Nevada
Environmental
Restoration
Project

DOE/NV--1095

National Nuclear Security Administration

Corrective Action Decision Document/ Closure Report for Corrective Action Unit 511: Waste Dumps (Piles and Debris) Nevada Test Site, Nevada

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December 2005

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CORRECTIVE ACTION DECISION DOCUMENT/ CLOSURE REPORT FOR CORRECTIVE ACTION UNIT 511: WASTE DUMPS (PILES AND DEBRIS) NEVADA TEST SITE, NEVADA

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

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CORRECTIVE ACTION DECISION DOCUMENT/ CLOSURE REPORT FOR CORRECTIVE ACTION UNIT 511: NEVADA TEST SITE, NEVADA

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List of Acronyms and Abbreviations

Am	Americium
ASTM	American Society for Testing and Materials
bgs	Below ground surface
CADD	Corrective Action Decision Document
CAI	Corrective Action Investigation
CAIP	Corrective Action Investigation Plan
CAS	Corrective Action Site
CAU	Corrective Action Unit
CLP	Contract Laboratory Program
cm^3/cm^3	Cubic centimeters per cubic centimeter
COC	Contaminant of concern
COPC	Contaminant of potential concern
CR	Closure Report
CSM	Conceptual site model
day/yr	Days per year
DOE	U.S. Department of Energy
$dpm/100cm^2$	Disintegrations per minute per 100 square centimeters
DQI	Data quality indicator
DQA	Data quality assessment
DQO	Data quality objective
DRO	Diesel-range organics
EOD	Explosive ordnance disposal
EPA	U.S. Environmental Protection Agency
FADL	Field activity daily log
FAL	Final action level
FD	Field duplicate

List of Acronyms and Abbreviations *(Continued)*

FFACO	*Federal Facility Agreement and Consent Order*
FID	Flame-ionization detector
FSL	Field-screening level
FSR	Field-screening result
ft	Foot
ft^2	Square foot
ft^3	Cubic foot
g/g	Grams per gram
GPS	Global positioning system
GRO	Gasoline-range organics
HAE	Height above ellipsoid
HWAA	Hazardous Waste Accumulation Area
ID	Identification
IDW	Investigation-derived waste
kg/day	Kilograms per day
LCS	Laboratory control sample
LLW	Low-level waste
MD	Munitions debris
MDC	Minimum detectable concentration
MEC	Munitions and explosives of concern
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
mi	Mile
MPPEH	Material potentially presenting an explosive hazard
mrem/yr	Millirem per year
MS	Matrix spike

List of Acronyms and Abbreviations *(Continued)*

MSD	Matrix spike duplicate
NA	Not applicable
NAC	*Nevada Administrative Code*
NAD	North American Datum
ND	Nondetect
NDEP	Nevada Division of Environmental Protection
NIST	National Institute for Standards and Technology
NNSA/NSO	U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office
NR	Not required
NTS	Nevada Test Site
PAL	Preliminary action level
PB	Preparation blank
PCB	Polychlorinated biphenyl
pCi/g	Picocuries per gram
pCi/L	Picocuries per liter
POC	Performance objective criteria
PPE	Personal protective equipment
ppm	Parts per million
PRG	Preliminary Remediation Goal
Pu	Plutonium
QA	Quality assurance
QAPP	Quality Assurance Project Plan
QC	Quality control
RadCon	Radiation Control
RAIS	Risk Assessment Information System
RBSL	Risk-based screening level

List of Acronyms and Abbreviations *(Continued)*

RCRA	*Resource Conservation and Recovery Act*
ROTC	Record of Technical Change
RPD	Relative percent difference
SCL	Sample collection log
SDG	Sample delivery group
SNJV	Stoller-Navarro Joint Venture
Sr	Strontium
SSTL	Site-specific target level
SVOC	Semivolatile organic compound
TCLP	Toxicity characteristic leaching procedure
TPH	Total petroleum hydrocarbons
TSCA	*Toxic Substance Control Act*
U	Uranium
UTM	Universal Transverse Mercator
UXO	Unexploded ordnance
VOC	Volatile organic compound
yd	Yard
yd^3	Cubic yard
yr	Year
µg/kg	Micrograms per kilogram

Executive Summary

This Corrective Action Decision Document/Closure Report has been prepared for Corrective Action Unit (CAU) 511, Waste Dumps (Piles & Debris). The CAU is comprised of nine corrective action sites (CASs) located in Areas 3, 4, 6, 7, 18, and 19 of the Nevada Test Site, Nevada, in accordance with the *Federal Facility Agreement and Consent Order* (1996). Corrective Action Unit 511 is comprised of nine CASs:

- 03-08-02, Waste Dump (Piles & Debris)
- 03-99-11, Waste Dump (Piles)
- 03-99-12, Waste Dump (Piles & Debris)
- 04-99-04, Contaminated Trench/Berm
- 06-16-01, Waste Dump (Piles & Debris)
- 06-17-02, Scattered Ordnance/Automatic Weapons Range
- 07-08-01, Contaminated Mound
- 18-99-10, Ammunition Dump
- 19-19-03, Waste Dump (Piles & Debris)

The purpose of this Corrective Action Decision Document/Closure Report is to provide justification and documentation supporting the recommendation for closure of CAU 511 with no further corrective action. To achieve this, corrective action investigation (CAI) and closure activities were performed from January 2005 through August 2005, as set forth in the *Corrective Action Investigation Plan for Corrective Action Unit 511: Waste Dumps (Piles & Debris)* (NNSA/NSO, 2004) and Record of Technical Change No. 1. The purpose of the CAI was to fulfill the following data needs as defined during the data quality objective process:

- Determine whether contaminants of concern (COCs) are present.
- If COCs are present, determine their nature and extent.
- Provide sufficient information and data to complete appropriate corrective actions.

The CAU 511 dataset from the investigation results was evaluated based on the data quality indicator parameters. This evaluation demonstrated the quality and acceptability of the dataset for use in fulfilling the data quality objective data needs. Analytes detected during the CAI were evaluated against appropriate preliminary action levels to identify the COCs for each CAS. Assessment of the data generated from investigation activities conducted at CAU 511 revealed the following:

- Two CASs contained COCs. The extent of the contamination was determined at each site, and the contaminant was removed during the CAI.
- Debris located at the CASs was removed during the CAI as a best management practice.
- Materials presenting a potentially explosive hazard at two of the CASs were disposed of appropriately by explosive ordnance disposal/unexploded ordnance personnel.

Based on the evaluation of analytical data from the CAI, review of future and current operations at the nine CASs, and the detailed and comparative analysis of the potential corrective action alternatives, the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office provides the following recommendations:

- No further corrective action for CAU 511.
- No Corrective Action Plan
- A Notice of Completion to the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office is requested from the Nevada Division of Environmental Protection for closure of CAU 511.
- Corrective Action Unit 511 should be moved from Appendix III to Appendix IV of the *Federal Facility Agreement and Consent Order*.

1.0 Introduction

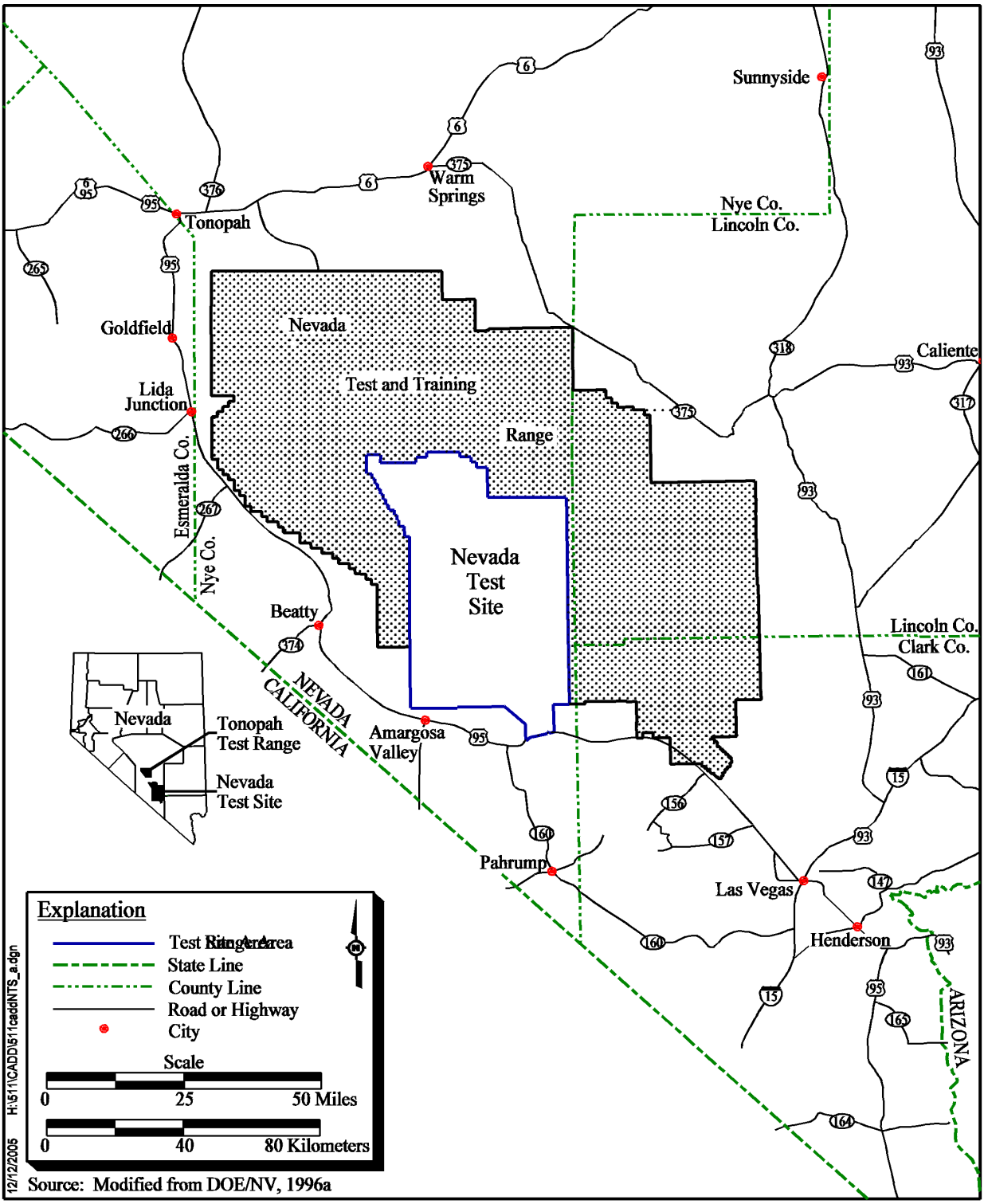
This Corrective Action Decision Document/Closure Report (CADD/CR) has been prepared for Corrective Action Unit (CAU) 511: Waste Dumps (Piles & Debris), Nevada Test Site (NTS), Nevada. The NTS is approximately 65 miles (mi) northwest of Las Vegas, Nevada (Figure 1-1). The corrective actions presented in this document are in accordance with the *Federal Facility Agreement and Consent Order* (FFACO) that was agreed to by the State of Nevada, U.S. Department of Energy (DOE), and the U.S. Department of Defense (FFACO, 1996).

Corrective Action Unit 511 is comprised of nine corrective active sites (CASs) that are shown on Figure 1-2 and listed below:

- CAS 03-08-02, Waste Dump (Piles & Debris)
- CAS 03-99-11, Waste Dump (Piles)
- CAS 03-99-12, Waste Dump (Piles & Debris)
- CAS 04-99-04, Contaminated Trench/Berm
- CAS 06-16-01, Waste Dump (Piles & Debris)
- CAS 06-17-02, Scattered Ordnance/Automatic Weapons Range
- CAS 07-08-02, Contaminated Mound
- CAS 18-99-10, Ammunition Dump
- CAS 19-19-03, Waste Dump (Piles & Debris)

Because CASs 07-08-02 and 18-99-10 had the potential of containing unexploded ordnance (UXO), clearances were conducted. To accurately reflect the current terminology and add consistency to the discussions, munitions and explosives of concern (MEC) will be used herein instead of UXO. This term includes, but is not limited to, the following specific categories of military munitions: UXO, material potentially presenting an explosive hazard (MPPEH), and munitions debris (MD). Definitions of these terms and others are provided in Appendix A of the *After Action Report: Munitions and Explosives of Concern Clearance Report* (Appendix F).

A detailed history of this CAU is presented in the *Corrective Action Investigation Plan* (CAIP) *for Corrective Action Unit 511: Waste Dumps (Piles & Debris), Nevada Test Site, Nevada* (NNSA/NSO, 2004) and summarized in Appendix A.



Source: Modified from DOE/NV, 1996a

Figure 1-1
Nevada Test Site

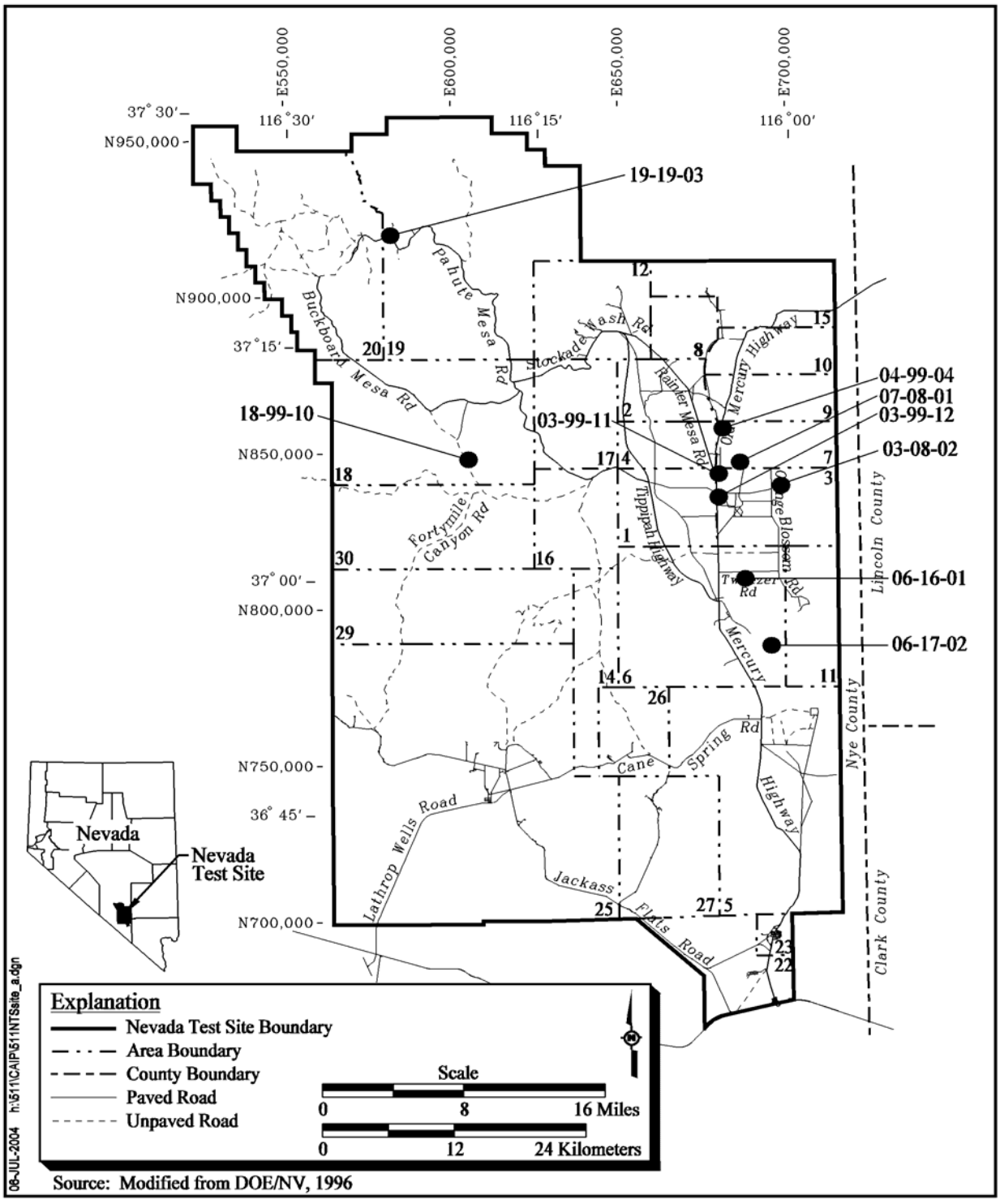


Figure 1-2
CAU 511, CAS Location Map

1.1 Purpose

This purpose of this CADD/CR is to justify the closure of CAU 511 without further corrective action. This justification is based on process knowledge and the results of investigation activities conducted in accordance with the CAIP (NNSA/NSO, 2004) and the associated Record of Technical Change (ROTC).

1.2 Scope

The scope of this CADD/CR is to justify and recommend that no further corrective action be required at CAU 511, Waste Dumps (Piles & Debris). To achieve this scope, the following actions were implemented:

- Evaluation of current site conditions, including the concentrations and extent of contaminants of concern (COCs)
- Development of the technical rationale for closure of the site with no further action.

1.3 Corrective Action Decision Document/Closure Report Contents

This CADD/CR is divided into the following sections and appendices:

Section 1.0 - Introduction: Summarizes the purpose, scope, and contents of this CADD/CR.

Section 2.0 - Corrective Action Investigation (CAI) Summary: Summarizes activities, investigation results, the need for corrective action, and a summary of the results of the data quality objective (DQO) assessment.

Section 3.0 - Recommendation: States why no further corrective action is necessary.

Section 4.0 - References: Provides a list of all referenced documents used in the preparation of this CADD/CR.

Appendix A - Corrective Action Investigation Results: Provides a description of the project objectives, field investigation and sampling activities, investigation results, waste management, and quality assurance (QA). Section A.3.0 through Section A.10.0

provide CAS specific information regarding field activities, sampling methods, and laboratory analytical results.

Appendix B - Data Assessment: Provides a data quality assessment (DQA) that reconciles DQO assumptions and requirements to the investigation results.

Appendix C - Risk Assessment for CAU 511: Documents the application of the American Society for Testing and Materials (ASTM) Method E1739-95 risk-based corrective action process.

Appendix D - Closure Activity Summary for CAU 511: Provides details on the completed closure activities, and includes the required verification activities and supporting documentation for CAU 511.

Appendix E - Sample Location Coordinates for CAU 511: Provides investigation sample location coordinates.

Appendix F - After Action Report: Munitions and Explosives of Concern Clearance Report.

Appendix G - Nevada Test Site Landfill Load Verification Forms for CAU 511.

Appendix H - Project Organization for CAU 511: Identifies the DOE Project Manager and other personnel involved with the CAU 511 characterization and closure activities.

1.3.1 Applicable Programmatic Plans and Documents

To ensure all project objectives, health and safety requirements, and quality control (QC) procedures were adhered to, all investigation activities were performed in accordance with the following documents:

- CAIP for CAU 511, Waste Dumps (Piles & Debris) (NNSA/NSO, 2004)

- ROTC No. 1 for CAU 511 CAIP, Waste Dumps (Piles & Debris) - The preliminary action levels (PALs) values for radiological isotopes in the environment are calculated based on the 25-millirem-per-year (mrem/yr) exposure level, not 15 mrem/yr, as agreed between the DOE, National Nuclear Security Administration Nevada Site Office (NNSA/NSO), Nevada Division of Environmental Protection (NDEP), and Stoller-Navarro Joint Venture (SNJV) for the Industrial Sites project.

- *Industrial Sites Quality Assurance Project Plan* (QAPP) (NNSA/NV, 2002)

- *Project Execution Plan* (SNJV, 2005)

- FFACO (1996)

- Approved standard quality practices and detailed operating procedures

The DQOs identified in the CAIP are as follow:

- Determine whether COCs are present.

- If COCs are present, determine their nature and extent. Obtain sufficient information to evaluate potential corrective action alternatives.

1.3.2 Data Quality Assessment Summary

The data quality indicators (DQIs) as discussed in Appendix B were achieved and the DQOs established in the CAIP were met. Following remediation activities, COCs were not present in concentrations above final action levels (FALs) at CAU 511.

2.0 Corrective Action Investigation Summary

The following sections summarize the CAU 511 investigation activities and results. Detailed investigation activities and results for individual CAU 511 CASs are presented in Appendix A of this document.

2.1 Investigation Activities

Corrective action investigation activities and remedial actions were performed as set forth in the CAU 511 CAIP (NNSA/NSO, 2004) from January 31, 2005, through August 12, 2005. The purpose of the CAU 511 CAI was to address the decision statements in the project-specific DQOs by:

- Determining whether COCs are present in soil associated with CAU 511.
- Determining the lateral and vertical extent of identified COCs.
- Ensuring adequate data have been collected to close the sites under NDEP, *Resource Conservations and Recovery Act* (RCRA) (CFR, 2003a), *Toxic Substance Control Act* (TSCA) (CFR, 2003b), and DOE requirements.

The scope of the CAI included the following activities:

- Performing radiological surveys at CASs 03-08-02, 04-99-04, 06-16-01, 07-08-01, and 19-19-03.
- Field screening soil samples for volatile organic compounds (VOCs) at CASs 03-99-11 and 06-16-01.
- Field screening soil samples for alpha and beta/gamma radiation.
- Collecting environmental soil samples for laboratory analyses to determine the presence of COCs.
- Collecting environmental soil samples for laboratory analyses to define the vertical and lateral extent of COCs.
- Collecting waste management samples for laboratory analyses to determine appropriate disposal requirements.

- Collecting QC samples for laboratory analyses to ensure that the data generated from the analysis of investigation samples meet the requirements of the DQIs.

A judgmental (nonprobabilistic) sampling scheme was implemented at eight of the nine CASs to determine sample locations. Judgmental sampling allows the methodical selection of sample locations that target the populations of interest (defined in the DQOs) rather than nonselective random locations. Random sample locations were selected at CAS 06-17-02 as no biasing factors were present.

Because individual sample results, rather than an average concentration, were used to compare FALs at the eight CASs, statistical methods to generate site characteristics (averages) will not be calculated. Section 0.4.4 of the U.S. Environmental Protection Agency (EPA) *Data Quality Objectives Process for Hazardous Waste Site Investigations* (EPA, 2000a) guidance states that the use of statistical methods may not be warranted by program guidelines or site-specific sampling objectives. The need for statistical methods is dependent upon the decisions being made. Section 7.1 of the EPA guidance states that a nonprobabilistic (judgmental) sampling design is developed when there is sufficient information on the contamination sources and history to develop a valid conceptual site model (CSM) and to select specific sampling locations. This design was used to confirm the existence of contamination at specific locations and provide information (such as extent of contamination) about specific areas of the site.

Confidence in judgmental sampling results was established qualitatively by the validation of the CSM developed and concurred to by stakeholder participants (DOE, NNSA/NSO, and NDEP) during the DQO process based on investigation results and performing a DQA to determine whether DQO requirements have been met.

The following sections describe specific investigation activities conducted at each CAS.

2.1.1 Waste Dump (Piles & Debris) (CAS 03-08-02)

This CAS consisted of a pile of debris and soil approximately 650 feet (ft) long and 10 to 20 ft wide in addition to two smaller areas containing surface debris in Area 3 of the NTS. Figure 2-1 shows the initial condition at CAS 03-08-02. Figure 2-2 shows the site after the debris piles were removed.



Figure 2-1
CAS 03-08-02 (Facing Southeast) Before Debris Removal (01/2005)

The following sections summarize the geophysical survey, land area radiological walkover survey, field screening, and sampling activities conducted at CAS 03-08-02.

2.1.1.1 Geophysical Survey

A geophysical survey of the CAS 03-08-02 area was performed in April 2004 and revealed the presence of metallic anomalies buried in the shallow subsurface. The absence of consistent linear anomalies suggests metallic pipes or utilities do not exist within the survey area. Results show the northern portions of the pile contain significantly more metallic debris than the southern portion (Fahringer, 2004).

2.1.1.2 Radiological Survey

A radiological survey was performed over the piles of debris and soil in February 2004. The results of the radiological survey shows three locations with slightly elevated radioactivity, one located in the



Figure 2-2
CAS 03-08-02 (Facing Northwest) After Debris Removal (03/2005)

northwest area of the soil pile and two in the debris pile. No removable contamination was identified (Alderson, 2004).

2.1.1.3 Field Screening

Field screening was conducted on soil samples using a handheld instrument to survey for alpha and beta/gamma radiation. The field-screening results (FSRs) were compared to field-screening levels (FSLs) to guide subsequent soil sampling decisions.

2.1.1.4 Sampling Activities

Surface soil sampling activities were conducted at CAS 03-08-02. A total of 18 environmental soil samples from 16 locations were collected and submitted to the laboratory for the analyses listed in Appendix A (Table A.3-1). Soil samples were collected using grab sampling techniques.

Pre-investigation activities included the collection of 26 waste characterization samples from surface soils of the large debris pile at 30-ft intervals. The waste characterization samples analyses were used to characterize the waste and debris in anticipation of disposal at the 10c landfill.

Once the debris pile was removed, seven environmental samples were collected from native soil (0.0 to 0.5 ft below ground surface [bgs]). One soil sample was collected every 100 ft along the center line of the large debris pile. Four environmental surface samples were collected at biased locations at Site B, and one environmental surface sample was collected at a biased location at Site C. Five verification samples were collected from the immediate area around sample location A5 (top of soil pile) after the contaminated soil was removed (Figure A.3-1).

2.1.2 Waste Dump (Piles) (CAS 03-99-11)

This CAS consisted of five discolored soil and rock piles, stained soil around the piles, and debris throughout the area of the CAS in Area 3 of the NTS. Figure 2-3 shows initial site conditions at CAS 03-99-11. Figure 2-4 shows the site after remediation of the soil. The following sections summarize the field screening and sampling activities conducted at CAS 03-99-11.



Figure 2-3
CAS 03-99-11 (Facing Northwest) Before Remediation Activities (02/2005)



Figure 2-4
CAS 03-99-11 (Facing Southwest) After Remediation Activities (10/2005)

2.1.2.1 Field Screening

Field screening was conducted on soil samples using the headspace method for volatiles using a flame-ionization (FID) detector. Field screening was conducted for alpha and beta/gamma radioactivity using a handheld alpha, beta/gamma radiological survey instrument. The FSRs were compared to FSLs to guide subsequent soil sampling decisions.

2.1.2.2 Sampling Activities

Surface and shallow subsurface soil sampling activities were conducted at CAS 03-99-11. A total of 73 soil samples from 33 locations were collected and submitted to the laboratory for the analyses listed in Appendix A (Table A.4-1). Soil samples were collected using grab, hand auger, and backhoe samplings techniques (Figure A.4-1).

2.1.3 Waste Dump (Piles & Debris) (CAS 03-99-12)

This CAS consists of multiple piles of white material determined to be expended calcium carbide. The material is not confined to the boundaries of this CAS, but is located throughout the area surrounding the former subdock in Area 3 of the NTS (Figure 2-5). The following sections summarize the field screening and sampling activities conducted at CAS 03-99-12.



Figure 2-5
CAS 03-99-12 (Facing Northeast) Piles (04/2005)

2.1.3.1 Field Screening

Field screening was conducted on samples using a handheld survey instrument to survey for alpha and beta/gamma radiation. The FSRs were compared to FSLs to guide subsequent sampling decisions.

2.1.3.2 Sampling Activities

Surface and shallow subsurface soil sampling activities were conducted at CAS 03-99-12. A total of eight soil samples from three different locations within the CAS were submitted to the laboratory for the analyses listed in Appendix A (Table A.5-1). Soil samples were collected using grab and hand augering techniques. Samples were collected from the surface of the piles of material, from about

halfway between the top of the pile and the native soil interface, and from native soil below the piles (0 - 5 ft bgs) (Figure A.5-1).

2.1.4 Contaminated Trench/Berm (CAS 04-99-04)

This CAS consists of a trench with two berms leading to a depression. Figure 2-6 shows the trench, berms, and sample location D04. The following sections summarize the geophysical survey, land area radiological walkover survey, field screening, and sampling activities conducted at CAS 04-99-04.

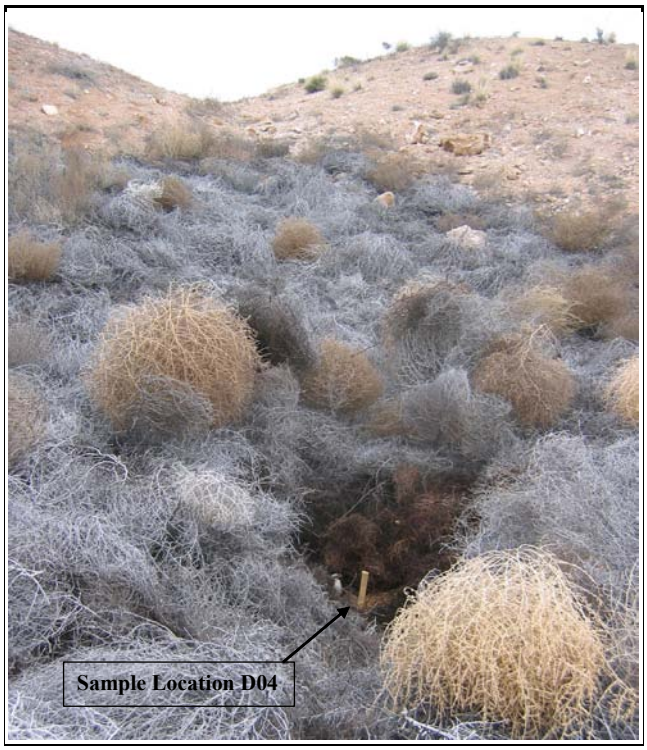


Figure 2-6
CAS 04-99-04 (Facing West) Trench/Berm (02/2005)

2.1.4.1 Geophysical Survey

A geophysical survey was conducted at the site in September 2002. No subsurface anomalies were identified, concluding that there is no metallic debris in these berms. (Shaw, 2002)

2.1.4.2 Radiological Survey

A radiological survey was conducted at the site in August 2002. Results indicated that the gamma radiation emission rate was not distinguishable from undisturbed background areas. (Alderson, 2002)

2.1.4.3 Field Screening

Field screening was conducted on soil samples using a handheld instrument to survey for alpha and beta/gamma radiation. The FSRs were compared to FSLs to guide subsequent soil sampling decisions.

2.1.4.4 Sampling Activities

The surface soil sampling activities were conducted at CAS 04-99-04. A total of six soil samples from four sample locations were collected and submitted to the laboratory for the analyses listed in Appendix A (Table A.6-1). Soil samples were collected using grab sampling methods.

Surface soil samples were collected from 0.0 to 0.5 ft bgs at the high points on each berm and the high and low points within the trench (Figure A.6-1). One confirmation sample was collected at a depth of 1.5 ft bgs at sample location D02 after plutonium (Pu)-contaminated soil was removed.

2.1.5 Waste Dump (Piles & Debris) (CAS 06-16-01)

This CAS consisted of a large debris area with three distinct debris piles located within the area. Figure 2-7 shows the initial condition at CAS 06-16-01. Figure 2-8 shows the site after the removal of the debris. The following sections summarize the geophysical survey, the land area radiological walkover survey, field screening, and sampling activities conducted at CAS 06-16-01.

2.1.5.1 Geophysical Survey

A geophysical survey was conducted at the site in September 2002 and identified soil with abundant surface metal debris and soil mounds with partially buried metallic debris. Much of the surface material at the site is partially buried, and there are two mounds of debris on the eastern side of the survey area. These mounds have large anomalous signatures that appear to be a landfill with large amounts of metal. (Shaw, 2002)



Figure 2-7
CAS 06-16-01 (Facing Southwest) Before Debris Removal (04/2005)

2.1.5.2 Radiological Survey

A radiological survey was conducted at the site in August 2002. The survey area encompassed approximately 143,500 square feet (ft^2). It was determined that the gamma radiation emission rate is not distinguishable from undisturbed background areas. (Alderson, 2002)

2.1.5.3 Field Screening

Field screening was conducted on soil samples using a handheld instrument to survey for alpha and beta/gamma radiation. The FSRs were compared to FSLs to guide subsequent soil sampling decisions. All samples collected were submitted for laboratory analysis.



Figure 2-8
CAS 06-16-01 (Facing West) After Debris Removal (04/2005)

2.1.5.4 Sampling Activities

Surface and shallow subsurface soil sampling activities were conducted at CAS 06-16-01. A total of nine environmental and one waste management soil samples from eight locations were collected and submitted to the laboratory for the analyses listed in Appendix A (Table A.7-1). Soil samples were collected using grab sampling techniques (backhoe). Surface soil samples were collected from 0.0 to 0.5 ft bgs from native soil at locations where debris piles had been located.

Subsurface soil samples were collected from a depth of 2.5 to 3.5 ft bgs at selected sample locations using a backhoe (Figure A.7-1).

2.1.6 Scattered Ordnance/Automatic Weapons Range (CAS 06-17-02)

This CAS consists of a former weapons range covering approximately 100 acres. Figure 2-9 shows the former weapons range. All former targets were removed by the NTS Management and Operating Contractor in June 2003. The following sections summarize the activities conducted at CAS 06-17-02.



Figure 2-9
CAS 06-17-02 (Facing West) Former Range (02/2005)

2.1.6.1 Field Screening

Field screening was conducted on soil samples using a handheld instrument to survey for alpha and beta/gamma radiation.

2.1.6.2 Sampling Activities

Surface soil sampling activities were conducted at CAS 06-17-02. A total of 81 environmental soil samples from 77 locations were collected and submitted to the laboratory for the analyses listed in Appendix A (Table A.8-1). Soil samples were collected using grab sampling techniques.

Surface soil samples were collected from 0.0 to 0.5 ft bgs at locations randomly identified throughout the CAS (Figure A.8-1).

2.1.7 Waste Dump (Piles & Debris) (CAS 19-19-03)

This CAS consists of a large water sump and some surface debris. The following sections summarize the geophysical survey, land area radiological walkover survey, field screening, and sampling activities conducted at CAS 19-19-03.

2.1.7.1 Geophysical Survey

A geophysical survey was conducted at the site in September 2002. The survey identified a single small anomaly in the northwest part of the survey area. The small anomalous appearance is likely due to minor changes in soil, and there appears to be no waste disposal site at this area. (Shaw, 2002)

2.1.7.2 Radiological Survey

The radiological survey was conducted at the site in August 2002 and indicated that the gamma radiation emission rate is not distinguishable from undisturbed background areas. (Alderson, 2002)

2.1.7.3 Field Screening

Field screening was conducted on soil samples using a handheld instrument to survey for alpha and beta/gamma radiation.

2.1.7.4 Sampling Activities

Surface soil sampling activities were conducted at CAS 19-19-03. A total of two environmental soil samples from two sample locations were collected and submitted to the laboratory for the analyses

listed in Appendix A (Table A.11-1). Soil samples were collected using grab sampling methods (Figure A.11-1).

Surface soil samples were collected from 0.0 to 0.5 ft bgs at locations beneath piping terminations determined to be inflow and overflow. No other biasing factors such as soil staining or elevated field screening measurements were identified.

2.1.8 Contaminated Mound (CAS 07-08-01)

This CAS consists of a large mound and a borrow pit located in Area 7 of the NTS. In 2003, an inert landmine was found in the immediate area of the mound; therefore, an MEC clearance was conducted during the CAI. The following sections summarize the geophysical survey, land area radiological walkover survey, field screening, MEC clearance, and sampling activities conducted at CAS 07-08-01.

2.1.8.1 Geophysical Survey

An initial geophysical survey was conducted over the mound in September 2002 to determine whether the site has been used for waste disposal. The results of the survey concluded that surface and subsurface debris is limited to the northern and southern edges of the mound (Shaw, 2002). An additional geophysical survey was conducted in March 2005 during the MEC clearance activities. Figure 5-1 in the After Action Report (provided in Appendix F) lists the MEC and non-MEC items identified during the clearance.

2.1.8.2 Radiological Survey

A radiological survey was conducted at the site in August 2002 and indicated gamma emission rates were not distinguishable from undisturbed background areas. (Alderson, 2002)

2.1.8.3 Field Screening

Field screening was conducted on soil samples using alpha and beta/gamma radioactivity using a handheld alpha, beta/gamma radiological survey instrument. The FSRs were compared to FSLs to guide subsequent soil sampling decisions.

2.1.8.4 Munitions and Explosives of Concern Clearance Activities

An MEC clearance was conducted by explosive ordnance disposal/UXO personnel on and around the mound. Fourteen landmines were identified, removed, and disposed as sanitary debris along with other miscellaneous debris (e.g., fencing and communication cable). For additional details of MEC clearance activities, refer to the After Action Report provided in Appendix F.

2.1.8.5 Sampling Activities

Surface and shallow subsurface soil sampling activities were conducted at CAS 07-08-01. A total of five soil samples from four locations were collected and submitted to the laboratory for the analyses listed in Appendix A (Table A.9-1). Soil samples were collected using grab sampling techniques.

Two surface samples were collected from the borrow pit, one each from the high and low points. Two surface samples were collected from locations where MEC and other miscellaneous debris was removed (northern and southern edge of the mound).

2.1.9 Ammunition Dump (CAS 18-99-10)

This CAS consisted of four separate sites each containing MEC. Site A consisted of a large pile of MEC and miscellaneous debris; Site B consisted of a shallow trench and scattered MEC and miscellaneous debris; Site C consisted of a large area of scattered MEC and miscellaneous debris; and Site D consisted of a small area of MEC and miscellaneous debris.

The following sections summarize the field screening, MEC clearance, and sampling activities conducted at CAS 18-99-10. Figure 2-10 shows the Site A debris pile. Figure 2-11 shows Site A after site activities.

2.1.9.1 Field Screening

Field screening was conducted on soil samples using a handheld instrument to survey for alpha and beta/gamma radiation. The FSRs were compared to FSLs to guide subsequent soil sampling decisions.



Figure 2-10
CAS 18-99-10, Site A (Facing Northwest) Before Debris Removal (08/2004)

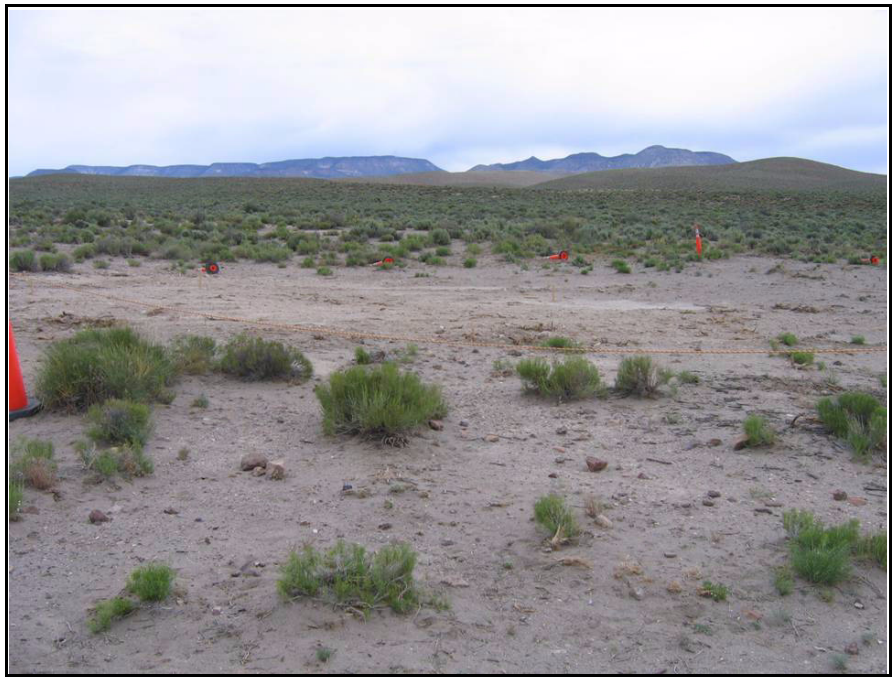


Figure 2-11
CAS 18-99-10 Site A (Facing Northeast) After Debris Removal (05/2005)

2.1.9.2 Geophysical Surveys and Munitions and Explosives of Concern Clearance Activities

Details of the MEC clearance activities conducted at CAS 18-99-10 by explosive ordnance disposal/UXO personnel is presented in the After Action Report (Appendix F). Geophysical surveys were conducted over the four sites (approximately 60 acres) and identified approximately 1,010 MEC items. Table 5-1 of Appendix F provides a summary of the MEC items identified and removed during clearance activities. Approximately 300 MPPEH items were destroyed in April 2005. Refer to Section A.12.2.8 for additional details of MPPEH destruction.

2.1.9.3 Sampling Activities

Surface and shallow subsurface soil sampling activities were conducted at CAS 18-99-10. A total of 22 soil samples from 14 sample locations were collected and submitted to the laboratory for the analyses listed in Appendix A (Table A.10-1). Soil samples were collected at biased locations within the four separate sites comprising this CAS using grab sampling techniques (Figure A.10-1). Biased locations focused on the location of debris or MEC in addition to an elevated radiological measurements identified within the debris pile.

2.1.10 Waste Characterization

Waste characterization samples were collected at CASs 03-08-02, 03-99-11, 06-16-01, and 18-99-10 to gather sufficient information and data to support waste disposal decisions. The samples were processed in accordance with approved procedures and shipped to an off-site laboratory for analysis. Analytical results from the environmental soil sampling and radiological screening were also used to determine the proper disposition of the investigation-derived waste (IDW). Additional information regarding waste management activities is presented in Appendix A.

2.1.11 Conceptual Site Model Validation

A CSM was developed in the CAU 511 CAIP that identified potential release mechanisms and migration pathways for potential contamination. The CSM addressed surface and shallow subsurface soils potentially impacted by debris including spills/leaks from debris. The two main migration pathways are consistent to the infiltration into native soil below the debris. Migration is away from

the release point, primarily downslope, to areas where settling may occur. No information collected during the CAI was inconsistent with CSM assumptions.

2.2 Results

A summary of the analytical data generated from the CAI is presented in Section 2.2.1. Section 2.2.2 presents a summary of the assessment made in Appendix B, which demonstrates that the investigation results satisfy the DQO data requirements.

2.2.1 Summary of Analytical Data

Chemical and radiological results for investigation samples collected at each of the CASs are summarized in Section 2.2.1.1 through Section 2.2.1.9.

The PALs for the investigation were determined during the DQO process and are discussed in Section 3.0 of the CAIP (NNSA/NSO, 2004). Final action levels are presented in Section 2.3 of this document. The COPCs identified during the CAI were compared to the FALs to identify COCs.

2.2.1.1 Waste Dump (Piles & Debris) (CAS 03-08-02)

The maximum concentration of each detected contaminant at Waste Dump (Piles & Debris) (CAS 03-08-02) is listed in Table 2-1. Sample locations are identified in Figure A.3-1.

Sample results indicated the presence of total petroleum hydrocarbons (TPH)-diesel-range organics (DRO) in concentration above PALs at one sample location; however, no hazardous constituents are present in concentrations above FALs. Samples collected from the surface of the debris piles for waste characterization purposes identified one location with Pu-239 present in concentrations greater than PALs. The Pu-239 contamination is attributed to atmospheric nuclear testing. The contaminated soil was removed as a best management practice and disposed as low-level waste (LLW). Verification samples were collected that indicated no Pu-239 present above PALs.

2.2.1.2 Waste Dump (Piles) (CAS 03-99-11)

Sample results indicated the presence of arsenic at concentrations above the PAL of 23 milligrams per kilogram (mg/kg) at seven sample locations. Total petroleum hydrocarbons-DRO was present at

Table 2-1
Maximum Concentration of Detected Contaminants at CAS 03-08-02

Constituent	Maximum Result	Sample #	Depth (ft bgs)	Location	Final Action Level	Units
Actinium-228	2.14	511A012	0.0 - 0.5	A36	5	pCi/g
Americium-241	1.71	511A002	0.0 - 0.5	A27	12.7	pCi/g
Aroclor-1254	0.20	511A512	0.0 - 0.5[a]	A11	0.74	mg/kg
Aroclor-1260	0.14	511A512	0.0 - 0.5[a]	A11	0.74	mg/kg
Arsenic	14.2	511A003	0.0 - 0.5[a]	A27	23	mg/kg
Barium	335	511A524	0.0 - 0.5[a]	A23	67,000	mg/kg
Lead	20.1	511A514	0.0 - 0.5[a]	A13	800	mg/kg
Mercury	0.0485	511A006	0.0 - 0.5	A30	310	mg/kg
Lead-212	2.64	511A009	0.0 - 0.5	A33	5	pCi/g
Lead-214	1.35	511A012	0.0 - 0.5	A36	5	pCi/g
Plutonium-238	1.43	511A505	0.0 - 0.5[a]	A05	13	pCi/g
Plutonium-239	37.1	511A505	0.0 - 0.5[a]	A05	12.7	pCi/g
Selenium	0.877	511A009	0.0 - 0.5	A33	5,100	mg/kg
Silver	1.08	511A520	0.0 - 0.5[a]	A19	5,100	mg/kg
Strontium-90	0.99	511A521	0.0 - 0.5[a]	A20	838	pCi/g
Thallium-208	0.62	511A009	0.0 - 0.5	A33	5	pCi/g
TPH-DRO	200	511A006	0.0 - 0.5	A30	100	mg/kg
Uranium-234	1.58	511A012	0.0 - 0.5	A36	143	pCi/g
Uranium-235	0.207	511A012	0.0 - 0.5	A36	17.5	pCi/g
Uranium-238	1.55	511A012	0.0 - 0.5	A36	105	pCi/g

[a]Sample collected from the surface of the soil pile.

DRO = Diesel-range organics
ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
pCi/g = Picocuries per gram
TPH = Total petroleum hydrocarbons

concentration above PALs at one location and is attributable to asphalt found throughout the area. Plutonium-239 was present at one sample location in concentration greater than PALs. The Pu-239 contamination is attributed to atmospheric nuclear testing.

The maximum concentration of each detected contaminant at Waste Dump (Piles) (CAS 03-99-11) is listed in Table 2-2. Sample locations are identified in Figure A.4-1.

Table 2-2
Maximum Concentration of Detected Contaminants at CAS 03-99-11
(Page 1 of 2)

Constituent	Maximum Result	Sample #	Depth (ft bgs)	Location	Final Action Level	Units
Acetone	0.0058	511B002	2.0 - 2.5[a]	B01	54,000	mg/kg
Actinium-228	2.08	511B011	10.5 - 11.5	B02	15	pCi/g
Americium-241	1.96	511B037	0.0 - 0.5	B13	12.7	pCi/g
Aroclor-1254	0.29	511B002	2.0 - 2.5[a]	B01	0.74	mg/kg
Aroclor-1260	0.17	511B002	2.0 - 2.5[a]	B01	0.74	mg/kg
Arsenic	1,920	511B022	0.0 - 0.5	B05	23	mg/kg
Barium	462	511B022	0.0 - 0.5	B05	67,000	mg/kg
Beryllium	1.26	511B016	10.0 - 10.5	B03	1,900	mg/kg
Bismuth-212	2.3	511B023	0.0 - 0.5	B05	5	pCi/g
Bismuth-214	3.11	511B018	1.0 - 1.5	B04	15	pCi/g
Cadmium	0.709	511B019	3.0 - 4.0	B04	450	mg/kg
Carbon Disulfide	0.006	511B012	0.0 - 0.5	B03	720	mg/kg
Cesium-137	2.89	511B037	0.0 - 0.5	B13	12.2	pCi/g
Chromium	11.5	511B004	4.0 - 4.5[b]	B01	450	mg/kg
Ethylbenzene	0.0032	511B031	0.0 - 0.5	B07	400	mg/kg
Europium-152	0.93	511B031	2.0 - 2.5	B01	5.7	pCi/g
Lead	61.4	511B022	0.0 - 0.5	B05	750	mg/kg
M/P-Xylene	0.003	511B035	0.0 - 0.5	B11	420	mg/kg
Mercury	7.42	511B022	0.0 - 0.5	B05	310	mg/kg
Methylene Chloride	3.3	511B013	1.5 - 2.5	B03	21	mg/kg
Lead-212	2.34	511B011	10.5 - 11.5	B02	15	pCi/g

Table 2-2
Maximum Concentration of Detected Contaminants at CAS 03-99-11
(Page 2 of 2)

Constituent	Maximum Result	Sample #	Depth (ft bgs)	Location	Final Action Level	Units
Lead-214	3.21	511B018	1.0 - 1.5	B04	15	pCi/g
Plutonium-238	1.33	511B038	0.0 - 0.5	B14	13	pCi/g
Selenium	6.96	511B018	1.0 - 1.5	B04	5,100	mg/kg
Strontium-90	0.38	511B037	0.0 - 0.5	B13	838	pCi/g
Thorium-234	1.32	511B041	2.0 - 3.0	B07	105	pCi/g
Thallium-208	0.74	511B011	10.5 - 11.5	B02	15	pCi/g
Trichlorofloromethane	3.7	511B048	0.0 - 0.5	B17	2,000	mg/kg
TPH-DRO	1,800	511B048	0.0 - 0.5	B17	100	mg/kg
Uranium-234	1.8	511B010	7.5 - 8.5	B02	143	pCi/g
Uranium-235	0.27	511B023	0.0 - 0.5	B05	17.5	pCi/g
Uranium-238	1.68	511B013	1.5 - 2.5	B03	105	pCi/g

[a]Sample collected from 2 ft below the surface of soil pile
[b]Sample collected from 4 ft below the surface of soil pile

DRO = Diesel-range organics
ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
pCi/g = Picocuries per gram
TPH = Total petroleum hydrocarbons

2.2.1.3 Waste Dump (Piles & Debris) (CAS 03-99-12)

Sample results indicated the presence of TPH-DRO in concentrations greater than the PAL of 100 mg/kg at three sample locations within the piles of expended calcium carbide. The TPH-DRO is considered a remnant by-product from the manufacturing of the calcium carbide.

The maximum concentration of each detected contaminant at Waste Dump (Piles & Debris) (CAS 03-99-12) is listed in Table 2-3. Sample locations are identified in Figure A.5-1.

Table 2-3
Maximum Concentration of Detected Contaminants at CAS 03-99-12

Constituent	Maximum Result	Sample #	Depth[a]	Location	Final Action Level	Units
Acetone	0.017	511C002	1.0 - 1.5	C01	54,000	mg/kg
Actinium-228	1.82	511C004	2.5 - 3.0	C01	15	pCi/g
Arsenic	3.19	511C002	1.0 - 1.5	C01	23	mg/kg
Barium	258	511C004	2.5 - 3.0	C01	67,000	mg/kg
Beryllium	0.878	511C002	1.0 - 1.5	C01	1,900	mg/kg
Bismuth-214	1.09	511C004	2.5 - 3.0	C01	5/15	pCi/g
Cadmium	0.152	511C001	0.0 - 0.5	C01	450	mg/kg
Cesium-137	1.66	511C002	1.0 - 1.5	C01	12.2	pCi/g
Chrysene	0.2	511C002	1.0 - 1.5	C01	210	mg/kg
Lead	17.2	511C001	0.0 - 0.5	C01	800	mg/kg
Lead-212	2.03	511C004	2.5 - 3.0	C01	15	pCi/g
Lead-214	1.22	511C003	2.5 - 3.0	C01	15	pCi/g
Methylene Chloride	3.7	511C001	0.0 - 0.5	C01	21	mg/kg
Plutonium-238	0.359	511C002	1.0 - 1.5	C01	13	pCi/g
Plutonium-239	1.57	511C002	1.0 - 1.5	C01	12.7	pCi/g
Selenium	0.968	511C002	1.0 - 1.5	C01	5,100	mg/kg
Silver	0.39	511C001	0.0 - 0.5	C01	5,100	mg.kg
Thorium-234	3.1	511C001	0.0 - 0.5	C01	105	mg/kg
Thallium-208	0.63	511C004	2.5 - 3.0	C01	15	pCi/g
TPH-DRO	990	511C002	1.0 - 1.5	C01	100	mg/kg
Uranium-234	0.88	511C004	2.5 - 3.0	C01	143	pCi/g
Uranium-235	0.149	511C003	2.5 - 3.0	C01	17.5	pCi/g
Uranium-238	0.85	511C004	2.5 - 3.0	C01	105	pCi/g

[a]Sample collected from the surface of the pile (0.0 - 0.5 ft), the middle of the pile (1.0 - 1.5 ft), and at the native soil surface beneath the pile (2.5 - 3.0 ft)

DRO = Diesel-range organics
ft = Foot
mg/kg = Milligrams per kilogram
pCi/g = Picocuries per gram
TPH = Total petroleum hydrocarbons

2.2.1.4 Contaminated Trench/Berm (CAS 04-99-04)

Sample results indicated Pu-239 was present at a concentration above the PAL at one location. The presence of the Pu-239 is attributed to atmospheric nuclear testing. The soil was removed as a best management practice and disposed of as LLW.

The maximum concentration of each detected contaminant at Contaminated Trench/Berm (CAS 04-99-04) is listed in Table 2-4. Sample locations are identified in Figure A.6-1.

Table 2-4
Maximum Concentration of Detected Contaminants at CAS 04-99-04

Constituent	Maximum Result	Sample #	Depth (ft bgs)	Location	Final Action Level	Units
Actinium-228	1.9	511D002	0.0 - 0.5	D02	5	pCi/g
Arsenic	4.62	511D001	0.0 - 0.5	D01	23	mg/kg
Barium	175	511D005	0.0 - 0.5	D04	67,000	mg/kg
Beryllium	1.18	511D002	0.0 - 0.5	D02	1,900	mg/kg
Bismuth-212	2.39	511D002	0.0 - 0.5	D02	5	pCi/g
Bismuth-214	1.18	511D001	0.0 - 0.5	D01	5	pCi/g
Chromium	7.66	511D002	0.0 - 0.5	D02	450	mg/kg
Diethylphthalate	0.460	511D004	0.0 - 0.5	D04	100,000	mg/kg
Lead	14.3	511D005	0.0 - 0.5	D04	800	mg/kg
Lead-212	1.98	511D002	0.0 - 0.5	D02	5	pCi/g
Lead-214	1.26	511D001	0.0 - 0.5	D01	5	pCi/g
Plutonium-238	0.208	511D002	0.0 - 0.5	D02	13	pCi/g
Plutonium-239	14.6	511D002	0.0 - 0.5	D02	12.7	pCi/g
Thallium-208	0.6	511D002	0.0 - 0.5	D02	5	pCi/g
TPH-DRO	13	511D003	0.0 - 0.5	D03	100	mg/kg
Uranium-234	1.18	511D001	0.0 - 0.5	D01	143	pCi/g
Uranium-235	0.091	511D002	0.0 - 0.5	D02	17.5	pCi/g
Uranium-238	1.19	511D001	0.0 - 0.5	D01	105	pCi/g

DRO = Diesel-range organics
ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
pCi/g = Picocuries per gram
TPH = Total petroleum hydrocarbons

2.2.1.5 Waste Dump (Piles & Debris) (CAS 06-16-01)

Surface results indicated the presence of lead at concentrations greater than PALs in surface soil beneath the remains of a battery. The contaminated soil was removed and disposed as hazardous waste. A verification sample was collected and results indicated no concentrations of lead exceeding the FALs.

The maximum concentration of each detected contaminant at Waste Dump (Piles & Debris) (CAS 06-16-01) is listed in Table 2-5. Sample locations are identified in Figure A.7-1.

2.2.1.6 Scattered Ordnance/Automatic Weapons Range (CAS 06-17-02)

Analytical results from analysis of environmental soil samples collected at CAS 06-17-02 identified no contamination in concentrations greater than PALs.

The maximum concentration of each detected contaminant at Scattered Ordnance/Automatic Weapons Range (CAS 06-17-02) is listed in Table 2-6. Sample locations are identified in Figure A.8-1.

2.2.1.7 Waste Dump (Piles & Debris) (CAS 19-19-03)

Analytical results from analysis of environmental soil samples collected at CAS 19-19-03 detected no contaminants in concentrations greater than PALs.

Table 2-5
Maximum Concentration of Detected Contaminants at CAS 06-16-01
(Page 1 of 2)

Constituent	Maximum Result	Sample #	Depth (ft bgs)	Location	Final Action Level	Units
Actinium-228	2.22	511E004	2.5 - 3.5	E04	15	pCi/g
Aroclor-1254	0.048	511E008	0.0 - 0.5	E08	0.74	mg/kg
Aroclor-1260	0.606	511E508	0.0 - 0.5	E08	7.62	pCi/g
Arsenic	6.29	511E003	2.5 - 3.5	E03	23	mg/kg
Barium	309	511E004	2.5 - 3.5	E04	67,000	mg/kg
Beryllium	1.52	511E004	2.5 - 3.5	E04	1,900	mg/kg
Bismuth-212	3.4	511E008	0.0 - 0.5	E08	5	pCi/g

Table 2-5
Maximum Concentration of Detected Contaminants at CAS 06-16-01
(Page 2 of 2)

Constituent	Maximum Result	Sample #	Depth (ft bgs)	Location	Final Action Level	Units
Bismuth-214	1.53	511E007	0.0 - 0.5	E07	5	pCi/g
Cesium-134	0.108	511E003	2.5 - 3.5	E03	5.2	pCi/g
Cesium-137	0.24	511E001	0.0 - 0.5	E02	12.2	pCi/g
Lead	6,420	511E001	0.0 - 0.5	E02	750	mg/kg
Lead-212	2.79	511E004	0.0 - 0.5	E04	5	pCi/g
Lead-214	1.66	511E008	0.0 - 0.5	E04	5	pCi/g
Strontium-90	0.43	511E001	0.0 - 0.5	E02	838	pCi/g
Thorium-234	3.3	511E004	2.5 - 3.5	E04	105	pCi/g
Thallium-208	0.78	511E002	2.5 - 3.5	E03	15	pCi/g
TPH-DRO	60	511E502	0.0 - 0.5	E01	100	mg/kg
Uranium-234	1.2	511E003	2.5 - 3.5	E03	143	pCi/g
Uranium-235	0.082	511E005	0.0 - 0.5	E05	17.5	pCi/g
Uranium-238	1.14	511E002	2.5 - 3.5	E03	105	pCi/g

DRO = Diesel-range organics
ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
pCi/g = Picocuries per gram
TPH = Total petroleum hydrocarbons

The maximum concentration of each detected contaminant at Waste Dump (Piles & Debris) (CAS 19-19-03) is listed in Table 2-7. Sample locations are identified in Figure A.11-1.

2.2.1.8 Contaminated Mound (CAS 07-08-01)

Sample results indicated the presence of Pu-239 at concentrations greater than PALs at two locations. The presence of the Pu-239 is attributable to atmospheric nuclear testing.

The maximum concentration of each detected contaminant at Contaminated Mound (CAS 07-08-01) is listed in Table 2-8. Sample locations are identified in Figure A.9-1.

Table 2-6
Maximum Concentration of Detected Contaminants at CAS 06-17-02

Constituent	Maximum Result	Sample #	Depth (ft bgs)	Location	Final Action Level	Units
Arsenic	5.63	511F060	0.0 - 0.5	F57	23	mg/kg
Barium	161	511F075	0.0 - 0.5	F71	67,000	mg/kg
Beryllium	1.62	511F064	0.0 - 0.5	F60	1,900	mg/kg
Cadmium	0.283	511F004	0.0 - 0.5	F05	450	mg/kg
Chromium	13	511F060	0.0 - 0.5	F57	450	mg/kg
Lead	133	511F010	0.0 - 0.5	F11	750	mg/kg
Mercury	0.0482	511F022	0.0 - 0.5	F21	310	mg/kg
Selenium	0.72	511F034	0.0 - 0.5	F32	5,100	mg/kg
Silver	0.607	511F026	0.0 - 0.5	F24	5,100	mg/kg

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram

Table 2-7
Maximum Concentration of Detected Contaminants at CAS 19-19-03

Constituent	Maximum Result	Sample #	Depth (ft bgs)	Location	Final Action Level	Units
Actinium-228	3.76	511G001	0.0 - 0.5	G01	5	pCi/g
Arsenic	2.57	511G002	0.0 - 0.5	G02	23	mg/kg
Barium	85.8	511G002	0.0 - 0.5	G02	67,000	mg/kg
Beryllium	0.806	511G001	0.0 - 0.5	G01	1,900	mg/kg
Bismuth-214	2.11	511G001	0.0 - 0.5	G01	5/15	pCi/g
Chromium	4.75	511G002	0.0 - 0.5	G02	450	mg/kg
Lead	8.99	511G002	0.0 - 0.5	G02	750	mg/kg
Lead-212	3.76	511G001	0.0 - 0.5	G01	5	pCi/g
Lead-214	1.7	511G001	0.0 - 0.5	G01	5	pCi/g
Plutonium-239	0.023	511G002	0.0 - 0.5	G02	12.7	pCi/g
Thallium-208	1.21	511G001	0.0 - 0.5	G01	5	pCi/g
Uranium-234	1.31	511G001	0.0 - 0.5	G01	143	pCi/g
Uranium-238	1.26	511G001	0.0 - 0.5	G01	105	pCi/g

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
pCi/g = Picocuries per gram

Table 2-8
Maximum Concentration of Detected Contaminants at CAS 07-08-01

Constituent	Maximum Result	Sample #	Depth (ft bgs)	Location	Final Action Level	Units
Actinium-228	1.57	511H001	0.5 - 1.0	H01	15	pCi/g
Americium-241	3.7	511H001	0.5 - 1.0	H01	12.7	pCi/g
Arsenic	2.75	511H004	0.0 - 0.5	H03	23	mg/kg
Barium	147	511H005	0.0 - 0.5	H04	67,000	mg/kg
Beryllium	0.71	511H004	0.0 - 0.5	H03	1,900	mg/kg
Bismuth-214	1.17	511H002	0.5 - 1.0	H02	5/15	pCi/g
Cadmium	3.08	511H001	0.5 - 1.0	H01	450	mg/kg
Cesium-137	4.31	511H001	0.5 - 1.0	H01	12.2	pCi/g
Chromium	4.62	511H001	0.5 - 1.0	H01	450	mg/kg
Lead	10.5	511H001	0.5 - 1.0	H01	750	mg/kg
Lead-214	1.26	511H005	0.0 - 0.5	H04	5	p/Ci/g
Plutonium-238	1.01	511H002	0.5 - 1.0	H02	13	pCi/g
Plutonium-239	30	511H002	0.5 - 1.0	H02	12.7	pCi/g
Silver	0.4	511H002	0.5 - 1.0	H02	5,100	mg/kg
Strontium-90	0.83	511H002	0.5 - 1.0	H02	838	pCi/g
Thallium-208	0.66	511H002	0.5 - 1.0	H02	15	pCi/g
Uranium-234	1.1	511H001	0.5 - 1.0	H01	143	pCi/g
Uranium-235	0.07	511H005	0.0 - 0.5	H04	17.5	pCi/g
Uranium-238	1.06	511H004	0.0 - 0.5	H03	105	pCi/g

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
pCi/g = Picocuries per gram

2.2.1.9 Ammunition Dump (CAS 18-99-10)

Sample results indicated the presence of TPH-DRO at one location in concentrations greater than PALs. None of the hazardous constituents present in TPH-DRO were present in concentrations above FALs. While collecting waste management samples from a pile of debris at this CAS, a piece of pipe was discovered to be contaminated with americium (Am)-241 in concentrations greater than the industrial landfill criteria. Accordingly, the contents of the pile was collected, containerized, and disposed of as LLW.

The maximum concentration of each detected contaminant at CAS 18-99-10 is listed in Table 2-9. Sample locations are identified in Figure A.10-1.

Table 2-9
Maximum Concentration of Detected Contaminants at CAS 18-99-10

Constituent	Maximum Result	Sample #	Depth (ft bgs)	Location	Final Action Level	Units
Actinium-228	3.46	511J001	0.0 - 0.5	Site B-01	5/15	pCi/g
Americium-241	2.03	511J012	0.0 - 0.5	Site A	12.7	pCi/g
Arsenic	5.41	511J002	0.0 - 0.5	Site B-02	23	mg/kg
Barium	156	511J010	0.0 - 0.5	Site C-09	67,000	mg/kg
Beryllium	0.65	511J008	0.0 - 0.5	Site C-07	1,900	mg/kg
Bismuth-212	4.2	511J010	0.0 - 0.5	Site C-09	5/15	pCi/g
Bismuth-214	1.76	511J001	0.0 - 0.5	Site B-01	5/15	pCi/g
Cadmium	1.38	511J004	0.0 - 0.5	Site B-03	450	mg/kg
Cesium-137	1.06	511J001	0.0 - 0.5	Site B-01	12.2	pCi/g
Chromium	6.57	511J007	0.0 - 0.5	Site D-06	450	mg/kg
Lead	17.2	511J007	0.0 - 0.5	Site D-06	750	mg/kg
Lead-212	3.84	511J001	0.0 - 0.5	Site B-01	5/15	pCi/g
Lead-214	1.79	511J006	0.0 - 0.5	Site D-05	5/15	pCi/g
Plutonium-238	0.26	511J015	0.0 - 0.5	Site A	13	pCi/g
Plutonium-239	8	511J012	0.0 - 0.5	Site A	12.7	pCi/g
Silver	0.59	511J008	0.0 - 0.5	Site C-07	5,100	mg/kg
Strontium-90	0.35	511J012	0.0 - 0.5	Site A	838	pCi/g
Thallium-208	1.1	511J002	0.0 - 0.5	Site B-02	5/15	pCi/g
Toluene	2.8	511J010	0.0 - 0.5	Site C-09	230	µg/kg
TPH-DRO	120	511J005	0.0 - 0.5	Site D-04	100	mg/kg
Uranium-234	1.38	511J004	0.0 - 0.5	Site B-03	143	pCi/g
Uranium-235	0.15	511J006	0.0 - 0.5	Site D-05	17.5	pCi/g
Uranium-238	1.43	511J009	3.5 - 4.0	Site C-08	105	pCi/g

DRO = Diesel-range organics
ft bgs = Feet below ground surface
pCi/g = Picocuries per gram
mg/kg = Milligrams per kilogram
TPH = Total petroleum hydrocarbons
µg/kg = Micrograms per kilogram

2.2.2 Data Assessment Summary

The DQA is presented in Appendix B. This assessment was performed based on the EPA *Guidance for Data Quality Assessments: Practical Methods for Data Analysis* (EPA, 2000b) document referenced in Section 5.5 of the Industrial Sites QAPP (NNSA/NV, 2002). The DQA ensures the type, quality, and quantity of data to support the resolution of DQO decisions at an appropriate level of confidence. Using both the DQO and DQA ensures that DQO decisions are sound and defensible.

The DQA process is comprised of the following steps:

- Step 1: Review DQOs and Sampling Design.
- Step 2: Conduct a Preliminary Data Review.
- Step 3: Select the Test.
- Step 4: Verify the Assumptions.
- Step 5: Draw Conclusions from the Data.

Sample locations that support the presence and/or extent of contamination at each CAS are shown in Appendix A. Based on the results of the DQA presented in Appendix B, the DQO requirements have been met and no further action was selected as the closure alternative. The DQA also determined that information generated during the investigation support the CSM assumptions and the data collected support their intended use in the decision-making process.

2.3 Justification for No Further Action

No further action is justified based on an evaluation of risk to ensure protection of the public and the environment in accordance with *Nevada Administrative Code* (NAC) 445A (NAC, 2003), feasibility, and cost effectiveness. The decision that no further action is needed at CAU 511 was determined from DQO decision statements based on a comparison of the analyte concentrations detected in CAI soil samples to the FALs.

After investigation activities and corrective actions were completed, no COCs were identified; therefore, no further corrective action is required. Appendix C presents the justification for no further action based on risk.

The CAU 511 corrective action objective is a risk-based cleanup goal defined herein as FALs that, if met, will ensure that each site released will pose no unacceptable risk to human health and the

environment and that conditions at each site are in compliance with all applicable laws and regulations. The process described in this section to define or determine the FALs is in conformance with NAC Section 445A.227, which lists the requirements for sites with soil contamination (NAC, 2003). For the evaluation of corrective actions, NAC Section 445A.22705 requires the use of ASTM Method E1739-95 to "conduct an evaluation of the site, based on the risk it poses to public health and the environment, to determine the necessary remediation standards (i.e., FALs), or to establish that corrective action is not necessary" (ASTM, 1995). The methodology used to establish FALs and the determination of FALs for CAU 511 are presented in Appendix C.

The PALs for all COPCs were established as the FALs except for TPH-DRO and arsenic. The FAL for TPH-DRO was established as EPA Region 9 Preliminary Remediation Goals (PRGs) for TPH-DRO constituents (EPA, 2002). The FAL for arsenic was established at 477 mg/kg.

The only contaminants identified at concentrations exceeding PALs are discussed on a CAS-by-CAS basis in the following sections.

2.3.1 Waste Dump (Piles & Debris) (CAS 03-08-02)

The TPH-DRO concentration in CAS 03-08-02 exceeded the PAL of 100 mg/kg. The TPH-DRO was further evaluated by comparing the hazardous constituents of diesel to EPA Region 9 PRG values (EPA, 2002). None of the hazardous constituents contained in TPH-DRO were present in concentrations above FALs. This evaluation is presented in Appendix C and summarized in Table C.1-3. Concentrations of Pu-239 were identified in a pre-investigation waste management sample. The Pu-239 is considered isolated and attributable to atmospheric testing. Approximately 1 cubic yard (yd^3) of soil was removed as a best management practice and disposed of as LLW. Verification samples collected indicated no concentrations of Pu-239 remained in the soil. No COCs are present at CAS 03-08-02; therefore, no further corrective action is required.

2.3.2 Waste Dump (Piles) (CAS 03-99-11)

The TPH-DRO concentration in CAS 03-99-11 exceeded the 100 mg/kg PAL. The TPH-DRO found in this CAS is believed to be associated with decomposed asphalt that was found throughout the immediate area. The TPH-DRO was further evaluated by comparing the hazardous constituents of

TPH-DRO to EPA Region 9 PRG values (EPA, 2002). No hazardous constituents were present in concentrations above FALs. This evaluation is presented in Appendix C and summarized in Table C.1-3. No contaminants associated with TPH-DRO are present at this CAS above FALs.

Concentrations of Pu-239 was found exceeding the PALs of 12.7 picocuries per gram (pCi/g) at location B32. The Pu-239 is attributable to atmospheric nuclear testing. As best management practice, less than 1 yd^3 of soil in the immediate area was removed and disposed of as LLW. A verification sample was collected and Pu-239 was not found exceeding the FALs.

Soil with concentrations of arsenic that exceeded the PAL of 23 mg/kg was found at five locations. All samples were collected at or above (within the soil piles) native soil with the exception of one sample collected from a depth of 5 ft bgs. Overall, arsenic concentrations decreased with depth below the ground surface (native soil); therefore, the spike at 5 ft bgs at sample location B05 is believed to be attributable to sample contamination from the surface into the trench before sampling from the backhoe bucket. Step-out samples were collected to bound the area of contaminated soil.

Approximately 900 yd^3 of soil, which included discolored soil, was removed as a corrective action and disposed of at the 10c landfill. Four verification samples were collected and indicated no residual contamination above FALs. No COCs remain at CAS 03-99-11; therefore, no further corrective action is required.

2.3.3 Waste Dump (Piles & Debris) (CAS 03-99-12)

The TPH-DRO concentration within the piles of expended calcium carbide exceeds the 100 mg/kg PAL. Total petroleum hydrocarbons-DRO was not present in concentrations above PALs in the native soils, only within the piles of expended calcium carbide (EPA, 2005) and most likely a remnant by-product of the manufacturing of calcium carbide. Hazardous constituents of TPH-DRO are not present in concentrations that exceed FALs. No COCs are present at CAS 03-99-12; therefore, no further corrective action is required.

2.3.4 Contaminated Trench/Berm (CAS 04-99-04)

Concentrations of Pu-239 was found exceeding the PALs of 12.7 picocuries per gram (pCi/g) at location D02. The Pu-239 is attributable to atmospheric nuclear testing. As best management

practice, less than 1 yd^3 of soil in the immediate area was removed and disposed of as LLW. A verification sample was collected and Pu-239 was not found exceeding the FALs.

2.3.5 Waste Dump (Piles & Debris) (CAS 06-16-01)

Piles of debris were removed from the area of this CAS and environmental samples collected from below where the piles of debris had been located. Concentrations of lead (6,420 mg/kg) exceeding the PAL was found in soil beneath the remains of a battery. Less than 1 yd^3 of soil was removed as a corrective action and disposed of as hazardous waste, and a verification sample collected. Results from the verification sample indicated that concentrations of lead remaining in the soil were below FALs. No COCs remain at CAS 06-16-01; therefore, no further corrective action is required.

2.3.6 Scattered Ordnance/Automatic Weapons Range (CAS 06-17-02)

At this CAS, no contamination is present at concentrations exceeding FALs. No COCs are present at CAS 06-17-02; therefore, no further corrective action is required.

2.3.7 Waste Dump (Piles & Debris) (CAS 19-19-03)

At this CAS no contamination is present at concentration exceeding FALs. No COCs are present at CAS 19-19-03; therefore, no further corrective action is required.

2.3.8 Contaminated Mound (CAS 07-08-01)

Concentrations of Pu-239 were detected above PALs in the two samples collected from beneath the inert landmines. The sample results have an average activity concentration of 15 pCi/g of Pu-239/240, and the ratios for Pu-238/Am-241 and Pu-239, 240/Am-241 are consistent with surface radiological contamination due to atmospheric nuclear testing in Areas 3, 7, and 9 (Alderson, 2004). The Pu-239 present at this CAS is not due to the release being investigated. No COCs associated with this investigation remain at CAS 07-08-01; therefore, no further corrective action is required. The mound (CAS 07-08-01) and surrounding soils have been evaluated by the Soils Project and is currently in the process of creating a new CAS to conduct investigation activities of the area in the future.

2.3.9 Ammunition Dump (CAS 18-99-10)

Removable radioactive contamination (Am-241) was detected on a pipe in the debris pile at Site A. All the debris in this pile along with approximately 3 inches of surface soil was removed during the CAI and disposed of as LLW. Environmental samples collected at Site A indicated no contamination is present at concentrations exceeding FALs. No COCs remain at CAS 18-99-10; therefore, no further corrective action is required.

2.4 Summary

Any COCs found at CAU 511 CASs were removed through corrective actions. No COCs remain at CAU 511; therefore, no further corrective action is required.

3.0 Recommendation

No further corrective action is recommended for the CAU 511 CASs. Selection of this corrective action is consistent with past practices for CASs that do not contain COCs. No further action was evaluated based on the investigations technical merits, focusing on performance, reliability, feasibility, and safety.

The NNSA/NSO requests that NDEP issue a Notice of Completion for this CAU and approval to move the CAU from Appendix III to Appendix IV of the FFACO.

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Appendix A

Corrective Action Investigation Results for CAU 511

A.1.0 Introduction

This appendix presents the CAI activities and analytical results for CAU 511. Corrective action sites within CAU 511 are located in Areas 3, 6, 7, 18, and 19 of the NTS (Figure 1-1 of the main document). The nine CASs that comprise CAU 511 are:

- 03-08-02, Waste Dump (Piles & Debris)
- 03-99-11, Waste Dump (Piles)
- 03-99-12, Waste Dump (Piles & Debris)
- 04-99-04, Contaminated Trench/Berm
- 06-16-01, Waste Dump (Piles & Debris)
- 06-17-02, Scattered Ordnance/Automatic Weapons Range
- 07-08-01, Contaminated Mound
- 18-99-10, Ammunition Dump
- 19-19-03, Waste Dump (Piles & Debris)

Corrective Action Site 03-08-02 is located in Area 3 of the NTS and consisted of a large pile of debris and soil and two debris areas. The debris was the remains of equipment and facilities originally built to support operations at drilling site U-3ev-2s.

Corrective Action Site 03-99-11 is located in Area 3 of the NTS and consisted of multiple piles of discolored soil and scattered debris located approximately 100 ft west of crater U-3gg. Details of the origin of the piles is unknown.

Corrective Action Site 03-99-12 is located in Area 3 about 200 yards (yd) south of the 3-03 Road next to the Power Line Road that runs parallel to Mercury Highway. The site consists of multiple piles of solid, white, gravel-sized material determined to be expended calcium carbide.

Corrective Action Site 04-99-04 is located in Area 7 and consists of a trench and two berms thought to be a potential waste dump site.

Corrective Action Site 06-16-01 is located in Area 6 next to Yucca Lake about 200 yd south of Tweezer Road and consisted of the debris from airplanes and dirigibles once housed there.

Corrective Action Site 06-17-02 is located in the foothills in Area 6 south of Yucca Lake and was a former weapons range. Numerous targets such as vehicles, trailers, and tanks were removed before beginning this investigation.

Corrective Action Site 07-08-01 is located in Area 7 approximately 0.25 mi southwest of Bunker 7-800 and consists of a soil mound and borrow pit. An inert landmine was found in 2003 near the mound.

Corrective Action Site 18-99-10 is located in Area 18 along Buckboard Mesa Road approximately 1.4 mi south of the intersection of Airport Road and Buckboard Mesa Road and consisted of MD.

Corrective Action Site 19-19-03 is located in Area 19 and consists of a large "H"-shaped water pit with associated piping.

This CAU was investigated because process knowledge indicated the associated CASs may have been used to store or dispose of material considered to be hazardous or radioactive waste by current standards.

Because CASs 07-08-01 and 18-99-10 had the potential of containing UXO, clearances were conducted. To accurately reflect the current terminology and add consistency to the discussions, MEC will be used herein instead of UXO. This term includes, but is not limited to, the following specific categories of military munitions: UXO, MPPEH, and MD. Definitions of these terms and others are provided in Appendix A of the *After Action Report: Munitions and Explosives of Concern Clearance Report* (Appendix F).

The CAI was conducted in accordance with the CAU 511 CAIP as developed in compliance with the FFACO (1996).

Additional information regarding the history of each site, planning, and the scope of the investigation is presented in the CAU 511 CAIP (NNSA/NSO, 2004a).

A.1.1 Project Objectives

The primary objective of the investigation was to provide sufficient information and data to document completion of appropriate corrective actions for each CAS in CAU 511 to support a recommendation that no further action is necessary for the CASs in CAU 511. This objective was achieved by identifying the absence or presence of COCs (i.e., contaminants of potential concern [COPCs] at concentrations above FALs).

The selection of soil and/or waste characterization sample locations was based on site conditions, and the judgmental strategy developed during the DQO process as outlined in the CAU 511 CAIP. The sampling strategy utilized biased sampling at CASs 03-08-02, 03-99-11, 03-99-12, 04-99-04, 06-16-01, 07-08-01, 18-99-10, and 19-19-03. Random sampling was conducted at CAS 06-17-02.

A.1.2 Content

This appendix contains information and data generated from the CAI. The contents of this appendix are as follows:

- Section A.1.0 describes the investigation background, objectives, and content.
- Section A.2.0 provides an investigation overview.
- Section A.3.0 through Section A.10.0 provides CAS-specific information regarding the field activities, sampling methods, and laboratory analytical results from investigation sampling.
- Section A.12.0 summarizes waste management activities.
- Section A.13.0 discusses the QA and QC procedures followed and results of the QA/QC activities.
- Section A.14.0 provides a summary of the investigation results.
- Section A.15.0 lists the cited references.

The complete field documentation and laboratory data, including field activity daily logs (FADLs), sample collection logs (SCLs), analysis request/chain-of-custody forms, soil sample descriptions, laboratory certificates of analyses, analytical results, and surveillance results are retained in project files as hard copy files or electronic media.

A.2.0 Investigation Overview

Field investigation and sampling activities for the CAU 511 CAI were conducted from January 2005 to August 2005. Table A.2-1 lists the CAI activities that were conducted at each of the CASs.

Table A.2-1
Corrective Action Investigation Activities Conducted at Each Corrective Action Site To Meet Corrective Action Investigation Plan Requirements

Corrective Action Investigation Activities	Corrective Action Site								
	03-08-02	03-99-11	03-99-12	04-99-04	06-16-01	06-17-02	07-08-01[a]	18-99-10[a]	19-19-03
Inspected CAS system components	X	X	X	X	X	X	X	X	X
Conducted surface land area radiological surveys	X			X	X		X		X
Conducted site transects/walkovers	X	X	X	X	X		X	X	X
Conducted site geophysical surveys	X			X	X		X	X	X
Field screened samples for alpha and beta/gamma radiation	X	X	X	X	X	X	X	X	X
Field screened soil samples for volatile organic compounds (Decision I sampling only)		X			X				
Collected biased soil samples	X	X	X	X	X		X	X	X
Collected random soil samples						X			
Submitted select samples for off-site laboratory analysis	X	X	X	X	X	X	X	X	X
Removed debris	X	X			X		X	X	
Collected verification sampling	X	X		X	X				
Conducted waste characterization sampling	X	X			X			X	
Conducted swipe sampling for removable radioactivity on debris	X				X			X	
Removed contaminated soil and collected verification samples	X	X		X	X			X	

[a]Munitions and explosives of concern cleared sites

The investigation and sampling program was managed in accordance with the requirements set forth in the CAU 511 CAIP (NNSA/NSO, 2004a). Field activities were performed in accordance with the approved Industrial Sites Health and Safety Plan (SNJV, 2004) that is consistent with the DOE Integrated Safety Management System. Samples were collected and documented following approved

protocols and procedures. Quality control samples (e.g., field blanks, equipment rinsate blanks, trip blanks, and duplicate samples) were collected as required by the Industrial Sites QAPP (NNSA/NV, 2002) and the CAU 511 CAIP (NNSA/NSO, 2004a). During field activities, waste minimization practices were followed according to approved procedures, including segregation of waste by waste stream.

Field work at CASs 03-08-02, 03-99-11, 06-16-01, and 18-99-10 was affected by weather. Decision I and II investigation activities began January 31, 2005, and extended through April 26, 2005. Additional step-out sampling and best management practice activities continued through August 2005. Weather conditions including rain and snow affected access to sites and delayed project activities. Temperatures ranged from below freezing during the winter months to over 100 degrees Fahrenheit during the summer months. Investigation activities at CAS 18-99-10 were also delayed by schedule confliction with other entities requiring the use of the area.

The CASs were investigated by conducting radiological surface screenings and surveys and sampling potential contaminant sources, including surface and shallow subsurface soils. Surface soil samples were collected using grab sampling techniques. Shallow subsurface soil samples were collected using backhoes and hand auger equipment. Investigation intervals and soil samples were field screened for alpha and beta/gamma radiation and VOCs at selected locations. The results were compared against screening levels to guide in the CAS-specific investigations. Collected samples were shipped to off-site laboratories to be analyzed for appropriate chemical and radiological parameters. Readings obtained during field screenings were also used to guide sampling decisions and health and safety controls.

Corrective Action Unit 511 CAI activities at CASs 03-08-02, 03-99-11, 06-16-01, 07-08-01, and 18-99-10 included the removal and disposition of debris and/or soil. Surface and shallow subsurface materials removed included construction and equipment debris, a discarded fuel bladder, a lead battery, tires, wires and cables, and MD. All items were disposed of in accordance with applicable requirements.

Housekeeping activities (e.g., removal of fencing, metal, wood, and miscellaneous debris) at CASs 04-99-04 and 19-19-03 are scheduled to be completed in early 2006.

Plutonium-239 was detected at concentrations above the PAL 12.7 (pCi/g) at CASs 03-08-02, 03-99-11, 04-99-04, and 07-08-01. These CASs are located in Yucca Flats nuclear testing area, where more than 80 atmospheric nuclear tests were conducted.

Sampling was conducted at two test areas (Quay and Hornet) between October 1982 and May 1983. Analytical results from these samples demonstrated a wide variation in Pu-239 activities (17 pCi/g to 4,200 pCi/g) indicating deposition of discrete particles of Pu-239 over a wide area. The Pu-239 results from CAU 511 CASs are consistent with the previously identified Pu-239 contamination within Yucca Flat. Therefore, Pu-239 activities detected above the FALs at CAU 511 CASs will not be assumed to have originated from CAS releases and will not be identified as COCs. The Soils Project will assess Pu-239 contamination within Yucca Flat.

Analytical results from CAS 07-08-01 indicated Pu-239/Am-241 ratios of 6.47. Analytical results from samples collected at the Quay and Hornet test locations yielded Pu-239/Am-241 ratios of 7.5 and 8.1. This demonstrates that the ratios determined at CAS 07-08-01 are consistent with those from residues of atmospheric nuclear testing in the area (Nicosia, 2005).

Except as noted in the following CAS-specific sections, CAU 511 sampling locations were accessible, and sampling activities at planned locations were not restricted by buildings, storage areas, active operations, or aboveground and underground utilities. Required sampling step-out locations were accessible and remained within anticipated spatial boundaries.

Section A.2.1 through Section A.2.6 provide the investigation methodology, site geology and hydrology, and laboratory analytical information. Additional activity-specific details for the individual CASs are presented in Section A.3.0 through Section A.10.0.

A.2.1 Sample Locations

Locations selected for sampling were based on interpretation of aerial and land photographs, visual observations obtained during site visits, and site conditions as provided in the CAU 511 CAIP. Sampling points for each site were selected based on the approach provided in the CAIP. The planned biased and random sample locations are discussed in text and shown on figures in the CAIP. All actual sample locations are shown on the figures included in Section A.3.0 through Section A.10.0. Some locations were modified slightly due to field conditions and observations. In some cases, FSRs

and/or laboratory analytical results determined the need for step-out sampling locations. Sample locations were staked, labeled appropriately, and surveyed with a Global Positioning System (GPS) instrument. A Trimble Pathfinder ProXRS™ GPS unit was used for determining sample location coordinates as well as other CAS points of interest. Actual sample locations have been plotted on the figures based on these coordinates. Appendix D lists the coordinates of sampling locations for the CASs in CAU 511.

A.2.2 Investigation Activities

The investigation activities performed were those discussed in the CAU 511 CAIP (NNSA/NSO, 2004a) and listed in Table A.2-1. The investigation established the nature and extent of contamination or lack of contamination associated with each CAS. The following sections provides the details of the investigation activities that took place at CAU 511.

A.2.2.1 Radiological Surveys

Surface radiological walkover surveys were conducted at CASs 03-08-02, 04-99-04, 06-16-01, 07-08-01, and 19-19-03 before the start of the CAI. The surveys were performed to identify the presence, the nature, and the extent of surficial beta/gamma-emitting radiological contaminants at activities statistically greater than background. The surveys were conducted using a TSA Model PRM-470B handheld plastic scintillation detector in conjunction with a Trimble Pathfinder Pro XRS™ Global Positioning Receiver with TSCI™ Datalogger. To conduct radiological static surveys to detect total alpha and beta/gamma radiation, a handheld instrument was held within an inch over the sample and/or debris for one minute. To support unrestricted release determinations per the *NV/YMP Radiological Control* (RadCon) *Manual* (NNSA/NSO, 2004b), radiological surveys were performed at the appropriate CASs using a NE Technology Electra with dual-alpha and beta/gamma radiation scintillation probe. Swipe samples were also collected for identification of removable contamination.

A.2.2.2 Site Walkovers

Site walkovers were performed on the following CASs within CAU 511: CASs 03-08-02, 03-99-11, 03-99-12, 04-99-04, 06-16-01, 07-08-01, and 19-19-03. Observations were made to identify biased sampling locations (e.g., stained soil, unidentified or out-of-place objects). Site walkovers were not

conducted at CAS 06-17-02 because all debris had been removed from the site before CAI activities and at CASs 18-99-10 because of the potential hazards associated with the presence of MEC.

A.2.2.3 Field Screening

Field-screening activities for alpha and beta/gamma radiation and VOCs were performed as specified in the CAU 511 CAIP. The FSL for VOC headspace was established at 20 parts per million (ppm) or 2.5 times background, whichever was greater. Site-specific FSLs for alpha and beta/gamma radiation were defined as the mean background activity level plus two times the standard deviation of readings from 10 background locations selected near each CAS. The radiation FSLs are instrument-specific and were established for each instrument and CAS before use.

Field screening for VOCs was conducted using an FID during Decision I activities at CASs 03-99-11 and 06-16-01. At all other CASs, VOCs were not considered to be a potential contaminant or present a health and safety concern. Alpha and beta/gamma radiation screening was performed at each CAS using a NE Technologies Electra or E-600 fitted with a DP6 dual-alpha and beta/gamma radiation scintillation probe.

The CAS-specific sections of this document identify the CASs where field screening was conducted and how the FSLs were used to aid in the selection of sample locations. Field-screening results are recorded on SCLs that are retained in project files.

A.2.2.4 Surface and Subsurface Sampling

Intrusive investigation activities (i.e., surface and subsurface soil sampling), were conducted at nine CASs within CAU 511 to support Decision I and Decision II investigation activities. Soil samples were collected using "scoop and trowel" (surface hand-grab sampling) or a backhoe. Regardless of the sampling method, the sample location was field screened for alpha and beta/gamma radiation before the start of sampling to serve as a health and safety control to protect the sampling team and guide the investigation. Labeled sample containers were filled according to the following sequence: total VOCs sample containers were filled with soil directly from the surface location, followed by the collection of soil for VOC field screening using headspace analysis, if required. Additional soil was transferred into a stainless-steel bowl or tin container, homogenized, and field screened for alpha and

beta/gamma radiation. All remaining sample containers were then filled. Excess soil was returned to its original location.

A.2.2.5 Waste Characterization Sampling

Characterization of CAS-specific components, objects, and materials was performed to support disposal of items encountered during investigation and closure activities. Characterization methods included visual inspection, radiological swipe sample collection, and direct sampling of media. Waste characterization activities were intended to gather adequate information and data to support decisions regarding the disposal of items.

Samples were analyzed in accordance with the procedures specified in the CAU 511 CAIP. The specific analyses for each CAS are listed in CAS-specific sections and the analytical results are compared to the federal limits for hazardous waste, NDEP hydrocarbon action limit, landfill acceptance criteria, and the limits in the NTS Performance Objective Criteria (POC) (BN, 1995). The POC limits have been established for NTS hazardous waste generators to ensure that all hazardous waste being shipped off-site contains no "added radioactivity."

Specific waste characterization sampling and analysis was conducted on the following potential waste streams:

- Swipe samples collected from the debris at CASs 03-08-02 and 18-99-10
- Soil samples collected from the soil piles at CAS 03-08-02 and 03-99-11
- Composite soil samples collected from surface soil surrounding the Site A debris pile at CAS 18-99-10

A.2.3 Laboratory Analytical Information

Chemical analyses were performed by EMAX laboratories in Torrance, California. Radiological analyses were performed by Paragon Analytics in Fort Collins, Colorado. The analytical parameters and laboratory analytical methods used to analyze investigation samples are listed in Table A.2-2. Analytical results are reported in this appendix if they were detected at or above the minimum detectable concentrations (MDCs).

Table A.2-2
Laboratory Analytical Parameters and Methods, CAU 511 Investigation Samples

Analytical Parameter	Analytical Method
Total volatile organic compounds (VOCs)	SW-846 8260B[a]
Total semivolatile organic compounds (SVOCs)	SW-846 8270C[a]
Total petroleum hydrocarbons - gasoline-range organics	SW-846 8015B (modified)[a]
Total petroleum hydrocarbons - diesel-range organics	
Polychlorinated biphenyls	SW-846 8082[a]
Total *Resource Conservation and Recovery Act* (RCRA) metals[b]	Water - SW-846 6010B/7470A[a] Soil - SW-846 6010B/7471A[a]
Total beryllium	
Herbicides	SW-846 8081
Explosives	SW-8330
Toxicity Characteristic Leading Procedure (TCLP) RCRA metals[b]	SW-846 1311/6010B/7470A[a]
Tritium	EPA 906.0
Gross Alpha/Beta	EPA 900.0
TCLP VOCs	SW-846 8260
TCLP SVOCs	SW-846 8270
pH	EPA 150.1
Gamma-emitting radionuclides	Water - EPA 901.1 soil - HASL-300
Isotopic uranium	Water - ASTM D3972-02 soil - ASTM C1000-02
Isotopic plutonium	Water - ASTM D3865-02 soil - ASTM C1001-00
Strontium-90	Water - ASTM D5811-00 soil - HASL-300

[a]U.S. Environmental Protection Agency (EPA), *Test Methods for Evaluating Solid Waste*, *Physical/Chemical Methods*, 3rd Edition, Parts 1-4, SW-846 CD ROM. Washington, DC. (EPA, 1996)
[b]Arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver

Validated analytical data for CAU 511 investigation samples have been compiled and evaluated to confirm the presence of contamination and define the extent of contamination, if present. The analytical results for each CAS are presented in Section A.3.0 through Section A.10.0. The complete laboratory data packages are available in the project files.

The analytical parameters are CAS-specific and were selected through the application of site process knowledge according to the EPA's *Guidance for the Data Quality Objectives Process* (EPA, 1994). Samples collected for confirmation or step-out sampling were only analyzed for the COCs that exceeded FALs in the original samples.

A.2.4 Comparison to Action Levels

Chemicals and radionuclides detected in samples at concentrations greater than FALs are identified as COCs. If COCs are present, corrective action will be considered for the CAS. The FALs for the CAU 511 investigation are defined in Section 2.3 of the main document.

Sample data that are equal to or greater than MDCs are tabulated in the CAS-specific sections Section A.3.0 through Section A.10.0. Results that are equal to or greater than FALs (a subset of those that exceed MDCs) are identified by bold text in the corresponding tables.

The complete dataset for CAU 511 is retained in an electronic format in the project files.

A.2.5 Geology

Regional native surface soil consists of poorly graded, moderately consolidated, alluvial silty sands with gravel, and some cobble-sized volcanic and sedimentary detritus. Subsurface soil ranged from gravelly sands with fine to well-graded sands. The percentage of organic matter in the soil is low and decreases with depth beyond the native soil interface.

A general field description for each sample was recorded on SCLs. A more detailed description of the regional geology for the NTS is provided in the CAU 511 CAIP (NNSA/NSO, 2004a).

A.2.6 Hydrology

Dry washes provide channels that concentrate surface runoff; however, there is no perennial stream flow in the region. Surface topography at the CAU 511 CASs range from generally flat at CASs 03-99-11, 03-99-12 and 06-16-01; to nearly flat with man-made excavations and/or soil mounding at CASs 03-08-02, 07-08-01, 18-99-10, and 19-19-03; to steeply sloping at CASs 04-99-04 and 06-17-02.

Corrective Action Sites 03-08-02, 03-99-11, 03-99-12, 04-99-04, 06-16-01, 06-17-02, and 07-08-01 are located within the Yucca Flat Hydrographic Area of the NTS.

Corrective Action Sites 18-99-10 and 19-19-03 are located within the Alkali Flat Furnace Creek Ranch subbasin.

Potential evapotranspiration at the NTS is significantly greater than precipitation, thus limiting vertical migration of contaminants. The annual average precipitation for this region is only 3 to 6 inches per year (USGS, 1975). The potential annual evaporation is the dominant factor influencing the movement of water in the upper saturated zone. Therefore, recharge to groundwater from precipitation is not significant at the NTS and does not provide a significant mechanism for migration of contaminants to groundwater.

A.3.0 CAS 03-08-02, Waste Dump (Piles & Debris)

Corrective Action Site 03-08-02 is located in Area 3 of the NTS at the east end of the 3-03 Road and consisted of a 650-ft-long debris pile and adjacent debris areas. The debris was the remains of drilling operations at site U-3ev-2. Small areas of debris have been left throughout the area. Debris material included steel beams, steel sections of equipment, electrical and steel cable, and wood. Soil contamination originating from the fallout of atmospheric nuclear weapons testing in the vicinity of CAS 03-08-02 is not considered part of this CAS as specified in the CAU 511 CAIP (NNSA/NSO, 2004a). Additional detail is provided in the CAU 511 CAIP (NNSA/NSO, 2004a).

A.3.1 Corrective Action Investigation

A total of 18 soil characterization samples (including 2 field duplicates [FDs]) and 32 waste management samples (including 1 FD) were collected during investigation activities at CAS 03-08-02. The sample identification (ID) numbers, locations, types, and analyses are listed in Table A.3-1. The sample locations are shown on Figure A.3-1. The specific CAI activities conducted to satisfy the CAIP requirements at this CAS are described in the following sections.

A.3.1.1 Field Screening

Soil samples were field screened for alpha and beta/gamma radiation. The FSRs were compared to FSLs to guide subsequent sampling decisions. The alpha and beta/gamma radiation FSLs were not exceeded during environmental sampling activities.

A.3.1.2 Sampling

Before beginning the CAI, waste management samples (soil and radiological swipes) were collected from soil and debris of the pile to ensure that the sanitary waste criteria of the 10c landfill were satisfied. Sample results from sample location A05 indicated a hot spot of Pu-239 associated with area-wide radioactivity. Approximately 1 yd^3 of soil was removed as a best management practice, and four verification samples were collected from the area. Section A.12.0 provides the waste management sampling details and analytical data.

Table A.3-1
Samples Collected at CAS 03-08-02, Waste Dump (Piles and Debris)
(Page 1 of 3)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
A01	511A501	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A02	511A502	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A03	511A503	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A04	511A504	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A05	511A505	0.0 - 0.5[a]	Soil	Waste Management	Set 1
	511A018	0.5 - 1.0[b]	Soil	Verification	Set 2
A06	511A506	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A07	511A507	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A08	511A508	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A09	511A509	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A10	511A510	0.0 - 0.5[a]	Soil	Waste Management	Set 1
	511A511	0.0 - 0.5[a]	Soil	Field Duplicate of #511A510	Set 1
A11	511A512	0.0 - 0.5[a]	Soil	Waste Management, MS/MSD	Set 1
A12	511A513	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A13	511A514	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A14	511A515	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A15	511A516	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A16	511A517	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A17	511A518	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A18	511A519	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A19	511A520	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A20	511A521	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A21	511A522	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A22	511A523	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A23	511A524	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A24	511A525	0.0 - 0.5[a]	Soil	Waste Management	Set 1

Table A.3-1
Samples Collected at CAS 03-08-02, Waste Dump (Piles and Debris)
(Page 2 of 3)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
A25	511A526	0.0 - 0.5[a]	Soil	Waste Management	Set 1
A26	511A001	0.0 - 0.5	Soil	Environmental, MS/MSD	Set 3
A27	511A002	0.0 - 0.5	Soil	Environmental	Set 3
	511A003	0.0 - 0.5	Soil	Field Duplicate of #511A002	Set 3
A28	511A004	0.0 - 0.5	Soil	Environmental	Set 3
A29	511A005	0.0 - 0.5	Soil	Environmental	Set 3
A30	511A006	0.0 - 0.5	Soil	Environmental	Set 3
A31	511A007	0.0 - 0.5	Soil	Environmental	Set 3
A32	511A008	0.0 - 0.5	Soil	Environmental	Set 3
A33	511A009	0.0 - 0.5	Soil	Environmental	Set 3
A34	511A010	0.0 - 0.5	Soil	Environmental	Set 3
A35	511A011	0.0 - 0.5	Soil	Environmental	Set 3
A36	511A012	0.0 - 0.5	Soil	Environmental	Set 3
A37	511A013	0.0 - 0.5	Soil	Environmental	Set 3
A38	511A014	0.5 - 1.0[b]	Soil	Verification	Set 2
A39	511A015	0.5 - 1.0[b]	Soil	Verification	Set 2
A40	511A016	0.5 - 1.0[b]	Soil	Verification	Set 2
A41	511A017	0.5 - 1.0[b]	Soil	Verification	Set 2
NA	511A301	NA	Water	Trip Blank	Total VOCs
NA	511A302	NA	Water	Trip Blank	Total VOCs
NA	511A303	NA	Water	Field Blank	Set 3
NA	511A304	NA	Water	Trip Blank	Total VOCs
Drum A01	511A527	NA	Water	Waste Management	Gross Alpha/ Beta, Tritium
Drum A02	511A528	NA	Water	Waste Management	Gross Alpha/ Beta, Tritium
Drum A03	511A529	NA	Water	Waste Management	Gross Alpha/ Beta, Tritium
Drum A04	511A530	NA	Water	Waste Management	Gross Alpha/ Beta, Tritium

Table A.3-1
Samples Collected at CAS 03-08-02, Waste Dump (Piles and Debris)
(Page 3 of 3)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
Drum A05	511A531	NA	Water	Waste Management	Gross Alpha/ Beta, Tritium
Drum A06	511A532	NA	Water	Waste Management	Gross Alpha/ Beta, Tritium
Drum A07	511A533	NA	Water	Waste Management	Gross Alpha/ Beta, Tritium

[a]Sample collected from the surface of the soil pile
[b]Sample collected from 1 ft below the surface of the soil pile

Set 1 = *Resource Conservation and Recovery Act* Metals, Polychlorinated Biphenyls (PCBs), Isotopic Uranium, Isotopic Plutonium, Strontium-90
Set 2 = Gamma Spectroscopy, Isotopic Uranium, Isotopic Plutonium, Strontium-90
Set 3 = Total VOCs, Total SVOCs, RCRA Metals, Beryllium, Total Petroleum Hydrocarbons-Diesel-Range Organics, PCBs, Gamma Spectroscopy, Isotopic Uranium, Isotopic Plutonium, Strontium-90

ft bgs = Feet below ground surface
MS/MSD = Matrix spike/matrix spike duplicate
NA = Not applicable
SVOC = Semivolatile organic compound
VOC = Volatile organic compound

Initial CAI activities included the removal and disposal of all debris. Once the debris was removed, Decision I sampling activities began with the collection of one surface soil sample from each sample location. No obvious release of contaminants was observed; therefore, seven samples were collected (one surface sample was collected approximately every 100 ft along the centerline of the 650-ft-long debris and soil pile). Four samples were collected from a second area within the CAS boundaries where surface debris was removed, and one sample was collected at third area within the CAS boundaries where surface debris was also removed.

Samples were collected and submitted for laboratory analysis as outlined in the CAU 511 CAIP (NNSA/NSO, 2004a).

A.3.1.3 Deviations

There were no deviations to the CAIP requirements at this CAS.

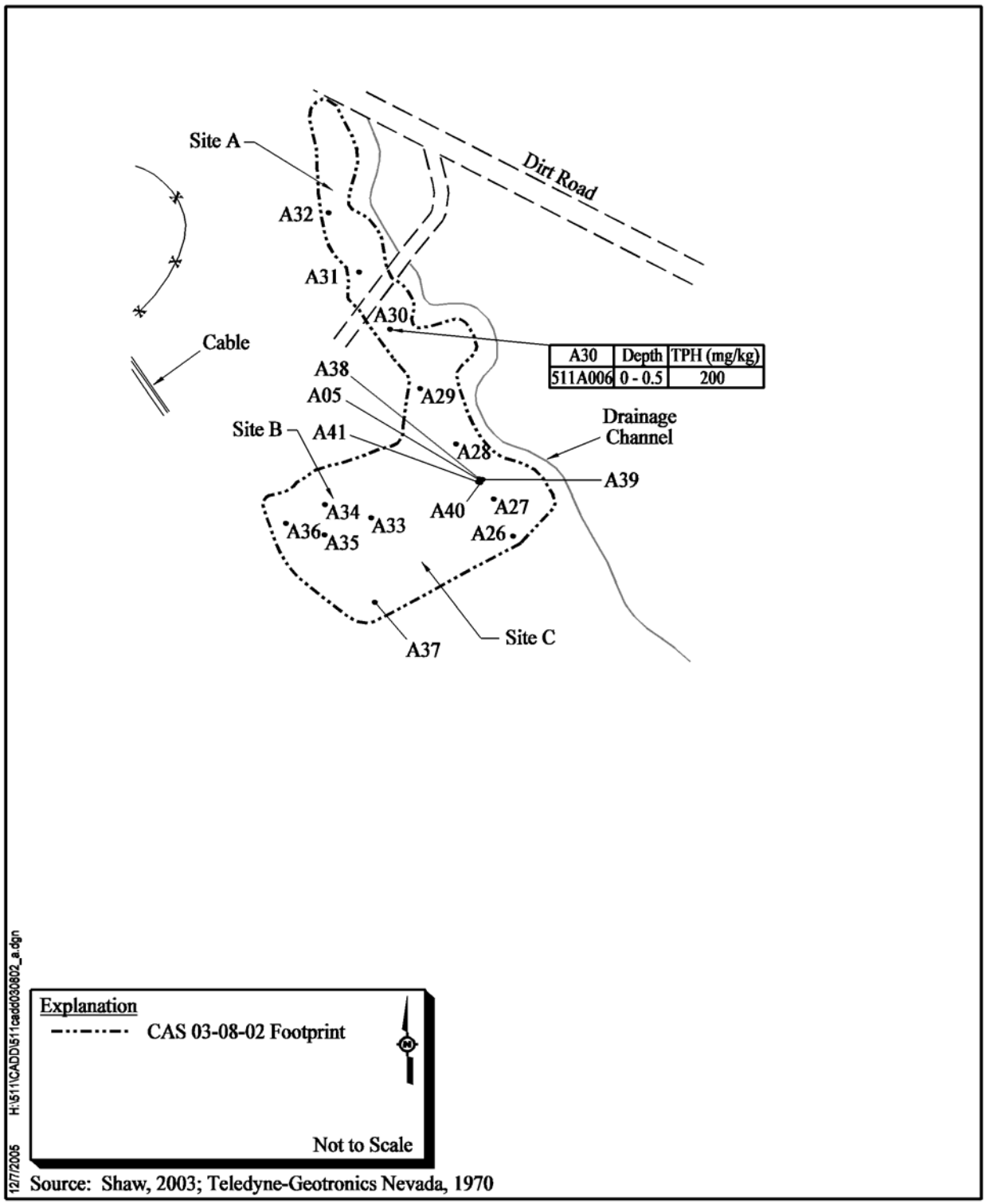


Figure A.3-1
Sample Location Map, CAS 03-08-02, Waste Dump (Piles & Debris)

A.3.2 Investigation Results

The following sections provide analytical results from the samples collected to complete investigation activities as outlined in the CAIP. Investigation samples were analyzed for total VOCs, total semivolatile organic compounds (SVOCs), TPH-DRO, total RCRA metals and beryllium, polychlorinated biphenyls (PCBs), gamma spectroscopy, isotopic uranium (U), isotopic plutonium (Pu), and strontium (Sr)-90. The analytical parameters and laboratory methods used to analyze the investigation samples are listed in Table A.2-2. Table A.3-1 lists the sample-specific analytical suite for CAS 03-08-02.

Analytical results from the soil samples with concentrations exceeding MDCs are summarized in the following sections. These results are compared to FALs and are a subset of the results that exceed MDCs. Results greater than FALs are identified by bold text in the analytical tables. A portion of the analytical results for this CAS were rejected during validation; however, these rejected data did not adversely impact closure decisions as discussed in Table B.1-6.

A.3.2.1 Total Volatile Organic Compounds

Total VOC analytical results for soil samples collected at CAS 03-08-02 identified no samples with a VOC concentration that exceed the MDCs.

A.3.2.2 Total Semivolatile Organic Compounds

Total SVOC analytical results for soil samples collected at CAS 03-08-02 identified no samples that exceed the MDCs.

A.3.2.3 Total RCRA Metals and Beryllium

Total RCRA metal and beryllium analytical results for soil samples collected at CAS 03-08-02 that were detected above MDCs are presented in Table A.3-2. No metals were detected in soil samples above FALs.

A.3.2.4 Total Petroleum Hydrocarbons-Diesel-Range Organics

The TPH-DRO analytical results for soil samples collected at CAS 03-08-02 that were detected above MDCs are presented in Table A.3-3. Sample 511A006 was found to contain concentrations of

Table A.3-2
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)						
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Selenium
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**5,100[b]**
A26	511A001	0.0 - 0.5	10.7	96.2	0.635	--	5.7	6.45	--
A27	511A002	0.0 - 0.5	9.09	84.4	0.429 (J)	--	3.2	6.12	--
	511A003	0.0 - 0.5	14.2	107	0.596	--	5.74	8.08	--
A28	511A004	0.0 - 0.5	6.09	103	0.942	0.127 (J)	6.69	7.35	--
A29	511A005	0.0 - 0.5	10.1	168	1.51	--	13.6	12.5	--
A30	511A006	0.0 - 0.5	8.66	123	1.2	--	9.14	9.71	--
A31	511A007	0.0 - 0.5	6.17	141	1.14	--	10.2	10.6	--
A32	511A008	0.0 - 0.5	5.38	135	0.903	--	6.72	7.54	--
A33	511A009	0.0 - 0.5	2.49 (J-)[c]	300	1.83	--	1.84	19.7	0.877 (J)
A34	511A010	0.0 - 0.5	2.94 (J-)[d]	203	1.56	--	2.88	16.2	--
A35	511A011	0.0 - 0.5	2.46 (J-)[c]	280	2.19	--	2.04	17.9	0.66 (J)
A36	511A012	0.0 - 0.5	1.76 (J-)[c]	268	2.14	--	1.52	16.9	--
A37	511A013	0.0 - 0.5	8.82	106	0.644	--	5.39	7.54	--

[a]Based on the background concentrations for metals. Background is considered the mean plus two times the standard deviation for sediment samples collected by the Nevada Bureau of Mines and Geology throughout the Nevada Test and Training Range (NBMG, 1998; Moore, 1999).
[b]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)
[c]Negative bias found in continuing calibration/method blank. Contract required quantitation limit check standard recovery exceeds control limits.
[d]Negative bias found in continuing calibration/method blank.

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
NA = Not applicable
-- = Not detected above minimum reporting limits
J = Estimated value
J- = The result is an estimated quantity, but the result may be biased low

TPH-DRO greater than PALs. However, results for VOCs and SVOCs indicate this location did not contain concentrations of contaminants greater than FALs.

Table A.3-3
Soil Sample Results for TPH-DRO Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depth (ft bgs)	Contaminants of Potential Concern (mg/kg)
			Diesel-Range Organics
Preliminary Action Levels[a]			100
A28	511A004	0.0 - 0.5	14
A29	511A005	0.0 - 0.5	6.5 (J)
A30	511A006	0.0 - 0.5	**200**
A31	511A007	0.0 - 0.5	14

[a]Based on *Nevada Administrative Code*; Contamination of soil: Establishment of action levels (NAC, 2002)

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
J = Estimated value

A.3.2.5 Polychlorinated Biphenyls

Analytical results for PCBs in soil samples collected at CAS 03-08-02 did not exceed the MDCs or FALs.

A.3.2.6 Gamma-Emitting Radionuclides

Gamma-emitting radionuclide analytical results for soil samples collected at CAS 03-08-02 that were detected above MDCs are presented in Table A.3-4. No gamma-emitting radionuclides were detected in concentrations greater than FALs.

A.3.2.7 Plutonium, Strontium-90, and Uranium Isotopes

The Pu, Sr-90, and U analytical results for soil samples collected at CAS 03-08-02 that were detected above MDCs are presented in Table A.3-5. No Sr-90 or U was detected above FALs.

Plutonium-239 was detected at a concentration of 37.1 pCi/g at A05 (511A505), which exceeded the FAL of 12.7 pCi/g (Table A.12-1). The Pu-contaminated soil is attributable to atmospheric nuclear

Table A.3-4
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 03-08-02, Waste Dump (Piles and Debris)
(Page 1 of 2)

Sample Location	Sample Number	Depth (ft bgs)	Contaminants of Potential Concern (pCi/g)											
			Actinium-228[a]		Americium-241[b]	Bismuth-214[a]		Cesium-137[a]	Lead-212[a]		Lead-214[a]		Thallium-208[a]	
Final Action Levels			**5**	**15**	**12.7**	**5**	**15**	**12.2**	**5**	**15**	**5**	**15**	**5**	**15**
Depth bgs (cm)			**<15**	**>15**		**<15**	**>15**		**<15**	**>15**	**<15**	**>15**	**<15**	**>15**
A05	511A018	0.5 - 1.0[d]	NA	1.38 (G)	--	NA	0.81 (G, J)	1.8 (G)	NA	1.35 (J)[c]	NA	1.02 (G, J)	NA	0.54 (G)
A26	511A001	0.0 - 0.5	1.2 (G)	NA	--	1.19 (G, J)	NA	0.34 (G, LT)	1.72 (J)[c]	NA	0.87 (G, J)	NA	0.6 (G)	NA
A27	511A002	0.0 - 0.5	1.18 (G)	NA	1.71 (J)[c]	0.78 (G, J)	NA	3.12 (G)	0.93 (J)[c]	NA	0.9 (G, J)	NA	0.48 (G)	NA
	511A003	0.0 - 0.5	0.87 (G)	NA	--	0.92 (G, J)	NA	3.03 (G)	1.18 (J)[c]	NA	0.81 (G, J)	NA	--	NA
A28	511A004	0.0 - 0.5	1.24 (G)	NA	--	0.66 (G, J)	NA	--	1.1 (J)[c]	NA	0.86 (G, J)	NA	0.33 (G)	NA
A29	511A005	0.0 - 0.5	1.46 (G)	NA	--	0.84 (G, J)	NA	--	1.59 (J)[c]	NA	1.11 (G, J)	NA	0.52 (G)	NA
A30	511A006	0.0 - 0.5	1.23 (G)	NA	--	0.48 (G, J)	NA	0.28 (G, LT)	1.23 (J)[c]	NA	0.81 (G, J)	NA	0.41 (G)	NA
A31	511A007	0.0 - 0.5	1.59 (G)	NA	--	1.09 (G, J)	NA	0.85 (G)	1.78 (J)[c]	NA	0.95 (G, J)	NA	0.47 (G)	NA
A32	511A008	0.0 - 0.5	1.37 (G)	NA	--	0.85 (G, J)	NA	--	1.26 (J)[c]	NA	0.85 (G, J)	NA	0.44 (G)	NA
A33	511A009	0.0 - 0.5	1.88 (G)	NA	--	1.16 (G, J)	NA	--	2.64 (J)[c]	NA	0.89 (G, J)	NA	0.62 (G)	NA
A34	511A010	0.0 - 0.5	1.81 (G)	NA	--	1.34 (G, J)	NA	0.85 (G)	1.92 (J)[c]	NA	1.32 (G, J)	NA	0.55 (G)	NA
A35	511A011	0.0 - 0.5	2.11 (G)	NA	--	0.91 (G, J)	NA	--	2.38 (J)[c]	NA	1.13 (G, J)	NA	0.61 (G)	NA
A36	511A012	0.0 - 0.5	2.14 (G)	NA	--	1.23 (G, J)	NA	--	2.11 (J)[c]	NA	1.35 (G, J)	NA	0.6 (G)	NA
A37	511A013	0.0 - 0.5	1.62 (G)	NA	0.74 (J)	1.02 (G, J)	NA	1.1 (G)	1.72 (J)[c]	NA	0.96 (G, J)	NA	0.47 (G)	NA

Table A.3-4
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 03-08-02, Waste Dump (Piles and Debris)
(Page 2 of 2)

Sample Location	Sample Number	Depth (ft bgs)	Contaminants of Potential Concern (pCi/g)											
			Actinium-228[a]		Americium-241[b]	Bismuth-214[a]		Cesium-137[a]	Lead-212[a]		Lead-214[a]		Thallium-208[a]	
Final Action Levels			5	15	12.7	5	15	12.2	5	15	5	15	5	15
Depth bgs (cm)			<15	>15		<15	>15		<15	>15	<15	>15	<15	>15
A38	511A014	0.0 - 0.5[e]	1.52 (G)	NA	--	0.82 (G, J)	NA	1.89 (G)	1.55 (J)[c]	NA	1.06 (G, J)	NA	0.48 (G)	NA
A39	511A015	0.0 - 0.5[d]	1.21 (G)	NA	0.55 (J)	0.78 (G, J)	NA	0.81 (G)	1.24 (J)[c]	NA	0.81 (G, J)	NA	0.35 (G)	NA
A40	511A016	0.0 - 0.5[d]	1.16 (G)	NA	--	0.69 (G, J)	NA	1.54 (G)	1.47 (J)[c]	NA	0.85 (G, J)	NA	0.39 (G)	NA
A41	511A017	0.0 - 0.5[d]	1.42 (G)	NA	0.47 (J)	0.73 (G, J)	NA	1.79 (G)	1.51 (J)[c]	NA	0.93 (G, J)	NA	0.417 (G)	NA

[a]Taken from the generic guidelines for residual concentrations of actinium-228, bismuth-214, lead-212, lead-214, thallium-208, and thorium-232, as found in Chapter IV of DOE Order 5400.5, Change 2, "Radiation Protection of the Public and Environment." (DOE, 1993). The PALs for these isotopes is specified as 5 pCi/g averaged over the first 15 cm of soil and 15 pCi/g for deeper soils (DOE, 1993). For purposes of this document, 15 cm is assumed to be equivalent to 0.5 ft (6 inches); therefore, 5 pCi/g represents the PALs for these radionuclides in the surface soil (0.0 - 0.5 ft depth).
[b]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.
[c]Qualifier added to laboratory data; record accepted. Sample does not meet counting geometry requirements.
[d]Sample collected from 1 ft below the surface of the soil pile.
[e]Sample collected from the surface of the soil pile.

ft bgs = Feet below ground surface
cm = Centimeter
pCi/g = Picocuries per gram
-- = Not detected above minimum reporting limits
> = Greater than
< = Less than
G = Sample density differs by more than 15% of laboratory control sample density
J = Estimated value
LT = Result is less than the requested minimum detectable concentration, greater than the sample specific minimum detectable concentration
PAL = Preliminary action level

Table A.3-5
Soil Sample Results for Isotopes Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)					
			Plutonium-238	Plutonium-239	Strontium-90	Uranium-234	Uranium-235	Uranium-238
Final Action Levels[a]			**13.0**	**12.7**	**838**	**143**	**17.5**	**105**
A05	511A018	0.5 - 1.0[b]	0.283	9.6	--	0.81	0.103	0.8
A26	511A001	0.0 - 0.5	--	0.215 (J)	--	0.9	--	0.87
A27	511A002	0.0 - 0.5	0.56	5.4 (J)	--	0.85	0.145	0.81
	511A003	0.0 - 0.5	0.55	9 (J)	0.47 (LT)	0.72	0.078	0.72
A28	511A004	0.0 - 0.5	--	--	--	1.03	0.147	0.8
A29	511A005	0.0 - 0.5	--	0.042 (J)	--	0.66	0.041 (LT)	0.62
A30	511A006	0.0 - 0.5	0.059	0.32 (J)	--	1.04	0.168	0.97
A31	511A007	0.0 - 0.5	0.207	2.81 (J)	--	0.91	0.146	0.86
A32	511A008	0.0 - 0.5	--	--	--	0.78	0.181	0.88
A33	511A009	0.0 - 0.5	--	0.071	--	1.04	0.154	1.12
A34	511A010	0.0 - 0.5	0.073	0.7	--	1.42	0.103	1.24
A35	511A011	0.0 - 0.5	--	--	--	1.12	0.165	1.13
A36	511A012	0.0 - 0.5	--	--	--	1.58	0.207	1.55
A37	511A013	0.0 - 0.5	0.211	4.81	--	1	0.151	0.9
A38	511A014	0.0 - 0.5[c]	0.43	4.23	--	0.77	--	0.74
A39	511A015	0.0 - 0.5[c]	0.082	1.05	--	0.77	0.139	0.79
A40	511A016	0.0 - 0.5[c]	0.49	6.7	0.86	1.02	0.139	0.89
A41	511A017	0.0 - 0.5[c]	0.41	5.63	--	0.79	0.148	0.75

[a]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.
[b]Sample collected from 1 ft below the surface of the soil pile.
[c]Sample collected from the surface of the soil pile.

ft bgs = Feet below ground surface
pCi/g = Picocuries per gram
J = Estimated value. Qualifier added to laboratory data; record accepted. Duplicate precision analysis (relative percent difference) exceeds control limits.
LT = Result is less than the requested minimum detectable concentration, greater than the sample specific minimum detectable concentration.
-- = Not detected above minimum reporting limits.

testing and not part of the investigation of this CAS, but was removed as a best management practice and disposed of as LLW. Subsequent verification samples collected at locations A05, A38, A39, A40, and A41 indicated that concentrations of Pu-239 that remained in the soil did not exceed the FAL.

A.3.3 Nature and Extent of Contamination

Based on the analytical results for soil samples collected within CAS 03-08-02, no COCs were identified.

A.3.4 Revised Conceptual Site Model

The CAIP requirements were met at this CAS, and no revisions were necessary to the CSM.

A.4.0 CAS 03-99-11, Waste Dump (Piles)

Corrective Action Site 03-99-11 is located in Area 3 of the NTS approximately 0.25 mi northeast of the Mercury Highway and 7-01 Road intersection. The CAS consisted of multiple piles of discolored rock, soil, and debris. The debris consisted of steel pipe, wire fencing, and pieces of wood. An area of stained soil and stressed vegetation surrounding the piles also existed. The source of the rock, soil, and debris is unknown. Additional detail is provided in the CAU 511 CAIP (NNSA/NSO, 2004a).

A.4.1 Corrective Action Investigation

A total of 73 soil characterization samples (including 4 FDs) from 33 sample locations and 1 waste management sample were collected during investigation activities at CAS 03-99-11. The sample IDs, locations, types, and analyses are listed in Table A.4-1. The sample locations are shown on Figure A.4-1. The specific CAI activities conducted to satisfy the CAIP requirements at this CAS are described in the following sections.

Table A.4-1
Samples Collected at CAS 03-99-11, Waste Dump (Piles)
(Page 1 of 5)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
B01	511B001	0.0 - 0.5[a]	Soil	Environmental, MS/MSD	Set 3, Herbicides
	511B002	2.0 - 2.5[b]	Soil	Environmental	Set 3, Herbicides
	511B003	2.0 - 2.5[b]	Soil	Field Duplicate of #511B002	Set 3, Herbicides
	511B004	4.0 - 4.5[b]	Soil	Environmental	Set 3, Herbicides
	511B005	6.5 - 7.5[c]	Soil	Environmental	Set 3, Herbicides
	511B006	9.5 - 10.5[d]	Soil	Environmental	Set 3, Herbicides
B02	511B007	0.0 - 0.5[a]	Soil	Environmental	Set 3, Herbicides
	511B008	2.5 - 3.5[b]	Soil	Environmental	Set 3, Herbicides
	511B009	4.5 - 5.5[b]	Soil	Environmental	Set 3, Herbicides
	511B010	7.5 - 8.5[c]	Soil	Environmental	Set 3, Herbicides
	511B011	10.5 - 11.5[d]	Soil	Environmental	Set 3, Herbicides
B03	511B012	0.0 - 0.5[a]	Soil	Environmental	Set 3, Herbicides
	511B013	1.5 - 2.5[b]	Soil	Environmental	Set 3, Herbicides

Table A.4-1
Samples Collected at CAS 03-99-11, Waste Dump (Piles)
(Page 2 of 5)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
B03 continued	511B014	4.5 - 5.5[b]	Soil	Environmental	Set 3, Herbicides
	511B015	7.0 - 8.0[c]	Soil	Environmental	Set 3, Herbicides
	511B016	10.0 - 10.5[d]	Soil	Environmental	Set 3, Herbicides
B04	511B017	0.0 - 0.5[a]	Soil	Environmental	Set 3, Herbicides
	511B018	1.0 - 1.5[b]	Soil	Environmental	Set 3, Herbicides
	511B019	3.0 - 4.0[b]	Soil	Environmental	Set 3, Herbicides
	511B020	6.0 - 7.0[c]	Soil	Environmental	Set 3, Herbicides
	511B021	9.0 - 10.0[d]	Soil	Environmental, MS/MSD	Set 3, Herbicides
B05	511B022	0.0 - 0.5[a]	Soil	Environmental	Set 3, Herbicides
	511B023	0.0 - 0.5[a]	Soil	Field Duplicate of #511B022	Set 3, Herbicides
	511B024	2.0 - 2.5[b]	Soil	Environmental	Set 3, Herbicides
	511B025	4.0 - 4.5[b]	Soil	Environmental	Set 3, Herbicides
	511B026	6.5 - 7.0[c]	Soil	Environmental	Set 3, Herbicides
	511B027	9.0 - 9.5[d]	Soil	Environmental	Set 3, Herbicides
B06	511B028	0.0 - 0.5[a]	Soil	Environmental	Set 3, Herbicides
	511B029	2.0 - 3.0[b]	Soil	Environmental	Set 3, Herbicides
	511B030	5.0 - 6.0[b]	Soil	Environmental	Set 3, Herbicides
	511B040	7.0 - 7.5[c]	Soil	Environmental, MS/MSD	Set 3, Herbicides
B07	511B031	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
	511B041	2.0 - 3.0	Soil	Environmental	Set 3, Herbicides
	511B042	2.0 - 3.0	Soil	Field Duplicate of #511B041	Set 3, Herbicides
	511B043	5.5 - 6.5	Soil	Environmental	Set 3, Herbicides
	511B044	8.0 - 9.0	Soil	Environmental	Set 3, Herbicides
B08	511B032	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
B09	511B033	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
B10	511B034	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
B11	511B035	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
	511B052	1.0 - 1.5	Soil	Environmental	Isotopic Plutonium

Table A.4-1
Samples Collected at CAS 03-99-11, Waste Dump (Piles)
(Page 3 of 5)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
B12	511B036	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
	511B062	2.0 - 2.5	Soil	Environmental	RCRA Metals
	511B063	4.0 - 4.5	Soil	Environmental	RCRA Metals
B13	511B037	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
B14	511B038	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
B15	511B039	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
B16	511B047	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
B17	511B048	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
B18	511B049	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
B19	511B050	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
	511B053	2.0 - 2.5	Soil	Environmental	RCRA Metals
	511B054	4.0 - 4.5	Soil	Environmental	RCRA Metals
B20	511B051	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
B21	511B045	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
B22	511B046	0.0 - 0.5	Soil	Environmental	Set 3, Herbicides
B23	511B055	0.0 - 0.5	Soil	Environmental	RCRA Metals
	511B056	2.0 - 2.5	Soil	Environmental	RCRA Metals
B24	511B064	0.0 - 0.5	Soil	Environmental	RCRA Metals
	511B065	2.0 - 2.5	Soil	Environmental	RCRA Metals
B25	511B060	0.0 - 0.5	Soil	Environmental	RCRA Metals
	511B061	2.0 - 2.5	Soil	Environmental	RCRA Metals
B26	511B057	0.0 - 0.5	Soil	Environmental	RCRA Metals
	511B058	2.0 - 2.5	Soil	Environmental	RCRA Metals
	511B059	2.0 - 2.5	Soil	Field Duplicate of #511B058	RCRA Metals
B27	511B066	3.5 - 4.5[b]	Soil	Waste Management	RCRA Metals, TCLP Metals, Mercury, TCLP Mercury

Table A.4-1
Samples Collected at CAS 03-99-11, Waste Dump (Piles)
(Page 4 of 5)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
B28	511B067	3.5 - 4.5[b]	Soil	Waste Management	RCRA Metals, TCLP Metals, Mercury, TCLP Mercury
B29	511B068	0.0 - 0.5[a]	Soil	Waste Management	RCRA Metals, TCLP Metals, Mercury, TCLP Mercury
	511B069	2.0 - 2.5[b]	Soil	Waste Management	RCRA Metals, TCLP Metals, Mercury, TCLP Mercury
B30	511B070	0.0 - 0.5	Soil	Waste Management	RCRA Metals, TCLP Metals, Mercury, TCLP Mercury
B31	511B071	0.0 - 0.5	Soil	Environmental	Isotopic Plutonium
B32	511B072	0.0 - 0.5	Soil	Environmental	Isotopic Plutonium
B33	511B073	0.0 - 0.5	Soil	Environmental	Isotopic Plutonium
B34	511B040A	0.0 - 0.5	Soil	Verification	Arsenic
B35	511B041A	0.0 - 0.5	Soil	Verification	Arsenic
	511B042A	1.0 - 1.5	Soil	Verification	Arsenic
B36	511B043A	0.0 - 0.5	Soil	Verification	Arsenic
NA	511B301	NA	Water	Trip Blank	Total VOCs
NA	511B302	NA	Water	Trip Blank	Total VOCs
NA	511B303	NA	Water	Trip Blank	Total VOCs
NA	511B304	NA	Water	Trip Blank	Total VOCs
NA	511B305	NA	Water	Field Blank	Set 3, Herbicides
NA	511B306	NA	Water	Equipment Rinsate Blank	Set 3, Herbicides
NA	511B307	NA	Water	Source Blank	Set 3, Herbicides
NA	511B308	NA	Water	Trip Blank	Total VOCs
Drum B01	511B501	NA	Water	Waste Management	Gross Alpha/ Beta, Tritium

Table A.4-1
Samples Collected at CAS 03-99-11, Waste Dump (Piles)
(Page 5 of 5)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses

[a]Sample collected from the top of the pile
[b]Sample collected from within the pile
[c]Sample collected at ground surface (native soil interface)
[d]Sample collected from below ground surface

Set 3 = Total VOCs, Total SVOCs, *Resource Conservation and Recovery Act* Metals, Beryllium, Total Petroleum Hydrocarbons-Diesel-Range Organics, Polychlorinated Biphenyls, Gamma Spectroscopy, Isotopic Uranium, Isotopic Plutonium, Strontium-90

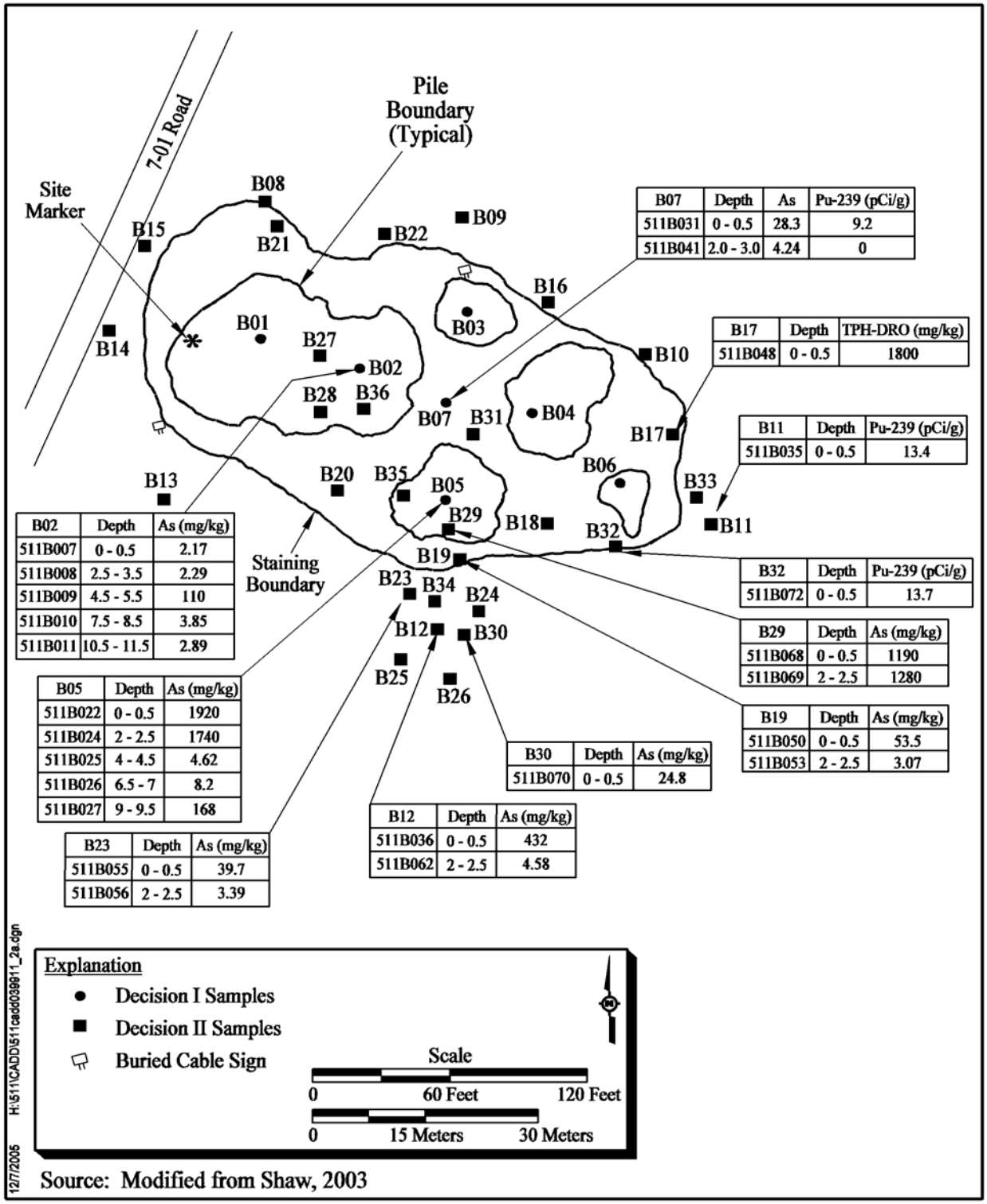
ft bgs = Feet below ground surface
MS/MSD = Matrix spike/matrix spike recovery
NA = Not applicable
SVOC = Semivolatile organic compound
VOC = Volatile organic compound

A.4.1.1 Field Screening

Soil samples were field screened for VOCs and alpha and beta/gamma radiation. The FSRs were compared to FSLs to guide subsequent sampling decisions. Beta/gamma screening results exceeded the FSLs of 3,120 disintegrations per minute per 100 square centimeters (dpm/100 cm^2) and 3,212 dpm/100 cm^2 at sample locations B13 and B16 respectively. The results at sample location B13 was 3,145 dpm/100 cm^2 and was 3,266 dpm/100 cm^2 at B16. The determination was made, based on experience, that the FSRs would need to be at least two to three times the FSLs before the analytical results of the contaminant in the soil would exceed the associated PAL. Consequently, no step-out sampling was conducted.

A.4.1.2 Sampling

Soil samples were collected from the primary soil piles (sample locations B01, B02, B03, B04, B05, B06, B27, B28, B29) at the surface (0.0 to 0.5 ft below the pile surface), from within the soil pile, at the ground surface (native soil interface) and below ground surface. All depths were recorded from the top of the soil pile where the first sample was collected. At sample location B06, only four environmental samples were collected due to refusal at 7.5 ft bgs. Sample location B07 was not on a soil pile, but in native material at a location between the piles. Environmental samples were collected at B07 from the surface, and then at 2.5-ft intervals to 7.5 ft bgs for a total of four samples. Sample



B07	Depth	As	Pu-239 (pCi/g)
511B031	0 - 0.5	28.3	9.2
511B041	2.0 - 3.0	4.24	0

B17	Depth	TPH-DRO (mg/kg)
511B048	0 - 0.5	1800

B11	Depth	Pu-239 (pCi/g)
511B035	0 - 0.5	13.4

B02	Depth	As (mg/kg)
511B007	0 - 0.5	2.17
511B008	2.5 - 3.5	2.29
511B009	4.5 - 5.5	110
511B010	7.5 - 8.5	3.85
511B011	10.5 - 11.5	2.89

B32	Depth	Pu-239 (pCi/g)
511B072	0 - 0.5	13.7

B29	Depth	As (mg/kg)
511B068	0 - 0.5	1190
511B069	2 - 2.5	1280

B05	Depth	As (mg/kg)
511B022	0 - 0.5	1920
511B024	2 - 2.5	1740
511B025	4 - 4.5	4.62
511B026	6.5 - 7	8.2
511B027	9 - 9.5	168

B19	Depth	As (mg/kg)
511B050	0 - 0.5	53.5
511B053	2 - 2.5	3.07

B30	Depth	As (mg/kg)
511B070	0 - 0.5	24.8

B12	Depth	As (mg/kg)
511B036	0 - 0.5	432
511B062	2 - 2.5	4.58

B23	Depth	As (mg/kg)
511B055	0 - 0.5	39.7
511B056	2 - 2.5	3.39

Figure A.4-1
Sample Location Map, CAS 03-99-11, Waste Dump (Piles)

locations B12 and B19 involved the collection of environmental samples at the ground surface, and from 2 to 4 ft bgs. Samples locations B23, B24, B25, and B26 involved the collection of environmental samples at the ground surface and from 2 ft bgs. All other sample locations involved surface samples collected from a depth of 0.0 to 0.5 ft bgs. All samples collected were submitted for off-site laboratory analysis. Results of the analyses of the environmental samples were used to confirm soils and debris could be disposed of at the 10c landfill. Confirmation samples were collected and analyzed following the excavation and removal of discolored and contaminated soils.

Decision II samples were collected from existing sample locations at depths up to 4 ft, and from other sample locations outside the stained soil in native soil. Decision II samples were collected from sample locations B11, B12, B19, and B23 through B33 at approximately 10-ft intervals in directions away from the soil piles. Verification samples were collected at sample locations B34, B35, and B36 (see Figure A.4-2).

A.4.1.3 Deviations

There were no deviations to the CAIP requirements at this CAS.

A.4.2 Investigation Results

The following sections provide analytical results from the samples collected to complete investigation activities as outlined in the CAIP. Investigation samples were analyzed for the CAIP-specified COPCs, which included total VOCs, total SVOCs, TPH-DRO, total RCRA metals and beryllium, PCBs, herbicides, gamma spectroscopy, isotopic U, isotopic Pu, and Sr-90. The analytical parameters and laboratory methods used to analyze the investigation samples are listed in Table A.2-2. Table A.4-1 lists the sample-specific analytical suite for CAS 03-99-11.

Analytical results from the soil samples with concentrations exceeding MDCs are summarized in the following sections. These results are compared to FALs and are a subset of the results that exceed MDCs. Results greater than FALs are identified by bold text in the analytical tables. A portion of the analytical results for this CAS were rejected during validation; however, these rejected data did not adversely impact closure decisions as discussed in Appendix B, Section B.1.4.

A.4.2.1 Total Volatile Organic Compounds

Total VOC analytical results for soil samples collected at CAS 03-99-11 that were detected above MDCs are presented in Table A.4-2. No VOCs were detected in soil samples above FALs.

Table A.4-2
Soil Sample Results for Total VOCs Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (µg/kg)				
			Acetone	Carbon Disulfide	Ethylbenzene	M/P-Xylenes	Methylene Chloride
Final Action Levels[a]			**6,000,000**	**720,000**	**20,000**	**420,000**	**21,000**
B01	511B001	0.0 - 0.5[b]	--	3.5 (J)	--	--	--
	511B002	2.0 - 2.5[c]	5.8 (J)	--	--	--	3.2 (J)
	511B004	4.0 - 4.5[c]	--	--	--	--	2.5 (J)
B03	511B012	0.0 - 0.5[b]	--	6.1	--	--	--
B05	511B022	0.0 - 0.5[b]	--	--	--	--	2.5 (J)
	511B023	0.0 - 0.5[b]	--	--	--	--	2.5 (J)
	511B025	4.0 - 4.5[c]	--	--	--	--	2.3 (J)
B06	511B028	0.0 - 0.5[b]	--	--	--	--	2.5 (J)
B07	511B031	0.0 - 0.5	--	--	3.2 (J)	--	--
B11	511B035	0.0 - 0.5	--	--	--	3 (J)	--
B22	511B046	0.0 - 0.5	--	--	--	--	2.6 (J)

[a]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)
[b]Sample collected from the top of the pile
[c]Sample collected from within the pile

ft bgs = Feet below ground surface
µg/kg = Micrograms per kilogram
J = Estimated value.
-- = Not detected above minimum reporting limits.

A.4.2.2 Total Semivolatile Organic Compounds

Total SVOC analytical results for soil samples collected at CAS 03-99-11 identified no samples that exceed the MDCs.

A.4.2.3 Total RCRA Metals and Beryllium

Total RCRA metal and beryllium analytical results for soil samples collected at CAS 03-99-11 that were detected above MDCs are presented in Table A.4-3. Arsenic was detected in 12 samples from 8 locations in concentrations greater than PALs (B02, B05, B07, B12, B19, B23, B29, and B30). The discolored soil and soil piles were removed, and verification samples were collected and analyzed for arsenic. The analysis of all verification samples indicated that arsenic concentrations remaining in the soil were below the FALs (Figure A.4-2).

A.4.2.4 Total Petroleum Hydrocarbons-Diesel-Range Organics

The TPH-DRO analytical results for soil samples collected at CAS 03-99-11 that were detected above MDCs are presented in Table A.4-4. Sample 511B048 was found to contain concentrations of TPH-DRO at 1,800 mg/kg, exceeding the PALS. However, analytical results indicated that the hazardous constituents of TPH (VOCs and SVOCs) were below the FALs. Appendix C provides additional detail on the comparison of hazardous constituents of TPH to FALS.

A.4.2.5 Polychlorinated Biphenyls

The PCB analytical results for soil samples collected at CAS 03-99-11 that were detected at concentrations above MDCs are presented in Table A.4-5. No samples contain PCBs in concentrations greater than FALs.

A.4.2.6 Gamma-Emitting Radionuclides

Gamma-emitting radionuclide analytical results for soil samples collected at CAS 03-99-11 that were detected above MDCs are presented in Table A.4-6. No gamma-emitting radionuclides were detected in concentrations greater than FALs.

A.4.2.7 Plutonium, Strontium-90, and Uranium Isotopes

Plutonium, Sr-90, and U analytical results for soil samples collected at CAS 03-99-11 that were detected above MDCs are presented in Table A.4-7. No Sr-90 or U was detected above FALs.

Plutonium-239 was detected at a concentration of 13.4 pCi/g at sample location B11 (outside of the initial CAS boundary), and 13.7 pCi/g at sample location B32, which exceeded the FAL of 12.7

Table A.4-3
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 1 of 5)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**477[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
B01	511B001	0.0 - 0.5[c]	--	9.1 (J)	0.555 (J)	--	--	6.96	--	1.17 (J-)	--
	511B002	2.0 - 2.5[d]	--	17 (J)	0.744 (J)	--	--	26.2	--	--	--
	511B003	2.0 - 2.5[d]	--	10.4 (J)	0.613 (J)	--	1.05 (J)	11.5	--	--	--
	511B004	4.0 - 4.5[d]	6.75 (J)[g]	228	0.984	--	11.5	10.6	--	--	--
	511B005	6.5 - 7.5[e]	3.16 (J)[g]	148	0.933	--	9.54	8.93	--	--	--
	511B006	9.5 - 10.0[f]	3.23 (J)[g]	131	1.16	--	5.79	10.9		--	--
B02	511B007	0.0 - 0.5[c]	--	21.2 (J)	0.582 (J)	--	1.47 (J)	4.8	0.0468 (J)	--	--
	511B008	2.5 - 3.5[d]	--	24.5	0.751 (J)	--	1.59 (J)	28.6	--	3.67 (J-)	--
	511B009	4.5 - 5.5[d]	110 (J)[g]	202	0.793	--	8.27	16.2	0.168	--	--
	511B010	7.5 - 8.5[e]	3.85 (J)[g]	136	1.1	--	8.86	7.83	--	--	--
	511B011	10.5 - 11.5[f]	2.89 (J)[g]	122	1.02	--	4.67	8.33	--	--	--
B03	511B012	0.0 - 0.5[c]	--	4.64 (J)	--	--	--	6.73	--	5.76	--
	511B013	1.5 - 2.5[d]	--	199	0.853	0.344 (J)	7.92	8.52	--	--	--
	511B014	4.5 - 5.5[d]	4.26	178	1.13	--	11.5	10.8	--	--	--
	511B015	7.0 - 8.0[e]	3.41	167	1.25	--	9.02	9.94	0.0817 (J)	--	--
	511B016	10.0 - 10.5[f]	0.714 (J)	167	1.26	--	7.3	11	--	--	--
B04	511B017	0.0 - 0.5[c]	--	6.13 (J)	--	--	2.7 (J)	5.55	--	2.87 (J)	--
	511B018	1.0 - 1.5[d]	--	2.73 (J)	--	--	5.08 (J)	6.64	--	6.96 (J)	--
	511B019	3.0 - 4.0[d]	--	147	0.9	0.709	9.12	10.4	--	0.542 (J)	--
	511B020	6.0 - 7.0[e]	--	150	0.831	--	9.64	12.5	--	--	--
	511B021	9.0 - 10.0[f]	--	190	0.961	--	8.08	9.76	--	--	--

Table A.4-3
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 2 of 5)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**477[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
B05	511B022	0.0 - 0.5[c]	**1,920**	462	--	0.64 (J)	6.06	61.4	7.42	--	--
	511B023	0.0 - 0.5[c]	**1,760**	375	0.43 (J)	0.336 (J)	3.28	46.8	6.34	--	--
	511B024	2.0 - 2.5[d]	**1,740**	433	0.381 (J)	0.204 (J)	2.74	58.2	5.1	--	--
	511B025	4.0 - 4.5[d]	4.62	145	0.9	0.281 (J)	9.16	8.99	--	--	--
	511B026	6.5 - 7.0[e]	8.2	182	0.782	0.264 (J)	8.41	10	--	--	--
	511B027	9.0 - 9.5[f]	168	264	0.924	--	8.28	18.2	0.325	--	--
B06	511B028	0.0 - 0.5[c]	--	150	0.575 (J)	--	6.62	15.6	--	--	--
	511B029	2.0 - 3.0[d]	3.37	175	1	--	8.87	10.9	--	--	--
	511B030	5.0 - 6.0[d]	4.82	193	1.1	0.122 (J)	8.47	11.5	0.0575 (J)	--	--
	511B040	7.0 - 7.5[e]	6.14	172	1.1	--	9.8	8.83	--	1.55	--
B07	511B031	0.0 - 0.5	28.3	437	0.654	--	6.71	15.6	0.0484 (J)	--	--
	511B041	2.0- 3.0	4.24	183	0.799	--	9.42	9.52	--	1.15	--
	511B042	2.0 - 3.0	4.68	186	0.97	--	11.5	11.4	--	0.681 (J)	--
	511B043	5.5 - 6.5	4.89	226	1.24	--	10.3	13.5	--	1.01 (J)	--
	511B044	8.0 - 9.0	3.57	124	0.925	--	5.82	7.69	--	0.579 (J)	--
B08	511B032	0.0 - 0.5	3.09	155	0.818	--	8.25	10.9	--	--	--
B09	511B033	0.0 - 0.5	2.82	126	0.825	--	7.99	10.2	--	--	--
B10	511B034	0.0 - 0.5	7.05	163	0.805	--	6.97	14.2	--	--	--
B11	511B035	0.0 - 0.5	4.57	147	0.702	0.214 (J)	6.09	10.8	--	--	--

Table A.4-3
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 3 of 5)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**477[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
B12	511B036	0.0 - 0.5	432	395	0.716	0.27 (J)	5.82	18.4	1.26	--	--
	511B062	2.0 - 2.5	4.58	165	1.18	0.131 (J)	9.94	10.7	0.0383 (J)	--	0.461 (J)
	511B063	4.0 - 4.5	5.22	164	0.854	0.122 (J)	9.87	11	--	--	0.395 (J)
B13	511B037	0.0 - 0.5	3.38	182	0.935	0.117 (J)	7.83	13.5	--	--	--
B14	511B038	0.0 - 0.5	2.99	123	0.856	0.196 (J)	7.16	9.75	--	--	--
B15	511B039	0.0 - 0.5	2.44	142	0.89	--	5.95	11.7	--	--	--
B16	511B047	0.0 - 0.5	8.13	143	0.624	--	6.67	13.4	--	0.713 (J)	--
B17	511B048	0.0 - 0.5	2.86	166	0.77	0.123 (J)	6.69	9.98	0.0585 (J)	1.41	--
B18	511B049	0.0 - 0.5	7.41	126	0.631	--	7.48	8.57	--	0.569 (J)	--
B19	511B050	0.0 - 0.5	53.5	98.4	0.42 (J)	--	3.51	6.42	--	--	--
	511B053	2.0 - 2.5	3.07	191	0.94	--	7.76	10.2	--	--	--
	511B054	4.0 - 4.5	3.13	127	0.762	--	8.27	9.11	--	--	--
B20	511B051	0.0 - 0.5	6.74	198	1	--	7.87	11.5	--	0.915 (J)	--
B21	511B045	0.0 - 0.5	4.2	129	0.912	--	9.58	11.1	0.0426 (J)	1.31	--
B22	511B046	0.0 - 0.5	5.62	168	0.784	--	6.63	36.6	0.0422 (J)	0.713 (J)	--
B23	511B055	0.0 - 0.5	39.7	132	0.466 (J)	0.325 (J)	4.58	9.61	0.0953 (J)	--	--
	511B056	2.0 - 2.5	3.39	170	0.921	--	8.24	10.4	--	--	0.338 (J)
B24	511B064	0.0 - 0.5	6.49	133	0.523 (J)	0.128 (J)	4.71	9.4	--	--	--
	511B065	2.0 - 2.5	3.54	179	1.1	0.112 (J)	9.84	11	--	--	0.443 (J)

Table A.4-3
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 4 of 5)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**477[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
B26	511B057	0.0 - 0.5	4.3	169	1.05	--	9.78	12.5	--	--	0.362 (J)
	511B058	2.0 - 2.5	4.1	183	1.19	0.161 (J)	11	12.1	--	--	0.563 (J)
	511B059	2.0 - 2.5	3.5	177	1.03	--	9.91	11.3	0.0374 (J)	--	0.293 (J)
B25	511B060	0.0 - 0.5	3.43	176	1.04	0.133 (J)	8.72	11.3	0.0407 (J)	--	0.384 (J)
	511B061	2.0 - 2.5	3.79	185	1.09	0.122 (J)	8.52	10.8	0.0369 (J)	--	0.392 (J)
B27	511B066	3.5 - 4.5[d]	13.2	17.6	--	0.424 (J)	5.48	3.36	--	3.18	--
B28	511B067	3.5 - 4.5[d]	8.01	154	0.546 (J)	0.188 (J)	10.4	7.1	--	1.33	--
B29	511B068	0.0 - 0.5[c]	**1,190**	861	0.212 (J)	0.79	12.7	64.1	4.33	0.731 (J)	--
	511B069	2.0 - 2.5[d]	**1,280**	778	0.23 (J)	1.06	14.5	82.9	3.97	0.881 (J)	--
B30	511B070	0.0 - 0.5	24.8	175	0.635	0.164 (J)	5.63	28.2	0.155	--	--
B34	511B040A	0.0 - 0.5	11.8	--	--	--	--	--	--	--	--
B35	511B041A	0.0 - 0.5	10.4	--	--	--	--	--	--	--	--
	511B042A	1.0 - 1.5	10.4	--	--	--	--	--	--	--	--
B36	511B043A	0.0 - 0.5	173	--	--	--	--	--	--	--	--

Table A.4-3
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 5 of 5)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**477[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**

[a]Based on the calculated Tier II site specific target levels for arsenic. (Appendix C)
[b]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002).
[c]Sample collected from the top of the pile
[d]Sample collected from within the pile
[e]Sample collected from the ground surface (native soil interface)
[f]Sample collected from below ground surface
[g]Qualifier added to laboratory data; record accepted. Matrix spike recovery exceeds control limits.

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
J = Estimated value.
J- = The result is an estimated quantity, but the result may be biased low. Negative bias found in continuing calibration/method blank.
-- = Not detected above minimum reporting limits.

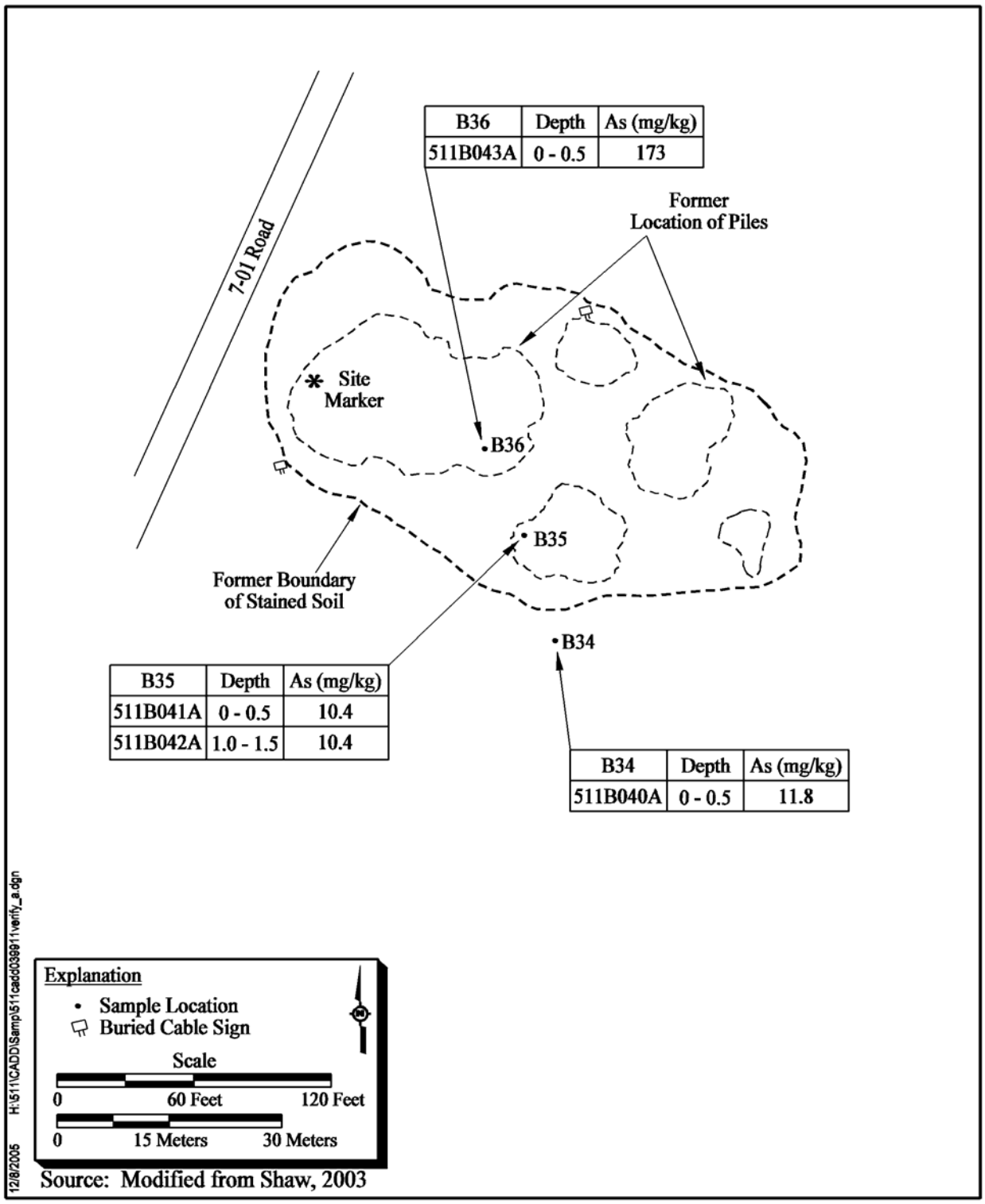


Figure A.4-2
Sample Location Map, CAS 03-99-11, Waste Dump (Piles)
Verification Sample Locations

Table A.4-4
Soil Sample Results for TPH-DRO Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)
			Diesel-Range Organics
Preliminary Action Levels[a]			100
B07	511B031	0.0 - 0.5	20
B10	511B034	0.0 - 0.5	23
B11	511B035	0.0 - 0.5	6.3 (J)
B12	511B036	0.0 - 0.5	15
B13	511B037	0.0 - 0.5	6.3 (J)
B17	511B048	0.0 - 0.5	**1,800** (J)[b]
B20	511B051	0.0 - 0.5	21
B22	511B046	0.0 - 0.5	23

[a]Based on *Nevada Administrative Code*; Contamination of soil: Establishment of action levels (NAC, 2002)
[b]Qualifier added to laboratory data; record accepted. Surrogates diluted out.

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
J = Estimated value.

pCi/g. A verification sample, collected after soil was removed at sample location B11 as a best management practice, indicated that no concentrations of Pu-239 above the FAL remained at this location.

A.4.3 Nature and Extent of Contamination

Based on the analytical results, the COC arsenic was identified in the soil located along the center of the CAS extending south. The vertical extent of contamination is limited to approximately 6 ft below the surface of the soil mound. The lateral extent of contamination was established with the collection of step-out samples. Approximately 600 yd^3 of soil had concentrations of arsenic over FALs. Approximately 900 yd^3 of rock and soil was removed from this CAS and disposed of at the 10c landfill. Confirmation samples were collected and analyzed, and indicate that no soils with contamination in concentrations greater than the FALs remain at the CAS. No COCs remain at the site.

Table A.4-5
Soil Sample Results for PCBs Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (µg/kg)	
			Aroclor 1254	Aroclor 1260
Final Action Levels[a]			**740**	**740**
B01	511B001	0.0 - 0.5[c]	70	57
	511B002	2.0 - 2.5[d]	290	170
	511B003	2.0 - 2.5[d]	210 (J)[b]	170 (J)[b]
B02	511B007	0.0 - 0.5[c]	71	91
	511B008	2.5 - 3.5[d]	81	72
	511B009	4.5 - 5.5[d]	87	79
	511B010	7.5 - 8.5[e]	--	36 (J)

[a]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)
[b]Qualifier added to laboratory data; record accepted. Surrogate recovery exceeded the lower limits.
[c]Sample collected from the top of the pile
[d]Sample collected from within the pile
[e]Sample collected from ground surface (native soil interface)

ft bgs = Feet below ground surface
µg/kg = Micrograms per kilogram
J = Estimated value

A.4.4 Revised Conceptual Site Model

The CAIP requirements were met at this CAS, and no revisions were necessary to the CSM.

Table A.4-6
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 03-99-11, Waste Dump (Piles)
(Page 1 of 6)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)															
			Actinium-228[a]		Americium-241[b]	Bismuth-212[a]		Bismuth-214[a]		Cesium-137[b]	Europium-152[b]	Lead-212[a]		Lead-214[a]		Thallium-208[a]	
Final Action Levels			5	15	12.7	5	15	5	15	12.2	5.7	5	15	5	15	5	15
Depth bgs (cm)			<15	>15		<15	>15	<15	>15			<15	>15	<15	>15	<15	>15
B01	511B001	0.0 - 0.5[e]	--	NA	--	--	NA	1.84 (J)	NA	0.307 (J)[c]	--	--	NA	2.1 (J)	NA	--	NA
	511B002	2.0 - 2.5[f]	NA	--	--	NA	--	NA	2.12 (G, J)	0.136 (J)[c]	0.93 (J)[d]	NA	--	NA	2.42 (G, J)	NA	--
	511B003	2.0 - 2.5[f]	NA	--	--	NA	--	NA	2.34 (G, J)	--	0.83 (J)[d]	NA	--	NA	2.47 (G, J)	NA	--
	511B004	4.0 - 4.5[f]	NA	2.03 (G)	--	NA	--	NA	1.16 (G, J)	--	--	NA	2.23 (J)[d]	NA	1.15 (G, J)	NA	0.7 (G)
	511B005	6.5 - 7.5[g]	NA	1.3 (G)	--	NA	--	NA	1.23 (G, J)	--	--	NA	1.81 (J)[d]	NA	1.29 (G, J)	NA	0.46 (G)
	511B006	9.5 - 10.0[h]	NA	1.74 (G)	--	NA	--	NA	1.28 (G, J)	--	--	NA	1.5 (J)[d]	NA	1.42 (G, J)	NA	0.7 (G)
B02	511B007	0.0 - 0.5[e]	--	NA	--	--	NA	1.89 (J)	NA	0.231 (LT)	0.43 (TI)	--	NA	2.07 (J)	NA	--	NA
	511B008	2.5 - 3.5[f]	NA	--	--	NA	--	NA	2.71 (J)	--	0.68 (TI)	NA	--	NA	2.25 (J)	NA	--
	511B009	4.5 - 5.5[f]	NA	1 (G)	--	NA	--	NA	1.08 (G, J)	--	--	NA	1.05 (J)[d]	NA	1.58 (G, J)	NA	0.33 (G)
	511B010	7.5 - 8.5[g]	NA	1.41 (G)	--	NA	--	NA	1.22 (G, J)	--	--	NA	1.31 (J)[d]	NA	1.33 (G, J)	NA	0.348 (G)

Table A.4-6
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 03-99-11, Waste Dump (Piles)
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Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)															
			Actinium-228[a]		Americium-241[b]	Bismuth-212[a]		Bismuth-214[a]		Cesium-137[b]	Europium-152[b]	Lead-212[a]		Lead-214[a]		Thallium-208[a]	
Final Action Levels			**5**	**15**	**12.7**	**5**	**15**	**5**	**15**	**12.2**	**5.7**	**5**	**15**	**5**	**15**	**5**	**15**
Depth bgs (cm)			**<15**	**>15**		**<15**	**>15**	**<15**	**>15**			**<15**	**>15**	**<15**	**>15**	**<15**	**>15**
B02 continued	511B011	10.5 - 11.5[h]	NA	2.08 (G)	--	NA	--	NA	1.31 (G, J)	--	--	NA	2.34 (J)[d]	NA	1.47 (G, J)	NA	0.74 (G)
B03	511B012	0.0 - 0.5[e]	--	NA	--	--	NA	1.92 (J)	NA	0.25 (LT)	--	--	NA	2.44 (J)	NA	--	NA
	511B013	1.5 - 2.5[f]	NA	1.68 (G)	--	NA	--	NA	1.18 (G, J)	--	--	NA	1.66 (J)[d]	NA	1.2 (G, J)	NA	0.56 (G)
	511B014	4.5 - 5.5[f]	NA	1.67 (G)	--	NA	--	NA	1.1 (G, J)	--	--	NA	1.65 (J)[d]	NA	1.18 (G, J)	NA	0.386 (G)
	511B015	7.0 - 8.0[g]	NA	1.45 (G)	--	NA	--	NA	1.3 (G, J)	--	--	NA	1.93 (J)[d]	NA	1.19 (G, J)	NA	0.57 (G)
	511B016	10.0 - 10.5[h]	NA	1.45 (G)	--	NA	--	NA	1.09 (G, J)	--	--	NA	1.79 (J)[d]	NA	1.31 (G, J)	NA	0.58 (G)
B04	511B017	0.0 - 0.5[e]	--	NA	--	--		2.61 (J)	NA	--	--	--	NA	3.06 (J)	NA	--	NA
	511B018	1.0 - 1.5[f]	NA	--	--	NA	--	NA	3.11 (J)	--	--	NA	--	NA	3.21 (J)	NA	--
	511B019	3.0 - 4.0[f]	NA	1.28 (G)	--	NA	--	NA	1.09 (G, J)	--	--	NA	1.64 (J)[d]	NA	1.2 (G, J)	NA	0.56 (G)
	511B020	6.0 - 7.0[g]	NA	1.23 (G)	--	NA	--	NA	1.09 (G, J)	--	--	NA	1.39 (J)[d]	NA	1.36 (G, J)	NA	0.391 (G)

Table A.4-6
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 03-99-11, Waste Dump (Piles)
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Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)															
			Actinium-228[a]		Americium-241[b]	Bismuth-212[a]		Bismuth-214[a]		Cesium-137[b]	Europium-152[b]	Lead-212[a]		Lead-214[a]		Thallium-208[a]	
Final Action Levels			**5**	**15**	**12.7**	**5**	**15**	**5**	**15**	**12.2**	**5.7**	**5**	**15**	**5**	**15**	**5**	**15**
Depth bgs (cm)			**<15**	**>15**		**<15**	**>15**	**<15**	**>15**			**<15**	**>15**	**<15**	**>15**	**<15**	**>15**
B04 continued	511B021	9.0 - 10.0[h]	NA	1.8 (G)	--	NA	--	NA	1.3 (G, J)	--	--	NA	2.08 (J)[d]	NA	1.14 (G, J)	NA	0.55 (G)
B05	511B022	0.0 - 0.5[e]	1.71	NA	--	--	NA	0.92 (J)	NA	--	--	1.75	NA	0.82 (J)	NA	0.54	NA
	511B023	0.0 - 0.5[e]	1.57	NA	--	2.3	NA	1.01 (J)	NA	--	--	1.55	NA	0.91 (J)	NA	0.54	NA
	511B024	2.0 - 2.5[f]	NA	1.69	--	NA	2.09	NA	0.67 (J)	--	--	NA	1.97	NA	0.8 (J)	NA	0.574
	511B025	4.0 - 4.5[f]	NA	1.4 (G)	--	NA	--	NA	1.08 (G, J)	--	--	NA	1.62 (J)[d]	NA	1.34 (G, J)	NA	0.61 (G)
	511B026	6.5 - 7.0[g]	NA	1.11 (G)	--	NA	--	NA	0.98 (G, J)	--	--	NA	1.25 (J)[d]	NA	0.95 (G, J)	NA	0.42 (G)
	511B027	9.0 - 9.5[h]	NA	1.45 (G)	--	NA	1.7 (G)	NA	1.1 (G, J)	--	--	NA	1.74 (J)[d]	NA	1.18 (G, J)	NA	0.479 (G)
B06	511B028	0.0 - 0.5[e]	1.19 (G)	NA	--	--	NA	1.93 (G, J)	NA	0.57 (G)	--	1.42 (J)	NA	2.03 (G, J)	NA	0.38 (G)	NA
	511B029	2.0 - 3.0[f]	NA	1.99 (G)	--	NA	--	NA	0.94 (G, J)	--	--	NA	1.72 (J)[d]	NA	0.91 (G, J)	NA	0.51 (G)
	511B030	5.0 - 6.0[f]	NA	1.25 (G)	--	NA	--	NA	1.05 (G, J)	--	--	NA	1.62 (J)[d]	NA	1.24 (G, J)	NA	0.445 (G)

Table A.4-6
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 03-99-11, Waste Dump (Piles)
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Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)															
			Actinium-228[a]		Americium-241[b]	Bismuth-212[a]		Bismuth-214[a]		Cesium-137[b]	Europium-152[b]	Lead-212[a]		Lead-214[a]		Thallium-208[a]	
Final Action Levels			5	15	12.7	5	15	5	15	12.2	5.7	5	15	5	15	5	15
Depth bgs (cm)			<15	>15		<15	>15	<15	>15			<15	>15	<15	>15	<15	>15
B06 continued	511B040	7.0 - 7.5[g]	NA	1.72 (G)	--	NA	--	NA	1.4 (G, J)	--	--	NA	1.81 (J)[d]	NA	1.48 (G, J)	NA	0.52 (G)
B07	511B031	0.0 - 0.5	1.27 (G)	NA	--	--	NA	1.01 (G, J)	NA	1.22 (J)[c]	--	1.53 (J)	NA	1.09 (G, J)	NA	0.39 (G)	NA
	511B041	2.0- 3.0	NA	1.04 (G)	--	NA	--	NA	1 (G, J)	--	--	NA	1.5 (J)[d]	NA	1.11 (G, J)	NA	0.41 (G)
	511B042	2.0 - 3.0	NA	1.2 (G)	--	NA	--	NA	0.83 (G, J)	--	--	NA	1.79 (J)[d]	NA	1.19 (G, J)	NA	0.46 (G)
	511B043	5.5 - 6.5	NA	1.23 (G)	--	NA	--	NA	1 (G, J)	--	--	NA	1.5 (J)[d]	NA	1.04 (G, J)	NA	0.422 (G)
	511B044	8.0 - 9.0	NA	1.54 (G)	--	NA	--	NA	1.22 (G, J)	--	--	NA	1.83 (J)[d]	NA	1.06 (G, J)	NA	0.56 (G)
B08	511B032	0.0 - 0.5	1.5 (G)	NA	--	--	NA	1 (G, J)	NA	--	--	1.7 (J)[d]	NA	1.19 (G, J)	NA	0.428 (G)	NA
B09	511B033	0.0 - 0.5	1.38 (G)	NA	--	--	NA	1.18 (G, J)	NA	--	--	2.07 (J)[d]	NA	1.31 (G, J)	NA	0.52 (G)	NA
B10	511B034	0.0 - 0.5	1.85 (G)	NA	--	--	NA	1.39 (G, J)	NA	1.73 (J)[c]	--	1.84 (J)[d]	NA	1.25 (G, J)	NA	0.65 (G)	NA
B11	511B035	0.0 - 0.5	1.69 (G)	NA	--	--	NA	1.09 (G, J)	NA	0.43 (J)[c]	--	1.94 (J)[d]	NA	1.32 (G, J)	NA	0.71 (G)	NA

Table A.4-6
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 03-99-11, Waste Dump (Piles)
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Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)															
			Actinium-228[a]		Americium-241[b]	Bismuth-212[a]		Bismuth-214[a]		Cesium-137[b]	Europium-152[b]	Lead-212[a]		Lead-214[a]		Thallium-208[a]	
Final Action Levels			5	15	12.7	5	15	5	15	12.2	5.7	5	15	5	15	5	15
Depth bgs (cm)			<15	>15		<15	>15	<15	>15			<15	>15	<15	>15	<15	>15
B12	511B036	0.0 - 0.5	1.62 (G)	NA	--	--	NA	1.14 (G, J)	NA	0.29 (J)[c]	--	1.77 (J)[d]	NA	1.12 (G, J)	NA	0.51 (G)	NA
B13	511B037	0.0 - 0.5	1.59 (G)	NA	1.96 (J)[d]	--	NA	0.96 (G, J)	NA	2.89 (J)[c]	--	1.68 (J)[d]	NA	1.04 (G, J)	NA	0.5 (G)	NA
B14	511B038	0.0 - 0.5	1.72 (G)	NA	--	--	NA	1.2 (G, J)	NA	--	--	1.75 (J)	NA	1.11 (G, J)	NA	0.57 (G)	NA
B15	511B039	0.0 - 0.5	1.67 (G)	NA	--	--	NA	1.02 (G, J)	NA	--	--	1.83 (J)[d]	NA	1.22 (G, J)	NA	0.63 (G)	NA
B16	511B047	0.0 - 0.5	1.57 (G)	NA	0.56 (J)[d]	--	NA	1.2 (G, J)	NA	0.59 (G)	--	2.2 (J)[d]	NA	1.52 (G, J)	NA	0.56 (G)	NA
B17	511B048	0.0 - 0.5	1.33 (G)	NA	1.18 (J)[d]	--	NA	1.13 (G, J)	NA	1.39 (G)	--	1.66 (J)[d]	NA	1.07 (G, J)	NA	0.51 (G)	NA
B18	511B049	0.0 - 0.5	1.14 (G)	NA	--	--	NA	0.71 (G, J)	NA	0.87 (G)	--	1.22 (J)[d]	NA	0.87 (G, J)	NA	0.3 (G)	NA
B19	511B050	0.0 - 0.5	1.42 (G)	NA	--	--	NA	0.96 (G, J)	NA	0.46 (G, LT)	--	1.52 (J)[d]	NA	1.19 (G, J)	NA	0.5 (G)	NA
B20	511B051	0.0 - 0.5	1.45 (G)	NA	--	--	NA	0.92 (G, J)	NA	--	--	1.56 (J)[d]	NA	1.09 (G, J)	NA	0.396 (G)	NA
B21	511B045	0.0 - 0.5	1.85 (G)	NA	--	--	NA	1.37 (G, J)	NA	0.84 (G)	--	1.73 (J)[d]	NA	1.28 (G, J)	NA	0.61 (G)	NA

Table A.4-6
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 03-99-11, Waste Dump (Piles)
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Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)															
			Actinium-228[a]		Americium-241[b]	Bismuth-212[a]		Bismuth-214[a]		Cesium-137[b]	Europium-152[b]	Lead-212[a]		Lead-214[a]		Thallium-208[a]	
Final Action Levels			**5**	**15**	**12.7**	**5**	**15**	**5**	**15**	**12.2**	**5.7**	**5**	**15**	**5**	**15**	**5**	**15**
Depth bgs (cm)			**<15**	**>15**		**<15**	**>15**	**<15**	**>15**			**<15**	**>15**	**<15**	**>15**	**<15**	**>15**
B22	511B046	0.0 - 0.5	1.69 (G)	NA	0.71 (J)[d]	--	NA	1.06 (G, J)	NA	0.44 (G, LT)	--	1.62 (J)[d]	NA	0.92 (G, J)	NA	0.52 (G)	NA

[a]Taken from the generic guidelines for residual concentrations of actinium-228, bismuth-214, lead-212, lead-214, thallium-208, and thorium-232, as found in Chapter IV of DOE Order 5400.5, Change 2, "Radiation Protection of the Public and Environment." (DOE, 1993). The PALs for these isotopes is specified as 5 pCi/g averaged over the first 15 cm of soil and 15 pCi/g for deeper soils (DOE, 1993). For purposes of this document, 15 cm is assumed to be equivalent to 0.5 ft (6 inches); therefore, 5 pCi/g represents the PALs for these radionuclides in the surface soil (0.0 - 0.5 ft depth).
[b]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.
[c]Qualifier added to laboratory data; record accepted. Duplicate normalized difference exceeds control limits.
[d]Qualifier added to laboratory data; record accepted. Sample does not meet counting geometry requirements.
[e]Sample collected from the top of the pile
[f]Sample collected from within the pile
[g]Sample collected from the ground surface (native soil interface)
[h]Sample collected from below ground surface

ft bgs = Feet below ground surface
cm = Centimeter
pCi/g = Picocuries per gram
-- = Not detected above minimum reporting limits
> = Greater than
< = Less than
G = Sample density differs by more than 15% of laboratory control sample density
J = Estimated value
LT = Result is less than the requested minimum detectable concentration, greater than the sample specific minimum detectable concentration
PAL = Preliminary action level

Table A.4-7
Soil Sample Results for Isotopes Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 1 of 3)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)					
			Plutonium-238	Plutonium-239	Strontium-90	Uranium-234	Uranium-235	Uranium-238
Final Action Levels[a]			**13.0**	**12.7**	**838**	**143**	**17.5**	**105**
B01	511B001	0.0 - 0.5[e]	--	1.88 (J)[b]	--	1.01 (M3)	--	0.74 (M3)
	511B002	2.0 - 2.5[f]	--	1.7 (J)[b]	--	0.93 (M3)	--	1.03 (M3)
	511B003	2.0 - 2.5[f]	--	0.61 (J)[b]	--	1.13 (M3)	--	0.95 (M3)
	511B004	4.0 - 4.5[f]	--	0.165	0.007 (J)[c]	1.15	0.067	1.26
	511B005	6.5 - 7.5[g]	--	--	--	1.06	0.09	0.93
	511B006	9.5 - 10.0[h]	--	--	--	1.41	--	1.29
B02	511B007	0.0 - 0.5[e]	--	0.88 (J)[b]	--	1.14 (M3)	--	0.78 (M3)
	511B008	2.5 - 3.5[f]	--	0.44 (J)[b]	--	1.33 (M3)	--	1.06 (M3)
	511B009	4.5 - 5.5[f]	--	0.36	--	1.03 (M3)	--	1.1 (M3)
	511B010	7.5 - 8.5[g]	--	--	--	1.8	0.078	1.66
	511B011	10.5 - 11.5[h]	--	--	--	1.24	0.083	1.35
B03	511B012	0.0 - 0.5[e]	0.73 (M3)	2.55	--	0.98 (M3)	--	0.82 (M3)
	511B013	1.5 - 2.5[f]	--	0.085	--	1.66 (M3)	0.186	1.68
	511B014	4.5 - 5.5[f]	--	--	--	1.14	--	1
	511B015	7.0 - 8.0[g]	--	--	--	1.71	0.103	1.32
	511B016	10.0 - 10.5[h]	--	0.237	--	1.3	0.105	1.4
B04	511B017	0.0 - 0.5[e]	--	0.126	--	1.12 (M3)	--	1.68 (M3)
	511B018	1.0 - 1.5[f]	--	--	--	1.79 (M3)	--	1.31 (M3)
	511B019	3.0 - 4.0[f]	--	--	--	1.02	0.048 (LT)	1.01
	511B020	6.0 - 7.0[g]	--	--	--	1.04	0.073	0.89
	511B021	9.0 - 10.0[h]	--	--	--	0.85	0.081	0.91

Table A.4-7
Soil Sample Results for Isotopes Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 2 of 3)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)					
			Plutonium-238	Plutonium-239	Strontium-90	Uranium-234	Uranium-235	Uranium-238
Final Action Levels[a]			**13.0**	**12.7**	**838**	**143**	**17.5**	**105**
B05	511B022	0.0 - 0.5[e]	--	--	--	1.08 (M3)	--	1.04 (M3)
	511B023	0.0 - 0.5[e]	--	--	--	1.29 (M3)	0.27 (M3)	1.34 (M3)
	511B024	2.0 - 2.5[f]	--	--	--	0.96 (M3)	--	1.02 (M3)
	511B025	4.0 - 4.5[f]	--	--	--	0.99	0.054	0.87
	511B026	6.5 - 7.0[g]	--	--	--	0.95	--	0.85
	511B027	9.0 - 9.5[h]	--	0.259	--	1.01	0.082	1.16
B06	511B028	0.0 - 0.5[e]	0.174	1.99	--	1.34	0.164	1.47
	511B029	2.0 - 3.0[f]	--	--	--	1.07	0.081	0.82
	511B030	5.0 - 6.0[f]	--	--	--	1.64	0.079	1.26
	511B040	7.0 - 7.5[g]	--	--	--	1.51 (M3)	0.11	1.26
B07	511B031	0.0 - 0.5	1.03	9.2	0.3 (LT)	0.85	0.058	0.75
	511B041	2.0- 3.0	--	--	--	1.18 (M3)	--	0.82 (M3)
	511B042	2.0 - 3.0	--	--	--	0.88	--	0.85
	511B043	5.5 - 6.5	--	0.157	--	1.23	0.119	1.06
	511B044	8.0 - 9.0	--	--	--	1.23	0.06	1.03
B08	511B032	0.0 - 0.5	--	0.286	--	0.83	--	0.89
B09	511B033	0.0 - 0.5	0.235	0.8	--	1.02	0.081	1.13
B10	511B034	0.0 - 0.5	0.398	3.89	--	0.93	--	0.84
B11	511B035	0.0 - 0.5	0.67	**13.4**	--	0.76	--	0.86
	511B052	1.0 - 1.5	--	0.53	--	--	--	--
B12	511B036	0.0 - 0.5	--	0.245	--	0.79	--	0.76
B13	511B037	0.0 - 0.5	--	0.075	0.38 (J)[c]	0.68	--	0.83
B14	511B038	0.0 - 0.5	1.33	7.6	--	1.02	--	0.99
B15	511B039	0.0 - 0.5	--	--	--	0.98	0.066	0.99
B16	511B047	0.0 - 0.5	0.77	3.99 (J)[d]	--	1	0.116	0.99

Table A.4-7
Soil Sample Results for Isotopes Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 3 of 3)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)					
			Plutonium-238	Plutonium-239	Strontium-90	Uranium-234	Uranium-235	Uranium-238
Final Action Levels[a]			**13.0**	**12.7**	**838**	**143**	**17.5**	**105**
B17	511B048	0.0 - 0.5	0.403	4.67 (J)[d]	--	0.8	0.095	0.98
B18	511B049	0.0 - 0.5	0.93	6.4 (J)[d]	--	0.8	--	0.88
B19	511B050	0.0 - 0.5	0.113	0.79 (J)[d]	--	0.95	0.071	0.86
B20	511B051	0.0 - 0.5	--	0.27 (J)[d]	--	0.85	0.066	0.82
B21	511B045	0.0 - 0.5	0.059	2.73 (J)[d]	--	1.07	--	0.97
B22	511B046	0.0 - 0.5	0.212	1.24 (J)[d]	--	1	0.065	0.83
B31	511B071	0.0 - 0.5	0.77 (J)	3.07 (J)[b]	--	--	--	--
B32	511B072	0.0 - 0.5	0.5 (J)	**13.7** (J)[b]	--	--	--	--
B33	511B073	0.0 - 0.5	0.86 (J)	6.1 (J)[b]	--	--	--	--

[a]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.
[b]Qualifier added to laboratory data; record accepted. Duplicate precision analysis (relative percent difference) exceeds control limits.
[c]Qualifier added to laboratory data; record accepted. Chemical yield exceeded the upper limits.
[d]Qualifier added to laboratory data; record accepted. Sample does not meet counting geometry requirements.
[e]Sample collected from the top of the pile
[f]Sample collected from within the pile
[g]Sample collected from the ground surface (native soil interface)
[h]Sample collected from below ground surface

ft bgs = Feet below ground surface
pCi/g = Picocuries per gram
J = Estimated value
LT = Result is less than the requested minimum detectable concentration, greater than the sample specific minimum detectable concentration
M3 = The requested minimum detectable concentration was not met, but the reported activity is greater than the reported minimum detectable concentration
-- = Not detected above minimum reporting limits

A.5.0 CAS 03-99-12, Waste Dump (Piles & Debris)

Corrective Action Site 03-99-12 is located in Area 3 of the NTS on Power Line Road approximately 200 yd south of the 3-03 Road parallel to the Mercury Highway. It consists of multiple piles of white material that is considered to be spent calcium carbide. Although there is no documentation confirming the source of the piles, calcium carbide was used to produce acetylene. Once calcium carbide is introduced to water and air, the acetylene is produced and calcium carbonate remains. The CAS includes three primary piles of material and multiple smaller piles. Additional detail is provided in the CAIP (NNSA/NSO, 2004a).

A.5.1 Corrective Action Investigation

A total of eight environmental samples (including one FD) were collected during investigation activities at CAS 03-99-12. The sample IDs, locations, types, and analyses are listed in Table A.5-1. The sample locations are shown on Figure A.5-1. The specific CAI activities conducted to satisfy the CAIP requirements at this CAS are described in the following sections.

A.5.1.1 Field Screening

Soil samples were field screened for alpha and beta/gamma radiation. The FSRs were compared to FSLs to guide subsequent sampling decisions. The alpha and beta/gamma radiation FSLs were not exceeded during sampling activities.

A.5.1.2 Sampling

Decision I sampling activities included the collection of three soil samples from each of two locations, one surface sample from a third location, and one duplicate. Samples were collected by using the grab sampling techniques of scoop and trowel, and using a hand auger to collect samples collected at depth. One sample was collected from the surface, one sample was collected from a depth of 1.0 to 1.5 ft bgs (about halfway between the surface of the pile and the native soil interface), and one sample and a duplicate was collected from 2.5 to 3.0 ft bgs (the base of the pile in native soil). No obvious release of contaminants was observed.

Table A.5-1
Samples Collected at CAS 03-99-12, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depth (ft bgs)[a]	Matrix	Purpose	Analyses
C01	511C001	0.0 - 0.5	Soil	Environmental, MS/MSD	Set 3
	511C002	1.0 - 1.5	Soil	Environmental	Set 3
	511C003	2.5 - 3.0	Soil	Environmental	Set 3
	511C004	2.5 - 3.0	Soil	Field Duplicate of #511C003	Set 3
C02	511C005	0.0 - 0.5	Soil	Environmental	TPH-DRO
	511C006	1.0 - 1.5	Soil	Environmental	TPH-DRO
	511C007	2.0 - 3.0	Soil	Environmental	TPH-DRO
C03	511C008	1.0 - 1.5	Soil	Environmental	TPH-DRO
NA	511C301	NA	Water	Trip Blank	Total VOCs
NA	511C302	NA	Water	Field Blank	Set 3

[a]Samples collected from the surface of the pile (0.0 - 0.5 ft), the middle of the pile (1.0 - 1.5 ft), and at the native soil beneath the pile (2.5 - 3.0 ft)

DRO = Diesel-range organics
ft bgs = Feet below ground surface
MS/MSD = Matrix spike/matrix spike duplicate
NA = Not applicable
Set 3 = Total VOCs, Total SVOCs, *Resource Conservation and Recovery Act* Metals, Beryllium, TPH-DRO, Polychlorinated Biphenyls, Gamma Spectroscopy, Isotopic Uranium, Isotopic Plutonium, Strontium-90
SVOC = Semivolatile organic compound
TPH = Total petroleum hydrocarbons
VOC = Volatile organic compound

Samples were collected as outlined in the CAU 511 CAIP (NNSA/NSO, 2004a) and submitted for laboratory analysis.

A.5.1.3 Deviations

There were no deviations to the CAIP requirements at this CAS.

A.5.2 Investigation Results

The following sections provide analytical results from the samples collected to complete investigation activities as outlined in the CAIP. Investigation samples were analyzed for the CAIP-specified COPCs, which included total VOCs, total SVOCs, TPH-DRO, total RCRA metals, beryllium, PCBs, gamma spectroscopy, isotopic U, isotopic Pu, and Sr-90. The analytical parameters

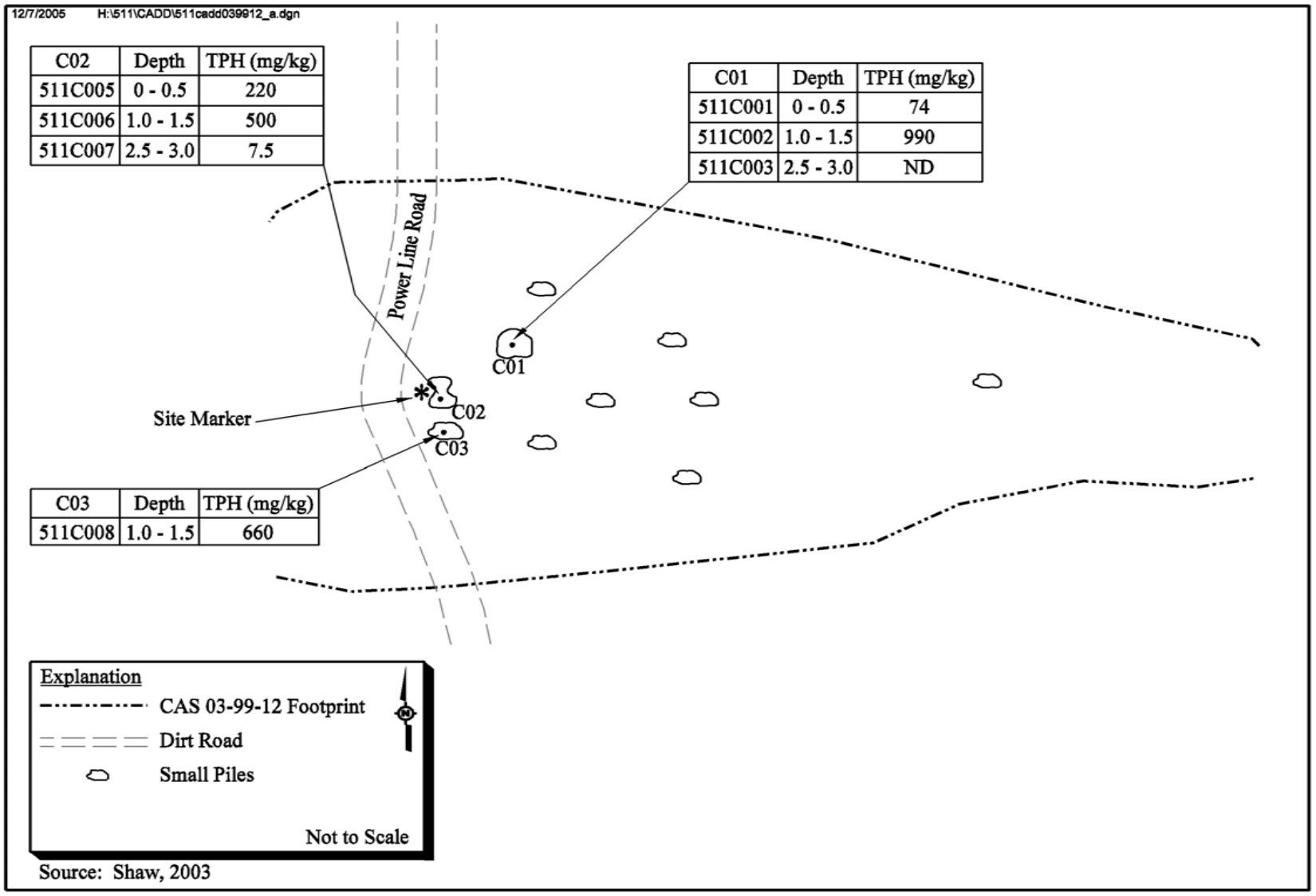


Figure A.5-1
Sample Location Map, CAS 03-99-12, Waste Dump (Piles & Debris)

and laboratory methods used to analyze the investigation samples are listed in Table A.2-2. Table A.5-1 lists the sample-specific analytical suite for CAS 03-99-12.

Analytical results from the soil samples with concentrations exceeding MDCs are summarized in the following sections. These results are compared to FALs and are a subset of the results that exceed MDCs. Results greater than FALs are identified by bold text in the analytical tables. A portion of the analytical results for this CAS were rejected during validation; however, these rejected data did not adversely impact closure decisions as discussed in Appendix B, Section B.1.4.

A.5.2.1 Total Volatile Organic Compounds

Total VOC analytical results for soil samples collected at CAS 03-99-12 that were detected above MDCs are presented in Figure A.5-2. No VOCs were detected in soil samples above FALs.

Table A.5-2
Soil Sample Results for Total VOCs Detected Above Minimum Reporting Limits at CAS 03-99-12, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)[b]	Contaminants of Potential Concern (µg/kg)	
			Acetone	Methylene Chloride
Final Action Levels[a]			**6,000,000**	**21,000**
C01	511C001	0.0 - 0.5	--	3.7 (J)
	511C002	1.0 - 1.5	17 (J)	3.7 (J)

[a]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)
[b]Samples collected from the surface of the pile (0.0 - 0.5 ft), the middle of the pile (1.0 - 1.5 ft), and at the native soil beneath the pile (2.5 - 3.0 ft)

ft bgs = Feet below ground surface
µg/kg = Micrograms per kilogram
J = Estimated value
-- = Not detected above minimum reporting limits.

A.5.2.2 Total Semivolatile Organic Compounds

Total SVOC analytical results for soil samples collected at CAS 03-99-12 that were detected above MDCs are presented in Table A.5-3. No SVOCs were detected in soil samples at concentrations above FALs.

Table A.5-3
Soil Sample Results for Total SVOCs Detected Above Minimum Reporting Limits at CAS 03-99-12, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)[b]	Contaminants of Potential Concern (µg/kg)
			Chrysene
Final Action Levels[a]			210,000
C01	511C002	1.0 - 1.5	200 (J)

[a]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)
[b]Samples collected from the surface of the pile (0.0 - 0.5 ft), the middle of the pile (1.0 - 1.5 ft), and at the native soil beneath the pile (2.5 - 3.0 ft)

ft bgs = Feet below ground surface
µg/kg = Micrograms per kilogram
J = Estimated value

A.5.2.3 Total RCRA Metals and Beryllium

Total RCRA metal and beryllium analytical results for soil samples collected at CAS 03-99-12 that were detected above MDCs are presented in Table A.5-4. No metals were detected in soil samples above FALs.

A.5.2.4 Total Petroleum Hydrocarbons-Diesel-Range Organics

The TPH-DRO analytical results for soil samples collected at CAS 03-99-11 that were detected above MDCs are presented in Table A.5-5. Samples 511C002, 511C005, 511C006, and 511C008 were found to contain concentrations of TPH-DRO greater than PALs. However, analytical results indicated that the hazardous constituents of TPH (VOCs and SVOCs) were below the FALs. Appendix C provides additional detail on the comparison of hazardous constituents of TPH to FALS.

A.5.2.5 Polychlorinated Biphenyls

Analytical results for PCBs in soil samples collected at CAS 03-99-12 did not exceed the MDCs or FALs.

Table A.5-4
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 03-99-12, Waste Dumps, (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)[e]	Contaminants of Potential Concern (mg/kg)						
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Selenium
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**5,100[b]**
C01	511C001	0.0 - 0.5	2.77	132 (J)[c]	0.557	0.152 (J)	6.39 (J)[d]	17.2	--
	511C002	1.0 - 1.5	3.19	226 (J)[c]	0.878	--	8.92 (J)[d]	11.2	0.968 (J)
	511C003	2.5 - 3.0	2.91	248 (J)[c]	0.765	--	5.62 (J)[d]	7.3	0.617 (J)
	511C004	2.5 - 3.0	2.18	258 (J)[c]	0.78	--	5.71 (J)[d]	9.23	0.71 (J)

[a]Based on the background concentrations for metals. Background is considered the mean plus two times the standard deviation for sediment samples collected by the Nevada Bureau of Mines and Geology throughout the Nevada Test and Training Range (NBMG, 1998; Moore, 1999).
[b]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)
[c]Qualifier added to laboratory data; record accepted. Matrix spike recovery exceeds control limits.
[d]Qualifier added to laboratory data; record accepted. Duplicate precision analysis (relative percent difference) exceeds control limits.
[e]Samples collected from the surface of the pile (0.0 - 0.5 ft), the middle of the pile (1.0 - 1.5 ft), and at the native soil beneath the pile (2.5 - 3.0 ft)

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
-- = Not detected above minimum reporting limits
J = Estimated value

A.5.2.6 Gamma-Emitting Radionuclides

Gamma-emitting radionuclide analytical results for soil samples collected at CAS 03-99-12 that were detected above MDCs are presented in Table A.5-6. No gamma-emitting radionuclides were detected in concentrations greater than FALs.

A.5.2.7 Plutonium, Strontium-90, and Uranium Isotopes

Plutonium, Sr-90, and U isotopic analytical results for soil samples collected at CAS 03-99-12 that were detected above MDCs are presented in Table A.5-7. No isotopic Pu, U, or Sr-90 was detected in concentrations greater than FALs.

Table A.5-5
Soil Sample Results for TPH-DRO Detected Above
Minimum Reporting Limits at CAS 03-99-12, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)[b]	Contaminants of Potential Concern (mg/kg)
			Diesel-Range Organics
Preliminary Action Levels[a]			**100**
C01	511C001	0.0 - 0.5	74
	511C002	1.0 - 1.5	**990**
C02	511C005	0.0 - 0.5	**220**
	511C006	1.0 - 1.5	**500**
	511C007	2.0 - 3.0	7.5 (J)
C03	511C008	1.0 - 1.5	**660**

[a]Based on *Nevada Administrative Code*; Contamination of soil: Establishment of action levels (NAC, 2002)
[b]Samples collected from the surface of the pile (0.0 - 0.5 ft), the middle of the pile (1.0 - 1.5 ft), and the native soil beneath the pile
ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
J = Estimated value.

A.5.3 Nature and Extent of Contamination

Based on the analytical results, no COCs were identified. The piles of materials are not limited to the area of this CAS, but extend for hundreds of yards to the north and east.

A.5.4 Revised Conceptual Site Model

The CAIP requirements were met at this CAS, and no revisions were necessary to the CSM.

Table A.5-6
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 03-99-12, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)[d]	Contaminants of Potential Concern (pCi/g)												
			Actinium-228[a]		Bismuth-214[a]		Cesium-137[b]	Lead-212[a]		Lead-214[a]		Thallium-208[a]		Thorium-234[b]
Final Action Levels			**5**	**15**	**5**	**15**	**12.2**	**5**	**15**	**5**	**15**	**5**	**15**	**105**
Depth bgs (cm)			**<15**	**>15**	**<15**	**>15**		**<15**	**>15**	**<15**	**>15**	**<15**	**>15**	
C01	511C001	0.0 - 0.5	--	NA	--	NA	0.64 (G)	0.53 (J)[c]	NA	--	NA	--	NA	--
	511C002	1.0 - 1.5	NA	1.39 (G)	NA	--	1.66 (G)	NA	1.28 (J)[c]	NA	1 (G, J)	NA	0.38 (G)	--
	511C003	2.5 - 3.0	NA	1.63 (G)	NA	0.94 (G, J)	--	NA	1.89 (J)[c]	NA	1.22 (G, J)	NA	0.429 (G)	3.1 (G, TI)
	511C004	2.5 - 3.0	NA	1.82 (G)	NA	1.09 (G, J)	--	NA	2.03 (J)[c]	NA	0.99 (G, J)	NA	0.63 (G)	--

[a]Taken from the generic guidelines for residual concentrations of actinium-228, bismuth-214, lead-212, lead-214, thallium-208, and thorium-232, as found in Chapter IV of DOE Order 5400.5, Change 2, "Radiation Protection of the Public and Environment." (DOE, 1993). The PALs for these isotopes is specified as 5 pCi/g averaged over the first 15 cm of soil and 15 pCi/g for deeper soils (DOE, 1993). For purposes of this document, 15 cm is assumed to be equivalent to 0.5 ft (6 inches); therefore, 5 pCi/g represents the PALs for these radionuclides in the surface soil (0.0 - 0.5 ft depth).
[b]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.
[c]Qualifier added to laboratory data; record accepted. Sample does not meet counting geometry requirements.
[d]Samples collected from the surface of the pile (0.0 - 0.5 ft), the middle of the pile (1.0 - 1.5 ft), and at the native soil beneath the pile (2.5 - 3.0 ft)

ft bgs = Feet below ground surface
cm = Centimeter
pCi/g = Picocuries per gram
-- = Not detected above minimum reporting limits
> = Greater than
< = Less than
G = Sample density differs by more than 15% of laboratory control sample density
J = Estimated value
NA = Not applicable
PAL = Preliminary action level
TI = Tentatively identified

Table A.5-7
Soil Sample Results for Isotopes Detected Above Minimum Reporting Limits at CAS 03-99-12, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)[b]	Contaminants of Potential Concern (pCi/g)				
			Plutonium-238	Plutonium-239	Uranium-234	Uranium-235	Uranium-238
Final Action Levels[a]			**13.0**	**12.7**	**838**	**17.5**	**105**
C01	511C001	0.0 - 0.5	0.115	1.55 (J)	0.47	--	0.45
	511C002	1.0 - 1.5	0.359	1.57 (J)	0.54	--	0.68
	511C003	2.5 - 3.0	0.138	0.53 (J)	0.86	0.149	0.77
	511C004	2.5 - 3.0	--	0.103 (J)	0.88	0.076	0.85

[a]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.
[b]Samples collected from the surface of the pile (0.0 - 0.5 ft), the middle of the pile (1.0 - 1.5 ft), and at the native soil beneath the pile (2.5 - 3.0 ft)

ft bgs = Feet below ground surface
pCi/g = Picocuries per gram
J = Estimated value. Qualifier added to laboratory data; record accepted. Sample does not meet counting geometry requirements.
-- = Not detected above minimum reporting limits

A.6.0 CAS 04-99-04, Contaminated Trench/Berm

Corrective Action Site 04-99-04 is located along the western edge of Area 7 of the NTS approximately 940 ft northeast of crater U-4q. The site consists of a trench with two large berms. There is no documentation or visual evidence that this trench has ever been used to support any activity. Soil contamination originating from the fallout of atmospheric nuclear weapons testing in the vicinity of CAS 04-99-04 is not considered part of this CAS as specified in the CAU 511 CAIP (NNSA/NSA, 2004a). Additional detail is provided in the CAIP (NNSA/NSO, 2004a).

A.6.1 Corrective Action Investigation

A total of six environmental samples (including one FD) were collected during investigation activities at CAS 04-99-04. The sample IDs, locations, types, and analyses are listed in Table A.6-1. The sample locations are shown on Figure A.6-1. The specific CAI activities conducted to satisfy the CAIP requirements at this CAS are described in the following sections.

Table A.6-1
Samples Collected at CAS 04-99-04, Contaminated Trench/Berm

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
D01	511D001	0.0 - 0.5	Soil	Environmental	Set 3
D02	511D002	0.0 - 0.5	Soil	Environmental	Set 3
	511D006	1.0 - 1.5	Soil	Environmental	Isotopic Plutonium
D03	511D003	0.0 - 0.5	Soil	Environmental, MS/MSD	Set 3
D04	511D004	0.0 - 0.5	Soil	Environmental	Set 3
	511D005	0.0 - 0.5	Soil	Field Duplicate of #511D004	Set 3
NA	511D301	NA	Water	Trip Blank	Total VOCs
NA	511D302	NA	Water	Field Blank	Set 3

Set 3 = Total VOCs, Total SVOCs, *Resource Conservation and Recovery Act* Metals, Beryllium, Total Petroleum Hydrocarbons-Diesel-Range Organics, Polychlorinated Biphenyls, Gamma Spectroscopy, Isotopic Uranium, Isotopic Plutonium, Strontium-90

ft bgs = Feet below ground surface
MS/MSD = Matrix spike/matrix spike duplicate
NA = Not applicable
SVOC = Semivolatile organic compound
VOC = Volatile organic compound

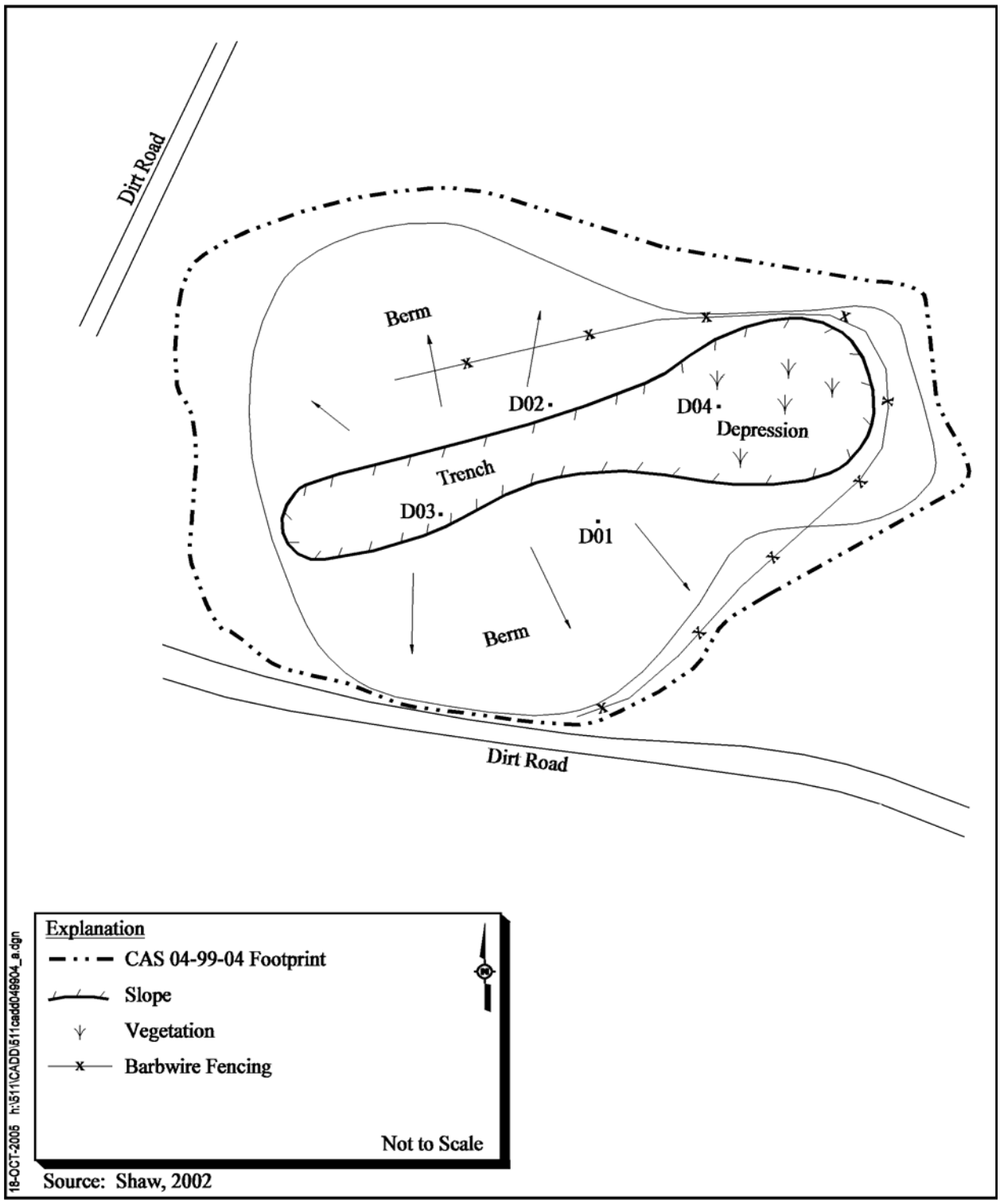


Figure A.6-1
Sample Location Map, CAS 04-99-04, Contaminated Trench/Berm

A.6.1.1 Field Screening

Soil samples were field screened for alpha and beta/gamma radiation. The FSRs were compared to FSLs to guide subsequent sampling decisions. The alpha and beta/gamma radiation FSLs were not exceeded during investigation activities.

A.6.1.2 Sampling

Decision I sampling activities included the collection of one surface soil sample from each of four sample locations. No staining was observed that could be used to bias the sampling. Sample results from sample location D02 indicated a hot spot of Pu-239 associated with area-wide radioactivity. Less than yd^3 of soil was removed as a best management practice and one verification sample was collected.

Samples were collected as outlined in the CAU 511 CAIP (NNSA/NSO, 2004a) and submitted for laboratory analysis.

A.6.1.3 Deviations

There were no deviations to the CAIP requirements at this CAS.

A.6.2 Investigation Results

The following sections provide analytical results from the samples collected to complete investigation activities as outlined in the CAIP. Investigation samples were analyzed for total VOCs, total SVOCs, TPH-DRO, total RCRA metals, beryllium, PCBs, gamma spectroscopy, isotopic U, isotopic Pu, and Sr-90. The analytical parameters and laboratory methods used to analyze the investigation samples are listed in Table A.2-2. Table A.6-1 lists the sample-specific analytical suite for CAS 04-99-04.

Analytical results from the soil samples with concentrations exceeding MDCs are summarized in the following sections. These results are compared to FALs and are a subset of the results that exceed MDCs. Results greater than FALs are identified by bold text in the analytical tables. A portion of the analytical results for this CAS were rejected during validation; however, these rejected data did not adversely impact closure decisions as discussed in Appendix B, Section B.1.4.

A.6.2.1 Total Volatile Organic Compounds

Analytical results for total VOCs in soil samples collected at CAS 04-99-04 did not exceed the MDCs.

A.6.2.2 Total Semivolatile Organic Compounds

Total SVOC analytical results for soil samples collected at CAS 04-99-04 that were detected in concentrations above MDCs are presented in Table A.6-2. No SVOCs were detected in soil samples in concentrations greater than FALs.

Table A.6-2
Soil Sample Results for Total SVOCs Detected Above Minimum Reporting Limits at AS 04-99-04, Contaminated Trench/Berm

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (µg/kg)
			Diethylphthalate
Final Action Levels[a]			100,000,000
D04	511D004	0.0 - 0.5	460

[a]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)

ft bgs = Feet below ground surface
µg/kg = Micrograms per kilogram

A.6.2.3 Total RCRA Metals and Beryllium

Total RCRA metal and beryllium analytical results for soil samples collected at CAS 04-99-04 that were detected above MDCs are presented in Table A.6-3. No metals were detected in soil samples above FALs.

A.6.2.4 Total Petroleum Hydrocarbons-Diesel-Range Organics

The TPH-DRO analytical results for soil samples collected at CAS 03-99-11 that were detected in concentrations greater than MDCs are presented in Table A.6-4. The TPH-DRO was not detected in the soil samples in concentrations greater than FALs.

Table A.6-3
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 04-99-04, Contaminated Trench/Berm

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)				
			Arsenic	Barium	Beryllium	Chromium	Lead
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**750[b]**
D01	511D001	0.0 - 0.5	4.62	132 (J)[c]	1.09	7.04 (J)[d]	7.71
D02	511D002	0.0 - 0.5	4.41	125 (J)[c]	1.18	7.66 (J)[d]	10.4
D03	511D003	0.0 - 0.5	4.02	120 (J)[c]	0.865	5.82 (J)[d]	8.38
D04	511D004	0.0 - 0.5	3.83	144 (J)[c]	0.829	4.21 (J)[d]	7.61
	511D005	0.0 - 0.5	4.14	175 (J)[c]	0.868	4.51 (J)[d]	14.3

[a]Based on the background concentrations for metals. Background is considered the mean plus two times the standard deviation for sediment samples collected by the Nevada Bureau of Mines and Geology throughout the Nevada Test and Training Range (NBMG, 1998; Moore, 1999).
[b]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)
[c]Qualifier added to laboratory data; record accepted. Matrix spike recovery exceeds control limits.
[d]Qualifier added to laboratory data; record accepted. Duplicate precision analysis (relative percent difference) exceeds control limits.

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
-- = Not detected above minimum reporting limits
J = Estimated value

Table A.6-4
Soil Sample Results for TPH-DRO Detected Above Minimum Reporting Limits at CAS 04-99-04, Contaminated Trench/Berm

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)
			Diesel-Range Organics
Preliminary Action Levels[a]			**100**
D03	511D003	0.0 - 0.5	13

[a]Based on *Nevada Administrative Code*; Contamination of soil: Establishment of action levels (NAC, 2002)

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram

A.6.2.5 Polychlorinated Biphenyls

Analytical results for PCBs in soil samples collected at CAS 04-99-04 did not exceed the MDCs.

A.6.2.6 Gamma-Emitting Radionuclides

Gamma-emitting radionuclide analytical results for soil samples collected at CAS 04-99-04 that were detected above MDCs are presented in Table A.6-5. No gamma-emitting radionuclides were detected in the soil samples greater than FALs.

Table A.6-5
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 04-99-04, Contaminated Trench/Berm

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)					
			Actinium-228	Bismuth-212	Bismuth-214	Lead-212	Lead-214	Thallium-208
Final Action Levels[a]			5	5	5	5	5	5
Depth bgs (cm)			<15	<15	<15	<15	<15	<15
D01	511D001	0.0 - 0.5	1.26 (G)	--	1.18 (G, J)	1.61 (J)[b]	1.26 (G, J)	0.46 (G)
D02	511D002	0.0 - 0.5	1.9 (G)	2.39 (G)	0.93 (G, J)	1.98 (J)[b]	0.97 (G, J)	0.6 (G)
D03	511D003	0.0 - 0.5	1.55 (G)	--	0.85 (G, J)	1.7 (J)[b]	1.12 (G, J)	0.6 (G)
D04	511D004	0.0 - 0.5	1.17 (G)	--	0.77 (G, J)	1.46 (J)[b]	0.84 (G, J)	0.54 (G)
	511D005	0.0 - 0.5	1.47 (G)	--	0.82 (G, J)	1.39 (J)[b]	0.71 (G, J)	0.49 (G)

[a]Taken from the generic guidelines for residual concentrations of actinium-228, bismuth-214, lead-212, lead-214, thallium-208, and thorium-232, as found in Chapter IV of DOE Order 5400.5, Change 2, "Radiation Protection of the Public and Environment." (DOE, 1993). The PALs for these isotopes is specified as 5 pCi/g averaged over the first 15 cm of soil and 15 pCi/g for deeper soils (DOE, 1993). For purposes of this document, 15 cm is assumed to be equivalent to 0.5 ft (6 inches); therefore, 5 pCi/g represents the PALs for these radionuclides in the surface soil (0.0 - 0.5 ft depth).
[b]Qualifier added to laboratory data; record accepted. Sample does not meet counting geometry requirements.

ft bgs = Feet below ground surface
cm = Centimeter
pCi/g = Picocuries per gram
-- = Not detected above minimum reporting limits
< = Less than
G = Sample density differs by more than 15% of laboratory control sample density
J = Estimated value

A.6.2.7 Plutonium, Strontium-90, and Uranium Isotopes

Plutonium, Sr-90, and U isotopic analytical results for soil samples collected at CAS 04-99-04 that were detected above MDCs are presented in Table A.6-6. No Sr-90 or U was detected above FALs.

Plutonium-239 was detected at a concentration of 14.6 pCi/g at sample location D02, which exceeds the PAL of 12.7 pCi/g. The Pu-239 contaminated soil is attributable to atmospheric testing at the NTS and is not part of the investigation of this CAS, but was removed as a best management practice and disposed of as LLW. Results from the verification sample collected at D02 indicated Pu-concentrations remaining in the soil were below the FAL.

A.6.3 Nature and Extent of Contamination

Based on the analytical results for soil sample collected within CAS 04-99-04, no COCs were identified.

A.6.4 Revised Conceptual Site Model

The CAIP requirements were met at this CAS, and no revisions were necessary to the CSM.

Table A.6-6
Soil Sample Results for Isotopes Detected Above Minimum Reporting Limits at CAS 04-99-04, Contaminated Trench/Berm

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)				
			Plutonium-238	Plutonium-239	Uranium-234	Uranium-235	Uranium-238
Final Action Levels[a]			**13.0**	**12.7**	**838**	**17.5**	**105**
D01	511D001	0.0 - 0.5	--	0.263 (J)	1.18	0.063	1.19
D02	511D002	0.0 - 0.5	0.208	**14.6** (J)	1.11	0.091	1.06
	511D006	1.0 - 1.5	--	0.048 (LT)	--	--	--
D03	511D003	0.0 - 0.5	--	1.09 (J)	1.1	0.076	0.89
D04	511D004	0.0 - 0.5	--	--	0.76	0.079	0.72
	511D005	0.0 - 0.5	--	--	0.72	--	0.76

[a]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.

ft bgs = Feet below ground surface
pCi/g = Picocuries per gram
J = Estimated value. Qualifier added to laboratory data; record accepted. Sample does not meet counting geometry requirements.
LT = Result is less than the requested minimum detectable concentration, greater than the sample specific minimum detectable concentration
-- = Not detected above minimum reporting limits

A.7.0 CAS 06-16-01, Waste Dump (Piles & Debris)

Corrective Action Site 06-16-01 is located in Area 6 of the NTS at the northern edge of Yucca Lake and consisted of three piles of debris and some surface debris. The debris included non-contaminated components of airplanes and dirigibles, the remains of a concrete building, and other miscellaneous debris once stored in the area. Additional detail is provided in the CAIP (NNSA/NSO, 2004a).

A.7.1 Corrective Action Investigation

A total of nine soil investigation samples (including one FD) and three waste characterization samples were collected during investigation activities at CAS 06-16-01. The sample IDs, locations, types, and analyses are listed in Table A.7-1. The sample locations are shown on Figure A.7-1. The specific CAI activities conducted to satisfy the CAIP requirements at this CAS are described in the following sections. Initial CAI activities included the removal and disposal of all debris. Three debris mounds were removed which exposed some buried debris. A backhoe was used to remove the debris to a depth of approximately 3.5 ft bgs at sample locations E03 and E04. Once the debris was completely removed, environmental samples were collected at sample locations E03 and E04. Also, the remains of a lead battery was found and removed for disposal.

Table A.7-1
Samples Collected at CAS 06-16-01, Waste Dump (Piles and Debris)
(Page 1 of 2)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
E01	511E502	0.0 - 0.5	Soil	Waste Management	Set 4
E02	511E001	0.0 - 0.5	Soil	Environmental, MS/MSD	Set 4
	511E009	1.0 - 1.5	Soil	Verification	RCRA Metals
E03	511E002	2.5 - 3.5	Soil	Environmental	Set 4
	511E003	2.5 - 3.5	Soil	Field Duplicate of #511E002	Set 4
E04	511E004	2.5 - 3.5	Soil	Environmental	Set 4
E05	511E005	0.0 - 0.5	Soil	Environmental	Set 4
E06	511E006	0.0 - 0.5	Soil	Environmental	Set 4
E07	511E007	0.0 - 0.5	Soil	Environmental	Set 4
E08	511E008	0.0 - 0.5	Soil	Environmental	Set 4

Table A.7-1
Samples Collected at CAS 06-16-01, Waste Dump (Piles and Debris)
(Page 2 of 2)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
NA	511E301	NA	Water	Trip Blank	Total VOCs
NA	511E302	NA	Water	Field Blank	Set 4
Drums E02 & E03	511E501	0.0 - 0.5	Soil	Waste Management	Set 4
Drum E01	511E503	NA	Liquid	Waste Management	Gross Alpha/ Beta, Tritium

Set 4 = Total SVOCs, RCRA Metals, Beryllium, Total Petroleum Hydrocarbons-Diesel-Range Organics, Total Petroleum Hydrocarbons-Gasoline-Range Organics, Polychlorinated Biphenyls, Isotopic Uranium, Isotopic Plutonium, Gamma Spectroscopy, Strontium-90

ft bgs = Feet below ground surface
MS/MSD = Matrix spike/matrix spike recovery
NA = Not applicable
RCRA = *Resource Conservation and Recovery Act*
SVOC = Semivolatile organic compound
VOC = Volatile organic compound

A.7.1.1 Field Screening

Soil samples were field screened for alpha and beta/gamma radiation and VOCs. The FSRs were compared to FSLs to guide subsequent sampling decisions. The alpha and beta/gamma radiation and VOCs FSLs were not exceeded during investigation activities.

A.7.1.2 Sampling

Decision I samples included soil samples from each of eight locations. Samples were collected to a depth of 3.5 ft.

Samples were collected as outlined in the CAU 511 CAIP (NNSA/NSO, 2004a) and submitted for laboratory analysis.

A.7.1.3 Deviations

There were no deviations to the CAIP requirements at this CAS.

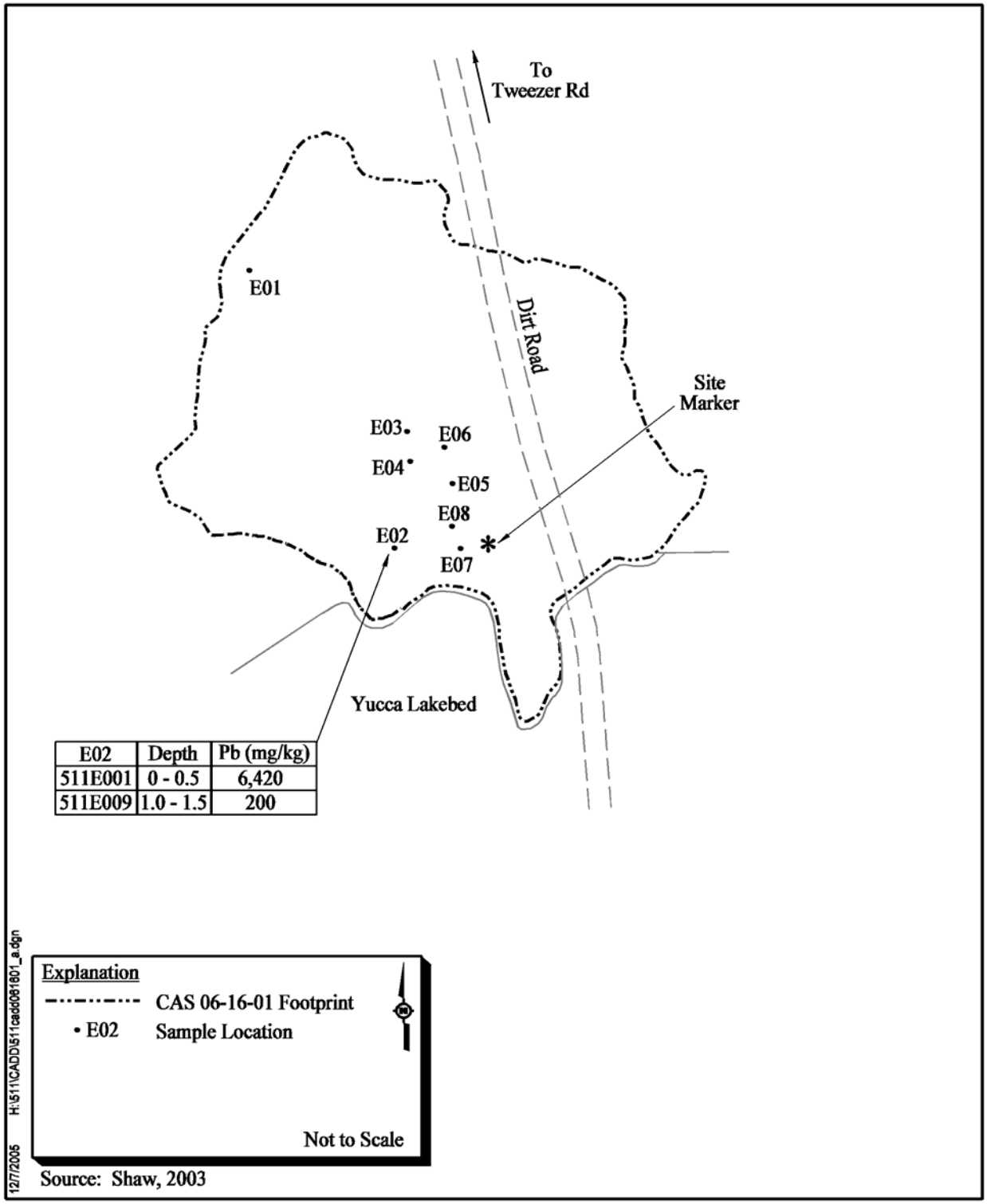


Figure A.7-1
Sample Location Map, CAS 06-16-01, Waste Dump (Piles & Debris)

A.7.2 Investigation Results

The following sections provide analytical results from the samples collected to complete investigation activities as outlined in the CAIP. Investigation samples were analyzed for total SVOCs, total RCRA metals, beryllium, TPH-DRO, TPH-gasoline-range organics (GRO), PCBs, gamma spectroscopy, isotopic U, isotopic Pu, and Sr-90. The analytical parameters and laboratory methods used to analyze the investigation samples are listed in Table A.2-2. Table A.7-1 lists the sample-specific analytical suite for CAS 06-16-01.

Analytical results from the soil samples with concentrations exceeding MDCs are summarized in the following sections. These results are compared to FALs and are a subset of the results that exceed MDCs. Results greater than FALs are identified by bold text in the analytical tables. A portion of the analytical results for this CAS were rejected during validation; however, these rejected data did not adversely impact closure decisions as discussed in Appendix B, Section B.1.4.

A.7.2.1 Total Semivolatile Organic Compounds

Total SVOC analytical results for soil samples collected at CAS 06-16-01 identified no samples that exceed the MDCs.

A.7.2.2 Total RCRA Metals and Beryllium

Total RCRA metals and beryllium analytical results for soil samples collected at CAS 06-16-01 that were detected above MDCs are presented in Table A.7-2. A lead battery was removed at location E02. Sample 511E001 (collected beneath the remains of the lead battery) contained concentrations of lead at 6,420 mg/kg, which exceeded the FAL of 750 mg/kg. Less than 1 yd^3 of soil was removed and disposed of as hazardous waste and a verification sample was collected. Verification sample results indicated that concentrations of lead were not present in the soil exceeding the FAL.

A.7.2.3 Total Petroleum Hydrocarbons-Diesel-Range Organics

The TPH-DRO analytical results for soil samples collected at CAS 06-16-01 identified no samples that exceed the MDCs.

Table A.7-2
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 06-16-01, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)							
			Arsenic[a]	Barium[b]	Beryllium[b]	Cadmium[b]	Chromium[b]	Lead[b]	Mercury[b]	Silver[b]
Final Action Levels			**23**	**67,000**	**1,900**	**450**	**450**	**750**	**310**	**5,100**
E02	511E001	0.0 - 0.5	4.02	222 (J)[c]	0.993	2.18	8.29	**6,420**	--	--
	511E009	1.0 - 1.5	4.85	197	1.57	0.308 (J)	12.1	200	0.0464 (J)	0.485 (J)
E03	511E002	2.5 - 3.5	5.96	240 (J)[c]	1.33	0.292 (J)	10.8	15.3	--	--
	511E003	2.5 - 3.5	6.29	224 (J)[c]	1.39	0.345 (J)	12	14.7	--	--
E04	511E004	2.5 - 3.5	6.15	309 (J)[c]	1.52	0.306 (J)	12.9	14.6	--	--
E05	511E005	0.0 - 0.5	5.73	189 (J)[c]	1.47	0.343 (J)	13.4	14.9	--	--
E06	511E006	0.0 - 0.5	4.77	274 (J)[c]	1.24	0.274 (J)	9.11	17.1	--	--
E07	511E007	0.0 - 0.5	3.9	276 (J)[c]	1.01	3.65	11.7	17.4	--	--
E08	511E008	0.0 - 0.5	3.57	83.4 (J)[c]	0.548 (J)	6.76	3.34	20.5	--	--

[a]Based on the background concentrations for metals. Background is considered the mean plus two times the standard deviation for sediment samples collected by the Nevada Bureau of Mines and Geology throughout the Nevada Test and Training Range (NBMG, 1998; Moore, 1999).
[b]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)
[c]Qualifier added to laboratory data; record accepted. Matrix spike recovery exceeds control limits.

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
-- = Not detected above minimum reporting limits
J = Estimated value

A.7.2.4 Total Petroleum Hydrocarbons-Gasoline-Range Organics

The TPH-GRO analytical results for soil samples collected at CAS 03-99-11 that were detected above MDCs are presented in Table A.7-3. No samples contained TPH-GRO in concentrations greater than PALs.

Table A.7-3
Soil Sample Results for TPH-GRO Detected Above Minimum Reporting Limits at CAS 06-16-01, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)
			Gasoline-Range Organics
Preliminary Action Levels[a]			100
E02	511E001	0.0 - 0.5	1.1 (J)

[a]Based on *Nevada Administrative Code*; Contamination of soil: Establishment of action levels (NAC, 2002)

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
J = Estimated value

A.7.2.5 Polychlorinated Biphenyls

Analytical results for PCBs in soil samples collected at CAS 06-16-01 that were detected above MDCs are presented in Table A.7-4. No samples contained PCBs in concentrations greater than FALs.

Table A.7-4
Soil Sample Results for PCBs Detected Above Minimum Reporting Limits at CAS 06-16-01, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (µg/kg)	
			Aroclor 1254	Aroclor 1260
Final Action Levels[a]			740	740
E08	511E008	0.0 - 0.5	48	36 (J)

[a]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)

ft bgs = Feet below ground surface
µg/kg = Micrograms per kilogram
J = Estimated value

A.7.2.6 Gamma-Emitting Radionuclides

Gamma-emitting radionuclide analytical results for soil samples collected at CAS 06-16-01 that were detected above MDCs are presented in Table A.7-5. No samples contained gamma-emitting radionuclides in concentrations in excess of FALs.

A.7.2.7 Plutonium, Strontium-90, and Uranium Isotopes

Analytical results for soil samples collected at CAS 06-16-01 that detected isotopes at concentrations above MDCs are presented in Table A.7-6. No concentrations of isotopic Pu, U, or Sr-90 exceeded the FALs.

A.7.3 Nature and Extent of Contamination

Based on the analytical results, lead was the only constituent detected above PALs. Lead was detected at 6,420 mg/kg at location E02 where the remains of a lead battery were found. The battery and surrounding soil were removed. Lead was not detected in verification samples collected at this location. No COCs remain at the site.

A.7.4 Revised Conceptual Site Model

The CAIP requirements were met at this CAS, and no revisions were necessary to the CSM.

Table A.7-5
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 06-16-01, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)											
			Actinium-228		Bismuth-212		Bismuth-214		Lead-212		Lead-214		Thallium-208	
Final Action Levels[a]			5	15	5	15	5	15	5	15	5	15	5	15
Depth bgs (cm)			<15	>15	<15	>15	<15	>15	<15	>15	<15	>15	<15	>15
E02	511E001	0.0 - 0.5	1.66 (G)	NA	--	NA	1.38 (G, J)	NA	2.06 (J)	NA	1.64 (G, J)	NA	0.56 (G)	NA
E03	511E002	2.5 - 3.5	NA	1.97 (G)	NA	--	NA	1.3 (G, J)	NA	2.38 (J)	NA	1.35 (G, J)	NA	0.78 (G)
	511E003	2.5 - 3.5	NA	2.19 (G)	NA	2.4 (G)	NA	1.25 (G, J)	NA	2.35 (J)	NA	1.45 (G, J)	NA	0.61 (G)
E04	511E004	2.5 - 3.5	NA	2.22 (G)	NA	--	NA	1.45 (G, J)	NA	2.79 (J)	NA	1.66 (G, J)	NA	0.63 (G)
E05	511E005	0.0 - 0.5	1.76 (G)	NA	--	NA	1.29 (G, J)	NA	2.19 (J)	NA	1.55 (G, J)	NA	0.69 (G)	NA
E06	511E006	0.0 - 0.5	1.77 (G)	NA	--	NA	1.52 (G, J)	NA	2.13 (J)	NA	1.46 (G, J)	NA	0.59 (G)	NA
E07	511E007	0.0 - 0.5	1.82 (G)	NA	--	NA	1.53 (G, J)	NA	2.06 (J)	NA	1.51 (G, J)	NA	0.54 (G)	NA
E08	511E008	0.0 - 0.5	1.7 (G)	NA	--	NA	1.34 (G, J)	NA	2.19 (J)	NA	1.55 (G, J)	NA	0.59 (G)	NA

[a]Taken from the generic guidelines for residual concentrations of actinium-228, bismuth-214, lead-212, lead-214, thallium-208, and thorium-232, as found in Chapter IV of DOE Order 5400.5, Change 2, "Radiation Protection of the Public and Environment." (DOE, 1993). The PALs for these isotopes is specified as 5 pCi/g averaged over the first 15 cm of soil and 15 pCi/g for deeper soils (DOE, 1993). For purposes of this document, 15 cm is assumed to be equivalent to 0.5 ft (6 inches); therefore, 5 pCi/g represents the PALs for these radionuclides in the surface soil (0 to 0.5 ft depth).

ft bgs = Feet below ground surface
cm = Centimeter
pCi/g = Picocuries per gram
-- = Not detected above minimum reporting limits
> = Greater than
< = Less than
G = Sample density differs by more than 15% of laboratory control sample density
J = Estimated value
LT = Result is less than the requested minimum detectable concentration, greater than the sample specific minimum detectable concentration
PAL = Preliminary action level

Table A.7-6
Soil Sample Results for Isotopes Detected Above Minimum Reporting Limits at CAS 06-16-01, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)			
			Plutonium-239	Uranium-234	Uranium-235	Uranium-238
Final Action Levels[a]			**12.7**	**143**	**17.5**	**105**
E02	511E001	0.0 - 0.5	0.111	0.98	0.05	0.83
E03	511E002	2.5 - 3.5	--	1.17	0.063	1.14
	511E003	2.5 - 3.5	--	1.2	0.048 (LT)	1.07
E04	511E004	2.5 - 3.5	--	1.19	0.063	1.02
E05	511E005	0.0 - 0.5	--	1.1	0.082	0.96
E06	511E006	0.0 - 0.5	--	0.87	0.049 (LT)	0.85
E07	511E007	0.0 - 0.5	0.084	0.79	--	0.86
E08	511E008	0.0 - 0.5	0.07	1.03	0.057	0.9

[a]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.

ft bgs = Feet below ground surface
pCi/g = Picocuries per gram
LT = Result is less than the requested minimum detectable concentration, greater than the sample specific minimum detectable concentration
-- = Not detected above minimum reporting limits

A.8.0 CAS 06-17-02, Scattered Ordnance/Automatic Weapons Range

Corrective Action Site 06-17-02 is located in Area 6 of the NTS in the foothills at the south end of Yucca Lake and was a former automatic weapons range. All targets had been removed before the investigation. Additional detail is provided in the CAIP (NNSA/NSO, 2004a).

A.8.1 Corrective Action Investigation

A total of 81 environmental samples (including 4 FDs) from 77 randomly generated locations were collected during investigation activities at CAS 06-17-02. The sample IDs, locations, types, and analyses are listed in Table A.8-1. The sample locations are shown on Figure A.8-1. The specific CAI activities conducted to satisfy the CAIP requirements at this CAS are described in the following sections.

Table A.8-1
Samples Collected at CAS 06-17-02, Scattered Ordnance/Automatic Weapons Range
(Page 1 of 4)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
F01	511F001	0.0 - 0.5	Soil	Environmental	Set 5
F02	511F002	0.0 - 0.5	Soil	Environmental	Set 5
F03	511F014	0.0 - 0.5	Soil	Environmental	Set 5
F04	511F003	0.0 - 0.5	Soil	Environmental	Set 5
F05	511F004	0.0 - 0.5	Soil	Environmental	Set 5
F06	511F005	0.0 - 0.5	Soil	Environmental	Set 5
F07	511F006	0.0 - 0.5	Soil	Environmental	Set 5
F08	511F007	0.0 - 0.5	Soil	Environmental	Set 5
F09	511F008	0.0 - 0.5	Soil	Environmental	Set 5
F10	511F009	0.0 - 0.5	Soil	Environmental	Set 5
F11	511F010	0.0 - 0.5	Soil	Environmental	Set 5
F12	511F011	0.0 - 0.5	Soil	Environmental, MS/MSD	Set 5

Table A.8-1
Samples Collected at CAS 06-17-02, Scattered Ordnance/Automatic Weapons Range
(Page 2 of 4)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
F13	511F012	0.0 - 0.5	Soil	Environmental	Set 5
	511F013	0.0 - 0.5	Soil	Field Duplicate of #511F012	Set 5
F14	511F015	0.0 - 0.5	Soil	Environmental	Set 5
F15	511F016	0.0 - 0.5	Soil	Environmental	Set 5
F16	511F017	0.0 - 0.5	Soil	Environmental	Set 5
F17	511F018	0.0 - 0.5	Soil	Environmental	Set 5
F18	511F019	0.0 - 0.5	Soil	Environmental	Set 5
F19	511F020	0.0 - 0.5	Soil	Environmental	Set 5
F20	511F021	0.0 - 0.5	Soil	Environmental	Set 5
F21	511F022	0.0 - 0.5	Soil	Environmental, MS/MSD	Set 5
F22	511F023	0.0 - 0.5	Soil	Environmental	Set 5
F23	511F024	0.0 - 0.5	Soil	Environmental	Set 5
	511F025	0.0 - 0.5	Soil	Field Duplicate of #511F024	Set 5
F24	511F026	0.0 - 0.5	Soil	Environmental	Set 5
F25	511F027	0.0 - 0.5	Soil	Environmental	Set 5
F26	511F028	0.0 - 0.5	Soil	Environmental	Set 5
F27	511F029	0.0 - 0.5	Soil	Environmental	Set 5
F28	511F030	0.0 - 0.5	Soil	Environmental	Set 5
F29	511F031	0.0 - 0.5	Soil	Environmental	Set 5
F30	511F032	0.0 - 0.5	Soil	Environmental	Set 5
F31	511F033	0.0 - 0.5	Soil	Environmental	Set 5
F32	511F034	0.0 - 0.5	Soil	Environmental	Set 5
F33	511F035	0.0 - 0.5	Soil	Environmental	Set 5
F34	511F036	0.0 - 0.5	Soil	Environmental	Set 5
F35	511F037	0.0 - 0.5	Soil	Environmental	Set 5
F36	511F038	0.0 - 0.5	Soil	Environmental	Set 5
F37	511F039	0.0 - 0.5	Soil	Environmental	Set 5
F38	511F040	0.0 - 0.5	Soil	Environmental	Set 5

Table A.8-1
Samples Collected at CAS 06-17-02, Scattered Ordnance/Automatic Weapons Range
(Page 3 of 4)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
F39	511F041	0.0 - 0.5	Soil	Environmental, MS/MSD	Set 5
F40	511F042	0.0 - 0.5	Soil	Environmental	Set 5
	511F043	0.0 - 0.5	Soil	Field Duplicate of #511F042	Set 5
F41	511F044	0.0 - 0.5	Soil	Environmental	Set 5
F42	511F045	0.0 - 0.5	Soil	Environmental	Set 5
F43	511F046	0.0 - 0.5	Soil	Environmental	Set 5
F44	511F047	0.0 - 0.5	Soil	Environmental	Set 5
F45	511F048	0.0 - 0.5	Soil	Environmental	Set 5
F46	511F049	0.0 - 0.5	Soil	Environmental	Set 5
F47	511F050	0.0 - 0.5	Soil	Environmental	Set 5
F48	511F051	0.0 - 0.5	Soil	Environmental	Set 5
F49	511F052	0.0 - 0.5	Soil	Environmental	Set 5
F50	511F053	0.0 - 0.5	Soil	Environmental	Set 5
F51	511F054	0.0 - 0.5	Soil	Environmental	Set 5
F52	511F055	0.0 - 0.5	Soil	Environmental	Set 5
F53	511F056	0.0 - 0.5	Soil	Environmental	Set 5
F54	511F057	0.0 - 0.5	Soil	Environmental	Set 5
F55	511F058	0.0 - 0.5	Soil	Environmental	Set 5
F56	511F059	0.0 - 0.5	Soil	Environmental	Set 5
F57	511F060	0.0 - 0.5	Soil	Environmental	Set 5
F58	511F061	0.0 - 0.5	Soil	Environmental, MS/MSD	Set 5
F59	511F062	0.0 - 0.5	Soil	Environmental	Set 5
	511F063	0.0 - 0.5	Soil	Field Duplicate of #511F062	Set 5
F60	511F064	0.0 - 0.5	Soil	Environmental	Set 5
F61	511F065	0.0 - 0.5	Soil	Environmental	Set 5
F62	511F066	0.0 - 0.5	Soil	Environmental	Set 5
F63	511F067	0.0 - 0.5	Soil	Environmental	Set 5
F64	511F068	0.0 - 0.5	Soil	Environmental	Set 5

Table A.8-1
Samples Collected at CAS 06-17-02, Scattered Ordnance/Automatic Weapons Range
(Page 4 of 4)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
F65	511F069	0.0 - 0.5	Soil	Environmental	Set 5
F66	511F070	0.0 - 0.5	Soil	Environmental	Set 5
F67	511F071	0.0 - 0.5	Soil	Environmental	Set 5
F68	511F072	0.0 - 0.5	Soil	Environmental	Set 5
F69	511F073	0.0 - 0.5	Soil	Environmental	Set 5
F70	511F074	0.0 - 0.5	Soil	Environmental	Set 5
F71	511F075	0.0 - 0.5	Soil	Environmental	Set 5
F72	511F076	0.0 - 0.5	Soil	Environmental	Set 5
F73	511F077	0.0 - 0.5	Soil	Environmental	Set 5
F74	511F078	0.0 - 0.5	Soil	Environmental	Set 5
F75	511F079	0.0 - 0.5	Soil	Environmental	Set 5
F76	511F080	0.0 - 0.5	Soil	Environmental	Set 5
F77	511F081	0.0 - 0.5	Soil	Environmental	Set 5
NA	511F301	NA	Water	Field Blank	Set 5

Set 5 = *Resource Conservation and Recovery Act* Metals, Beryllium, Explosives

ft bgs = Feet below ground surface
MS/MSD = Matrix spike/matrix spike duplicate
NA = Not applicable

A.8.1.1 Field Screening

Soil samples were field screened for alpha and beta/gamma radiation. The FSRs were compared to FSLs to guide subsequent sampling decisions. The alpha radiation FSLs were not exceeded during investigation activities, but the beta/gamma radiation FSLs were exceeded on 18 of the 77 soil samples (see Table A.8-2). The determination was made, based on experience, that the FSRs would need to be at least two to three times the FSLs before the analytical results would indicate that radiological contaminants in the soil would exceed the associated PAL. Based on this determination, Decision II sampling was not conducted.

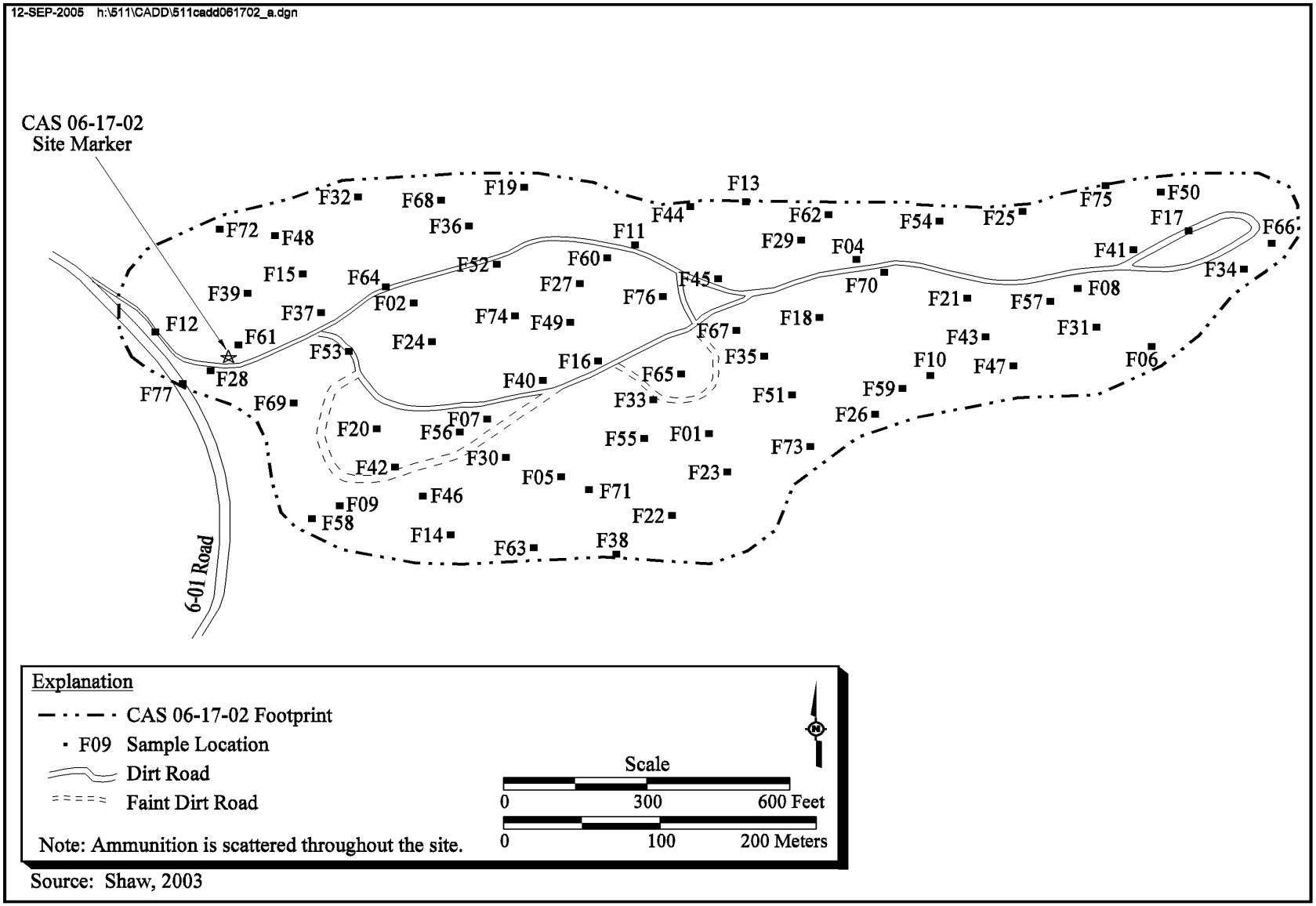


Figure A.8-1
Sample Location Map, CAS 06-17-02, Scattered Ordnance/Automatic Weapons Range

Table A.8-2
CAS 06-17-02 Sample Locations Where FSR is Greater Than FSL

Sample Location	Sample Number	Field-screening level (dpm/100 cm^2)	Field-screening result (dpm/100 cm^2)
F03	511F014	3,596	3,760
F17	511F018	3,596	3,627
F18	511F019	3,596	3,656
F19	511F020	3,596	3,602
F21	511F021	3,596	3,631
F25	511F027	3,596	3,656
F28	511F030	3,596	3,939
F29	511F031	3,596	3,751
F30	511F032	3,596	3,710
F34	511F036	3,596	3,701
F35	511F037	3,596	3,730
F40	511F042	3,672	3,880
F45	511F048	3,672	3,793
F58	511F061	3,672	3,768
F59	511F062	3,672	3,751
F61	511F065	3,672	3,789
F63	511F067	3,672	3,775
F66	511F070	3,672	3,726

dpm/100 cm^2 = Disintegrations per minute per 100 square centimeters

A.8.1.2 Sampling

Sampling activities consisted of the collection of one surface soil sample from each random location.

Samples were collected as outlined in the CAU 511 CAIP (NNSA/NSO, 2004a) and submitted for laboratory analysis.

A.8.1.3 Deviations

There were no deviations to the CAIP requirements at this CAS.

A.8.2 Investigation Results

The following sections provide analytical results from the samples collected to complete investigation activities as outlined in the CAIP. Investigation samples were analyzed for total RCRA metals, beryllium, and explosives. The analytical parameters and laboratory methods used to analyze the investigation samples are listed in Table A.2-2. Table A.8-1 lists the sample-specific analytical suite for CAS 06-17-02.

Analytical results from the soil samples with concentrations exceeding MDCs are summarized in the following sections. These results are compared to FALs and are a subset of the results that exceed MDCs. Results greater than FALs are identified by bold text in the analytical tables. A portion of the analytical results for this CAS were rejected during validation; however, these rejected data did not adversely impact closure decisions as discussed in Appendix B, Section B.1.1.1.1.

A.8.2.1 Total RCRA Metals and Beryllium

Total RCRA metal and beryllium analytical results for soil samples collected at CAS 06-17-02 that were detected above MDCs are presented in Table A.8-3. No metals were detected in soil samples in concentrations greater than FALs.

A.8.2.2 Explosives

Analytical results for explosives in soil samples collected at CAS 06-17-02 detected no contaminants in concentrations greater than MDCs or FALs.

A.8.3 Nature and Extent of Contamination

The analysis of environmental samples collected at CAS 06-17-02 revealed that no COCs are present at this site.

A.8.4 Revised Conceptual Site Model

No revision to the CSM was required.

Table A.8-3
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 06-17-02, Scatter Ordnance/Automatic Weapons Range
(Page 1 of 6)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
F01	511F001	0.0 - 0.5	2.64	47.2	1.02	0.162 (J)	4.36	14.8	--	--	--
F02	511F002	0.0 - 0.5	4.3	126	0.759	0.206 (J)	6.57	84.1	0.0422 (J)	--	--
F03	511F014	0.0 - 0.5	2.57	91.3	0.572	0.121 (J)	4.92	9.93	--	--	--
F04	511F003	0.0 - 0.5	2.79	61.5	0.699	0.187 (J)	2.33	103	--	--	--
F05	511F004	0.0 - 0.5	3.82	123	0.729	0.283 (J)	7.24	37.5	--	--	--
F06	511F005	0.0 - 0.5	4.79	148	0.954	0.224 (J)	10.6	13.3	--	--	--
F07	511F006	0.0 - 0.5	2.9	75.9	0.779	0.204 (J)	3.63	20.8	--	--	--
F08	511F007	0.0 - 0.5	3.73	91.6	0.848	0.235 (J)	6.04	14.1	--	--	--
F09	511F008	0.0 - 0.5	2.78	68.9	0.692	0.142 (J)	3.55	7.75	--	--	--
F10	511F009	0.0 - 0.5	4.97	115	1.32	0.171 (J)	12.4	13.8	--	--	--
F11	511F010	0.0 - 0.5	4.4	157	1.05	0.135 (J)	4.26	133	--	--	--
F12	511F011	0.0 - 0.5	3.52	63.8	0.554 (J)	0.115 (J)	4.04	6.16	--	--	--
F13	511F012	0.0 - 0.5	3.59	69.3	1.35	0.201 (J)	7.87	16.4	--	--	--
	511F013	0.0 - 0.5	4.02	68.7	1.44	0.189 (J)	8.83	17.5	0.0451 (J)	--	--
F14	511F015	0.0 - 0.5	2.64	131	0.801	0.183 (J)	9.23	12	--	--	--
F15	511F016	0.0 - 0.5	4.09	66.9	0.656	--	7.19	11.2	--	--	--

Table A.8-3
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 06-17-02, Scatter Ordnance/Automatic Weapons Range
(Page 2 of 6)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
F16	511F017	0.0 - 0.5	1.74	48.3	0.492 (J)	--	1.6	16.5	--	--	--
F17	511F018	0.0 - 0.5	2.29	77.2	0.719	--	4.39	9.25	--	--	--
F18	511F019	0.0 - 0.5	1.84	49.4	1.07	--	4.81	24.5	--	--	--
F19	511F020	0.0 - 0.5	2.02	59	0.493 (J)	--	3.63	7.72	--	--	--
F20	511F021	0.0 - 0.5	1.76 (J-)	58.5	0.547 (J)	--	2.67	29.9	--	--	--
F21	511F022	0.0 - 0.5	1.79 (J-)	48.4	0.687	--	3.01	19.4	0.0482 (J)	--	--
F22	511F023	0.0 - 0.5	2.68 (J-)	113	0.855	--	9.43	12.8	--	--	0.354 (J)
F23	511F024	0.0 - 0.5	2.74 (J-)	109	0.848	--	8.8	13.2	0.041 (J)	--	--
	511F025	0.0 - 0.5	2.87 (J-)	111	0.912	--	8.29	13.1	0.0394 (J)	--	--
F24	511F026	0.0 - 0.5	3.36	106	0.743	--	8.89	34.8	--	--	0.607 (J)
F25	511F027	0.0 - 0.5	1.97 (J-)	67.6	1.12	--	5.66	13.6	--	--	--
F26	511F028	0.0 - 0.5	2.78 (J-)	122	0.878	--	9.68	13.2	--	--	--
F27	511F029	0.0 - 0.5	2.88 (J-)	101	1.18	--	6.34	15.2	--	--	--
F28	511F030	0.0 - 0.5	3.7	77.8	0.573	--	5.26	8	--	--	--
F29	511F031	0.0 - 0.5	2.96 (J-)	85.6	0.935	--	4.5	15.7	--	--	--
F30	511F032	0.0 - 0.5	2.29 (J-)	80.5	0.913	--	5.23	9.79	--	--	--

Table A.8-3
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 06-17-02, Scatter Ordnance/Automatic Weapons Range
(Page 3 of 6)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
F31	511F033	0.0 - 0.5	2.67 (J-)	111	1.41	--	12.9	12	0.0399 (J)	--	--
F32	511F034	0.0 - 0.5	4.03	123	0.778	0.172 (J)	8.53	12.1	--	0.72 (J)	--
F33	511F035	0.0 - 0.5	--	58.3	1.09	--	5.53	26	--	--	--
F34	511F036	0.0 - 0.5	--	75.1	0.829	--	3.24	11.2	--	--	--
F35	511F037	0.0 - 0.5	--	81.1	0.674	--	5.9	27.9	--	--	--
F36	511F038	0.0 - 0.5	5.04	73.6 (J)[c]	0.947	0.146 (J)	9.08	10.5 (J)[d]	--	--	--
F37	511F039	0.0 - 0.5	2.53 (J-)	51.1 (J)[c]	0.522 (J)	0.152 (J)	3.26	11.3 (J)[d]	--	--	--
F38	511F040	0.0 - 0.5	4.08	122 (J)[c]	0.7	0.237 (J)	9.15	11.4 (J)[d]	--	--	--
F39	511F041	0.0 - 0.5	4.36	110 (J)[c]	0.81	0.186 (J)	8.09	22.3 (J)[d]	--	--	--
F40	511F042	0.0 - 0.5	2.5	77.8 (J)[c]	0.792	0.156 (J)	4.02	119 (J)[d]	--	--	--
	511F043	0.0 - 0.5	2.66	79.8 (J)[c]	0.766	0.159 (J)	4.12	129 (J)[d]	--	--	--
F41	511F044	0.0 - 0.5	2.02	58.4 (J)[c]	0.677	--	2.81	7.49 (J)[d]	--	--	--
F42	511F045	0.0 - 0.5	2.58	74.4 (J)[c]	0.722	0.185 (J)	3.38	45.3 (J)[d]	--	--	--

Table A.8-3
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 06-17-02, Scatter Ordnance/Automatic Weapons Range
(Page 4 of 6)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
F43	511F046	0.0 - 0.5	2.81	86.1 (J)[c]	1.12	0.144 (J)	3.65	11.8 (J)[d]	--	--	--
F44	511F047	0.0 - 0.5	4.66	94.9 (J)[c]	0.806	0.172 (J)	10	12 (J)[d]	--	--	--
F45	511F048	0.0 - 0.5	2.75	76.5 (J)[c]	0.856	0.135 (J)	3.8	10.7 (J)[d]	--	--	--
F46	511F049	0.0 - 0.5	2.91	85.6 (J)[c]	0.799	0.21 (J)	4.33	10.8 (J)[d]	--	--	--
F47	511F050	0.0 - 0.5	3.83	125 (J)[c]	0.93	0.246 (J)	7.98	14.1 (J)[d]	--	--	--
F48	511F051	0.0 - 0.5	4.78	118 (J)[c]	0.884	0.252 (J)	9.24	16.9 (J)[d]	--	--	--
F49	511F052	0.0 - 0.5	4.65	87.5 (J)[c]	0.778	0.212 (J)	8.89	13 (J)[d]	--	--	--
F50	511F053	0.0 - 0.5	1.78	54.2 (J)[c]	0.881	--	2.21	6.58 (J)[d]	--	--	--
F51	511F054	0.0 - 0.5	4.12	123 (J)[c]	0.862	0.19 (J)	9.34	18.9 (J)[d]	--	--	--
F52	511F055	0.0 - 0.5	3.86	86.4 (J)[c]	1.52	0.172 (J)	6.13	48 (J)[d]	--	--	--
F53	511F056	0.0 - 0.5	3.1	88.4 (J)[c]	0.864	0.123 (J)	6.09	10.3 (J)[d]	--	--	--
F54	511F057	0.0 - 0.5	2.92	57.3 (J)[c]	0.89	0.197 (J)	3.32	14.4 (J)[d]	--	--	--

Table A.8-3
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 06-17-02, Scatter Ordnance/Automatic Weapons Range
(Page 5 of 6)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
F55	511F058	0.0 - 0.5	3.98	108 (J)[c]	0.85	0.257 (J)	7.22	20.2	--	--	--
F56	511F059	0.0 - 0.5	3	65.1 (J)[c]	0.694	0.147 (J)	4.22	15	--	--	0.758 (J)
F57	511F060	0.0 - 0.5	5.63	106 (J)[c]	1.4	0.209 (J)	13	22.8	--	--	0.703 (J)
F58	511F061	0.0 - 0.5	3.1	87.8 (J)[c]	0.905	0.174 (J)	4.26	9.91	--	--	--
F59	511F062	0.0 - 0.5	4.52	95.7 (J)[c]	0.926	0.2 (J)	9.5	12.9	--	--	0.574 (J)
	511F063	0.0 - 0.5	3.86	95.3 (J)[c]	0.93	0.185 (J)	10	13.6	--	--	0.817 (J)
F60	511F064	0.0 - 0.5	3.65	116 (J)[c]	1.62	0.172 (J)	3.24	21.2	--	--	--
F61	511F065	0.0 - 0.5	3.54	75.8 (J)[c]	0.543 (J)	0.139 (J)	4.47	11	--	--	--
F62	511F066	0.0 - 0.5	2.78	45.9 (J)[c]	0.826	--	3.79	7.4	--	--	--
F63	511F067	0.0 - 0.5	3.07	45.1 (J)[c]	0.948	0.179 (J)	3.39	32.3	--	--	0.525 (J)
F64	511F068	0.0 - 0.5	2.37	61.6 (J)[c]	0.629	0.153 (J)	2.61	72.1	--	--	--
F65	511F069	0.0 - 0.5	3.76	104 (J)[c]	1.1	0.189 (J)	5.23	87.6	--	--	--
F66	511F070	0.0 - 0.5	3.09	76.1 (J)[c]	0.883	0.151 (J)	3.69	11.5	--	--	0.384 (J)
F67	511F071	0.0 - 0.5	3.31	124 (J)[c]	1.04	0.207 (J)	4.29	60.5	--	--	--
F68	511F072	0.0 - 0.5	3.86	81.1 (J)[c]	0.634	0.173 (J)	5.23	7.44	--	--	0.629 (J)

Table A.8-3
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 06-17-02, Scatter Ordnance/Automatic Weapons Range
(Page 6 of 6)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
F69	511F073	0.0 - 0.5	4.46	112 (J)[c]	0.686	0.188 (J)	7.73	30.5	--	--	0.487 (J)
F70	511F074	0.0 - 0.5	1.92	42.4 (J)[c]	0.709	0.148 (J)	2.6	10.1	--	--	--
F71	511F075	0.0 - 0.5	4.58	161	0.91	0.283 (J)	10.2	25.7	--	--	--
F72	511F076	0.0 - 0.5	3.63	95.6	0.68	0.195 (J)	5.7	97.6	0.0427 (J)	--	--
F73	511F077	0.0 - 0.5	3.51	58.7	0.433 (J)	0.171 (J)	3.22	8.21	--	--	0.366 (J)[e]
F74	511F078	0.0 - 0.5	4.27	123	0.743	0.188 (J)	8.08	21.8	--	--	--
F75	511F079	0.0 - 0.5	2.92	42.1	1.39	0.151 (J)	3.23	11.3	--	--	--
F76	511F080	0.0 - 0.5	2.56	63.5	0.776	0.161 (J)	2.5	12.6	--	--	--
F77	511F081	0.0 - 0.5	3.72	62.5	0.512 (J)	--	3.38	4.93	--	--	--

[a]Based on the background concentrations for metals. Background is considered the mean plus two times the standard deviation for sediment samples collected by the Nevada Bureau of Mines and Geology throughout the Nevada Test and Training Range (NBMG, 1998; Moore, 1999).
[b]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)
[c]Qualifier added to laboratory data; record accepted. Matrix spike recovery exceeds control limits.
[d]Qualifier added to laboratory data; record accepted. Matrix spike recovery exceeds control limits. Duplicate precision analysis (relative percent difference) exceeds control limits.
[e]Qualifier added to laboratory data; record accepted. Negative bias found in continuing calibration/method blank. Contract required quantitation limit check standard recovery exceeds control limits.

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
-- = Not detected above minimum reporting limits
J = Estimated value
J- = The result is an estimated quantity, but the result may be biased low. Negative bias found in continuing calibration/method blank.

A.9.0 CAS 07-08-01, Contaminated Mound

Corrective Action Site 07-08-01 is located in Area 7 of the NTS about 0.25 mi southwest of Bunker 7-800. This CAS consists of a mound and borrow pit. In 2003, an inert landmine used for training purposes was discovered adjacent to the mound. Soil contamination originating from the fallout of atmospheric nuclear weapons testing in the vicinity of CAS 07-08-01 is not considered part of this CAS as specified in the CAU 511 CAIP (NNSA/NSO, 2004a). Additional detail is provided in the CAIP (NNSA/NSO, 2004a).

A.9.1 Corrective Action Investigation

A total of five soil characterization samples (including one FD) were collected during investigation activities at CAS 07-08-01. The sample IDs, locations, types, and analyses are listed in Table A.9-1. The sample locations are shown on Figure A.9-1. The specific CAI activities conducted to satisfy the CAIP requirements at this CAS are described in the following sections.

Table A.9-1
Samples Collected at CAS 07-08-01, Contaminated Mound

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
H01	511H001	0.5 - 1.0	Soil	Environmental	Set 2, Set 5, PCBs
H02	511H002	0.5 - 1.0	Soil	Environmental	Set 2, Set 5, PCBs
	511H003	0.5 - 1.0	Soil	Field Duplicate of #511H002	Set 2, Set 5, PCBs
H03	511H004	0.0 - 0.5	Soil	Environmental	Set 2, Set 5, PCBs
H04	511H005	0.0 - 0.5	Soil	Environmental, MS/MSD	Set 2, Set 5, PCBs
NA	511H301	NA	Water	Field Blank	Set 2, Set 5, PCBs

Set 2 = Gamma Spectroscopy, Isotopic Uranium, Isotopic Plutonium, Strontium-90
Set 5 = *Resource Conservation and Recovery Act Metals*, Beryllium, Explosives

ft bgs = Feet below ground surface
MS/MSD = Matrix spike/matrix spike duplicate
NA = Not applicable
PCB = Polychlorinated biphenyl

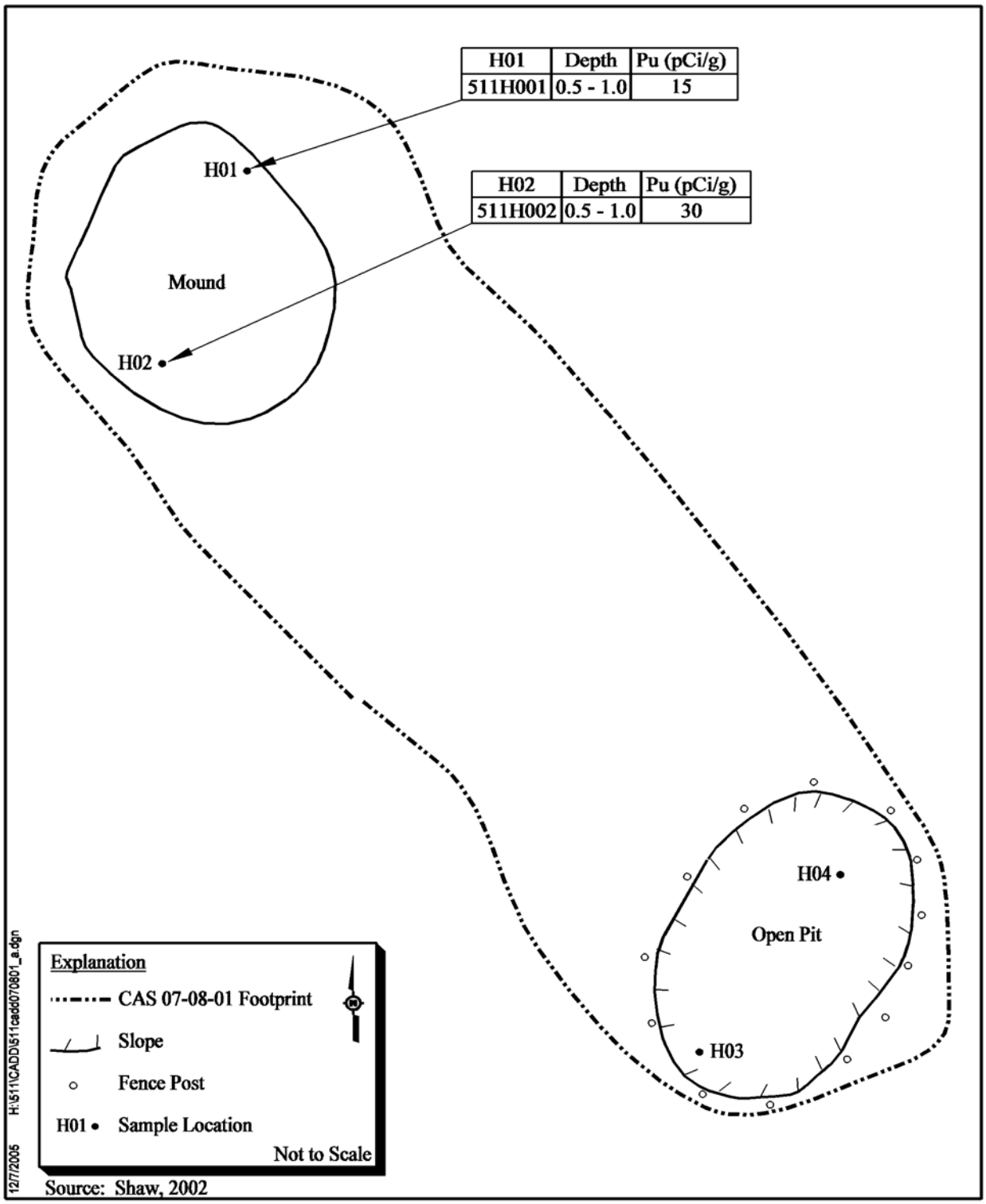


Figure A.9-1
Sample Location Map, CAS 07-08-01, Contaminated Mound

A.9.1.1 Field Screening

Soil samples were field screened for alpha and beta/gamma radiation. The FSRs were compared to FSLs to guide subsequent sampling decisions. The alpha and beta/gamma radiation FSLs were not exceeded during field investigation activities.

A.9.1.2 Sampling

Decision I sampling included the collection of four samples. Two samples were collected from the borrow pit; one each from the high and low points. Two samples were collected at the northern and southern edge of the mound (below removed debris and MEC items).

Samples were collected as outlined in the CAU 511 CAIP (NNSA/NSO, 2004a) and submitted for laboratory analysis.

A.9.1.3 Deviations

There were no deviations to the CAIP requirements at this CAS.

A.9.2 Investigation Results

The following sections provide analytical results from the samples collected to complete investigation activities as outlined in the CAIP. Investigation samples were analyzed for total RCRA metals and beryllium, PCBs, explosives, gamma spectroscopy, isotopic U, isotopic Pu, and Sr-90. The analytical parameters and laboratory methods used to analyze the investigation samples are listed in Table A.2-2. Table A.9-1 lists the sample-specific analytical suite for CAS 07-08-01.

Analytical results from the soil samples with concentrations exceeding MDCs are summarized in the following sections. These results are compared to FALs and are a subset of the results that exceed MDCs. Results greater than FALs are identified by bold text in the analytical tables. A portion of the analytical results for this CAS were rejected during validation; however, these rejected data did not adversely impact closure decisions as discussed in Appendix B.

A.9.2.1 Total Metals and Beryllium

Total metal and beryllium analytical results for soil samples collected at CAS 07-08-01 that were detected above MDCs are presented in Table A.9-2. No metals were detected in soil samples at concentrations greater than the FALs.

Table A.9-2
Soil Sample Results for Metals Detected Above
Minimum Reporting Limits at CAS 07-08-01, Contaminated Mound

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)						
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Silver
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**5,100[b]**
H01	511H001	0.5 - 1.0	2.57	109 (J)[c]	0.656	3.08	4.62	10.5	--
H02	511H002	0.5 - 1.0	2.73	121 (J)[c]	0.697	1.9	4.46	8.28	0.402 (J-)
	511H003	0.5 - 1.0	2.77	114 (J)[c]	0.676	8.86	4.06	8.29	0.401 (J-)
H03	511H004	0.0 - 0.5	2.75	118 (J)[c]	0.711	0.156 (J)	3.5	7.42	0.308 (J-)
H04	511H005	0.0 - 0.5	2.63	147 (J)[c]	0.687	0.125 (J)	2.91	8.07	--

[a]Based on the background concentrations for metals. Background is considered the mean plus two times the standard deviation for sediment samples collected by the Nevada Bureau of Mines and Geology throughout the Nevada Test and Training Range (NBMG, 1998; Moore, 1999).
[b]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)
[c]Qualifier added to laboratory data; record accepted. Matrix spike recovery exceeds control limits.

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
-- = Not detected above minimum reporting limits
J = Estimated value
J- = The result is an estimated quantity, but the result may be biased low. Negative bias found in continuing calibration/method blank.

A.9.2.2 Polychlorinated Biphenyls

Analytical results for PCBs in soil samples collected at CAS 07-08-01 did not exceed the MDCs.

A.9.2.3 Gamma-Emitting Radionuclides

Gamma-emitting radionuclide analytical results for soil samples collected at CAS 07-08-01 that were detected above MDCs are presented in Table A.9-3. No gamma-emitting radionuclides were detected in concentrations greater than FALs.

A.9.2.4 Plutonium, Strontium-90, and Uranium Isotopes

Plutonium, Sr-90, and U analytical results for soil samples collected at CAS 07-08-01 detected above MDCs are presented in Table A.9-4. No Sr-90 or U was detected above FALs.

Plutonium-239 was detected at a concentration of 15 pCi/g at sample location H01 and 30 pCi/g at sample location H02, which exceeds the FAL of 12.7 pCi/g. The Pu-contaminated soil is attributable to atmospheric nuclear testing and is not part of the investigation. The mound (CAS 07-08-01) and surrounding soils have been evaluated by the Soils Project and is currently in the process of creating a new CAS to conduct investigation activities of the area in the future.

A.9.3 Nature and Extent of Contamination

Based on the analytical results for soil samples collected within CAS 07-08-01, no COCs are present at this CAS.

A.9.4 Revised Conceptual Site Model

The CAIP requirements were met at this CAS, and no revisions were necessary to the CSM.

Table A.9-3
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 07-08-01, Contaminated Mound

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)											
			Actinium-228[a]		Americium-241[b]	Bismuth-214[a]		Cesium-137[b]	Lead-212[a]		Lead-214[a]		Thallium-208[a]	
Preliminary Action Levels			5	15	12.7	5	15	12.2	5	15	5	15	5	15
Depth bgs (cm)			<15	>15		<15	>15		<15	>15	<15	>15	<15	>15
H01	511H001	0.5 - 1.0	NA	1.57 (G)	3.7 (J)[c]	NA	1.05 (G,J)	4.31 (G)	NA	2.07 (J)[c]	NA	1.06 (G,J)	NA	0.62 (G)
H02	511H002	0.5 - 1.0	NA	1.36 (G)	3.1 (J)[c]	NA	1.17 (G,J)	3.77 (G)	NA	1.8 (J)[c]	NA	1.04 (G,J)	NA	0.66 (G)
	511H003	0.5 - 1.0	NA	1.64 (G)	3.1 (J)[c]	NA	0.99 (G,J)	3.45 (G)	NA	1.81 (J)[c]	NA	1.21 (G,J)	NA	0.6 (G)
H03	511H004	0.0 - 0.5	1.5 (G)	NA	--	1 (G,J)	NA	--	1.75 (J)[c]	NA	1.18 (G,J)	NA	0.52 (G)	NA
H04	511H005	0.0 - 0.5	1.33 (G)	NA	0.48 (J)[c]	1.05 (G,J)	NA	1.39 (G)	1.64 (J)[c]	NA	1.26 (G,J)	NA	0.61 (G)	NA

[a]Taken from the generic guidelines for residual concentrations of actinium-228, bismuth-214, lead-212, lead-214, thallium-208, and thorium-232, as found in Chapter IV of DOE Order 5400.5, Change 2, "Radiation Protection of the Public and Environment." (DOE, 1993). The PALs for these isotopes is specified as 5 pCi/g averaged over the first 15 cm of soil and 15 pCi/g for deeper soils (DOE, 1993). For purposes of this document, 15 cm is assumed to be equivalent to 0.5 ft (6 inches); therefore, 5 pCi/g represents the PALs for these radionuclides in the surface soil (0.0 - 0.5 ft depth).
[b]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.
[c]Qualifier added to laboratory data; record accepted. Sample does not meet counting geometry requirements.

ft bgs = Feet below ground surface
cm = Centimeter
pCi/g = Picocuries per gram
-- = Not detected above minimum reporting limits
> = Greater than
< = Less than
G = Sample density differs by more than 15% of laboratory control sample density
J = Estimated value
LT = Result is less than the requested minimum detectable concentration, greater than the sample specific minimum detectable concentration
PAL = Preliminary action level

Table A.9-4
Soil Sample Results for Isotopes Detected Above Minimum Detectable Concentration at CAS 07-08-01, Contaminated Mound

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)				
			Plutonium-238	Plutonium-239	Uranium-234	Uranium-235	Uranium-238
Final Action Levels[a]			**13.0**	**12.7**	**143**	**17.5**	**105**
H01	511H001	0.5 - 1.0	0.48 (J)	**15** (J)	1.1	0.057	0.98
H02	511H002	0.5 - 1.0	1.01 (J)	**30** (J)	1.1	0.056	0.84
	511H003	0.5 - 1.0	2.06 (J)	**21.2** (J)	1.16	0.056	0.87
H03	511H004	0.0 - 0.5	0.083 (J)	4.05 (J)	0.88	--	1.06
H04	511H005	0.0 - 0.5	0.269 (J)	2.54 (J)	0.87	0.072	0.95

[a]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.

ft bgs = Feet below ground surface
pCi/g = Picocuries per gram
J = Estimated value. Qualifier added to laboratory data; record accepted. Duplicate precision analysis (relative percent difference) exceeds control limits.
-- = Not detected above minimum reporting limits

A.10.0 CAS 18-99-10, Ammunition Dump

Corrective Action Site 18-99-10 is located in Area 18 of the NTS about 1.5 mi south of the Pahute Airstrip just off Buckboard Mesa Road. This CAS consisted of four separate debris sites identified as Site A, Site B, Site C, and Site D. Site A consisted of a pile of MD approximately 25 ft in diameter and 6 ft high. Site B consisted of a variety of MD strewn throughout the immediate area. Site C consisted of the buried remains of a truck and a variety of MD strewn throughout the immediate area. Site D consisted of a pile of MD.

Additional detail regarding planned CAI activities is provided in the CAIP (NNSA/NSO, 2004a).

A.10.1 Corrective Action Investigation

A total of 22 soil investigation samples (including 1 FD) were collected during investigation activities at CAS 18-99-10. The sample IDs, locations, types, and analyses are listed in Table A.10-1. The CAS is shown on Figure A.10-1.

Radiological screening of the debris at Site A revealed items with alpha and beta/gamma contamination. A swipe sample was collected from a pipe located in the Site A debris pile and analysis verified the presence of Am-241 in concentrations.

The specific CAI activities conducted to satisfy the CAIP requirements at this CAS are described in the following sections.

A.10.1.1 Field Screening

Soil samples were field screened for alpha and beta/gamma radiation. The FSRs were compared to FSLs to guide subsequent sampling decisions. While the beta/gamma radiation FSLs were not exceeded during environmental sampling activities, the alpha FSR was exceeded at one location. The Site A North sample had a FSR beta/gamma reading of 82.2 dpm/100 cm^2, which exceeded the FSL of 74 dpm/100 cm^2. The determination was made, based on experience, that the FSRs would need to be at least two to three times the FSLs before the analytical results of the contaminant in the soil would exceed the associated PAL. Consequently, no step-out sampling was conducted.

Table A.10-1
Samples Collected at CAS 18-99-10, Ammunition Dump
(Page 1 of 2)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
Site A	511J011	0.0 - 0.5	Soil	Environmental	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
	511J012	0.0 - 0.5	Soil	Environmental	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
	511J013	0.0 - 0.5	Soil	Environmental	Set 2, Explosives
	511J014	0.0 - 0.5	Soil	Environmental	Set 2, Explosives
	511J015	0.0 - 0.5	Soil	Environmental	Set 2, Explosives
	511J016	0.0 - 0.5	Soil	Environmental	Set 2, Explosives
	511J017	0.0 - 0.5	Soil	Environmental	Set 2, Explosives
	511J018	0.0 - 0.5	Soil	Environmental	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
Site C	511J019	0.0 - 0.5	Soil	Environmental	Explosives
	511J020	0.0 - 0.5	Soil	Environmental	Explosives
Site D	511J021	0.0 - 0.5	Soil	Environmental	Explosives
Site B-01	511J001	0.0 - 0.5	Soil	Environmental	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
Site B-02	511J002	0.0 - 0.5	Soil	Environmental	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
Site B-03	511J003	0.0 - 0.5	Soil	Environmental	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
	511J004	0.0 - 0.5	Soil	Field Duplicate of #511J003	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
Site C-07	511J008	0.0 - 0.5	Soil	Environmental	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
Site C-08	511J009	3.5 - 4.0	Soil	Environmental	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
Site C-09	511J010	0.0 - 0.5	Soil	Environmental, MS/MSD	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
Site D-04	511J005	0.0 - 0.5‘	Soil	Environmental	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
Site D-05	511J006	0.0 - 0.5	Soil	Environmental	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
Site D-06	511J007	0.0 - 0.5	Soil	Environmental	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs

Table A.10-1
Samples Collected at CAS 18-99-10, Ammunition Dump
(Page 2 of 2)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
Site D-07	511J022	0.0 - 0.5	Soil	Environmental	Explosives
Site B	511J301	NA	Water	Trip Blank	Total VOCs
	511J302	NA	Water	Field Blank	Set 2, Set 5, PCBs, TPH-DRO, Total VOCs
	511J303	NA	Water	Trip Blank	Total VOCs
NA	511J304	NA	Water	Trip Blank	Total VOCs
NA	511J305	NA	Water	Trip Blank	Total VOCs
NA	511J306	NA	Water	Trip Blank	Total VOCs
Site A - South	511J501	0.0 - 0.5	Soil	Waste Management	Set 6
Site A - West	511J502	0.0 - 0.5	Soil	Waste Management	Set 6
Site A - East	511J503	0.0 - 0.5	Soil	Waste Management	Set 6
Site A - North	511J504	0.0 - 0.5	Soil	Waste Management	Set 6
Site A	511J505	NA	Swipe	Waste Management	Set 2

Set 2 = Gamma Spectroscopy, Isotopic Uranium, Isotopic Plutonium, Strontium-90
Set 5 = RCRA Metals, Beryllium, Explosives
Set 6 = Gamma, Spectroscopy, Isotopic Uranium, Isotopic Plutonium, Strontium-90, Explosives, TPH-DRO, TCLP VOCs, TCLP SVOCs, TCLP Resource Conservation and Recovery Act Metals, TCLP Beryllium

DRO = Diesel-range organics
ft bgs = Feet below ground surface
MS/MSD = Matrix spike/matrix spike duplicate
NA = Not applicable
PCB = Polychlorinated biphenyl
TCLP = Toxicity characteristic leaching procedure
TPH = Total petroleum hydrocarbons
VOC = Volatile organic compound

A.10.1.2 Sampling

Decision I sampling included the collection of 19 surface samples, 2 matrix spike (MS)/matrix spike duplicate (MSD) samples, and 1 FD using grab sample techniques. Samples were collected from native soil at a depth of 0.0 to 0.5 ft bgs with one exception (511J009), which was collected from 3.5 to 4.0 ft bgs. No Decision II sampling was required.

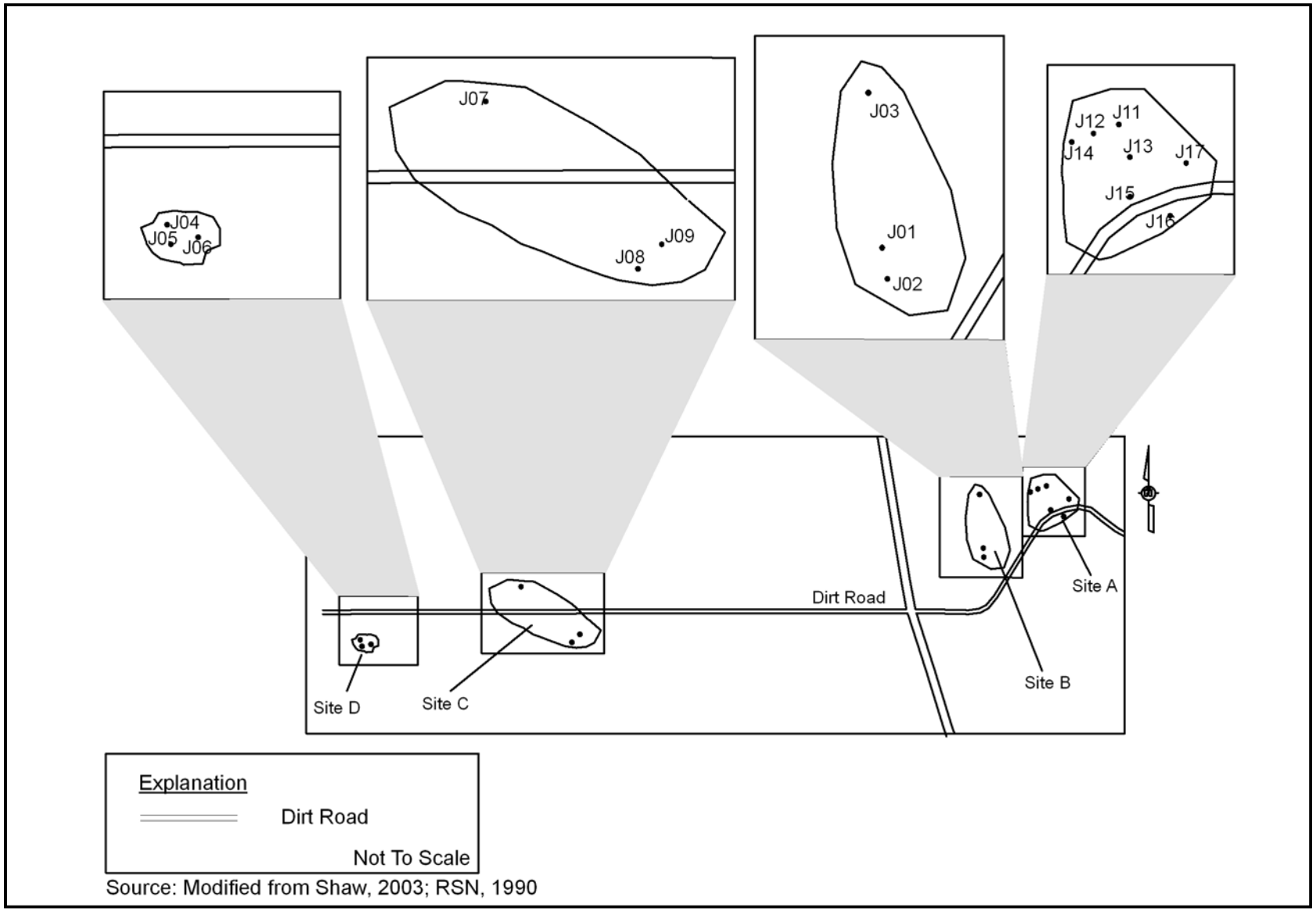


Figure A.10-1
Sample Location Map, CAS 18-99-10, Ammunition Dump

Samples were collected as outlined in the CAU 511 CAIP (NNSA/NSO, 2004a) and submitted for laboratory analysis.

A.10.1.3 Deviations

There were no deviations to the CAIP requirements at this CAS.

A.10.2 Investigation Results

The following sections provide analytical results from the samples collected to complete investigation activities as outlined in the CAIP. Investigation samples were analyzed for total VOCs, TPH-DRO, total RCRA metals, beryllium, PCBs, explosives, gamma spectroscopy, isotopic U, isotopic Pu, and Sr-90. The analytical parameters and laboratory methods used to analyze the investigation samples are listed in Table A.2-2. Table A.10-1 lists the sample-specific analytical suite for CAS 18-99-10.

Analytical results from the soil samples with concentrations exceeding MDCs are summarized in the following sections. These results are compared to FALs and are a subset of the results that exceed MDCs. Results greater than FALs are identified by bold text in the analytical tables. A portion of the analytical results for this CAS were rejected during validation; however, these rejected data did not adversely impact closure decisions as discussed in Appendix B, Section B.1.4.

A.10.2.1 Total Volatile Organic Compounds

Toluene was the only VOC at CAS 18-99-10 that was detected above MDCs are as presented in Table A.10-2. The reported toluene did not exceed the FAL.

A.10.2.2 Total Semivolatile Organic Compounds

Total SVOC analytical results for soil samples collected at CAS 18-99-10 that were detected above MDCs are presented in Table A.10-3. No SVOCs were detected in soil samples in concentrations greater than FALs.

Table A.10-2
Soil Sample Results for Total VOCs Detected Above Minimum Reporting Limits at CAS 18-99-10, Ammunition Dump

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (µg/kg)
			Toluene
Final Action Levels[a]			520,000
Site A	511J012	0.0 - 0.5	2.8 (J)
	511J018	0.0 - 0.5	3.8 (J)
Site C-09	511J010	0.0 - 0.5	2.8 (J)

[a]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)

ft bgs = Feet below ground surface
µg/kg = Micrograms per kilogram
J = Estimated value

Table A.10-3
Soil Sample Results for Total SVOCs Detected Above Minimum Reporting Limits at CAS 18-99-10, Ammunition Dump

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (µg/kg)
			Diethylphthalate
Final Action Levels[a]			100,000,000
Site A	511J018	0.0 - 0.5	290 (J)

[a]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)

ft bgs = Feet below ground surface
µg/kg = Micrograms per kilogram
J = Estimated value

A.10.2.3 Total RCRA Metals and Beryllium

Total RCRA metals and beryllium analytical results for soil samples collected at CAS 18-99-10 that were detected above MDCs are presented in Table A.10-4. No metals were detected in soil samples above FALs.

Table A.10-4
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 18-99-10, Ammunition Dump

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)							
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Silver
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**
Site A	511J011	0.0 - 0.5	2.7	75.1	0.661	1.73	5.18	8.51	--	0.401 (J)
	511J012	0.0 - 0.5	2.04	72.5	0.609	1.67	4.87	12.7	--	--
	511J018	0.0 - 0.5	2.68	94.3	0.795	0.129 (J)	5.78	10.3	0.0521 (J)	--
Site B-01	511J001	0.0 - 0.5	4.09	60.7 (J)[c]	0.532 (J)	0.202 (J)	3.47	12.6	--	--
Site B-02	511J002	0.0 - 0.5	5.41	79.2 (J)[c]	0.502 (J)	0.255 (J)	4.99	11.3	--	--
Site B-03	511J003	0.0 - 0.5	2.04	--	0.412 (J)	0.599	3.77	8.27	0.349 (J-)	--
	511J004	0.0 - 0.5	2.88	105 (J)[c]	0.438 (J)	1.38	2.84	6.72	--	--
Site C-07	511J008	0.0 - 0.5	3.18	101 (J)[c]	0.646	--	4.73	8.9	--	0.589 (J-)
Site C-08	511J009	3.5 - 4.0	2.83	80.7 (J)[c]	0.309 (J)	--	2.09	4.85	--	--
Site C-09	511J010	0.0 - 0.5	3.24	156 (J)[c]	0.467 (J)	0.163 (J)	2.89	7.51	--	--
Site D-04	511J005	0.0 - 0.5	4.26	71 (J)[c]	0.505 (J)	0.326 (J)	4.58	10.9	--	--
Site D-05	511J006	0.0 - 0.5	4.3	78.1 (J)[c]	0.569	0.306 (J)	5.16	10.2	--	0.291 (J-)
Site D-06	511J007	0.0 - 0.5	3.85	88.3 (J)[c]	0.623	0.176 (J)	6.57	17.2	--	--

[a]Based on the background concentrations for metals. Background is considered the mean plus two times the standard deviation for sediment samples collected by the Nevada Bureau of Mines and Geology throughout the Nevada Test and Training Range (NBMG, 1998; Moore, 1999).
[b]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)
[c]Qualifier added to laboratory data; record accepted. Matrix spike recovery exceeds control limits. Duplicate precision analysis (relative percent difference) exceeds control limits.

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
NA = Not applicable
-- = Not detected above minimum reporting limits
J = Estimated value
J- = The result is an estimated quantity, but the result may be biased low. Negative bias found in continuing calibration/method blank. Contract required quantitative limit check standard recovery exceeds control limits.

A.10.2.4 Total Petroleum Hydrocarbons-Diesel-Range Organics

The TPH-DRO analytical results for soil samples collected at CAS 18-99-10 that were detected above MDCs are presented in Table A.10-5. Sample 511J005 was found to contain concentrations of TPH-DRO greater than PALs. However, analytical results indicated that the hazardous constituents of TPH (VOCs and SVOCs) were below the FALs. Appendix C provides additional detail on the comparison of hazardous constituents of TPH to FALS.

Table A.10-5
Soil Sample Results for TPH-DRO Detected Above Minimum Reporting Limits at CAS 18-99-10, Ammunition Dump

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)
			Diesel-Range Organics
Preliminary Action Levels[a]			100
Site A	511J011	0.0 - 0.5	24
	511J018	0.0 - 0.5	21
Site B-03	511J003	0.0 - 0.5	45
	511J004	0.0 - 0.5	23
Site C-08	511J009	3.5 - 4.0	74
Site D-04	511J005	0.0 - 0.5	**120**
Site D-05	511J006	0.0 - 0.5	89
Site D-06	511J007	0.0 - 0.5	94

[a]Based on *Nevada Administrative Code*; Contamination of soil: Establishment of action levels (NAC, 2002)

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram

A.10.2.5 Polychlorinated Biphenyls

Analytical results for PCBs in soil samples collected at CAS 18-99-10 did not exceed the MDCs.

A.10.2.6 Explosives

Analytical results for explosives in soil samples collected at CAS 18-99-10 did not exceed the MDCs or FALs.

A.10.2.7 Gamma-Emitting Radionuclides

Gamma-emitting radionuclide analytical results for soil samples collected at CAS 18-99-10 that were detected above MDCs are presented in Table A.10-6. No analytical results for gamma-emitting radionuclides detected concentrations in excess of FALs. A swipe sample from a pipe located in the Site A debris pile was contaminated with Am-241. The contents of the entire debris pile as well as approximately 6 inches of soil below the debris pile was treated as contaminated, and was removed and disposed of as LLW. Confirmation samples were collected and analyzed for Am-241. No contamination remains at the site.

A.10.2.8 Plutonium, Strontium-90, and Uranium Isotopes

Analytical results for isotopes detected in soil samples in concentrations greater than MDCs are presented in Table A.10-7. No isotopic Pu, U, or Sr-90 exceeded FALs.

A.10.3 Nature and Extent of Contamination

Based on the analytical results, there is no contamination above COCs remaining at this site.

A.10.4 Revised Conceptual Site Model

The CAIP requirements were met at this CAS, and no revisions were necessary to the CSM.

Table A.10-6
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 18-99-10, Ammunition Dump
(Page 1 of 3)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)													
			Actinium-228[a]		Americium-241[b]	Bismuth-212[a]		Bismuth-214[a]		Cesium-137[b]	Lead-212[a]		Lead-214[a]		Thallium-208[a]	
Final Action Levels			**5**	**15**	**12.7**	**5**	**15**	**5**	**15**	**12.2**	**5**	**15**	**5**	**15**	**5**	**15**
Depth bgs (cm)			**<15**	**>15**		**<15**	**>15**	**<15**	**>15**		**<15**	**>15**	**<15**	**>15**	**<15**	**>15**
Site A	511J011	0.0 - 0.5	2.15 (G)	NA	--	--	NA	1.22 (G, J)	NA	--	2.57 (J)[d]	NA	1.31 (G, J)	NA	0.93 (G)	NA
	511J012	0.0 - 0.5	1.83 (G)	NA	2.03 (J)[c]	--	NA	0.98 (G, J)	NA	0.34 (G, LT)	2.4 (J)[d]	NA	1.21 (G, J)	NA	0.8 (G)	NA
	511J013	0.0 - 0.5	2.08 (G)	NA	--	--	NA	1.09 (G, J)	NA	--	2.58 (J)[d]	NA	1.19 (G, J)	NA	0.77 (G)	NA
	511J014	0.0 - 0.5	1.87 (G)	NA	--	2.51 (G)	NA	0.82 (G, J)	NA	0.57 (G)	2.17 (J)[d]	NA	0.91 (G, J)	NA	0.67 (G)	NA
	511J015	0.0 - 0.5	2.53 (G)	NA	--	2.2 (G)	NA	1.01 (G, J)	NA	0.436 (G, LT)	2.41 (J)[d]	NA	1.11 (G, J)	NA	0.82 (G)	NA
	511J016	0.0 - 0.5	1.93 (G)	NA	--	--	NA	1.24 (G, J)	NA	0.31 (G, LT)	2.25 (J)[d]	NA	1.24 (G, J)	NA	0.73 (G)	NA
	511J017	0.0 - 0.5	1.69 (G)	NA	--	--	NA	0.83 (G, J)	NA	0.71 (G)	2.37 (J)[d]	NA	1.23 (G, J)	NA	0.84 (G)	NA
	511J018	0.0 - 0.5	2.05 (G)	NA	--	--	NA	1.32 (G, J)	NA	0.5 (G, LT)	2.87 (J)[d]	NA	1.35 (G, J)	NA	0.76 (G)	NA
Site B-01	511J001	0.0 - 0.5	3.46 (G)	NA	--	--	NA	1.76 (G, J)	NA	1.06 (G)	3.84 (J)[d]	NA	1.72 (G, J)	NA	0.95 (G)	NA
Site B-02	511J002	0.0 - 0.5	3.2 (G)	NA	--	4.1 (G)	NA	1.62 (G, J)	NA	0.58 (G)	3.06 (J)[d]	NA	1.76 (G, J)	NA	1.1 (G)	NA

Table A.10-6
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 18-99-10, Ammunition Dump
(Page 2 of 3)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)													
			Actinium-228[a]		Americium-241[b]	Bismuth-212[a]		Bismuth-214[a]		Cesium-137[b]	Lead-212[a]		Lead-214[a]		Thallium-208[a]	
Final Action Levels			**5**	**15**	**12.7**	**5**	**15**	**5**	**15**	**12.2**	**5**	**15**	**5**	**15**	**5**	**15**
Depth bgs (cm)			**<15**	**>15**		**<15**	**>15**	**<15**	**>15**		**<15**	**>15**	**<15**	**>15**	**<15**	**>15**
Site B-03	511J003	0.0 - 0.5	2.45 (G)	NA	--	--	NA	1.08 (G, J)	NA	--	2.45 (J)[d]	NA	1.46 (G,J)	NA	0.75 (G)	NA
	511J004	0.0 - 0.5	2.51 (G)	NA	--	--	NA	1.22 (G, J)	NA	--	3.18 (J)[d]	NA	1.56 (G, J)	NA	0.84 (G)	NA
Site C-07	511J008	0.0 - 0.5	2.14 (G)	NA	--	--	NA	1.35 (G, J)	NA	0.35 (G, LT)	3.01 (J)[d]	NA	1.31 (G, J)	NA	0.91 (G)	NA
Site C-08	511J009	3.5 - 4.0	NA	2.59 (G)	--	NA	--	NA	1.26 (G,J)	--	NA	2.82 (J)[d]	NA	1.39 (G, J)	NA	0.93 (G)
Site C-09	511J010	0.0 - 0.5	2.39 (G)	NA	--	4.2 (G)	NA	1.29 (G, J)	NA	--	2.97 (J)[d]	NA	1.26 (G, J)	NA	0.84 (G)	NA
Site D-04	511J005	0.0 - 0.5	2.87 (G)	NA	--	3.7 (G)	NA	1.64 (G, J)	NA	--	3.05 (J)[d]	NA	1.46 (G, J)	NA	0.98 (G)	NA
Site D-05	511J006	0.0 - 0.5	2.13 (G)	NA	--	--	NA	1.4 (G, J)	NA	0.32 (G, LT)	2.95 (J)[d]	NA	1.79 (G, J)	NA	0.91 (G)	NA
Site D-06	511J007	0.0 - 0.5	2.19 (G)	NA	--	3.2 (G)	NA	1.25 (G, J)	NA	0.4 (G, LT)	2.98 (J)[d]	NA	1.42 (G, J)	NA	0.91 (G)	NA

Table A.10-6
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 18-99-10, Ammunition Dump
(Page 3 of 3)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)													
			Actinium-228[a]		Americium-241[b]	Bismuth-212[a]		Bismuth-214[a]		Cesium-137[b]	Lead-212[a]		Lead-214[a]		Thallium-208[a]	
Final Action Levels			5	15	12.7	5	15	5	15	12.2	5	15	5	15	5	15
Depth bgs (cm)			<15	>15		<15	>15	<15	>15		<15	>15	<15	>15	<15	>15

[a]Taken from the generic guidelines for residual concentrations of actinium-228, bismuth-214, lead-212, lead-214, thallium-208, and thorium-232, as found in Chapter IV of DOE Order 5400.5, Change 2, "Radiation Protection of the Public and Environment." (DOE, 1993). The PALs for these isotopes is specified as 5 pCi/g averaged over the first 15 cm of soil and 15 pCi/g for deeper soils (DOE, 1993). For purposes of this document, 15 cm is assumed to be equivalent to 0.5 ft (6 inches); therefore, 5 pCi/g represents the PALs for these radionuclides in the surface soil
(0.0 - 0.5 ft depth).
[b]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.
[c]Qualifier added to laboratory data; record accepted. Duplicate normalized difference exceeds control limits.
[d]Qualifier added to laboratory data; record accepted. Sample does not meet counting geometry requirements.

ft bgs = Feet below ground surface
cm = Centimeter
pCi/g = Picocuries per gram
-- = Not detected above minimum reporting limits
> = Greater than
< = Less than
G = Sample density differs by more than 15% of laboratory control sample density
J = Estimated value
LT = Result is less than the requested minimum detectable concentration, greater than the sample specific minimum detectable concentration
NA = Not applicable
PAL = Preliminary action level

Table A.10-7
Soil Sample Results for Isotopes Detected Above Minimum Reporting Limits at CAS 18-99-10, Ammunition Dump

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)					
			Plutonium-238	Plutonium-239	Strontium-90	Uranium-234	Uranium-235	Uranium-238
Final Action Levels[a]			**13.0**	**12.7**	**838**	**143**	**17.5**	**105**
Site A	511J011	0.0 - 0.5	--	0.228	--	1.14	0.058	0.96
	511J012	0.0 - 0.5	0.11	8	0.35 (LT)	0.99	--	0.89
	511J013	0.0 - 0.5	--	0.077	--	0.99	--	0.94
	511J014	0.0 - 0.5	0.188	1.59	--	0.84	--	0.73
	511J015	0.0 - 0.5	0.262	1.2	--	1.09	--	1.04
	511J016	0.0 - 0.5	0.098	0.352	--	1.09	--	1.08
	511J017	0.0 - 0.5	0.232	0.91	--	0.92	--	1.02
	511J018	0.0 - 0.5	0.084	0.49	--	0.78 (M3)	--	0.78
Site B-01	511J001	0.0 - 0.5	--	0.234	--	1.3	0.098	1.13
Site B-02	511J002	0.0 - 0.5	--	0.43	--	1.28	0.077	1.17
Site B-03	511J003	0.0 - 0.5	0.071	0.244	--	0.93	0.055	0.97
	511J004	0.0 - 0.5	--	0.191	--	1.38	0.118	1.18
Site C-07	511J008	0.0 - 0.5	0.055	0.351	--	1	0.066	0.98
Site C-08	511J009	3.5 - 4.0	--	--	--	1.3	0.148	1.43
Site C-09	511J010	0.0 - 0.5	--	0.033 (LT)	--	1.3	0.123	1.34
Site D-04	511J005	0.0 - 0.5	--	0.316	--	1.36	0.106	1.06
Site D-05	511J006	0.0 - 0.5	--	0.176	--	1.2	0.081	1.05
Site D-06	511J007	0.0 - 0.5	--	0.21	--	0.92	0.079	0.94

[a]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.

ft bgs = Feet below ground surface
pCi/g = Picocuries per gram
LT = Result is less than the requested minimum detectable concentration, greater than the sample specific minimum detectable concentration
M3 = The requested minimum detectable concentration was not met, but the reported activity is greater than the reported minimum detectable concentration
-- = Not detected above minimum reporting limits

A.11.0 CAS 19-19-03, Waste Dump (Piles & Debris)

Corrective Action Site 19-19-03 is located in Area 19 of the NTS approximately 250 ft north of the intersection of Pahute Mesa Road and the 19-03 Road. The primary feature of the CAS is the remains of a large water sump used to support operations at the Area 19 camp and the associated debris, which is the pipes and pump stands that were used to transfer water in and out of the sump. Additional detail is provided in the CAIP (NNSA/NSO, 2004a).

A.11.1 Corrective Action Investigation

A total of three soil characterization samples (including one FD) were collected during investigation activities at CAS 19-19-03. The sample IDs, locations, types, and analyses are listed in Table A.11-1. The sample locations are shown on Figure A.11-1. The specific CAI activities conducted to satisfy the CAIP requirements at this CAS are described in the following sections.

Table A.11-1
Samples Collected at CAS 19-19-03, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depth (ft bgs)	Matrix	Purpose	Analyses
G01	511G001	0.0 - 0.5	Soil	Environmental, MS/MSD	Set 3
G02	511G002	0.0 - 0.5	Soil	Environmental	Set 3
	511G003	0.0 - 0.5	Soil	Field Duplicate of #511G002	Set 3
NA	511G301	NA	Water	Trip Blank	Total VOCs

Set 3 = Total VOCs, Total SVOCs, *Resource Conservation and Recovery Act* Metals, Beryllium, Total Petroleum Hydrocarbons-Diesel-Range Organics, Polychlorinated Biphenyls, Gamma Spectroscopy, Isotopic Uranium, Isotopic Plutonium, Strontium-90

ft bgs = Feet below ground surface
MS/MSD = Matrix spike/matrix spike duplicate
NA = Not applicable
SVOC = Semivolatile organic compound
VOC = Volatile organic compound

A.11.1.1 Field Screening

Soil samples were field screened for alpha and beta/gamma radiation. The FSRs were compared to FSLs to guide subsequent sampling decisions. The alpha and beta/gamma radiation FSLs were not exceeded during investigation activities.

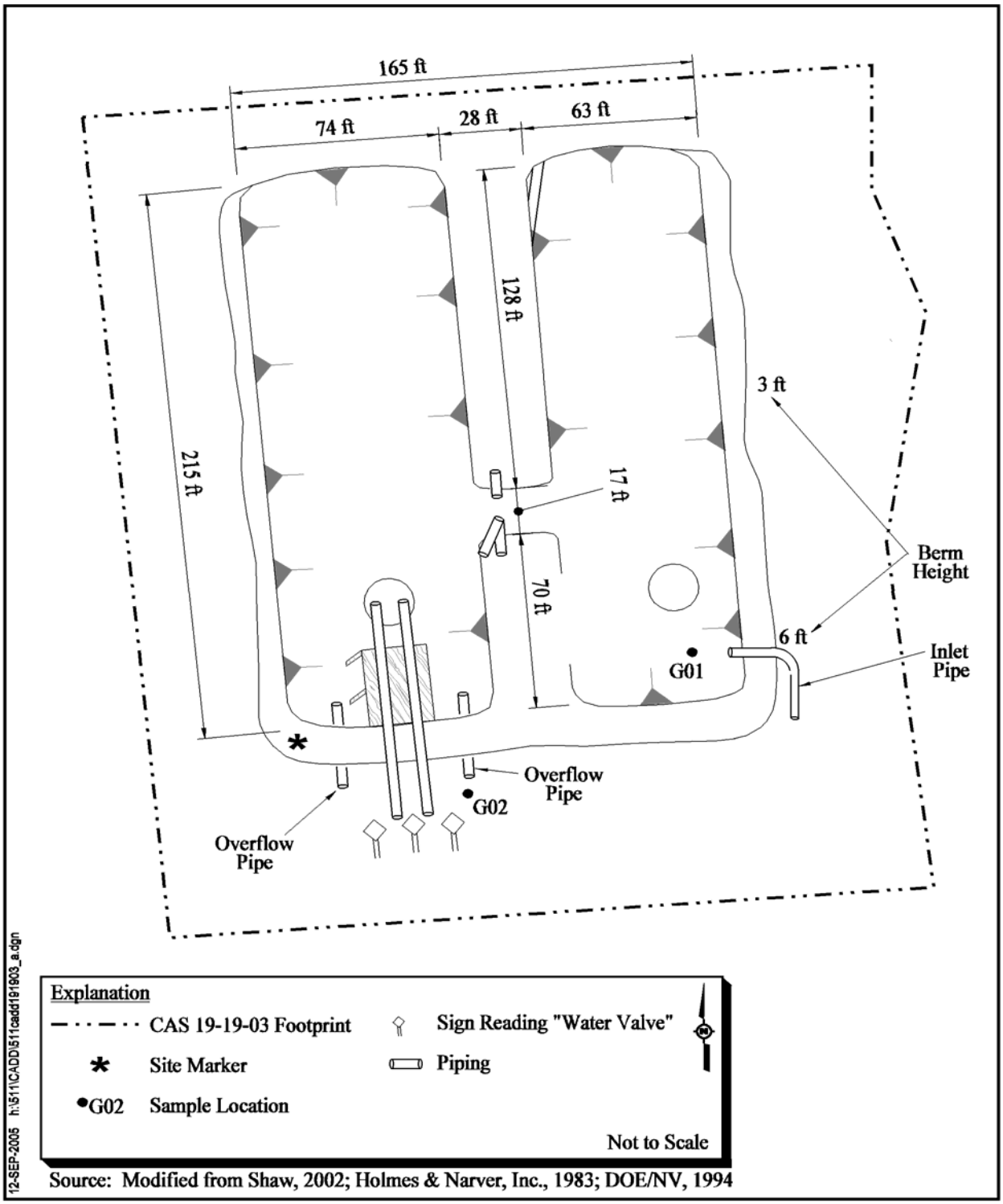


Figure A.11-1
Sample Location Map, CAS 19-19-03, Waste Dump (Piles & Debris)

A.11.1.2 Sampling

Sampling activities included the collection of two surface soil samples, one from where a pipe emptied into the sump and one from where an overflow pipe discharged out of the sump.

Samples were collected as outlined in the CAU 511 CAIP (NNSA/NSO, 2004a) and submitted for laboratory analysis.

A.11.1.3 Deviations

There were no deviations to the CAIP requirements at this CAS.

A.11.2 Investigation Results

The following sections provide analytical results from the samples collected to complete investigation activities as outlined in the CAIP. Investigation samples were analyzed for total VOCs, total SVOCs, TPH-DRO, total RCRA metals and beryllium, PCBs, gamma spectroscopy, isotopic U, isotopic Pu, and Sr-90. The analytical parameters and laboratory methods used to analyze the investigation samples are listed in Table A.2-2. Table A.11-1 lists the sample-specific analytical suite for CAS 19-19-03.

Analytical results from the soil samples with concentrations exceeding MDCs are summarized in the following sections. These results are compared to FALs and are a subset of the results that exceed MDCs. Results greater than FALs are identified by bold text in the analytical tables. A portion of the analytical results for this CAS were rejected during validation; however, these rejected data did not adversely impact closure decisions as discussed in Appendix B, Section B.1.4.

A.11.2.1 Total Volatile Organic Compounds

Total VOC analytical results for soil samples collected at CAS 19-19-03 identified no samples that exceed the MDCs.

A.11.2.2 Total Semivolatile Organic Compounds

Total SVOC analytical results for soil samples collected at CAS 19-19-03 identified no samples that exceed the MDCs or FALs.

A.11.2.3 Total RCRA Metals and Beryllium

Total RCRA metal and beryllium analytical results for soil samples collected at CAS 19-19-03 that were detected above MDCs are presented in Table A.11-2. No metals were detected in soil samples above FALs.

Table A.11-2
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 19-19-03, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)				
			Arsenic	Barium	Beryllium	Chromium	Lead
Final Action Levels			23[a]	67,000[b]	1,900[b]	450[b]	750[b]
G01	511G001	0.0 - 0.5	1.75	61.6	0.806	3.36	7.19
G02	511G002	0.0 - 0.5	2.57	85.8	0.749	4.75	8.99
	511G003	0.0 - 0.5	2.38	85.2	0.78	4.95	9.36

[a]Based on the background concentrations for metals. Background is considered the mean plus two times the standard deviation for sediment samples collected by the Nevada Bureau of Mines and Geology throughout the Nevada Test and Training Range (NBMG, 1998; Moore, 1999).
[b]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram

A.11.2.4 Total Petroleum Hydrocarbons-Diesel-Range Organics

The TPH-DRO analytical results for soil samples collected at CAS 19-19-03 identified no samples that exceed the MDCs or FALs.

A.11.2.5 Polychlorinated Biphenyls

Analytical results for PCBs in soil samples collected at CAS 19-19-03 did not exceed the MDCs or FALs.

A.11.2.6 Gamma-Emitting Radionuclides

Gamma-emitting radionuclide analytical results for soil samples collected at CAS 19-19-03 that were detected above MDCs are presented in Table A.11-3. No gamma-emitting radionuclides were detected in soil samples in concentrations greater than FALs.

Table A.11-3
Soil Sample Results for Gamma-Emitting Radionuclides Detected Above Minimum Detectable Concentration at CAS 19-19-03, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)				
			Actinium-228	Bismuth-214	Lead-212	Lead-214	Thallium-208
Final Action Levels[a]			5	5	5	5	5
Depth bgs (cm)			<15	<15	<15	<15	<15
G01	511G001	0.0 - 0.5	3.76 (G)	2.11 (G, J)	3.76 (J)[b]	1.7 (G, J)	1.21 (G)
G02	511G002	0.0 - 0.5	2.42 (G)	1.41 (G, J)	2.98 (J)[b]	1.3 (G, J)	0.9 (G)
	511G003	0.0 - 0.5	2.78 (G)	1.1 (G, J)	2.73 (J)[b]	1.53 (G, J)	1.16 (G)

[a]Taken from the generic guidelines for residual concentrations of actinium-228, bismuth-214, lead-212, lead-214, thallium-208, and thorium-232, as found in Chapter IV of DOE Order 5400.5, Change 2, "Radiation Protection of the Public and Environment." (DOE, 1993). The PALs for these isotopes is specified as 5 pCi/g averaged over the first 15 cm of soil and 15 pci/g for deeper soils (DOE, 1993). For purposes of this document, 15 cm is assumed to be equivalent to 0.5 ft (6 inches); therefore, 5 pci/g represents the pals for these radionuclides in the surface soil (0.0 - 0.5 ft depth).
[b]Qualifier added to laboratory data; record accepted. Sample does not meet counting geometry requirements.

ft bgs = Feet below ground surface
cm = Centimeter
pCi/g = Picocuries per gram
< = Less than
G = Sample density differs by more than 15% of laboratory control sample density
J = Estimated value

A.11.2.7 Plutonium, Strontium-90, and Uranium Isotopes

Plutonium, Sr-90, and U isotopic analytical results for soil samples collected at CAS 19-19-03 that were detected above MDCs are presented in Table A.11-4. No isotopic Pu, U, or Sr-90 exceeded the FALs.

A.11.3 Nature and Extent of Contamination

Based on the analytical results for soil samples collected within CAS 19-19-03, no COCs were identified.

A.11.4 Revised Conceptual Site Model

The CAIP requirements were met at this CAS, and no revisions were necessary to the CSM.

Table A.11-4
Soil Sample Results for Isotopic Uranium Detected Above Minimum Reporting Limits at CAS 19-19-03, Waste Dump (Piles and Debris)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (pCi/g)		
			Uranium-234	Uranium-235	Uranium-238
Final Action Levels[a]			**143**	**17.5**	**105**
G01	511G001	0.0 - 0.5	1.31	0.084	1.26
G02	511G002	0.0 - 0.5	1.02	0.078	1.07
	511G003	0.0 - 0.5	1.1	--	0.94

[a]Taken from the construction, commercial, industrial land use scenario in Table 2.1 of the National Council of Radiation Protection and Measurements Report No. 129, *Recommended Screening Limits for Contaminated Surface Soil and Review Factors Relevant to Site-Specific Studies* (NCRP, 1999). The values provided in this source document were scaled to a 25-millirem-per-year dose.

ft bgs = Feet below ground surface
pCi/g = Picocuries per gram

A.12.0 Waste Management

Investigation-derived waste was generated during the field investigation activities of CAU 511. The waste streams generated include decontamination rinse water, disposable personal protective equipment (PPE), disposable sampling equipment, contaminated soil and debris, and miscellaneous debris removed as best management practice during the investigation activities. Investigation-derived waste was segregated to the extent possible and waste minimization techniques were integrated into the field activities to reduce the amount of waste generated. Controls were in place to minimize the use of hazardous materials and the unnecessary generation of hazardous and/or mixed waste. Decontamination activities were planned and executed to minimize the volume of rinsate generated.

The amount, type, and source of waste placed into each drum was recorded in waste management logbooks. Waste generated during the investigation that was known to be hazardous based on process knowledge and/or sample analytical results was placed in containers and labeled as "Hazardous Waste." Potentially hazardous waste generated during the investigation was placed in containers and labeled as "Hazardous Waste - Pending Analysis." Radiological waste was placed in containers and labeled with radiological postings. Four Hazardous Waste Accumulation Areas (HWAAs) were established to manage hazardous and potentially hazardous waste generated during the CAI.

A.12.1 Investigation-Derived Waste Generated

Investigation-derived waste generated during the investigation was segregated into the following waste streams:

- Decontamination rinsate
- Debris including, but not limited to: plastic sheeting, glass/plastic sample jars, PPE, soil, sampling scoops, aluminum foil, and tin sample trays.
- Contaminated soil and associated debris (e.g., parts of battery)
- Munition debris

A total of 15 drums and 4 transportainers of IDW were generated during the investigation:

- Seven drums of decontamination rinsate from CAS 03-08-02.
- Two drums of soil was characterized as LLW and recommended for disposal at the NTS in accordance with the requirements contained in the NTS Waste Acceptance Criteria (NNSA/NV, 2003). The drums of LLW were collected at CAS 03-08-02.
- One drum of decontamination rinsate generated at CAS 03-99-11.
- One drum of hazardous debris (battery remains) and lead-contaminated soil to be disposed of at a permitted hazardous waste disposal facility. This drum was generated at CAS 06-16-01.
- Two drums containing soil and debris were collected. Analysis identified no contamination. The drums were generated at CAS 06-16-01.
- One drum of decontamination rinsate generated at CAS 06-16-01.
- One drum of Pu-239-contaminated soil from CASs 04-99-04 and 03-99-11 characterized as LLW.
- Four 8-by-20-ft enclosed containers of debris and mingled soil from CAS 18-99-10 characterized as LLW.

Office waste and lunch trash were disposed of throughout the project at the NTS sanitary landfill. Sanitary industrial waste was inspected and disposed of in the NTS industrial waste landfill (see Appendix G for load verification forms).

A.12.2 Waste Characterization Samples

Waste characterization samples were collected from the housekeeping waste at CASs 03-08-02, 03-99-11, 06-16-01, and 18-99-10, and from drummed waste, as necessary, to facilitate full characterization of the waste for disposal. Results of waste characterization samples are presented in the sections addressing each CAS. Complete results for all samples are maintained in project files. The following sections describe the waste characterization samples collected during the investigation of CAU 511.

A.12.2.1 CAS 03-08-02, Waste Dump (Piles & Debris)

Twenty-six soil samples were collected to characterize the soil piles and debris at CAS 03-08-02 for waste management purposes (see Table A.12-1). Analytical results indicated concentration of Pu-239 in one sample was above landfill limits. All other sample results met the landfill criteria. Approximately 1 yd^3 of soil was removed and disposed of as LLW. Approximately 950 yd^3 of debris (with some soil) was disposed of in the 10c landfill.

Table A.12-1
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)
(Page 1 of 11)

Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
A01	511A501	Soil	Plutonium-239	1.29 (J)[a]	pCi/g
		Soil	Uranium-234	0.77	pCi/g
		Soil	Plutonium-238	0.061 (J)[a]	pCi/g
		Soil	Uranium-238	0.83	pCi/g
		Soil	Strontium-90	0.195 (LT)	pCi/g
		Soil	Arsenic	8.16	mg/kg
		Soil	Barium	107 (J)[b]	mg/kg
		Soil	Cadmium	0.38 (J)	mg/kg
		Soil	Chromium	4.94 (J)[a]	mg/kg
		Soil	Lead	6.56 (J)[c]	mg/kg
		Soil	Silver	0.452 (J)	mg/kg
A02	511A502	Soil	Plutonium-239	1.11 (J)[a]	pCi/g
		Soil	Uranium-234	0.71	pCi/g
		Soil	Plutonium-238	0.106 (J)[a]	pCi/g
		Soil	Uranium-238	0.72	pCi/g
		Soil	Strontium-90	0.183 (J)[d]	pCi/g
		Soil	Arsenic	8.83	mg/kg
		Soil	Barium	115 (J)[b]	mg/kg
		Soil	Cadmium	0.384 (J)	mg/kg
		Soil	Chromium	5.43 (J)[a]	mg/kg
		Soil	Lead	7.18 (J)[c]	mg/kg

Table A.12-1
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)
(Page 2 of 11)

Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
A02 cont.	511A502 cont.	Soil	Silver	0.546 (J)	mg/kg
A03	511A503	Soil	Plutonium-239	0.163 (J)[a]	pCi/g
		Soil	Uranium-234	0.68	pCi/g
		Soil	Uranium-238	0.76	pCi/g
		Soil	Arsenic	8.33	mg/kg
		Soil	Barium	114 (J)[b]	mg/kg
		Soil	Cadmium	0.302 (J)	mg/kg
		Soil	Chromium	3.92 (J)[a]	mg/kg
		Soil	Lead	8.51 (J)[c]	mg/kg
		Soil	Silver	0.319 (J)	mg/kg
A04	511A504	Soil	Plutonium-239	1.53 (J)	pCi/g
		Soil	Uranium-234	0.64	pCi/g
		Soil	Plutonium-238	0.204 (J)	pCi/g
		Soil	Uranium-238	0.64	pCi/g
		Soil	Strontium-90	0.302 (LT, Y1)	pCi/g
		Soil	Arsenic	9.73	mg/kg
		Soil	Barium	98.5 (J)[b]	mg/kg
		Soil	Cadmium	0.432 (J)	mg/kg
		Soil	Chromium	4.55 (J)[a]	mg/kg
		Soil	Lead	6.6 (J)[c]	mg/kg
		Soil	Silver	0.48 (J)	mg/kg
A05	511A505	Soil	Plutonium-239	37.1 (J)[a]	pCi/g
		Soil	Uranium-234	0.76	pCi/g
		Soil	Plutonium-238	1.43 (J)[a]	pCi/g
		Soil	Uranium-238	0.54	pCi/g
		Soil	Strontium-90	0.35 (LT)	pCi/g
		Soil	Arsenic	4.99	mg/kg
		Soil	Barium	117 (J)[b]	mg/kg

Table A.12-1
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)
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Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
A05 cont.	511A505 cont.	Soil	Cadmium	0.4 (J)	mg/kg
		Soil	Chromium	4.59 (J)[a]	mg/kg
		Soil	Lead	7.39 (J)[c]	mg/kg
		Soil	Silver	0.334 (J)	mg/kg
A06	511A506	Soil	Uranium-235	0.04 (LT)	pCi/g
		Soil	Plutonium-239	4.97 (J)[a]	pCi/g
		Soil	Uranium-234	0.91	pCi/g
		Soil	Plutonium-238	0.238 (J)[a]	pCi/g
		Soil	Uranium-238	0.97	pCi/g
		Soil	Arsenic	3.14 (J-)	mg/kg
		Soil	Barium	195 (J)[b]	mg/kg
		Soil	Cadmium	0.448 (J)	mg/kg
		Soil	Chromium	2.79 (J)[a]	mg/kg
		Soil	Lead	14 (J)[c]	mg/kg
		Soil	Mercury	0.0485 (J)	mg/kg
		Soil	Silver	0.739 (J)	mg/kg
A07	511A507	Soil	Plutonium-239	3.62 (J)[a]	pCi/g
		Soil	Uranium-234	0.71	pCi/g
		Soil	Plutonium-238	0.55 (J)[a]	pCi/g
		Soil	Uranium-238	0.76	pCi/g
		Soil	Arsenic	4.14	mg/kg
		Soil	Barium	152 (J)[b]	mg/kg
		Soil	Cadmium	0.512 (J)	mg/kg
		Soil	Chromium	7.99 (J)[a]	mg/kg
		Soil	Lead	10.6 (J)[c]	mg/kg
		Soil	Silver	0.758 (J)	mg/kg
A08	511A508	Soil	Plutonium-239	1.11 (J)[a]	pCi/g
		Soil	Uranium-234	0.87	pCi/g

Table A.12-1
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)
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Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
A08 cont.	511A508 cont.	Soil	Plutonium-238	0.088 (J)[a]	pCi/g
		Soil	Uranium-238	0.82	pCi/g
		Soil	Aroclor 1254	42	µg/kg
		Soil	Arsenic	3.34 (J-)	mg/kg
		Soil	Barium	185 (J)[b]	mg/kg
		Soil	Cadmium	0.487 (J)	mg/kg
		Soil	Chromium	4.51 (J)[a]	mg/kg
		Soil	Lead	12.1 (J)[c]	mg/kg
		Soil	Silver	0.568 (J)	mg/kg
A09	511A509	Soil	Plutonium-239	4.08 (J)[a]	pCi/g
		Soil	Uranium-234	0.95	pCi/g
		Soil	Plutonium-238	0.61 (J)[a]	pCi/g
		Soil	Uranium-238	0.91	pCi/g
		Soil	Arsenic	4.82	mg/kg
		Soil	Barium	221 (J)[b]	mg/kg
		Soil	Cadmium	0.541 (J)	mg/kg
		Soil	Chromium	7.72 (J)[a]	mg/kg
		Soil	Lead	14.8 (J)[c]	mg/kg
		Soil	Silver	0.778 (J)	mg/kg
A10	511A510	Soil	Uranium-234	1.08	pCi/g
		Soil	Uranium-238	1.1	pCi/g
		Soil	Aroclor 1254	160	µg/kg
		Soil	Aroclor 1260	73 (J)[e]	µg/kg
		Soil	Arsenic	2.18 (J-)	mg/kg
		Soil	Barium	122 (J)[b]	mg/kg
		Soil	Cadmium	0.208 (J)	mg/kg
		Soil	Chromium	1.02 (J)[a]	mg/kg
		Soil	Lead	10.5 (J)[c]	mg/kg

Table A.12-1
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)
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Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
A10 cont.	511A510 cont.	Soil	Silver	0.438 (J)	mg/kg
	511A511	Soil	Uranium-234	1.16	pCi/g
		Soil	Uranium-238	1.14	pCi/g
		Soil	Aroclor 1254	110	µg/kg
		Soil	Arsenic	2.82 (J-)	mg/kg
		Soil	Barium	166 (J)[b]	mg/kg
		Soil	Cadmium	0.23 (J)	mg/kg
		Soil	Chromium	2.12 (J)[a]	mg/kg
		Soil	Lead	16.9 (J)[c]	mg/kg
		Soil	Silver	0.338 (J)	mg/kg
A11	511A512	Soil	Uranium-234	1.08	pCi/g
		Soil	Uranium-238	1.15	pCi/g
		Soil	Aroclor 1254	200	µg/kg
		Soil	Aroclor 1260	140 (J)[e]	µg/kg
		Soil	Arsenic	1.87 (J-)	mg/kg
		Soil	Barium	279 (J)[b]	mg/kg
		Soil	Cadmium	0.618	mg/kg
		Soil	Chromium	5.55 (J)[a]	mg/kg
		Soil	Lead	17.3 (J)[c]	mg/kg
		Soil	Silver	0.93 (J)	mg/kg
A12	511A513	Soil	Plutonium-239	0.51 (J)[a]	pCi/g
		Soil	Uranium-234	1.02	pCi/g
		Soil	Uranium-238	1.01	pCi/g
		Soil	Aroclor 1254	55	µg/kg
		Soil	Aroclor 1260	38 (J)[e]	µg/kg
		Soil	Arsenic	5.37	mg/kg
		Soil	Barium	180 (J)[b]	mg/kg
		Soil	Chromium	5.65 (J)[a]	mg/kg

Table A.12-1
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)
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Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
A12 cont.	511A513 cont.	Soil	Lead	13.4 (J)[c]	mg/kg
A13	511A514	Soil	Uranium-235	0.096	pCi/g
		Soil	Plutonium-239	0.19 (J)[a]	pCi/g
		Soil	Uranium-234	1.03	pCi/g
		Soil	Uranium-238	1.01	pCi/g
		Soil	Strontium-90	0.46 (LT)	pCi/g
		Soil	Aroclor 1254	42	µg/kg
		Soil	Arsenic	2.09 (J-)	mg/kg
		Soil	Barium	214 (J)[b]	mg/kg
		Soil	Chromium	3.99 (J)[a]	mg/kg
		Soil	Lead	20.1 (J)[c]	mg/kg
A14	511A515	Soil	Plutonium-239	2.78 (J)[a]	pCi/g
		Soil	Uranium-234	0.77	pCi/g
		Soil	Plutonium-238	0.314 (J)[a]	pCi/g
		Soil	Uranium-238	0.72	pCi/g
		Soil	Arsenic	5.3	mg/kg
		Soil	Barium	118 (J)[b]	mg/kg
		Soil	Chromium	6.67 (J)[a]	mg/kg
		Soil	Lead	8.8 (J)[c]	mg/kg
A15	511A516	Soil	Uranium-235	0.052	pCi/g
		Soil	Plutonium-239	3.16 (J)[a]	pCi/g
		Soil	Uranium-234	1.02	pCi/g
		Soil	Plutonium-238	0.305 (J)[a]	pCi/g
		Soil	Uranium-238	0.84	pCi/g
		Soil	Arsenic	5.67	mg/kg
		Soil	Barium	155 (J)[b]	mg/kg
		Soil	Chromium	9.23 (J)[a]	mg/kg
		Soil	Lead	10.3 (J)[c]	mg/kg

Table A.12-1
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)
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Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
A16	511A517	Soil	Plutonium-239	3 (J)[a]	pCi/g
		Soil	Uranium-234	0.72	pCi/g
		Soil	Plutonium-238	0.236 (J)[a]	pCi/g
		Soil	Uranium-238	0.66	pCi/g
		Soil	Arsenic	11.4	mg/kg
		Soil	Barium	157 (J)[b]	mg/kg
		Soil	Chromium	12.5 (J)[a]	mg/kg
		Soil	Lead	12.2 (J) [c]	mg/kg
		Soil	Mercury	0.0431 (J)	mg/kg
A17	511A518	Soil	Uranium-234	0.76	pCi/g
		Soil	Uranium-238	0.63	pCi/g
		Soil	Arsenic	9.17	mg/kg
		Soil	Barium	148 (J)[b]	mg/kg
		Soil	Cadmium	0.122 (J)[a]	mg/kg
		Soil	Chromium	12.7 (J)[c]	mg/kg
		Soil	Lead	12.6 (J)	mg/kg
A18	511A519	Soil	Plutonium-239	0.64 (J)[a]	pCi/g
		Soil	Uranium-234	0.55	pCi/g
		Soil	Plutonium-238	0.057 (J)[a]	pCi/g
		Soil	Uranium-238	0.59	pCi/g
		Soil	Arsenic	4.57	mg/kg
		Soil	Barium	124 (J)[b]	mg/kg
		Soil	Chromium	7.45 (J)[a]	mg/kg
		Soil	Lead	9.13 (J)[c]	mg/kg
A19	511A520	Soil	Uranium-234	0.67[a]	pCi/g
		Soil	Uranium-238	0.56	pCi/g
		Soil	Plutonium-239	6.8 (J)[a]	pCi/g
		Soil	Arsenic	8.71	mg/kg

Table A.12-1
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)
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Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
A19 cont.	511A520 cont.	Soil	Barium	155 (J)[b]	mg/kg
		Soil	Cadmium	0.895 (J+)	mg/kg
		Soil	Chromium	10.2 (J)[a]	mg/kg
		Soil	Lead	10.3 (J)[c]	mg/kg
		Soil	Mercury	0.0462 (J)	mg/kg
		Soil	Silver	1.08 (J)	mg/kg
A20	511A521	Soil	Uranium-234	0.73	pCi/g
		Soil	Plutonium-238	0.42	pCi/g
		Soil	Uranium-238	0.69	pCi/g
		Soil	Strontium-90	0.99 (J)[f]	pCi/g
		Soil	Arsenic	5.36	mg/kg
		Soil	Barium	130 (J)[b]	mg/kg
		Soil	Cadmium	0.7 (J+)	mg/kg
		Soil	Chromium	8.23 (J)[a]	mg/kg
		Soil	Lead	10.7 (J)[c]	mg/kg
		Soil	Silver	0.642 (J)	mg/kg
A21	511A522	Soil	Uranium-235	0.04 (LT)	pCi/g
		Soil	Plutonium-239	5.15 (J)[a]	pCi/g
		Soil	Uranium-234	0.86	pCi/g
		Soil	Plutonium-238	0.38	pCi/g
		Soil	Uranium-238	0.72	pCi/g
		Soil	Arsenic	5.74	mg/kg
		Soil	Barium	138 (J)[b]	mg/kg
		Soil	Cadmium	0.638 (J+)	mg/kg
		Soil	Chromium	9.2 (J)[a]	mg/kg
		Soil	Lead	11.1 (J)[c]	mg/kg
		Soil	Silver	0.662 (J)	mg/kg
A22	511A523	Soil	Plutonium-239	0.142 (J)[a]	pCi/g

Table A.12-1
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)
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Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
A22 cont.	511A523 cont.	Soil	Uranium-234	0.74	pCi/g
		Soil	Uranium-238	0.67	pCi/g
		Soil	Arsenic	6.85	mg/kg
		Soil	Barium	107 (J)[b]	mg/kg
		Soil	Cadmium	0.63 (J+)	mg/kg
		Soil	Chromium	6.17 (J)[a]	mg/kg
		Soil	Lead	7.43 (J)[c]	mg/kg
		Soil	Silver	0.571 (J)	mg/kg
A23	511A524	Soil	Uranium-235	0.065	pCi/g
		Soil	Uranium-234	0.85	pCi/g
		Soil	Uranium-238	0.84	pCi/g
		Soil	Aroclor 1254	190 (J)[e]	µg/kg
		Soil	Aroclor 1260	130 (J)[e]	µg/kg
		Soil	Arsenic	2.35	mg/kg
		Soil	Barium	335 (J)[b]	mg/kg
		Soil	Cadmium	0.807 (J+)	mg/kg
		Soil	Chromium	1.95 (J)[a]	mg/kg
		Soil	Lead	15.7 (J)[c]	mg/kg
		Soil	Silver	0.76 (J)	mg/kg
A24	511A525	Soil	Plutonium-239	2.2 (J)[a]	pCi/g
		Soil	Uranium-234	0.84	pCi/g
		Soil	Plutonium-238	0.23	pCi/g
		Soil	Uranium-238	0.77	pCi/g
		Soil	Arsenic	9.13	mg/kg
		Soil	Barium	113 (J)[b]	mg/kg
		Soil	Cadmium	0.87 (J+)	mg/kg
		Soil	Chromium	6.4 (J)[a]	mg/kg
		Soil	Lead	8.25 (J)[c]	mg/kg

Table A.12-1
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)
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Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
A24 cont.	511A525 cont.	Soil	Silver	0.822 (J)	mg/kg
A25	511A526	Soil	Plutonium-239	0.284 (J)	pCi/g
		Soil	Uranium-234	0.88	pCi/g
		Soil	Uranium-238	0.8	pCi/g
		Soil	Aroclor 1254	36 (J)	µg/kg
		Soil	Arsenic	2.56	mg/kg
		Soil	Barium	208 (J)[b]	mg/kg
		Soil	Cadmium	0.83 (J+)	mg/kg
		Soil	Chromium	1.61 (J)[a]	mg/kg
		Soil	Lead	15.5 (J)[c]	mg/kg
		Soil	Silver	0.93 (J)	mg/kg
Drum A01	511A527	Water	Gross Beta	14.7	pCi/L
Drum A02	511A528	Water	Gross Alpha	8.7	pCi/L
		Water	Gross Beta	20.2	pCi/L
Drum A03	511A529	Water	Gross Alpha	10.7	pCi/L
		Water	Gross Beta	23.9	pCi/L
Drum A04	511A530	Water	Gross Alpha	17.2	pCi/L
		Water	Gross Beta	31	pCi/L
Drum A05	511A531	Water	Gross Alpha	10.3	pCi/L
		Water	Gross Beta	19.2	pCi/L
Drum A06	511A532	Water	Gross Alpha	4.5	pCi/L
		Water	Gross Beta	7.9	pCi/L
Drum A07	511A533	Water	Gross Alpha	3.6 (LT)	pCi/L
		Water	Gross Beta	9.8	pCi/L

Table A.12-1
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 03-08-02, Waste Dump (Piles and Debris)
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Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units

[a]Qualifier added to laboratory data; record accepted
[b]Qualifier added to laboratory data; record accepted
[c]Qualifier added to laboratory data; record accepted
[d]Qualifier added to laboratory data; record accepted
[e]Qualifier added to laboratory data; record accepted
[f]Qualifier added to laboratory data; record accepted

mg/kg = Milligrams per kilogram
pCi/L = Picocuries per liter
pCi/g = Picocuries per gram
µg/kg = Micrograms per kilogram
J = Estimated value
J+ = The result is an estimated quantity, but the result may be biased high
J- = The result is an estimated quantity, but the result may be biased low
LT = Result is less than the requested minimum detectable concentration, greater than the sample specific minimum detectable concentration
Y1 = Chemical yield is in control at 100-110%. Quantitive yield is assumed.

Seven water samples were collected, one from each of the decontamination rinsate drums, and analyzed for gross alpha/beta and tritium. Results indicated that lagoon effluent criteria were met. The drums were disposed of in the Area 23 lagoon. Load verification paperwork is provided in Appendix G.

A.12.2.2 CAS 03-99-11, Waste Dump (Piles)

One sample was collected from a single drum of decontamination rinsate at CAS 03-99-11. The sample was analyzed for gross alpha/beta and tritium (see Table A.12-2 for analytical results). Results indicated that lagoon effluent criteria were met. The drum was disposed of as sanitary waste.

Soil samples were collected at sample locations B27 through B30 and analyzed for toxicity characteristic leaching procedure (TCLP) metals. The results indicated no contaminants in concentrations above regulatory limits (see Table A.12-3 and Table A.12-4 for analytical results). Approximately 900 yd^3 of soil was remediated and disposed of at the 10c landfill.

Load verification paperwork is provided in Appendix G.

Table A.12-2
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)

Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
NA	511B501	Water	Gross Alpha	7.1	pCi/L
	511B501	Water	Gross Beta	12.7 (M3)	pCi/L

pCi/L = Picocuries per liter
M3 = The requested minimum detectable concentration was not met, but the reported activity is greater than the reported minimum detectable concentration
NA = Not applicable

Table A.12-3
Sample Results for TCLP RCRA Metals Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/L)		
			Arsenic	Barium	Chromium
Regulatory Limits					
B05	511B022	0.0 - 0.5	0.522	1.69	--
B27	511B066	3.5 - 4.5	--	0.116	--
B28	511B067	3.5 - 4.5	--	0.125	--
B29	511B068	0.0 - 0.5	0.678	0.966	0.0352 (J)
	511B069	2.0 - 2.5	0.577	0.318	0.0607
B30	511B070	0.0 - 0.5	--	0.561	--

ft bgs = Feet below ground surface
mg/L = Milligrams per liter
J = Estimated value

A.12.2.3 CAS 03-99-12 (Piles and Debris)

No IDW was generated at CAS 03-99-12.

A.12.2.4 CAS 04-99-04 Contaminated Trench/Berm

Less than a yd^3 of Pu-239 contaminated soil was removed at CAS 04-99-04 and disposed of as LLW.

Table A.12-4
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 1 of 5)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**23**[a]	**67,000**[b]	**1,900**[b]	**450**[b]	**450**[b]	**750**[b]	**310**[b]	**5,100**[b]	**5,100**[b]
B01	511B001	0.0 - 0.5	--	9.1 (J)	0.555 (J)	--	--	6.96	--	1.17 (J-)	--
	511B002	2.0 - 2.5	--	17 (J)	0.744 (J)	--	--	26.2	--	--	--
	511B003	2.0 - 2.5	--	10.4 (J)	0.613 (J)	--	1.05 (J)	11.5	--	--	--
	511B004	4.0 - 4.5	6.75 (J)[c]	228	0.984	--	11.5	10.6	--	--	--
	511B005	6.5 - 7.5	3.16 (J)[c]	148	0.933	--	9.54	8.93	--	--	--
	511B006	9.5 - 10.0	3.23 (J)[c]	131	1.16	--	5.79	10.9		--	--
B02	511B007	0.0 - 0.5	--	21.2 (J)	0.582 (J)	--	1.47 (J)	4.8	0.0468 (J)	--	--
	511B008	2.5 - 3.5	--	24.5	0.751 (J)	--	1.59 (J)	28.6	--	3.67 (J-)	--
	511B009	4.5 - 5.5	**110** (J)[c]	202	0.793	--	8.27	16.2	0.168	--	--
	511B010	7.5 - 8.5	3.85 (J)[c]	136	1.1	--	8.86	7.83	--	--	--
	511B011	10.5 - 11.5	2.89 (J)[c]	122	1.02	--	4.67	8.33	--	--	--
B03	511B012	0.0 - 0.5	--	4.64 (J)	--	--	--	6.73	--	5.76	--
	511B013	1.5 - 2.5	--	199	0.853	0.344 (J)	7.92	8.52	--	--	--
	511B014	4.5 - 5.5	4.26	178	1.13	--	11.5	10.8	--	--	--
	511B015	7.0 - 8.0	3.41	167	1.25	--	9.02	9.94	0.0817 (J)	--	--
	511B016	10.0 - 10.5	0.714 (J)	167	1.26	--	7.3	11	--	--	--
B04	511B017	0.0 - 0.5	--	6.13 (J)	--	--	2.7 (J)	5.55	--	2.87 (J)	--

Table A.12-4
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 2 of 5)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
B04 cont.	511B018	1.0 - 1.5	--	2.73 (J)	--	--	5.08 (J)	6.64	--	6.96 (J)	--
	511B019	3.0 - 4.0	--	147	0.9	0.709	9.12	10.4	--	0.542 (J)	--
	511B020	6.0 - 7.0	--	150	0.831	--	9.64	12.5	--	--	--
	511B021	9.0 - 10.0	--	190	0.961	--	8.08	9.76	--	--	--
B05	511B022	0.0 - 0.5	**1,920**	462	--	0.64 (J)	6.06	61.4	7.42	--	--
	511B023	0.0 - 0.5	**1,760**	375	0.43 (J)	0.336 (J)	3.28	46.8	6.34	--	--
	511B024	2.0 - 2.5	**1,740**	433	0.381 (J)	0.204 (J)	2.74	58.2	5.1	--	--
	511B025	4.0 - 4.5	4.62	145	0.9	0.281 (J)	9.16	8.99	--	--	--
	511B026	6.5 - 7.0	8.2	182	0.782	0.264 (J)	8.41	10	--	--	--
	511B027	9.0 - 9.5	**168**	264	0.924	--	8.28	18.2	0.325	--	--
B06	511B028	0.0 - 0.5	--	150	0.575 (J)	--	6.62	15.6	--	--	--
	511B029	2.0 - 3.0	3.37	175	1	--	8.87	10.9	--	--	--
	511B030	5.0 - 6.0	4.82	193	1.1	0.122 (J)	8.47	11.5	0.0575 (J)	--	--
	511B040	7.0 - 7.5	6.14	172	1.1	--	9.8	8.83	--	1.55	--
B07	511B031	0.0 - 0.5	**28.3**	437	0.654	--	6.71	15.6	0.0484 (J)	--	--
	511B041	2.0- 3.0	4.24	183	0.799	--	9.42	9.52	--	1.15	--
	511B042	2.0 - 3.0	4.68	186	0.97	--	11.5	11.4	--	0.681 (J)	--

Table A.12-4
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 3 of 5)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
B07 cont.	511B043	5.5 - 6.5	4.89	226	1.24	--	10.3	13.5	--	1.01 (J)	--
	511B044	8.0 - 9.0	3.57	124	0.925	--	5.82	7.69	--	0.579 (J)	--
B08	511B032	0.0 - 0.5	3.09	155	0.818	--	8.25	10.9	--	--	--
B09	511B033	0.0 - 0.5	2.82	126	0.825	--	7.99	10.2	--	--	--
B10	511B034	0.0 - 0.5	7.05	163	0.805	--	6.97	14.2	--	--	--
B11	511B035	0.0 - 0.5	4.57	147	0.702	0.214 (J)	6.09	10.8	--	--	--
B12	511B036	0.0 - 0.5	**432**	395	0.716	0.27 (J)	5.82	18.4	1.26	--	--
	511B062	2.0 - 2.5	4.58	165	1.18	0.131 (J)	9.94	10.7	0.0383 (J)	--	0.461 (J)
	511B063	4.0 - 4.5	5.22	164	0.854	0.122 (J)	9.87	11	--	--	0.395 (J)
B13	511B037	0.0 - 0.5	3.38	182	0.935	0.117 (J)	7.83	13.5	--	--	--
B14	511B038	0.0 - 0.5	2.99	123	0.856	0.196 (J)	7.16	9.75	--	--	--
B15	511B039	0.0 - 0.5	2.44	142	0.89	--	5.95	11.7	--	--	--
B16	511B047	0.0 - 0.5	8.13	143	0.624	--	6.67	13.4	--	0.713 (J)	--
B17	511B048	0.0 - 0.5	2.86	166	0.77	0.123 (J)	6.69	9.98	0.0585 (J)	1.41	--
B18	511B049	0.0 - 0.5	7.41	126	0.631	--	7.48	8.57	--	0.569 (J)	--

Table A.12-4
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 4 of 5)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
B19	511B050	0.0 - 0.5	**53.5**	98.4	0.42 (J)	--	3.51	6.42	--	--	--
	511B053	2.0 - 2.5	3.07	191	0.94	--	7.76	10.2	--	--	--
	511B054	4.0 - 4.5	3.13	127	0.762	--	8.27	9.11	--	--	--
B20	511B051	0.0 - 0.5	6.74	198	1	--	7.87	11.5	--	0.915 (J)	--
B21	511B045	0.0 - 0.5	4.2	129	0.912	--	9.58	11.1	0.0426 (J)	1.31	--
B22	511B046	0.0 - 0.5	5.62	168	0.784	--	6.63	36.6	0.0422 (J)	0.713 (J)	--
B23	511B055	0.0 - 0.5	**39.7**	132	0.466 (J)	0.325 (J)	4.58	9.61	0.0953 (J)	--	--
	511B056	2.0 - 2.5	3.39	170	0.921	--	8.24	10.4	--	--	0.338 (J)
B24	511B064	0.0 - 0.5	6.49	133	0.523 (J)	0.128 (J)	4.71	9.4	--	--	--
	511B065	2.0 - 2.5	3.54	179	1.1	0.112 (J)	9.84	11	--	--	0.443 (J)
B25	511B060	0.0 - 0.5	3.43	176	1.04	0.133 (J)	8.72	11.3	0.0407 (J)	--	0.384 (J)
	511B061	2.0 - 2.5	3.79	185	1.09	0.122 (J)	8.52	10.8	0.0369 (J)	--	0.392 (J)
B26	511B057	0.0 - 0.5	4.3	169	1.05	--	9.78	12.5	--	--	0.362 (J)
	511B058	2.0 - 2.5	4.1	183	1.19	0.161 (J)	11	12.1	--	--	0.563 (J)

Table A.12-4
Soil Sample Results for Metals Detected Above Minimum Reporting Limits at CAS 03-99-11, Waste Dump (Piles)
(Page 5 of 5)

Sample Location	Sample Number	Depths (ft bgs)	Contaminants of Potential Concern (mg/kg)								
			Arsenic	Barium	Beryllium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
Final Action Levels			**23[a]**	**67,000[b]**	**1,900[b]**	**450[b]**	**450[b]**	**750[b]**	**310[b]**	**5,100[b]**	**5,100[b]**
B26 cont.	511B059	2.0 - 2.5	3.5	177	1.03	--	9.91	11.3	0.0374 (J)	--	0.293 (J)
B27	511B066	3.5 - 4.5	13.2	17.6	--	0.424 (J)	5.48	3.36	--	3.18	--
B28	511B067	3.5 - 4.5	8.01	154	0.546 (J)	0.188 (J)	10.4	7.1	--	1.33	--
B29	511B068	0.0 - 0.5	**1,190**	861	0.212 (J)	0.79	12.7	64.1	4.33	0.731 (J)	--
	511B069	2.0 - 2.5	**1,280**	778	0.23 (J)	1.06	14.5	82.9	3.97	0.881 (J)	--
B30	511B070	0.0 - 0.5	**24.8**	175	0.635	0.164 (J)	5.63	28.2	0.155	--	--

[a]Based on the background concentrations for metals. Background is considered the mean plus two times the standard deviation for sediment samples collected by the Nevada Bureau of Mines and Geology throughout the Nevada Test and Training Range (NBMG, 1998; Moore, 1999).
[b]Based on U.S. Environmental Protection Agency, *Region 9 Preliminary Remediation Goals* (PRGs) (EPA, 2002)
[c]Qualifier added to laboratory data; record accepted. Matrix spike recovery exceeds control limits.

ft bgs = Feet below ground surface
mg/kg = Milligrams per kilogram
NA = Not applicable
-- = Not detected above minimum reporting limits
J = Estimated value
J- = The result is an estimated quantity, but the result may be biased low. Negative bias found in continuing calibration/method blank

A.12.2.5 CAS 06-16-01, Waste Dump (Piles & Debris)

One drum consisting of battery remains and associated soil was disposed of as hazardous waste. One composite soil sample (511E501) was collected from two drums of soil at CAS 06-16-01. Results from this sample indicate that landfill criteria were met. The drums were disposed of in the 10c landfill.

A representative sample (511E502) was collected from soil beneath the remains of a concrete building for waste characterization of the concrete. Results indicated that landfill criteria were met. The building remains were disposed broken up and placed in roll-off containers and subsequently disposed of in the 10c landfill.

Sample 511E503 was collected from a single drum of decontamination rinsate. The sample was analyzed from gross alpha/beta and tritium. Results indicate that lagoon effluent criteria were met. The drum was disposed of in the Area 23 lagoon

Analytical results are provided in Table A.12-5. Load verification paperwork is provided in Appendix G.

A.12.2.6 CAS 06-16-02, Scattered Ordnance/Automatic Weapons Range

No IDW was generated at CAS 06-16-02.

A.12.2.7 CAS 07-08-02, Contaminated Mound

Munitions debris and other miscellaneous debris was placed in a roll-off container and disposed of in the 10c landfill. Load verification paperwork is provided in Appendix G.

A.12.2.8 CAS 18-99-10, Ammunition Dump

Non-MEC scrap metal identified on-site with the exception of items from Site A, was collected, segregated and placed into roll-off containers for disposal of in the 10c landfill. All MEC and non-MEC debris from Site A was placed into containers for disposal as LLW. The LLW is scheduled to be removed in December 2005. During field activities, identified MEC items were managed as hazardous waste in two on-site ammunition magazines.

The detonation of 262 MEC items was conducted on April 26, 2005 in accordance with the 90-day Emergency Permit issued to treat UXO at this site (Murphy, 2005). Figure A.12-1 shows the MEC items ready for detonation. Table 5-1 in Appendix F of this report include MEC items (exclude fragments and small arms) which were detonated. Detonations required the use of 400 4-inch shape charges, 550 ft of primer cord, and 10 electronic plastic caps. Section 4.5 of the After Action Report (Appendix F) provides information on demolition procedures. After demolition, all MD was inspected and certified as UXO-free.



Figure A.12-1
CAS 18-99-10 (Facing West) MEC Items Before Detonation (04/2005)

Four soil samples composited from four separate locations along each side of the debris pile at Site A were collected and analyzed to characterize the surface soil for waste management purposes. The samples were analyzed for TCLP VOCs, TCLP SVOCs, TCLP metals, TPH-DRO, PCBs, gamma spectroscopy, isotopic U, isotopic Pu, isotopic Sr-90, and explosives (see Table A.12-5).

A single swipe sample was collected from hard surfaces of debris loaded in the transportainers at Site A. The swipe was analyzed for gamma spectroscopy, isotopic U, isotopic Pu, and isotopic Sr-90 (see Table A.12-6). Results indicate contaminants present in concentrations greater than landfill limits for disposal as non-radioactive waste.

Table A.12-5
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 06-16-01, Waste Dump (Piles and Debris)
(Page 1 of 2)

Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
E01	511E001	Soil	Diesel-Range Organics	60	mg/kg
		Soil	Gasoline-Range Organics	0.72 (J)	mg/kg
		Soil	Actinium-228	1.51 (G)	pCi/g
		Soil	Thallium-208	0.63 (G)	pCi/g
		Soil	Bismuth-212	2.35 (G)	pCi/g
		Soil	Bismuth-214	1.33 (G, J)	pCi/g
		Soil	Lead-212	1.85 (J)[a]	pCi/g
		Soil	Lead-214	1.48 (G, J)	pCi/g
		Soil	Uranium-235	0.053	pCi/g
		Soil	Uranium-234	0.89	pCi/g
		Soil	Uranium-238	0.91	pCi/g
		Soil	Chromium	8	mg/kg
		Soil	Cadmium	0.278 (J)	mg/kg
		Soil	Beryllium	1.03	mg/kg
		Soil	Barium	220 (J)[b]	mg/kg
		Soil	Arsenic	4.28	mg/kg
		Soil	Lead	16.9	mg/kg
Drums E02 & E03	511E501	Soil	Gasoline-Range Organics	1.2	mg/kg
		Soil	Actinium-228	1.64 (G)	pCi/g
		Soil	Thallium-208	0.49 (G)	pCi/g
		Soil	Bismuth-214	1.33 (G, J)	pCi/g
		Soil	Lead-212	1.79 (J)[a]	pCi/g
		Soil	Lead-214	1.23 (G, J)	pCi/g
		Soil	Uranium-234	0.59	pCi/g
		Soil	Uranium-238	0.68	pCi/g
		Soil	Chromium	36.6	mg/kg
		Soil	Cadmium	15.4	mg/kg

Table A.12-5
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 06-16-01, Waste Dump (Piles and Debris)
(Page 2 of 2)

Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
Drums E02 & E03 cont.	511E501 cont.	Soil	Beryllium	0.785	mg/kg
		Soil	Barium	187 (J)[b]	mg/kg
		Soil	Arsenic	3.34	mg/kg
		Soil	Lead	70.1	mg/kg
		Soil	Silver	1.83	mg/kg
		Soil	Plutonium-239	0.149	pCi/g
		Soil	pH	7.57 (J)[c]	pH Units
Drum E04	511E503	Water	Gross Alpha	227	pCi/L
		Water	Gross Beta	519	pCi/L

[a]Qualifier added to laboratory data; record accepted. Samples does not meet counting geometry requirements.
[b]Qualifier added to laboratory data; record accepted. Matrix spike recovery exceeds control limits.
[c]Qualifier added to laboratory data; record accepted. Holding time exceeded.

mg/kg = Milligrams per kilogram
pCi/g = Picocuries per gram
pCi/L = Picocuries per liter
G = Sample density differs by more than 15% of laboratory control sample density
J = Estimated value
M3 = The requested minimum detectable concentration was not met, but the reported activity is greater than the reported minimum detectable concentration

A.12.2.9 CAS 19-19-03 Waste Sump (Piles and Debris)

No IDW was generated at CAS 19-19-03. Some miscellaneous debris is located on the site and is scheduled to be removed as housekeeping activities and disposed of in the 10c landfill.

Table A.12-6
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 18-99-10, Ammunition Dump
(Page 1 of 3)

Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
Site A	511J505	Swipe	Americium-241	2,400	pCi/Sample
		Swipe	Cesium-137	23 (M3)	pCi/Sample
		Swipe	Plutonium-239	14,100 (M3)	pCi/Sample
		Swipe	Plutonium-238	210 (M3)	pCi/Sample
Site A South	511J501	Soil	Diesel-Range Organics	190	mg/kg
		Soil	Americium-241	2.85 (J)[a]	pCi/g
		Soil	Actinium-228	1.79 (G)	pCi/g
		Soil	Thallium-208	0.62 (G)	pCi/g
		Soil	Bismuth-214	1.15 (G, J)	pCi/g
		Soil	Lead-212	2.3 (J)[a]	pCi/g
		Soil	Cesium-137	1.04 (G)	pCi/g
		Soil	Lead-214	0.97 (G, J)	pCi/g
		Soil	Plutonium-239	14.1 (Y1)	pCi/g
		Soil	Uranium-234	0.94	pCi/g
		Soil	Plutonium-238	0.52 (Y1)	pCi/g
		Soil	Uranium-238	0.84	pCi/g
		Soil	Strontium-90	0.49 (LT)	pCi/g
		Soil	TCLP Cadmium	0.051	mg/L
		Soil	TCLP Barium	0.816	mg/L
		Soil	Aroclor 1254	41	µg/kg
		Soil	Aroclor 1260	25 (J)	µg/kg
Site A - West	511J502	Soil	Diesel-Range Organics	160	mg/kg
		Soil	Actinium-228	1.8 (G)	pCi/g

Table A.12-6
Waste Management Samples Detected Above
Minimum Reporting Limits at CAS 18-99-10, Ammunition Dump
(Page 2 of 3)

Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
Site A - West cont.	511J502 cont.	Soil	Thallium-208	0.85 (G)	pCi/g
		Soil	Bismuth-214	0.85 (G, J)	pCi/g
		Soil	Lead-212	2.47 (J)[a]	pCi/g
		Soil	Cesium-137	0.52 (G)	pCi/g
		Soil	Lead-214	0.95 (G, J)	pCi/g
		Soil	Uranium-235	0.096	pCi/g
		Soil	Plutonium-239	0.303	pCi/g
		Soil	Uranium-234	1.05	pCi/g
		Soil	Uranium-238	0.95	pCi/g
		Soil	TCLP Cadmium	0.0735	mg/L
		Soil	TCLP Barium	0.685	mg/L
Site A - East	511J503	Soil	Diesel-Range Organics	160	mg/kg
		Soil	Actinium-228	1.85 (G)	pCi/g
		Soil	Thallium-208	0.72 (G)	pCi/g
		Soil	Bismuth-212	3.2 (G)	pCi/g
		Soil	Bismuth-214	1.07 (G, J)	pCi/g
		Soil	Lead-212	2.22 (J)[a]	pCi/g
		Soil	Cesium-137	0.58 (G)	pCi/g
		Soil	Lead-214	1.16 (G, J)	pCi/g
		Soil	Uranium-235	0.147	pCi/g
		Soil	Plutonium-239	1.05	pCi/g
		Soil	Uranium-234	0.82	pCi/g
		Soil	Plutonium-238	0.231	pCi/g
		Soil	Uranium-238	0.83	pCi/g
		Soil	Strontium-90	0.34 (LT)	pCi/g
		Soil	TCLP Cadmium	0.138	mg/L
		Soil	TCLP Barium	0.868	mg/L

Table A.12-6
Waste Management Samples Detected Above Minimum Reporting Limits at CAS 18-99-10, Ammunition Dump
(Page 3 of 3)

Sample Location	Sample Number	Sample Matrix	Parameter	Result	Units
Site A - North	511J504	Soil	Diesel-Range Organics	150	mg/kg
		Soil	Actinium-228	1.89 (G)	pCi/g
		Soil	Thallium-208	0.63 (G)	pCi/g
		Soil	Bismuth-214	0.94 (G, J)	pCi/g
		Soil	Lead-212	2.44 (J)[a]	pCi/g
		Soil	Cesium-137	0.58 (G)	pCi/g
		Soil	Lead-214	1.29 (G, J)	pCi/g
		Soil	Uranium-235	0.092	pCi/g
		Soil	Plutonium-239	0.66	pCi/g
		Soil	Uranium-234	1	pCi/g
		Soil	Plutonium-238	0.131	pCi/g
		Soil	Uranium-238	0.9	pCi/g
		Soil	TCLP Cadmium	0.0521	mg/L
		Soil	TCLP Barium	0.66	mg/L
		Soil	TCLP Lead	0.169	mg/L

[a]Qualifier added to laboratory data; record accepted. Sample does not meet counting geometry requirements.

μg/kg = Micrograms per kilogram
mg/kg = Milligrams per kilogram
mg/L = Milligrams per liter
pCi/g = Picocuries per gram
G = Sample density differs by more than 15% of laboratory control sample density
J = Estimated value
LT = Result is less than the requested minimum detectable concentration, greater than the sample specific minimum detectable concentration
M3 = The requested minimum detectable concentration was not met, but the reported activity is greater than the reported minimum detectable concentration
TCLP = Toxicity characteristic leaching procedure
Y1 = Chemical yield is in control at 100-110%. Quantitive yield is assumed.

A.13.0 Quality Assurance

This section contains a summary of QA/QC measures implemented during the sampling and analysis activities conducted in support of the CAU 511 CAI. The following sections discuss the data validation process, QC samples, and nonconformances. A detailed evaluation of the DQI is presented in Appendix B.

Laboratory analyses were conducted for samples used in the decision-making process to provide a quantitative measurement of any COPCs present. Rigorous QA/QC was implemented for all laboratory samples including documentation, verification and validation of analytical results, and affirmation of DQI requirements related to laboratory analysis. Detailed information regarding the QA program is contained in the Industrial Sites QAPP (NNSA/NV, 2002).

A.13.1 Data Validation

Data validation was performed in accordance with the Industrial Sites QAPP (NNSA/NV, 2002) and approved protocols and procedures. All laboratory data from samples collected and analyzed for CAU 511 were evaluated for data quality according to the EPA Functional Guidelines (EPA, 1999 and 2002). These guidelines are implemented in a tiered process and are presented in Sections A.13.1.1, A.13.1.2, and A.13.1.3. Data were reviewed to ensure that samples were appropriately processed and analyzed, and the results were evaluated using validation criteria. Documentation of the data qualifications resulting from these reviews is retained in project files as a hard copy and electronic media.

One hundred percent of the data analyzed as part of this investigation were subjected to Tier I and Tier II evaluations. A Tier III evaluation was performed on approximately 5 percent of the data analyzed.

A.13.1.1 Tier I Evaluation

Tier I evaluation for chemical and radiochemical analysis examines, but is not limited to:

- Sample count/type consistent with chain of custody
- Analysis count/type consistent with chain of custody

- Correct sample matrix
- Significant problems stated in cover letter or case narrative
- Completeness of certificates of analysis
- Completeness of Contract Laboratory Program (CLP) or CLP-like packages
- Completeness of signatures, dates, and times on chain of custody
- Condition-upon-receipt variance form included
- Requested analyses performed on all samples
- Date received/analyzed given for each sample
- Correct concentration units indicated
- Electronic data transfer supplied
- Results reported for field and laboratory QC samples
- Whether or not the deliverable met the overall objectives of the project

A.13.1.2 Tier II Evaluation

Tier II evaluation for chemical and radiochemical analysis examines, but is not limited to:

Chemical:

- Correct detection limits achieved.
- Sample date, preparation date, and analysis date for each sample.
- Holding time criteria met.
- Quality control batch association for each sample.
- Cooler temperature upon receipt.
- Sample pH for aqueous samples, as required.
- Detection limits properly adjusted for dilution, as required.
- Blank contamination evaluated and applied to sample results/qualifiers.
- Matrix spike/MSD percent recoveries and relative percent differences (RPDs) evaluated qualifiers applied to laboratory results, as necessary.
- Field duplicate RPDs evaluated using professional judgment and qualifiers applied to laboratory results, as necessary.
- Laboratory duplicate RPDs evaluated and qualifiers applied to laboratory results, as necessary.
- Surrogate percent recovery evaluated and qualifiers applied to laboratory results, as necessary.

- Laboratory control sample (LCS) percent recovery evaluated and qualifiers applied to laboratory results, as necessary.
- Initial and continuing calibration evaluated and qualifiers applied to laboratory results, as necessary.
- Internal standard evaluation.
- Mass spectrometer tuning criteria.
- Organic compound quantitation.
- Inductively coupled plasma interference check sample evaluation.
- Graphite furnace atomic absorption QC.
- Inductively coupled plasma serial dilution effects.
- Recalculation of 10 percent of laboratory results from raw data.

Radioanalytical:

- Correct detection limits achieved.
- Blank contamination evaluated and, if significant, qualifiers are applied to sample results.
- Certificate of Analysis consistent with data package documentation.
- Quality control sample results (duplicates, LCSs, laboratory blanks) evaluated and used to determine laboratory result qualifiers.
- Sample results, uncertainty, and minimum detectable concentration evaluated.
- Detector system calibrated with National Institute for Standards and Technology (NIST)-traceable sources.
- Calibration sources preparation was documented, demonstrating proper preparation and appropriateness for sample matrix, emission energies, and concentrations.
- Detector system response to daily or weekly background and calibration checks for peak energy, peak centroid, peak full-width half-maximum, and peak efficiency, depending on the detection system.
- Tracers NIST-traceable, appropriate for the analysis performed, and recoveries that met QC requirements.

- Documentation of all QC sample preparation complete and properly performed.
- Spectra lines, photon emissions, particle energies, peak areas, and background peak areas support the identified radionuclide and its concentration.

A.13.1.3 Tier III

The Tier III review is an independent examination of the Tier II evaluation. The Tier III review duplicated the Tier II review for 16 samples (or 5 percent of the total samples) by an independent agency and includes the following additional evaluations:

Chemical:

- Recalculation of all laboratory results from raw data

Radioanalytical:

- Quality Control sample results (e.g., calibration source concentration, percent recovery, and RPD) verified.
- Radionuclides and their concentration validated as appropriate considering their decay schemes, half-lives, and process knowledge and history of the facility and site.
- Each identified line in spectra verified against emission libraries and calibration results.
- Independent identification of spectra lines, area under the peaks, and quantification of radionuclide concentration in a random number of sample results.

A Tier III review was performed by TechLaw, Inc., of Lakewood, Colorado. Tier II and Tier III results were compared, and no corrections to Tier II validation resulted from the Tier III review.

A.13.2 Field Quality Control Samples

Field QC samples collected during the CAI consisted of 17 trip blanks, 1 equipment rinsate blank, 8 field blanks, 1 source blank, 17 MS/MSDs, and 17 FDs collected and submitted to the laboratory for analysis using the analytical methods shown in Table A.2-2. The QC samples were assigned individual sample numbers and sent to the laboratory "blind." Additional samples were selected by the laboratory to be analyzed as laboratory duplicates.

Review of the field blank analytical data for soil sampling indicates that there was no cross-contamination due to transportation practices or ambient conditions and that decontamination

practices were adequate. Field, equipment rinsate, and source blanks were analyzed for the applicable parameters listed in Table A.2-2 and trip blanks were analyzed for VOCs only.

During the sampling events, 17 FDs were sent as blind samples to the laboratory to be analyzed for the investigation parameters listed in Table A.2-2. For these samples, the duplicate results precision (i.e., RPDs between the environmental sample results and their corresponding FD sample results) were evaluated according to the guidance set forth in the EPA Functional Guidelines (EPA, 1999 and 2002).

A.13.2.1 Laboratory Quality Control Samples

Analysis of method QC blanks were performed on each sample delivery group (SDG) for inorganics. Analysis for surrogate spikes and preparation blanks (PBs) were performed on each SDG for organics only. Initial and continuing calibration and LCSs were performed for each SDG. The results of these analyses were used to qualify associated environmental sample results according to the EPA Functional Guidelines (EPA, 1999 and 2002). Documentation of data qualifications resulting from the application of these guidelines is retained in project files as both hard copy and electronic media.

The laboratory included a PB, LCS, and a laboratory duplicate sample with each batch of field samples analyzed for radionuclides.

A.13.3 Field Nonconformances

One field nonconformance was identified on this project. It dealt with the failure to follow internal procedures for the management of radioactively contaminated soils/debris. The occurrence was remedied, and the debris was disposed of in accordance with procedures. There is no impact to DQO decisions.

A.13.4 Laboratory Nonconformances

Laboratory nonconformances are generally due to inconsistencies in the analytical instrumentation operation, sample preparations, extractions, missed holding times, and fluctuations in internal standard and calibration results. Nineteen nonconformances were issued by the laboratory that may or may not have resulted in qualifying data. These laboratory nonconformances have been accounted for during the data qualification process.

A.14.0 Summary

Analytes detected in soil samples during the CAI were evaluated against PALs/FALs to determine the nature and extent of COCs for CAU 511. Assessment of the data generated from investigation activities indicates the FALs were exceeded in soil samples at two CAU 511 CASs. However, disposal activities were conducted in all areas where FALs were exceeded and verification samples indicate no COCs remain at any CAS above FALs. The following summarizes the results for each CAS.

CAS 03-08-02, Waste Dump (Piles & Debris). Analytical results demonstrate that no contaminants are remain at this site above FALs. Approximately 1,500 yd^3 of debris/soil was removed and deposited in the 10c landfill. Two 55-gallon drums of radioactively contaminated soil were collected and sent to the NTS LLW landfill.

CAS 03-99-11, Waste Dump (Piles). Approximately 900 yd^3 of soil and rock (600 yd^3 with concentrations of arsenic above FALs) was removed from this CAS as a corrective action. In addition, some Pu containing soil was removed and disposed of as LLW. Verification soil samples demonstrated that no soil contaminated with arsenic in concentrations greater than FALs remain at this site.

CAS 03-99-12, Waste Dump (Piles & Debris). Analytical results from environmental samples collected at CAS 03-99-12 demonstrate that concentrations of TPH are present in the piles, but no hazardous constituents greater than FALs exist.

CAS 04-99-04, Contaminated Trench/Berm. Analytical results from environmental surface samples at CAS 04-99-04 showed the presence of Pu-239 at one of the sample locations not associated with this CAS. The contaminated soil was removed as a best management practice. No contaminants remain in soils in concentrations greater than FALs.

CAS 06-16-01, Waste Dump (Piles & Debris). Analytical results from environmental surface samples showed the presence of lead in the soil beneath a battery. The contaminated soil was removed and disposed of as hazardous waste and a verification sample was collected. Results indicated no contaminants remain in soils in concentrations greater than FALs.

CAS 06-17-02, Scattered Ordnance/Automatic Weapons Range. Analytical results of environmental surface samples identified no contaminants present in concentrations above FALs. No contaminants remain in concentrations greater than FALs.

CAS 07-08-01, Contaminated Mound. Analytical results of environmental soil samples collected from soils beneath removed debris showed the presence of Pu-239 in concentrations greater than FALs, but is attributable to atmospheric nuclear testing and not associated with CAS 07-08-01. Therefore, there are no COCs remaining at this site (see Section A.2.0).

CAS 18-99-10, Ammunition Dump. Munitions and explosives of concern items were collected from four separate sites comprising CAS 18-99-10. Field screening of debris from Site A revealed the presence of Am-241 in concentrations greater than FALs. All debris was collected, properly containerized, and disposed of in the LLW landfill. All UXO and MPPEH was demilitarized. All remaining debris including MD was removed and disposed of in the 10c landfill. No contamination remains in concentrations above FALs.

CAS 19-19-03, Waste Dump (Piles & Debris). Analytical results of environmental surface samples revealed that there are no contaminants above FALs located at this site.

A.15.0 References

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Appendix B

Data Assessment

B.1.0 Data Assessment

The DQA process is the scientific evaluation of the actual investigation results to determine whether the DQO criteria established in the CAU 511 CAIP were met and whether DQO decisions can be resolved at the desired level of confidence. The DQO process ensures that the right type, quality, and quantity of data will be available to support the resolution of those decisions at an appropriate level of confidence. Using both the DQO and DQA processes help to ensure that DQO decisions are sound and defensible.

As required by Section 5.5 of the Industrial Sites QAPP (NNSA/NV, 2002), a DQA was performed to verify DQO assumptions and document performance of the DQO tests listed in Appendix A of the CAU 511 CAIP. This assessment was performed following the EPA *Guidance for Data Quality Assessments: Practical Methods for Data Analysis* (EPA, 2000) document referenced in Section 5.5 of the Industrial Sites QAPP (NNSA/NV, 2002). This use of the DQA process has been applied to a DQO process based on judgmental sampling.

The DQA involves five steps that begin with a review of the DQOs and end with an answer to the DQO decisions. The five steps are briefly summarized as follows:

Step 1: Review DQOs and Sampling Design - Review the DQO process to provide context for analyzing the data. State the primary statistical hypotheses, confirm the limits on decision errors for committing false negative (Type I) or false positive (Type II) decision errors, and review any special features, potential problems, or any deviations to the sampling design.

Step 2: Conduct a Preliminary Data Review - A preliminary data review should be performed by reviewing QA reports and inspecting the data both numerically and graphically, validating and verifying the data to ensure that the measurement systems performed in accordance with the criteria specified, and using the validated dataset to determine whether the quality of the data is satisfactory.

Step 3: Select the Test - Select the test based on the population of interest, population parameter, and the hypotheses. Identify the key underlying assumptions that could cause a change in one of the DQO decisions.

Step 4: Verify the Assumptions - Perform tests of assumptions. If data are missing or are censored, determine the impact on DQO decision error.

Step 5: Draw Conclusions from the Data - Perform the calculations required for the test.

B.1.1 Review DQOs and Sampling Design

This section contains a review of the DQO process presented in Appendix A of the CAU 511 CAIP. The DQO decisions are presented with the DQO provisions to limit false negative or false positive decision errors. Special features, potential problems, or any deviations to the sampling design are also presented.

B.1.1.1 Decision I

The Decision I statement as presented in the CAU 511 CAIP is: "Is a contaminant present within a CAS at a concentration that could pose an unacceptable risk to human health and the environment?"

Decision Rules:

- If the population parameter of any COPC in a target population exceeds the FAL for that COPC, then that COPC is identified as a COC.
- If a COC is detected, then the Decision II statement must be resolved.
- If COCs are not identified, then the investigation is complete.

Population Parameter: The maximum observed sample result.

B.1.1.1.1 DQO Provisions To Limit False Negative Decision Error

A false negative decision error (where consequences are more severe) was controlled by meeting the following criteria:

1. Having a high degree of confidence that locations selected will identify COCs if present anywhere within the CAS.

2. Having a high degree of confidence that analyses conducted will be sufficient to detect any COCs present in the samples.

3. Having a high degree of confidence that the dataset is of sufficient quality and completeness.

Criterion 1:

The following methods (stipulated in the CAU 511 DQOs [NNSA/NSO, 2004]) were used in selecting sample locations:

- Random locations based upon the required criteria for Visual Sample Plan location generation.
- Sampling from high and low spots where contamination of the environment was not apparent.
- Selection of sampling locations associated with subsurface debris based on anomalies.
- Selection of sampling locations based on bias associated with surface and subsurface staining, odors, presence of debris, etc. was accomplished by visual field observations.
- Selection of sampling locations associated with professional judgment based on acceptable knowledge was accomplished by:
  - Source and location of release
  - Chemical nature and fate properties
  - Physical transport pathways and properties
  - Transport drivers

Criterion 2:

All samples were analyzed using the analytical methods listed in Table 3-3 of the CAIP and for the chemical and radiological parameters listed in Section A.1.1 of the CAIP. Table B.1-1 provides a reconciliation of samples analyzed to the planned analytical program.

Samples were submitted for all of the analytical methods specified in the analytical program specified in Section A.1.4.3.3 of the CAIP with the following exception. Samples from CAS 06-17-02 were not analyzed for TPH or PCBs because no bias was identified during the investigation activities.

Sample results were assessed against the acceptance criterion of the DQI of sensitivity as defined in the Industrial Sites QAPP (NNSA/NV, 2002). The sensitivity acceptance criterion defined in the

Table B.1-1
CAU 511 Samples Submitted by Parameter

		Analytes										
		Total VOCs	Total SVOCs	PCBs	Metals	TPH-DRO	Herbicide	Explosives	Gamma Spectroscopy	Isotopic Uranium	Isotopic Plutonium	Stontium-90
Corrective Action Site	03-08-02	X	X	X	X	X	NR	NR	X	X	X	X
	03-99-11	X	X	X	X	X	X	NR	X	X	X	X
	03-99-12	X	X	X	X	X	NR	NR	X	X	X	X
	04-99-04	X	X	X	X	X	NR	NR	X	X	X	X
	06-16-01	X	X	X	X	X	NR	NR	X	X	X	X
	06-17-02	NR	NR	NR	X	NR	NR	X	NR	NR	NR	NR
	07-08-01	NR	NR	X	X	NR	NR	X	X	X	X	X
	18-99-10	X	NR	X	X	X	NR	X	X	X	X	X
	19-19-03	X	X	X	X	X	NR	NR	X	X	X	X

DRO = Diesel-range organics
NR = Not required
PCB = Polychlorinated biphenyl
SVOC = Semivolatile organic compound
TPH = Total petroleum hydrocarbons
VOC = Volatile organic compound

CAIP is that analytical detection limits will be less than the corresponding action level. This goal was not achieved for the analytical results listed in Tables B.1-2 and B.1-3. Results not meeting the sensitivity acceptance criteria were not used in making DQO decisions and therefore are considered as rejected data. The impact on DQO decisions is addressed in the assessment of completeness.

Criterion 3:

To satisfy the third criterion, the entire dataset, as well as individual sample results, were assessed against the acceptance criteria for the DQIs of precision, accuracy, comparability, completeness, and representativeness, as defined in the Industrial Site QAPP (NNSA/NV, 2002). The DQI acceptance criteria are presented in Table 6-1 of the CAIP. As presented in Tables B.1-4 through B.1-6, these goals were met for each of the DQIs.

Table B.1-2
Chemical Analytes Failing Sensitivity Criteria (μg/kg)

Sample Number	Parameter	Result	Detect Limit	Industrial 2002 PRG
511B012	Arsenic	5.33	2.13	1.6
511B017	Arsenic	5.29	2.11	1.6
511B018	Arsenic	10.6	4.23	1.6
511B048	Benzo(a)pyrene	2,200	1,800	210
511C001	Benzo(a)pyrene	260	220	210
511A011	Benzo(a)pyrene	260	220	210
511A012	Benzo(a)pyrene	260	220	210
511B015DL	Bis(2-chloroethyl)ether	1,800	930	550
511B048	Bis(2-chloroethyl)ether	3,600	1,800	550
511B048	Dibenzo(a,h)anthracene	2,200	1,800	210
511C001	Dibenzo(a,h)anthracene	260	220	210
511A011	Dibenzo(a,h)anthracene	260	220	210
511A012	Dibenzo(a,h)anthracene	260	220	210
511B048	Hexachlorobenzene	3,600	1,800	1,100
511B015DL	N-Nitroso-di-n-propylamine	1,300	930	250
511B048	N-Nitroso-di-n-propylamine	2,500	1,800	250

PRG = Preliminary remediation goal

Table B.1-3
Radiological Analytes Failing Sensitivity Criteria

Sample Number	Parameter	Result	Detect Limit	Preliminary Action Level
511E503	Gross Alpha	227	19	15
511E503DUP	Gross Alpha	208	18	15

Precision

The duplicate precision is evaluated using the RPD or normalized difference (ND). For the purpose of determining the data precision of chemical analyses, the RPD between duplicate analyses was calculated. For radionuclides, the RPD was not calculated unless both the sample and its duplicate had concentration of the target radionuclide exceeding five times their MDC. Otherwise radionuclide duplicate results were evaluated using the ND.

Table B.1-4 provides the chemical and radiological precision analysis results for all constituents that were qualified for precision The chemical analytes qualified for precision were barium, chromium, and lead. Radiological data qualified for precision were Am-241, cesium-137, Pu-238, Pu-239, and Sr-90.

As shown in Table B.1-4, the precision rate for 19 measurements for all constituents except Pu-239 exceeded the CAIP acceptance criterion of 80 percent. The precision rate for all other constituents is 100 percent. Therefore, the dataset is determined to be acceptable for the DQI of precision, as all criteria were met with the exception of Pu-239, which was not a COC.

Table B.1-4
Precision Measurements

Parameter	CAS Number	Number of Analytes Qualified	Number of Measurements performed	Percent within Criteria
Strontium-90	10098-97-2	6	137	95.6
Cesium-137	10045-97-3	7	112	93.8
Americium-241	14596-10-2	8	112	92.9
Lead	7439-92-1	19	217	91.2
Barium	7440-39-3	26	217	88.0
Chromium	7440-47-3	33	217	84.8
Plutonium-238	13981-16-3	26	142	81.7
Plutonium-239	15117-48-3	43	142	69.7

CAS = Chemical Abstract Service

Accuracy

For the purpose of determining data accuracy of sample analyses, environmental soil samples were evaluated and incorporated into the accuracy calculation. The results qualified for accuracy were associated with MS recoveries that were outside control limits and could potentially be reported at concentration lower or higher than actual concentrations. Table B.1-5 provides the chemical accuracy analysis results for all constituents qualified for accuracy. Accuracy rates are above the CAIP criterion of 80 percent for all parameters except barium. The barium was qualified for low MS recoveries. There are specific criteria for applying bias to sample results and these results did not pass that criteria. Technically, the accuracy where MS/MSD percent recovery exceeded the lower

limit is negligible considering the results are orders of magnitude lower than the PRG; thus, the lack of qualification of the accuracy results from the analysis of samples for barium did not affect any decision. There was no radiological data qualified for accuracy.

Table B.1-5
Chemical Accuracy Measurements
(Page 1 of 3)

Parameter	CAS Number	Number of Analytes Qualified	Number of Measurements Performed	Percent within Criteria
4-(2,4-Dichlorophenoxy)butyric Acid	94-82-6	1	48	97.9
Nitrobenzene	98-95-3	3	107	97.2
1,2-Dichlorobenzene	95-50-1	3	83	96.4
1,3-Dichlorobenzene	541-73-1	3	83	96.4
1,4-Dichlorobenzene	106-46-7	3	83	96.4
Hexachlorobutadiene	87-68-3	3	84	96.4
Naphthalene	91-20-3	3	83	96.4
1,2-Dichlorobenzene	95-50-1	3	81	96.3
1,2-Diphenylhydrazine	122-66-7	3	81	96.3
1,3-Dichlorobenzene	541-73-1	3	81	96.3
1,4-Dichlorobenzene	106-46-7	3	81	96.3
2,4-Dinitrotoluene	121-14-2	3	81	96.3
2,6-Dinitrotoluene	606-20-2	3	81	96.3
2-Chloronaphthalene	91-58-7	3	81	96.3
2-Nitroaniline	88-74-4	3	81	96.3
3,3-Dichlorobenzidine	91-94-1	3	81	96.3
4-Bromophenyl-phenyl ether	101-55-3	3	81	96.3
4-Chloroaniline	106-47-8	3	81	96.3
Acenaphthene	83-32-9	3	81	96.3
Acenaphthylene	208-96-8	3	81	96.3
Aniline	62-53-3	3	81	96.3
Anthracene	120-12-7	3	81	96.3
Benzo(a)anthracene	56-55-3	3	81	96.3
Benzo(a)pyrene	50-32-8	3	81	96.3
Benzo(b)fluoranthene	205-99-2	3	81	96.3
Benzo(g,h,i)perylene	191-24-2	3	81	96.3
Benzo(k)fluoranthene	207-08-9	3	81	96.3

Table B.1-5
Chemical Accuracy Measurements
(Page 2 of 3)

Parameter	CAS Number	Number of Analytes Qualified	Number of Measurements Performed	Percent within Criteria
Benzyl Alcohol	100-51-6	3	81	96.3
Bis(2-chloroethoxy)methane	111-91-1	3	81	96.3
Bis(2-chloroethyl)ether	111-44-4	3	81	96.3
Bis(2-chloroisopropyl)ether	108-60-1	3	81	96.3
Bis(2-ethylhexyl)phthalate	117-81-7	3	81	96.3
Butylbenzylphthalate	85-68-7	3	81	96.3
Carbazole	86-74-8	3	80	96.3
Chrysene	218-01-9	3	82	96.3
Di-n-butylphthalate	84-74-2	3	82	96.3
Di-n-octylphthalate	117-84-0	3	80	96.3
Dibenzo(a,h)anthracene	53-70-3	3	81	96.3
Dibenzofuran	132-64-9	3	81	96.3
Diethylphthalate	84-66-2	3	81	96.3
Dimethylphthalate	131-11-3	3	81	96.3
Fluoranthene	206-44-0	3	81	96.3
Fluorene	86-73-7	3	81	96.3
Hexachlorobenzene	118-74-1	3	81	96.3
Hexachlorobutadiene	87-68-3	3	81	96.3
Hexachlorocyclopentadiene	77-47-4	3	81	96.3
Hexachloroethane	67-72-1	3	81	96.3
Indeno(1,2,3-cd)pyrene	193-39-5	3	81	96.3
Isophorone	78-59-1	3	81	96.3
N-Nitroso-di-n-propylamine	621-64-7	3	81	96.3
N-Nitrosodiphenylamine	86-30-6	3	81	96.3
Naphthalene	91-20-3	3	81	96.3
Nitrobenzene	98-95-3	3	81	96.3
Phenanthrene	85-01-8	3	81	96.3
Pyrene	129-00-0	3	81	96.3
Pyridine	110-86-1	3	81	96.3
Arsenic	7440-38-2	10	221	95.5
1,2,4-Trichlorobenzene	120-82-1	4	83	95.2

Table B.1-5
Chemical Accuracy Measurements
(Page 3 of 3)

Parameter	CAS Number	Number of Analytes Qualified	Number of Measurements Performed	Percent within Criteria
1,2,4-Trichlorobenzene	120-82-1	4	81	95.1
2,4,5-Trichlorophenol	95-95-4	4	81	95.1
2,4,6-Trichlorophenol	88-06-2	4	81	95.1
2,4-Dichlorophenol	120-83-2	4	81	95.1
2,4-Dimethylphenol	105-67-9	4	81	95.1
2,4-Dinitrophenol	51-28-5	4	81	95.1
2-Methylphenol	95-48-7	4	81	95.1
4-Methylphenol	106-44-5	4	81	95.1
4-Nitrophenol	100-02-7	4	81	95.1
Benzoic Acid	65-85-0	4	81	95.1
Pentachlorophenol	87-86-5	4	81	95.1
2-Chlorophenol	95-57-8	5	81	93.8
Phenol	108-95-2	5	81	93.8
Lead	7439-92-1	19	217	91.2
Barium	7440-39-3	92	217	57.6

CAS = Chemical Abstract Service

Representativeness

The DQO process as identified in Appendix A of the CAU 511 CAIP (NNSA/NSO, 2004) was used to address sampling and analytical requirements for CAU 511. During this process, appropriate locations were selected that enabled the samples collected to be representative of the population parameters identified in the DQO (the most likely locations to contain contamination and locations that bound COCs). The sampling locations identified in the Criterion 1 discussion meet this criteria. Therefore, the analytical data acquired during the CAU 511 CAI are considered representative of the population parameters.

Comparability

Field sampling, as described in the CAU 511 CAIP (NNSA/NSO, 2004), was performed and documented in accordance with approved procedures that are comparable to standard industry

practices. Approved analytical methods and procedures per DOE were used to analyze, report, and validate the data. These are comparable to other methods used not only in industry and government practices, but most importantly are comparable to other investigations conducted for the NTS. Therefore, project datasets are considered comparable to other datasets generated using these same standardized DOE procedures, thereby meeting DQO requirements.

Also, standard, approved field and analytical methods ensured that data were appropriate for comparison to the investigation action levels specified in the CAIP.

Completeness

The CAU 511 CAIP (NNSA/NSO, 2004) defines acceptable criteria for completeness to be 80 percent of CAS-specific non-critical analytes identified in the CAIP having valid results and 90 percent of critical analytes (including Decision II samples) having valid results. Also, the dataset must be sufficiently complete to be able to make the DQO decisions. Critical analytes for CAU 511 are identified as the hazardous constituents of TPH-DRO, 2-(2methyl-4-chlorophenoxy) propionic acid, and lead. The critical analytes are identified as the hazardous constituents of TPH-DRO and arsenic at CASs 03-08-02, 03-99-11, and 03-99-12 where a Tier 2 evaluation was required.

Rejected data (either qualified as rejected or data that failed the criterion of sensitivity) were not used in the resolution of DQO decisions and are not counted towards meeting the completeness acceptance criterion. Table B.1-6 provides the rejected data for CAU 511 Table B.1-2 identifies analytes that failed the sensitivity criteria and includes three samples for arsenic from CAU 03-99-11 and a total of four samples for benzo(a)pyrene (hazardous constituent of TPH-DRO) from CASs 03-02-02, 03-99-11, and 03-99-12. This rejected data did not impact the decision at CAS 03-99-11 because arsenic was assumed to be present throughout the soil piles. The rejected data did not impact the decision at CASs 03-08-02 because the hazardous constituent was attributable to asphalt in the sample. The rejected hazardous constituent data from CAS 03-08-02 was an anomolous hit and attributable to heavy equipment use during debris removal activities. The rejected data did not impact the decision at CAS 03-99-12 because TPH-DRO was assumed to be present throughout the piles and attributable to a rement by-product from the manufacturing process of calcium carbide.

Table B.1-6
CAU 511 Rejected Data Table

Parameter	CAS Number	Number of Analytes Rejected	Number of Measurements Performed	Percent Complete
2,4,5-Trichlorophenol	95-95-4	1	81	98.8
2,4,6-Trichlorophenol	88-06-2	1	81	98.8
2,4-Dichlorophenol	120-83-2	1	81	98.8
2,4-Dimethylphenol	105-67-9	1	81	98.8
2,4-Dinitrophenol	51-28-5	1	81	98.8
2-Chlorophenol	95-57-8	1	81	98.8
2-Methylphenol	95-48-7	1	81	98.8
4-Methylphenol	106-44-5	1	81	98.8
4-Nitrophenol	100-02-7	1	81	98.8
Benzoic Acid	65-85-0	1	81	98.8
Hexachlorobutadiene	87-68-3	1	84	98.8
Hexachlorobutadiene	87-68-3	1	81	98.8
Pentachlorophenol	87-86-5	1	81	98.8
Phenol	108-95-2	1	81	98.8
All > 95%				

CAS = Chemical Abstract Service

B.1.1.1.2 DQO Provisions To Limit False Positive Decision Error

The false decision error was controlled by assessing the potential for false positive analytical results. Quality assurance/QC samples such as field blanks, trip blanks, LCSs, and method blanks were used to determine whether a false positive analytical result may have occurred. Of 60 QA/QC samples submitted, no false positive analytical results were detected.

Proper decontamination of sampling equipment and the use of certified clean sampling equipment and containers also minimized the potential for cross contamination that could lead to a false positive analytical result.

B.1.1.2 Decision II

Decision II as presented in the CAU 511 CAIP is: "If a COC is present, is sufficient information available to evaluate appropriate corrective action alternatives?"

Decision Rules:

- If the observed concentration of any COC in a Decision II sample exceeds the PALs, then additional samples will be collected to complete the determination of the extent.
- If observed COC concentrations in a sample from all bounding directions are less than the PALs, then the decision will be that the extent of contamination has been defined in the lateral and/or vertical direction.
- If wastes are to be generated as part of a corrective action, samples will be collected to sufficiently characterize the potential wastes.

Population Parameter - The population parameter for Decision II data will be the observed concentration of each unbounded COC in any sample or the observed concentration of each sample used to characterize the potential waste stream.

B.1.1.2.1 DQO Provisions To Limit False Negative Decision Error

A false decision error (where consequences are more severe) is controlled by meeting the following criteria:

1. Having a high degree of confidence that the sample locations selected will identify the extent of the COCs.
2. Having a high degree of confidence that analyses conducted will be sufficient to detect any COCs present in the samples.
3. Having a high degree of confidence that the dataset is of sufficient quality and completeness.
4. Having a high degree of confidence that the potential waste streams are characterized.

Criterion 1:

The following criteria (stipulated in the CAU 511 DQOs [NNSA/NSO, 2004]) were used in selecting Decision II sample locations.

- Selection of sampling locations associated with vertical extent was accomplished by the depth sequences used during the Decision I sampling for each CAS.

- Selection of sampling locations associated with lateral extent was accomplished by measuring a maximum of 15 ft from the Decision I sample location in a triangular pattern surrounding the Decision I location.

In general, soil sample results demonstrated that the vertical and lateral extent of COCs were defined.

Criterion 2:

Decision II samples were collected and analyzed for the COCs present at the corresponding CAS.

- CAS 03-99-11- Arsenic
- CAS 06-16-01 - Lead
- CAS 18-99-10 - Am-241

The second criterion for extent (sensitivity) was accomplished for all analyses as demonstrated in Table B.1-2 and Table B.1-3.

Criterion 3:

To satisfy the third criterion for extent, the entire dataset, as well as individual sample results, were assessed against the DQIs of precision, accuracy, comparability, completeness, and representativeness, as defined in the Industrial Sites QAPP (NNSA/NV, 2002). The DQI discussion is presented under Criterion 3 for Decision I.

B.1.1.2.2 DQO Provisions To Limit False Positive Decision Error

The false positive decision error was controlled by assessing the potential for false positive analytical results. Quality assurance/QC samples such as field blanks, trip blanks, LCSs, and method blanks were used to determine whether a false positive analytical result may have occurred. Of 60 QA/QC samples submitted, no false positive analytical results were detected.

Proper decontamination of sampling equipment and the use of certified clean sampling equipment and containers also minimized the potential for cross contamination that could lead to a false positive analytical result.

B.1.2 Conduct a Preliminary Data Review

A preliminary data review was conducted by reviewing QA reports and inspecting the data. The contract analytical laboratories generate a QA non-conformance report when data quality does not meet contractual requirements. All data received from the analytical laboratories met contractual requirements and a QA non-conformance report was not generated. Data were validated and verified to ensure that the measurement systems performed in accordance with the criteria specified. The validated dataset quality was found to be satisfactory.

B.1.3 Select the Test and Identify Key Assumptions

The test for making DQO Decision I was the comparison of the maximum analyte result from each CAS to the corresponding FAL. The test for making DQO Decision II was the comparison of all COC analyte results from each bounding sample to the corresponding FALs.

The key assumptions that could impact a DQO decision are listed in Table B.1-7.

B.1.4 Verify the Assumptions

The results of the investigation support the key assumptions identified in the CAU 511 DQOs and Table B.1-7 except as listed below:

- Exception: At CAS 18-99-10, Site A, the debris was found to contain radioactive contamination. The contamination was confined to the debris and surface soils beneath the debris pile. The debris and surface soil was removed and disposed of as LLW.
- Impact: No impact to the CSM.

All data collected during the CAI supported CSMs with the exceptions noted in this section. These exceptions did not invalidate the CSM presented in the CAIP, nor did they necessitate revisions to the CSM.

B.1.5 Results

This section resolves the two DQO decisions for each of the CAU 511 CASs.

Table B.1-7
Key Assumptions

Exposure Scenario	Site workers are only exposed to contaminants of concern (COCs) through oral ingestion, inhalation, external exposure to radiation, or dermal contact (by absorption) of COCs absorbed onto the soils. Exposure to contamination is limited to industrial site workers, construction/remediation workers, and military personnel conducting training. The investigation results did not reveal any potential exposures other than those identified in the conceptual site models (CSMs).
Affected Media	Surface soil, shallow subsurface soil, and potentially perched (shallow) groundwater. Deep groundwater contamination is not a concern. Contaminants migrating to regional aquifers are not considered. The investigation results did not reveal any affected media other than those identified in the CSMs.
Location of Contamination/Release Points	The area of contamination is contiguous The extent of COC concentration decreases away from the area of contamination. The investigation results did not reveal any locations of contamination or release points other than those identified in the CSMs.
Transport Mechanisms	Surface transport may occur as a result of a spill or storm water runoff. Surface transport beyond shallow substrate is not a concern. The investigation results did not reveal any transport mechanisms other than those identified in the CSMs.
Preferential Pathways	None. The investigation results did not reveal any preferential pathways other than those identified in the CSMs.
Lateral and Vertical Extent of Contamination	Subsurface contamination, if present, is contiguous and decreases with distance and depth from the source. Surface contamination may occur laterally as a result of a spill or storm water runoff. The investigation results did not reveal any lateral and vertical extent of contamination other than those identified in the CSMs.
Groundwater Impacts	None. The investigation results did not reveal groundwater impacts other than those identified in the CSMs.
Future Land Use	Nonresidential. The investigation results did not reveal any future land uses other than those identified in the CSMs.
Other Data Quality Objective Assumptions	None.

B.1.5.1 Decision I

Decision Rule: If the concentration of any COPC in a target population exceeds the FAL for that COPC during the initial investigation, then that COPC is identified as a COC and Decision II sampling will be conducted.

Result: In the following CASs, COPCs exceeded FALs.

- CAS 03-99-11 - Arsenic
- CAS 06-16-01 - Lead

Plutonium-239 exceeded FALs in CASs 03-08-02, 03-99-11, 04-99-04, and 07-08-01, but because the source of the Pu-239 is not part of the investigation of these CAS, it is not considered a COC.

Decision Rule: If all COPC concentrations are less than the corresponding FALs, then the decision will be no further action.

Result: No COCs were identified in samples collected from CASs 03-08-02, 03-99-12, 04-99-04, 06-17-02, 07-08-01, and 19-19-03. No further action was identified as the recommended corrective action alternative for these CASs.

B.1.5.2 Decision II Decision Rules

Decision Rule: If the observed concentration of any COC in a Decision II sample exceeds the FALs, then additional samples may be collected to complete the determination of the extent.

Result: The vertical and lateral extent of COCs at CAS 03-99-11 was defined.

Decision Rule: If all observed COC population parameters are less than the FALs, then the decision will be that the extent of contamination has been defined in the lateral and/or vertical direction.

Result: The vertical and lateral extent of contamination at CASs 03-08-02, 03-99-11, and 18-99-10 were defined. At CASs 03-08-02, 03-99-11, 04-99-04, and 07-08-01, Pu-239 contamination was removed as best management practice. At CASs 03-99-11 and 06-16-01, arsenic and lead (respectively) contamination was removed as a corrective action.

B.2.0 References

EPA, see U.S. Environmental Protection Agency.

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

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

U.S. Department of Energy, National Nuclear Security Administration Nevada Operations Office. 2002, *Industrial Sites Quality Assurance Project Plan, Nevada Test Site, Nevada*, Rev. 3, DOE/NV--372. Las Vegas, NV.

U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2004. *Corrective Action Investigation Plan for Corrective Action Unit 511: Waste Dumps (Piles & Debris), Nevada Test Site, Nevada,* DOE/NV--996. Las Vegas, NV.

U.S. Environmental Protection Agency. 2000. *Guidance for Data Quality Assessments: Practical Methods for Data Analysis*, QA/G-9. Washington, DC.

Appendix C

Risk Assessment for CAU 511

C.1.0 Risk Assessment

This section contains documentation of the ASTM Method E1739-95 (ASTM, 1995) risk-based corrective action process as applied to CAU 511. The ASTM Method E1739-95 defines three tiers (or levels) in evaluating DQO decisions involving increasingly sophisticated analyses.

- Tier 1 – Sample results from source areas (highest concentrations) compared to PALs based on generic (non-site-specific) conditions
- Tier 2 – Sample results from exposure points compared to site-specific target levels (SSTLs) calculated using site-specific inputs and Tier 1 formulas (from the ASTM procedure).
- Tier 3 – Sample results from exposure points compared to SSTLs and points of compliance calculated using chemical fate/transport and probabilistic modeling

The risk-based corrective action decision process stipulated in ASTM Method E1739-95 is summarized in Figure C.1-1.

A. Scenario

Corrective Action Unit 511, Waste Dumps (Piles & Debris), consists of the following nine inactive sites within Areas 3, 6, 7, 18, and 19 of the NTS:

- 03-08-02, Waste Dump (Piles & Debris)
- 03-99-11, Waste Dump (Piles)
- 03-99-12, Waste Dump (Piles & Debris)
- 04-99-04, Contaminated Trench/Berm
- 06-16-01, Waste Dump (Piles & Debris)
- 06-17-02, Scattered Ordnance/Automatic Weapons Range
- 07-08-01, Contaminated Mound
- 18-99-10, Ammunition Dump
- 19-19-03, Waste Dump (Piles & Debris)

Corrective Action Site 03-08-02 is located in Area 3 of the NTS and consisted of a debris pile and two other debris areas. The debris was the remains of equipment and facilities originally built to support operations at drilling site U-3ev-2s. Contamination at the site may have occurred due to limited surface contamination of the debris being transferred to the soil or by the detonation of atmospheric nuclear tests.

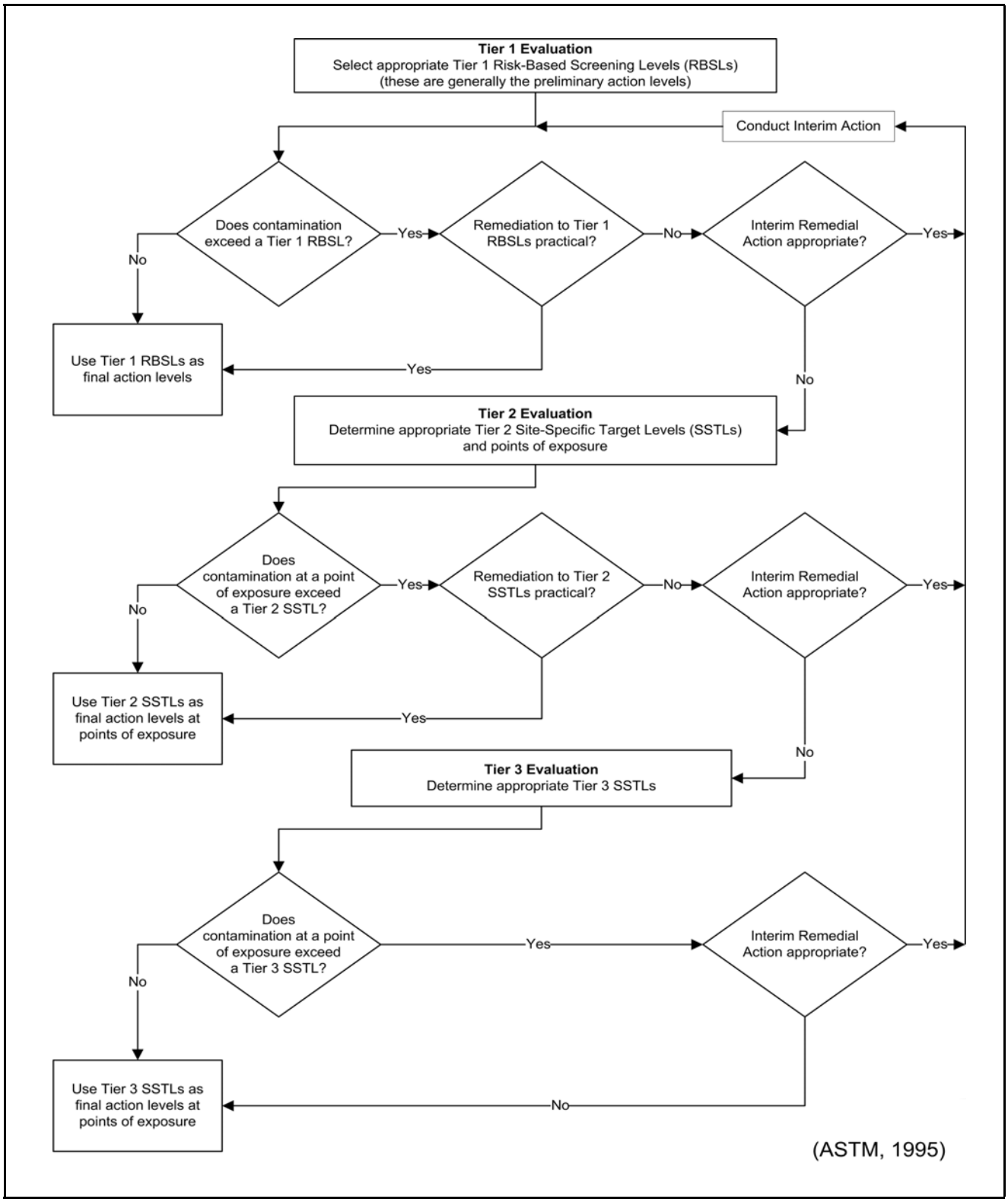


Figure C.1-1
ASTM Method E1739-95 Risk-Based Corrective Action Decision Process

Corrective Action Site 03-99-11 is located in Area 3 of the NTS and consisted of multiple piles of discolored soil and scattered debris located approximately 100 ft west of crater U-3gg. Details of the history and contents of the piles are unavailable. Contamination at this site was assumed to have occurred due to the transfer of contamination from the discarded soil transferring to the site soil, the possible spraying of chemicals on the discarded soil to regulate or limit rodent populations, or the results of atmospheric nuclear testing.

Corrective Action Site 03-99-12 is located in Area 3 about 200 yd south of the 3-03 Road next to the Power Line Road that runs parallel to Mercury Highway. The site consists of multiple piles of solid, white, gravel-sized material suspected to be spent calcium carbide (i.e., calcium carbonate). Contamination at this site is assumed to have occurred due to the contamination present in the materials discarded at the site being transferred to the site soils.

Corrective Action Site 04-99-04 is located in Area 7 and consists of a potential waste disposal site associated with two berms and a trench. There is no process or historical knowledge to suggest that contamination exists at this CAS.

Corrective Action Site 06-16-01 is located in Area 6 next to Yucca Lake about 200 yd south of Tweezer Road and consisted of the debris from airplanes and dirigibles once stored there. Contamination at this site may have occurred to the limited surface contamination of the debris being transferred to the soil surface.

Corrective Action Site 06-17-02 is located in the foothills in Area 6 south of Yucca Lake and was used by Wackenhut Services, Inc. and the military for live-round training purposes. Numerous targets such as vehicles, trailers, and tanks were removed before beginning this investigation. Contamination at this site may have occurred due to the limited surface contamination of the debris being transferred to the soil surface from the targets or the bullets fired in the area, or the remains of explosives that may have been used at the site.

Corrective Action Site 07-08-01 is located in Area 7 approximately 0.25 mi southwest of Bunker 7-800 and consists of a borrow pit and a mound where an inert landmine was found. Contamination at the site may have occurred due to limited surface contamination of the debris being transferred to the soil surface or from atmospheric nuclear tests.

Corrective Action Site 18-99-10 is located in Area 18 along Buckboard Mesa road approximately 1.4 mi south of the intersection of Airport Road and Buckboard Mesa Road. It consisted of MD and target debris from military exercises. Contamination at the site may have occurred due to limited surface contamination of the debris being transferred to the soil surface.

This CAU was investigated because process knowledge indicated the associated CASs may have been used to store or dispose of material considered to be hazardous or radioactive waste by current standards. The CAI was conducted in accordance with the CAU 511 CAIP as developed in compliance with the FFACO (1996).

Corrective Action Site 19-19-03 is located in Area 19 approximately 250 ft north of the 19-03 Road and Pahute Mesa Road intersection and consists of a large "H"-shaped pit with multiple pipes entering or exiting. Contamination at the site may have been transferred to the soil as water was removed and replaced in the pit.

Additional information regarding the history of each site, planning, and the scope of the investigation is presented in the CAU 511 CAIP (NNSA/NSO, 2004a).

B. Site Assessment

The CAI at CAS 03-08-02 involved visual inspection and a site walkover. The presence of a large debris pile in addition to surface debris lying throughout the area provided the basis of the assessment. Based on the historical knowledge that the debris pile was the remains of support facilities and noting the presence of crushed rusted containers, analysis of soil for unknown contaminants was limited to those identified in Table A.1-1 of the CAU 511 CAIP.

The CAI at CAS 03-99-11 involved visual inspection and a site walkover. Piles of discolored soil and a slight odor in addition to data from previous sample provided the basis of the assessment. Based on the previous data and the lack of historical documentation, analysis of soil for unknown contaminants was limited to those identified in Table A.1-1 of the CAU 511 CAIP.

The CAI at CAS 03-99-12 involved visual inspection, a site walkover, and the analysis provided by investigations conducted throughout the area on similar piles of material. Based on this knowledge

and its proximity to the remains of the subdock located in Area 3, analysis of soil for unknown contaminants was limited to those identified in Table A.1-1 of the CAU 511 CAIP

The CAI at CAS 04-99-04 involved visual inspection and a site walkover. Based on the results of previous geophysical and radiological surveys, analysis of soil for unknown contaminants was limited to those identified in Table A.1-1 of the CAU 511 CAIP.

The CAI at CAS 06-16-01 involved visual inspection, a site walkover, and knowledge that the land had previously been used to store old airplanes and dirigibles. Based on this knowledge and the type of debris lying throughout the area, analysis of soil for unknown contaminants was limited to those identified in Table A.1-1 of the CAU 511 CAIP.

The CAI for CAS 06-17-02 involved visual inspection, a site walkover, and knowledge that the land had been used as a target range for small weapons. Based on this knowledge, analysis of soil for unknown contaminants was limited to those identified in Table A.1-1 of the CAU 511 CAIP.

The CAI at CAS 07-08-01 involved visual inspection, a site walkover, and knowledge of the previous discovery of an inert landmine. Based on this knowledge, analysis of soil for unknown contaminants is limited to those identified in Table A.1-1 of the CAU 511 CAIP.

The CAI at CAS 18-99-10 involved visual inspection, a site walkover, and knowledge that the area had been and is still being used for live-fire exercises by the military. Based on this knowledge, analysis of soil for contaminants is limited to those identified in Table A.1-1 of the CAU 511 CAIP.

The CAI at CAS 19-19-03 involved visual inspection and a site walkover. Analysis of soil for contaminants was limited to those identified in Table A.1-1 of the CAU 511 CAIP.

The maximum concentration of constituents identified throughout CAU 511 for each constituent and their corresponding FALs are presented in Table C.1-1.

C. Site Classification and Initial Response Action

The four major site classifications listed in Table 3 of the ASTM Standard are: (1) immediate threat to human health, safety, and the environment; (2) short-term (0 to 2 years) threat to human health,

Table C.1-1
Maximum Concentration of Constituents
(Page 1 of 2)

Sample Number	Constituent	Result	PRG 2002	units
511G001	Actinium-228	3.76	5/15	pCi/g
511C002	Acetone	17	6,000,000	µg/kg
511H001	Americium-241	3.7	12.7	pCi/g
511B022	Arsenic	1,920	1.6	mg/kg
511B068	Barium	861	67,000	mg/kg
511A011	Beryllium	2.19	1,900	mg/kg
511J010	Bismuth-212	4.2	5/15	pCi/g
511B018	Bismuth-214	3.11	5/15	pCi/g
511E501	Cadmium	15.4	450	mg/kg
511B012	Carbon Disulfide	6.1	720,000	µg/kg
511E501	Chromium	36.6	450	mg/kg
511C002	Chrysene	200	210,000	µg/kg
511H001	Cesium-137	4.31	12.2	pCi/g
511B048	Diesel	1,800	100	mg/kg
511D004	Diethylphthalate	460	1E+08	µg/kg
511B031	Ethylbenzene	3.2	20,000	µg/kg
511B002	Europium-152	0.93	5.7	pCi/g
511E501	Gasoline	1.2	100	mg/kg
511E001	Lead	6,420	750	mg/kg
511B035	M/P-Xylenes	3	420,000	µg/kg
511B022	Mercury	7.42	310	mg/kg
511C001	Methylene Chloride	3.7	21,000	µg/kg
511J001	Lead-212	3.84	5/15	pCi/g
511B018	Lead-214	3.21	5/15	pCi/g
511B002	PCB-1254	290	740	µg/kg
511B002	PCB-1260	170	740	µg/kg
511A505	Plutonium-238	1.43	13	pCi/g

Table C.1-1
Maximum Concentration of Constituents
(Page 2 of 2)

Sample Number	Constituent	Result	PRG 2002	units
511A505	Plutonium-239	37.1	12.7	pCi/g
511B018	Selenium	6.96	5,100	mg/kg
511E501RE	Silver	1.83	5,100	mg/kg
511A521	Strontium-90	0.99	838	pCi/g
511C003	Thorium-234	3.1	105	pCi/g
511G001	Thallium-208	1.21	5/15	pCi/g
511J018	Toluene	3.8	520,000	µg/kg
511B010	Uranium-234	1.8	143	pCi/g
511A012	Uranium-235	0.207	17.5	pCi/g
511B013	Uranium-238	1.68	105	pCi/g

mg/kg = Milligrams per kilogram
pCi/g = Picocuries per gram
PRG = Preliminary remediation goal
µg/kg = Micrograms per kilogram

safety, and the environment; (3) long-term (greater than 2 years) threat to human health, safety, or the environment; and (4) no demonstrated long-term threats.

Based on the CAI, none of the CASs present an immediate threat to human health, safety, and the environment; therefore, no interim response actions are necessary at these sites. The CAI demonstrated that the contamination present at the various CASs within CAU 511 is limited to the points of release (e.g., debris pile). The results further showed that there has been limited migration into the subsurface or laterally away from the source of the contamination. A detailed discussion of the nature and extent of contamination is presented in Appendix A of this report. Based on this information, all nine of the CASs are determined to be Classification 4 sites as defined by ASTM Method E1739-95 and pose no demonstrated near- or long-term threats.

D. Development of Tier 1 Look-Up Table of Risk-Based Screening Level Selection

Tier 1 action levels have been defined as the PALs established during the DQO process. The PALs are a tabulation of chemical-specific (but not site-specific) screening levels based on the type of media (soil) and potential exposure scenarios (industrial). These are very conservative estimates of risk, are preliminary in nature, and are used as action levels for site screening purposes. Although the PALs are not necessarily intended to be used as FALs, a FAL may be defined as the Tier 1 action level (i.e., PAL) value if individual constituent analytical results are below the corresponding Tier 1 action level value. The FAL may also be established as the Tier 1 action level value if individual constituent analytical results exceed the corresponding Tier 1 action level value and implementing a corrective action based on the FAL is practical. The PALs are defined as:

- EPA Region 9 Risk-Based PRGs for Industrial Soils (EPA, 2004).
- Background concentrations for RCRA metals will be evaluated when natural background exceeds the PAL, as is often the case with arsenic. Background is considered the mean plus two times the standard deviation of the mean based on data published in Mineral and Energy Resource Assessment of the Nellis Air Force Range (NBMG, 1998; Moore, 1999).
- TPH concentrations above the action level of 100 mg/kg per NAC 445A.2272 (NAC, 2003).
- For COPCs without established PRGs, a protocol similar to EPA Region 9 will be used to establish an action level; otherwise, an established PRG from another EPA region may be chosen.
- The PALs for material, equipment, and structures with residual surface contamination are the allowable total residual surface contamination values for unrestricted release of material and equipment listed in the DOE Order 5400.5 (DOE, 1993), which is also Table 4-2 of the NV/YMP RadCon Manual (NNSA/NSO, 2004b).
- The PALs for radioactive contaminants are based on the National Council on Radiation Protection and Measurements Report No. 129 recommended screening limits for construction, commercial, industrial land-use scenarios (NCRP, 1999) scaled to 25 millirem per year dose constraint (Appenzeller-Wing, 2004) and the generic guidelines for residual concentration of radionuclides in DOE Order 5400.5 (DOE, 1993).

The PALs were developed based on an industrial scenario. Because the CAU 511 CASs are not assigned work stations and are considered to be in remote or occasional use areas, the use of industrial reuse based PALs is conservative. The Tier 1 look-up table is defined as the PAL concentrations or activities defined in the CAIP.

E. Exposure Pathway Evaluation

The DQOs stated that site workers would only be exposed to COCs through oral ingestion, inhalation, or dermal contact (absorption) due to exposure to potentially contaminated media (i.e., soil) at the CASs. The results of the CAI showed that all COCs identified at CASs within CAU 511 are localized near the release point and have not migrated more than 15 ft vertically or laterally. The only potential exposure pathways would be through worker contact with the contaminated soil. The limited migration demonstrated by the analytical results, elapsed time since the suspected release, and depth to groundwater supports the selection and evaluation only the surface and shallow subsurface exposure pathways. Groundwater is not considered to be a significant exposure pathway.

F. Comparison of Site Conditions with Tier 1 Risk-Based Screening Levels

All analytical results from CAU 511 samples were less than corresponding Tier 1 action levels (i.e., PALs) except for those listed in Table C.1-2.

G. Evaluation of Tier 1 Results

For all constituents at all CASs not listed in Table C.1-2, the FALs were established as the Tier 1 risk-based screening levels (RBSLs). It was determined that no further action is required for these constituents at these CASs.

Table C.1-2
Corrective Action Sites with Contaminants Detected Above Preliminary Action Levels

Corrective Action Site	TPH-DRO	Arsenic	Plutonium-239
CAS 03-08-02	X		
CAS 03-99-11	X	X	X
CAS 03-99-12	X		
CAS 04-99-04			X
CAS 07-08-01			X
CAS 18-99-10	X		

DRO = Diesel-range organics
TPH = Total petroleum hydrocarbons

Plutonium is not considered a COC because it is not from the release(s) being investigated. However, all Pu-239-contaminated soil identified above PALs was removed as a best management practice except at CAS 07-08-01.

It was determined by NNSA/NSO that FALs would not be established at the Tier 1 RBSLs for the COPCs exceeding Tier 1 RBSLs in Table C.1-1. Therefore, a Tier 2 SSTL were calculated for these constituents at these CASs.

H. Tier 1 Remedial Action Evaluation

TPH-DRO Evaluation

Remediation to Tier 1 action levels would be very difficult and expensive while potentially not providing a significant risk reduction. Therefore, it was determined to assess the risk to human health posed by the hazardous constituents of TPH-DRO at CASs 03-08-02, 03-99-11, 03-99-12, and 18-99-10 under a Tier 2 evaluation before establishing FALs for TPH-DRO constituents or implementing a corrective action.

Arsenic Evaluation

Corrective action was undertaken to remove arsenic to below FALs at CAS 03-99-11.

I. Tier 2 Evaluation

No additional data was needed to complete a Tier 2 evaluation.

J. Development of Tier 2 Table of Site-Specific Target Levels

Evaluation of TPH-DRO Site-Specific Target Levels

Method E1739-95 stipulates that risk evaluations for TPH-DRO contamination be calculated and evaluated based on the risk posed by the potentially hazardous constituents of TPH-DRO. Section 6.4.3 ("Use of Total Petroleum Hydrocarbon Measurements") of ASTM Method E1739-95 states: "TPHs should not be used for risk assessment because the general measure of TPH-DRO provides insufficient information about the amounts of individual chemical(s) of concern present" (see also Sections X1.5.4 and X1.42 of Method E1739-95). Therefore, the individual potentially hazardous constituents in TPH-DRO were compared to corresponding Tier 2 SSTLs to evaluate the

need for corrective action at each individual CAS at CAU 511. Although Tier 2 SSTLs are generally calculated using site-specific inputs and general risk formulas (such as those used to calculate the PALs), the Tier 2 SSTLs selected for the hazardous constituents of TPH-DRO are the EPA *Region 9 Preliminary Remediation Goals (PRGs)* (EPA, 2004). These SSTLs and the maximum reported level for each diesel constituent per CAS are presented in Table C.1-3.

Table C.1-3
Tier 2 SSTLs and CAU 511 Results for Hazardous Constituents of Diesel

CAS No.	Common Name	SSTL (mg/kg)	Maximum Reported Value (mg/kg)			
			03-08-02	03-99-11	03-99-12	18-99-10
108-67-8	1,3,5-Trimethylbenzene	70	ND	ND	ND	ND
91-57-6	2-Methylnaphthalene[a]	190	ND	ND	ND	ND
56-55-3	Benz(a)anthracene	2.1	ND	ND	ND	ND
71-43-2	Benzene	1.4	ND	ND	ND	ND
50-32-8	Benzo(a)pyrene	0.21	ND	ND	ND	ND
100-41-4	Ethylbenzene	400	ND	ND	ND	ND
91-20-3	Naphthalene	190	ND	ND	ND	ND
108-88-3	Toluene	520	ND	ND	ND	ND
1330-20-7	Xylenes[b]	420	ND	ND	ND	ND
104-51-8	n-Butylbenzene	240	ND	ND	ND	ND
103-65-1	n-Propylbenzene	240	ND	ND	ND	ND

[a]Uses PRG for napthalene as surrogate
[b]Total of m-, o-, and p-xylenes

CAS = Chemical Abstract Service
mg/kg = Milligrams per kilogram
ND = Nondetect
PRG = Preliminary remediation goal
SSTL = Site-specific target level

Evaluation of Arsenic Site-Specific Target Levels

A Tier 2 SSTL was calculated for arsenic at CAS 03-99-11 using an outdoor industrial soil scenario and site-specific inputs to standard risk procedures contained in the Risk Assessment Information System (RAIS) (ORNL, 2005). The arsenic-specific risk input parameters used in the RAIS calculation is from the RAIS chemical-specific database. These parameters were compiled or derived from information found in the Integrated Risk Information System (EPA, 2005) and Health Effects

Assessment Summary Tables (EPA, 1997b). The site-specific input parameters used for this calculation were the "NTS standard" parameter values listed in Table C.1-4 for the Industrial Area exposure scenario. The Tier II level is 477 mg/kg.

Table C.1-4
Site-Specific Input Parameters with Proposed NTS Standard Values

Parameter	Definition	Units	EPA Region 9 Default Value	Exposure Scenario		
				Industrial Area	Remote Work Area	Occasional Use Area
ED	exposure duration	yr	25	25	25	5[a]
EF	exposure frequency	day/yr	250	250	42[b]	10[c]
IR	soil ingestion rate	kg/day	0.0001	0.00005[a]	0.00005[d]	0.00005[d]
foc	Fraction organic carbon in soil	g/g	0.006	0.001[b]	0.001[b]	0.001[b]
θ_w	water-filled soil porosity	cm^3/cm^3	0.15	0.1[c]	0.1[c]	0.1[c]
V	Fraction of vegetative cover	unitless	0.5	0.1[d]	0.2-.06[d]	0.2-.06[d]
TR	target excess individual lifetime cancer risk	unitless	1E-06	1E-06	1E-05	1E-05

Rationale for non-default input values:
[a]EPA Exposure Factors Handbook (EPA/600/P-95/002Fa) (EPA, 1997a)
[b]Estimated value based on reduced total organic carbon content of NTS soils
[c]Estimated value based on reduced soil moisture content of NTS soils
[d]Estimated value based on reduced vegetative cover at NTS

cm^3/cm^3 = Cubic centimeters per cubic centimeter
day/yr = Days per year
g/g = Grams per gram
kg/day = Kilograms per day
yr = Year

The Occasional Use Area exposure is the least conservative scenario and assumes industrial workers are not assigned to the area as a regular worksite but may occasionally use the site for short-term activities. A site worker under this scenario is assumed to be on site for 8 hours per day, 10 days per year, for 5 years. The SSTL calculated for this scenario was 477 ppm, which is below the FAL.

K. Comparison of Site Conditions with Tier 2 Table Site-Specific Target Levels

The Tier 2 action levels are typically compared to individual sample results from reasonable points of exposure (as opposed to the source areas as is done in Tier 1 on a point-by-point basis). Points of exposure are defined as those locations or areas at which an individual or population may come in contact with a COC originating from a CAS. For CAU 511, the Tier 2 action levels were compared to maximum constituent concentrations from each sample location.

As shown in Table C.1-3, all analytical results for potentially hazardous constituents in TPH-DRO from CAU 511 were non-detects The FALs for these diesel constituents were established as the Tier 2 SSTLs (i.e., EPA Region 9 PRGs).

L. Tier 2 Remedial Action Evaluation

Based on the Tier 2 evaluation of the TPH-DRO hazardous constituents, the TPH-DRO does not pose an unacceptable risk to human health and the environment. Therefore, no further action concerning TPH-DRO required at the CASs within CAU 511. Based on the initial Tier 2 evaluation of arsenic, the arsenic at CAS 03-99-11 was present in concentrations exceeding Tier II levels; thus, removal actions were undertaken. Once the soils were removed, confirmation samples were collected and analyzed. Arsenic was again detected in concentrations greater than PALs. A Tier II evaluation based on the results of the confirmation samples confirmed that arsenic was not present in concentrations exceeding Tier II levels. Therefore, no further action concerning arsenic is required at this CAS.

As all contaminant FALs were established as Tier 1 or Tier 2 action levels, a Tier 3 evaluation was not considered necessary.

C.2.0 Regulatory Basis

The FFACO Part III, Section III.3 (FFACO, 1996) stipulates conformance with Chapter 445 of the NAC (NAC, 2003). Section NAC 445A.227 lists the factors to be considered in determining whether corrective action is required.

Section NAC 445A.227 states:

1. Except as otherwise provided in NAC 445A.22715, the Director may require an owner or operator to take corrective action if the release of a hazardous substance, hazardous waste, or a regulated substance contaminates soil and the level of contamination exceeds the action level established for the soil pursuant to NAC 445A.2272.
2. In determining whether corrective action is required, the Director shall consider:
   (a) The depth of any groundwater.
   (b) The distance to irrigation wells or wells for drinking water.
   (c) The type of soil that is contaminated.
   (d) The annual precipitation.
   (e) The type of waste or substance that was released.
   (f) The extent of the contamination.
   (g) The present and potential use for the land.
   (h) The preferred routes of migration.
   (i) The location of structures or impediments.
   (j) The potential for a hazard related to fire, vapor, or explosion.
   (k) Any other information specifically related to the site that the director determines is appropriate.

For sites where it is determined that corrective action is required (the corrective action process applies to all FFACO sites), Section NAC 445A.22705 stipulates a process to determine the necessary remediation standards (or FALs) based on an evaluation of the risk the site poses to public health and the environment.

Section NAC 445A.22705 states:

1. Except as otherwise provided in NAC 445A.22715, if an owner or operator is required to take corrective action pursuant to NAC 445A.227, the owner or operator may conduct an evaluation of the site, based on the risk it poses to public health and the environment, to determine the necessary remediation standards or to establish that corrective action is not necessary. Such an evaluation must be conducted using Method E1739-95, adopted by the ASTM, as it exists on October 3, 1996, or an equivalent method approved by the Division.

2. The Division shall determine whether an evaluation complies with the requirements of Method E1739-95, or an equivalent method of testing approved by the Division. The Division may reject, require revisions be made to, or withdraw its concurrence with the evaluation at any time after the completion of the evaluation for the following reasons:

   (a) The evaluation does not comply with the applicable requirements for conducting the evaluation.

   (b) Conditions at the site have changed.

   (c) New information or previously unidentified information that would alter the results of the evaluation becomes available and demonstrates that the release may have a detrimental impact on public health or the environment.

Therefore, in compliance with Section NAC 445A.22705, NNSA/NSO will "conduct an evaluation of the site, based on the risk it poses to public health and the environment, to determine the necessary remediation standards or to establish that corrective action is not necessary" using ASTM Method E1739-95.

C.3.0 Recommendations

As all of the remaining site contaminant concentrations from the analysis of CAU 511 samples were less than the corresponding FALs for all CASs, it was determined that contamination at these CASs does not warrant corrective action (does not pose an unacceptable risk to human health or the environment). However, this does not preclude the consideration of these sites for additional protective measures that may be implemented as best management practices.

C.4.0 References

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Appenzeller-Wing, J., U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2004. Letter to T.A. Maize (NDEP) entitled, "Submittal of Proposed Radiological Preliminary Action Levels (PALs) for the Industrial Sites Project," 15 January. Las Vegas, NV.

DOE, see U.S. Department of Energy.

EPA, see U.S. Environmental Protection Agency.

FFACO, see *Federal Facility Agreement and Consent Order.*

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NAC, see *Nevada Administrative Code*

NBMG, see Nevada Bureau of Mines and Geology.

NCRP, see National Council on Radiation Protection and Measurements.

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U.S. Environmental Protection Agency. 1997a. *Exposure Factors Handbook,* EPA/600/P-95/002Fa. Washington, DC: Office of Research and Development.

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U.S. Environmental Protection Agency. 2005. *Integrated Risk Information System*. As accessed at http://www.epa.gov/iris/index.html on 30 August 2005.

Appendix D

Closure Activity Summary for CAU 511

D.1.0 Closure Activity Summary

The following sections document closure activities completed for CAU 511 at CASs 03-99-11 and 06-16-01. Closure activities were not necessary at the other CASs of CAU 511 and are not discussed in this appendix.

D.1.1 CAS 03-99-11 Closure Activities

A total of 25 Decision II soil samples were collected to characterize the lateral and vertical extent of arsenic contained at this site. The analysis of the Decision I soil samples showed arsenic to be present in concentrations up to 1,920 mg/kg. The Decision II samples were collected from depths up to 10 ft below the surface of the soil pile. Soil samples were collected using surface sampling techniques and backhoe for the subsurface samples. The soil sample analytical results from this CAS did not detect arsenic in concentrations above the FALs.

The corrective action, which was accomplished using a front-end loader and end dumps, removed 900 yd^3 of stained and contaminated soil and debris that was disposed of at the sanitary industrial landfill. The analytical results of the verification samples support the closure of this CAS.

D.1.2 CAS 06-16-01 Closure Activities

A total of one Decision II soil sample was collected and characterized to verify that the soil was no longer contaminated with lead. The analysis of the Decision I soil sample showed lead to be present at a concentration of 6,420 mg/kg. The verification sample collected after the lead-contaminated soil was removed did not detect lead in concentrations above the FALs.

The corrective action was accomplished by removing the contaminated soil through the use of a shovel. Approximately 2 ft^3 of soil was removed and placed in a 55-gallon drum and disposed of as hazardous waste. The analytical results of the verification sample support the closure of this CAS.

Appendix E

Sample Location Coordinates for CAU 511

E.1.0 Sample Location Coordinates

Sample location coordinates were collected during the corrective action investigation using a Trimble GPS, Model TSCI. These coordinates identify the field-sampling locations (e.g., latitude, longitude, elevation) at CAU 511 CASs 03-08-02, 03-99-11, 03-99-12, 04-99-04, 06-16-01, 06-17-02, 07-08-01, 18-99-10, and 19-19-03.

Sample locations and pertinent locations of interest at 03-08-02 are shown on Figure A.3-1. The corresponding coordinates for CAS 03-08-02 sample locations are listed in Table E.1-1.

Table E.1-1
Sample Location Coordinates and Locations of Interest for CAS 03-08-02

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
37.05371973	115.9859046	4101109.242	590170.206	1278.598	A26
37.05387745	115.9859977	4101126.651	590161.745	1278.308	A27
37.05410995	115.9861826	4101152.268	590145.022	1279.008	A28
37.05434607	115.9863589	4101178.295	590129.066	1279.568	A29
37.0545969	115.9865072	4101205.981	590115.583	1279.129	A30
37.05483868	115.9866595	4101232.659	590101.761	1279.862	A31
37.05508967	115.9868086	4101260.362	590088.207	1279.479	A32
37.05380381	115.9866111	4101117.9	590107.287	1277.026	A33
37.05386196	115.9868408	4101124.133	590086.791	1277.38	A34
37.05373353	115.9868454	4101109.881	590086.531	1276.829	A35
37.05378283	115.9870376	4101115.168	590069.389	1276.009	A36
37.05344816	115.9865986	4101078.457	590108.817	1276.009	A37
37.0539555	115.9860627	4101135.248	590155.865	1279.136	A05
37.05396243	115.9860687	4101136.011	590155.324	1278.824	A38
37.05395997	115.9860538	4101135.752	590156.655	1279.093	A39
37.05394843	115.9860638	4101134.462	590155.778	1279.435	A40
37.05394909	115.9860763	4101134.524	590154.667	1279.095	A41

[a]Universal Transverse Mercator (UTM) Zone 11, North American Datum (NAD) 1927 (U.S. Western)
HAE = Height above ellipsoid

Sample locations and pertinent locations of interest at 03-99-11 are shown on Figure A.4-1.

The corresponding coordinates for CAS 03-99-11 sample locations are listed in Table E.1-2.

Table E.1-2
Sample Location Coordinates and Locations of Interest for CAS 03-99-11
(Page 1 of 2)

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
37.06568909	116.0494871	4102378.663	584503.224	0	B01
37.0656504	116.0493392	4102374.502	584516.412	0	B02
37.06572072	116.0491777	4102382.447	584530.698	0	B03
37.0655921	116.0490819	4102368.264	584539.359	0	B04
37.06548361	116.0492129	4102356.112	584527.833	0	B05
37.06550277	116.0489514	4102358.47	584551.052	0	B06
37.06560625	116.0492105	4102369.719	584527.904	0	B07
37.06586198	116.049478	4102397.851	584503.836	0	B08
37.06583998	116.0491835	4102395.672	584530.05	0	B09
37.06566482	116.0489113	4102376.483	584554.446	0	B10
37.06544948	116.0488155	4102352.679	584563.195	0	B11
37.06532938	116.0492373	4102338.98	584525.828	0	B12
37.06548783	116.0496342	4102356.205	584490.366	0	B13
37.06570142	116.0497138	4102379.829	584483.059	0	B14
37.06580777	116.049659	4102391.676	584487.806	0	B15
37.06573187	116.0490561	4102383.792	584541.493	0	B16
37.06556366	116.0488718	4102365.296	584558.065	0	B17
37.06545263	116.0490606	4102352.81	584541.404	0	B18
37.06541472	116.0492021	4102348.479	584528.862	0	B19
37.06549693	116.0493745	4102357.446	584513.448	0	B20
37.06583345	116.0494804	4102394.684	584503.661	0	B21
37.06582003	116.0492999	4102393.356	584519.718	0	B22
37.06536571	116.0492675	4102342.984	584523.102	0	B23
37.06534261	116.0491649	4102340.513	584532.257	0	B24
37.06528295	116.0492821	4102333.79	584521.902	0	B25
37.06525786	116.0492088	4102331.072	584528.44	0	B26
37.06566721	116.0493987	4102376.314	584511.109	0	B27
37.06559604	116.0493984	4102368.419	584511.211	0	B28

Table E.1-2
Sample Location Coordinates and Locations of Interest for CAS 03-99-11
(Page 2 of 2)

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
37.06544638	116.0492089	4102351.985	584528.23	0	B29
37.06531321	116.0491869	4102337.231	584530.327	0	B30
37.06556619	116.0491703	4102365.311	584531.526	0	B31
37.06542033	116.0489579	4102349.319	584550.566	0	B32
37.06548366	116.0488358	4102356.453	584561.351	0	B33
37.06536	116.0492	4102342	584526.3	0	B34
37.06549	116.0493	4102357	584522.2	0	B35
37.0656	116.0493	4102369	584516.8	0	B36

[a]Universal Transverse Mercator (UTM) Zone 11, North American Datum (NAD) 1927 (U.S. Western)
HAE = Height above ellipsoid

Sample locations and pertinent locations of interest at 03-99-12 are shown on Figure A.5-1. The corresponding coordinates for CAS 03-99-12 sample locations are listed in Table E.1-3.

Table E.1-3
Sample Location Coordinates and Locations of Interest for CAS 03-99-12

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
37.04476043	116.0497819	4100056.661	584500.219	37.04476043	C01
37.0446898	116.0498867	4100048.732	584490.976	37.0446898	C02
37.04464532	116.0498828	4100043.802	584491.377	37.04464532	C03

[a]Universal Transverse Mercator (UTM) Zone 11, North American Datum (NAD) 1927 (U.S. Western)
HAE = Height above ellipsoid

Sample locations and pertinent locations of interest at 04-99-04 are shown on Figure A.6-1. The corresponding coordinates for CAS 04-99-04 sample locations are listed in Table E.1-4.

Sample locations and pertinent locations of interest at 06-16-01 are shown on Figure A.7-1. The corresponding coordinates for CAS 06-16-01 sample locations are listed in Table E.1-5.

Table E.1-4
Sample Location Coordinates and Locations of Interest for CAS 04-99-04

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
37.10566072	116.0447962	4106817.157	584875.682	1267.807	D01
37.10580835	116.044865	4106833.474	584869.405	1266.234	D02
37.10567121	116.045028	4106818.114	584855.072	1265.898	D03
37.10580427	116.0446161	4106833.243	584891.532	1260.823	D04

[a]Universal Transverse Mercator (UTM) Zone 11, North American Datum (NAD) 1927 (U.S. Western)
HAE = Height above ellipsoid

Table E.1-5
Sample Location Coordinates and Locations of Interest for CAS 06-16-01

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
36.9735628	116.0232587	4092182.227	586939.97	1192.217	E01
36.9730477	116.0229483	4092125.368	586968.188	1191.247	E02
36.97326335	116.0229176	4092149.319	586970.676	1192.588	E03
36.9732078	116.022912	4092143.162	586971.237	1192.488	E04
36.97316572	116.0228196	4092138.578	586979.506	1191.999	E05
36.97323332	116.0228364	4092146.062	586977.934	1191.889	E06
36.97304576	116.022804	4092125.285	586981.032	1191.685	E07
36.97308757	116.0228216	4092129.907	586979.423	1192.506	E08

[a]Universal Transverse Mercator (UTM) Zone 11, North American Datum (NAD) 1927 (U.S. Western)
HAE = Height above ellipsoid

Sample locations and pertinent locations of interest at 06-17-02 are shown on Figure A.8-1.

The corresponding coordinates for CAS 06-17-02 sample locations are listed in Table E.1-6.

Table E.1-6
Sample Location Coordinates and Locations of Interest for CAS 06-17-02
(Page 1 of 4)

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
36.91339661	115.9944125	589578.065	4085534.447	NA	F01
36.91426591	115.9965223	589389.1025	4085628.903	NA	F02
36.91447342	115.9975802	589294.6213	4085650.932	NA	F03

Table E.1-6
Sample Location Coordinates and Locations of Interest for CAS 06-17-02
(Page 2 of 4)

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
36.91452279	115.9933371	589672.5463	4085660.389	NA	F04
36.91312179	115.9954767	589483.5838	4085502.961	NA	F05
36.91393721	115.9912236	589861.5088	4085597.418	NA	F06
36.91350466	115.996002	589436.3431	4085544.942	NA	F07
36.91432011	115.9917488	589814.2681	4085639.399	NA	F08
36.91294604	115.9970699	589341.8619	4085481.971	NA	F09
36.91376151	115.9928168	589719.7869	4085576.427	NA	F10
36.91463086	115.9949266	589530.8244	4085670.884	NA	F11
36.91409239	115.9983806	589223.7603	4085607.913	NA	F12
36.91490792	115.9941275	589601.6853	4085702.37	NA	F13
36.91275012	115.996277	589412.7228	4085460.98	NA	F14
36.91446183	115.9973152	589318.2416	4085649.894	NA	F15
36.91387633	115.9952016	589507.2041	4085586.923	NA	F16
36.91469173	115.9909485	589885.1291	4085681.379	NA	F17
36.91414665	115.9936072	589648.9259	4085618.408	NA	F18
36.91501597	115.995717	589459.9634	4085712.865	NA	F19
36.91344831	115.9967982	589365.4822	4085537.945	NA	F20
36.91426379	115.992545	589743.4072	4085632.402	NA	F21
36.9128628	115.9946846	589554.4447	4085474.974	NA	F22
36.91314323	115.9942832	589589.8752	4085506.46	NA	F23
36.91401254	115.996393	589400.9127	4085600.916	NA	F24
36.914828	115.9921399	589778.8377	4085695.373	NA	F25
36.91351263	115.9932178	589684.3564	4085548.44	NA	F26
36.91438196	115.9953276	589495.3939	4085642.897	NA	F27
36.91383677	115.9979863	589259.1908	4085579.926	NA	F28
36.91465229	115.9937331	589637.1158	4085674.383	NA	F29
36.91325128	115.9958727	589448.1533	4085516.955	NA	F30
36.91406672	115.9916196	589826.0783	4085611.411	NA	F31
36.91496299	115.9969109	589353.672	4085705.868	NA	F32
36.91362069	115.9948073	589542.6345	4085558.935	NA	F33

Table E.1-6
Sample Location Coordinates and Locations of Interest for CAS 06-17-02
(Page 3 of 4)

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
36.9144361	115.9905541	589920.5595	4085653.392	NA	F34
36.91389776	115.9940082	589613.4955	4085590.421	NA	F35
36.91476708	115.996118	589424.533	4085684.878	NA	F36
36.91420845	115.9971859	589330.0517	4085621.907	NA	F37
36.91261391	115.9950856	589519.0142	4085446.987	NA	F38
36.91433905	115.9977145	589282.8111	4085635.9	NA	F39
36.91375356	115.995601	589471.7736	4085572.929	NA	F40
36.91456899	115.9913478	589849.6986	4085667.386	NA	F41
36.91319494	115.9966689	589377.2923	4085509.958	NA	F42
36.91401041	115.9924158	589755.2173	4085604.415	NA	F43
36.91487975	115.9945256	589566.2548	4085698.871	NA	F44
36.91440508	115.994333	589583.9701	4085646.395	NA	F45
36.91300407	115.9964725	589395.0076	4085488.968	NA	F46
36.91381952	115.9922194	589772.9326	4085583.424	NA	F47
36.91471577	115.9975107	589300.5263	4085677.881	NA	F48
36.91413027	115.9953972	589489.4888	4085614.91	NA	F49
36.91494568	115.991144	589867.4138	4085709.366	NA	F50
36.91364381	115.9938127	589631.2107	4085562.434	NA	F51
36.91451314	115.9959225	589442.2482	4085656.891	NA	F52
36.91395451	115.9969904	589347.767	4085593.919	NA	F53
36.91476999	115.9927372	589725.692	4085688.376	NA	F54
36.913369	115.9948769	589536.7295	4085530.948	NA	F55
36.91342225	115.9962019	589418.6279	4085535.613	NA	F56
36.91423771	115.9919488	589796.5529	4085630.07	NA	F57
36.91286363	115.9972698	589324.1466	4085472.642	NA	F58
36.91367911	115.9930167	589702.0716	4085567.098	NA	F59
36.91454845	115.9951265	589513.1091	4085661.555	NA	F60
36.91400327	115.9977852	589276.906	4085598.584	NA	F61
36.91481878	115.9935321	589654.831	4085693.041	NA	F62
36.91266099	115.9956816	589465.8685	4085451.651	NA	F63

Table E.1-6
Sample Location Coordinates and Locations of Interest for CAS 06-17-02
(Page 4 of 4)

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
36.91437271	115.9967198	589371.3873	4085640.565	NA	F64
36.91378719	115.9946062	589560.3498	4085577.594	NA	F65
36.91460258	115.9903531	589938.2748	4085672.05	NA	F66
36.91406761	115.9942048	589595.7802	4085609.079	NA	F67
36.91493693	115.9963146	589406.8177	4085703.536	NA	F68
36.91362152	115.9973925	589312.3365	4085556.603	NA	F69
36.91443702	115.9931394	589690.2615	4085651.06	NA	F70
36.91303602	115.995279	589501.299	4085493.632	NA	F71
36.91476116	115.9979079	589265.0959	4085682.545	NA	F72
36.91330635	115.9936845	589643.0209	4085525.118	NA	F73
36.91417567	115.9957943	589454.0584	4085619.574	NA	F74
36.9149911	115.9915411	589831.9834	4085714.031	NA	F75
36.91429283	115.9947322	589548.5396	4085633.568	NA	F76
36.91375437	115.9981862	589241.4755	4085570.597	NA	F77

[a]Universal Transverse Mercator (UTM) Zone 11, North American Datum (NAD) 1927 (U.S. Western)
HAE = Height above ellipsoid
NA = Not applicable

Sample locations and pertinent locations of interest at 07-08-01 are shown on Figure A.9-1.

The corresponding coordinates for CAS 07-08-01 sample locations are listed in Table E.1-7.

Table E.1-7
Sample Location Coordinates and Locations of Interest for CAS 07-08-01

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
37.0756981	116.0274591	4103508.838	586450.2609	NA	H01
37.07551089	116.0275597	4103487.978	586441.5285	NA	H02
37.07483461	116.0269473	4103413.511	586496.7359	NA	H03
37.07500624	116.0267822	4103432.701	586511.2166	NA	H04

[a]Universal Transverse Mercator (UTM) Zone 11, North American Datum (NAD) 1927 (U.S. Western)
HAE = Height above ellipsoid
NA = Not applicable

Sample locations and pertinent locations of interest at 18-99-10 are shown on Figure A.10-1.

The corresponding coordinates for CAS 18-99-10 sample locations are listed in Table E.1-8.

Table E.1-8
Sample Location Coordinates and Locations of Interest for CAS 18-99-10

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
37.07891	116.307	4103647	561601	NA	Area B
37.07949	116.307	4103712	561596.3	NA	Area B
37.07881	116.307	4103636	561601.5	NA	Area B
37.07852	116.3133	4103600	561037.3	NA	Area C
37.07799	116.3125	4103542	561109	NA	Area C
37.0779	116.3126	4103532	561099.3	NA	Area C
37.07795	116.3155	4103535	560841.7	NA	Area D
37.07788	116.3155	4103527	560843.4	NA	Area D
37.0779	116.3154	4103530	560854.4	NA	Area D

[a]Universal Transverse Mercator (UTM) Zone 11, North American Datum (NAD) 1927 (U.S. Western)
HAE = Height above ellipsoid
NA = Not applicable

Sample locations and pertinent locations of interest at 19-19-03 are shown on Figure A.11-1.

The corresponding coordinates for CAS 19-19-03 sample locations are listed in Table E.1-9.

Table E.1-9
Sample Location Coordinates and Locations of Interest for CAS 19-19-03

Latitude	Longitude	Northing[a]	Easting[a]	HAE (meters)	Location
36.83212757	116.2773902	4076290.86	564438.1	1158.728	G01
36.83191452	116.2777693	4076266.97	564404.47	1157.792	G02

[a]Universal Transverse Mercator (UTM) Zone 11, North American Datum (NAD) 1927 (U.S. Western)
HAE = Height above ellipsoid

Appendix F

After Action Report: Munitions and Explosives of Concern Clearance Report

(74 Pages)

FINAL AFTER ACTION REPORT

MUNITIONS AND EXPLOSIVES OF CONCERN (MEC) CLEARANCE

TECHNICAL SERVICES FOR UNEXPLODED ORDNANCE NEVADA TEST SITE CORRECTIVE ACTION SITES 07-08-01 AND 18-99-10 NYE COUNTY, NEVADA

CONTRACT NO.: DE-AC52-03NA99205
TASK ORDER NO. ISO5 310
Prepared For:

STOLLER-NAVARRO JOINT VENTURE
7710 West Cheyenne
Las Vegas, Nevada 89129

Prepared By

WESTON SOLUTIONS, INC.
4801 University Square, Suite 13
Huntsville, AL 35816

WESTON PROJECT NO.: 13142.015.003.0320

JULY 2005

DRAFT MUNITIONS AND EXPLOSIVES OF CONCERN (MEC) CLEARANCE REPORT

CORRECTIVE ACTION SITES 07-08-01 AND 18-99-10
NEVADA TEST SITE
NYE COUNTY, NEVADA

CONTRACT NO.: DE-AC52-03NA99205
TASK ORDER NO. ISO5 310

APPROVED SIGNATURE	7/13/2005
Sonny Richardson WESTON- MEC Service Line QC Manager	Date
APPROVED SIGNATURE	7/13/2005
John Williams WESTON – Senior Technical Manager - Geophysics	Date
APPROVED SIGNATURE	7/13/2005
Gerald Moore WESTON – Senior Project Manager	Date

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LIST OF ACRONYMS

AHA	Activity Hazard Analysis
bgs	below ground surface
CASs	Corrective Action Sites
CAU	Corrective Action Unit
DGM	digital geophysical mapping
DOE	Department of Energy
DQO	Data Quality Objectives
EOR	Explosive Ordnance Reconnaissance
GPO	geophysical prove-out
GPS	Global Positioning System
HE	high explosive
MD	Munitions Debris
MEC	Munitions and Explosives of Concern
MR	Munitions Responses
NTP	Notice to Proceed
NTS	Nevada Test Site
PDA	personal digital assistant
QC	Quality Control
RTK	Real-Time Kinematic
SNJV	Stoller-Navarro Joint Venture
SOW	scope of work
SUXOS	Senior UXO Supervisor
TDY	Temporary Duty
Tech II	UXO Technician-II
Tech III	UXO Technician-III
TM	Task Manager
UTM	Universal Transverse Mercator
UXO	unexploded ordnance
UXOQC	UXO Quality Control Manager
UXOSO	UXO Safety Officer
WESTON	Weston Solutions, Inc.

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EXECUTIVE SUMMARY

Weston Solutions, Inc. (WESTON) performed a Munitions and Explosives of Concern (MEC) clearance action at selected portions of Corrective Action Sites (CAS) 7 and 18, Corrective Action Unit (CAU) 511, Nevada Test Site, NV, between 2 February 2005 and 29 April 2005. The objective of this project was to safely locate, identify and dispose of MEC items to a maximum depth of 4-feet below ground surface (bgs) (Final Munitions and Explosives of Concern (MEC) Clearance Work Plan, WESTON, January 2005). This project work was performed for Stoller-Navarro Joint Venture (SNJV) on Work Authorization No. ISO5 310, under SNJV Prime Contract DE-AC52-03NA99205 with the United States Department of Energy (DOE), National Nuclear Security Administration, Nevada Site Office.

The primary tasks of this project were: 1) perform analog geophysical mapping ("Mag and Flag") investigations at two designated sites at Area 7 and 18; 2) perform digital geophysical mapping on approximately 60 acres of land within Area 18 that had formerly been used as an artillery range; and, 3) identify and remove geophysically detected anomalies that are, or could represent, munitions and explosives of concern (MEC) previously used at this site.

The digital geophysical mapping (DGM) was accomplished using a towed array consisting of three EM-61 MK2 high sensitivity metal detection sensors. The DGM provided detailed anomaly mapping to develop a target database relating the location and identification of potential MEC and Munitions Debris (MD) within Area 18C. Anomalies were reacquired using a survey-grade Real-Time Kinematic (RTK) Global Positioning System (GPS), hand-held Schonstedt magnetometers, and Schiebel all metal detectors. The target database was provided to WESTON's UXO team, which in turn carried out a clearance action of selected anomalies at the site. A total of 6,304 anomalies identified using DGM were excavated from Area 18C. Of these 6,304 excavations, 854 represented MEC items. Mag and Dig efforts in Areas 7A and 18A-B yielded 14 and 142 MEC items respectively.

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1. INTRODUCTION

1.1 PROJECT AUTHORIZATION

Technical Services for Unexploded Ordnance, Nevada Test Site, Corrective Action Sites 07-08-01 and 18-99-10 task order (UXO task order) was awarded to WESTON from SNJV on Work Authorization No. ISO5 310, under SNJV Prime Contract DE-AC52-03NA99205 with the DOE, National Nuclear Security Administration, Nevada Site Office.

1.2 PURPOSE AND SCOPE

The purpose of this Munitions and Explosives of Concern (MEC) Clearance is documented in the MEC Clearance Work Plan for Corrective Action Sites (CASs) 07-08-01 and 18-99-10. The MEC Clearance Work Plan details the technical services that were provided to SNJV to perform procedures related to identification, removal, destruction or detonation of MEC items, including UXO. This document also identifies the procedures that were implemented to address safety concerns through an Activity Hazard Analysis (AHA).

1.3 REPORT ORGANIZATION

This MEC Clearance After Action Report summarizes the field activities and results of the geophysical surveys and MEC clearances activities conducted at CAS 07-08-01 and 18-99-10 sites covered under the MEC Clearance Work Plan. Section 2 presents the site background information. Section 3 of this report presents a discussion on the geophysical mapping, target selection and anomaly reacquisition processes used to identify and locate subsurface MEC items. Section 4 presents a discussion of the MEC recovery, demolition, and scrap management procedures. Section 5 presents the results of the MEC Clearance activities, including the type and number of recovered MEC items. Section 6 presents our summary and conclusions. The Appendices, included at the end of Section 6, include: MEC Terminology; Recovered MEC Data Sheets; Explosives Accountability Records; and Geophysical Mapping Data (electronic files only); and, Dig Sheet Database (electronic files only).

1.4 TERMINOLOGY

MEC terminology used throughout this report adheres to standard definitions established on 28 October 2003 by the Deputy Assistant Secretary of the Army for Installations and Environment. This memorandum provided standard definitions to be used in Munitions Responses (MR). The purpose was to ensure clarity and consistency in the use of terms for an MR. Discussions contained herein will adhere to the terminology as set forth in the memorandum (U.S. Army, 2003). While most of the terminology in the memorandum is well established, several terms are a departure from the traditional terminology. Specific terminology used throughout this report is defined in Appendix A.

2. SITE DESCRIPTION

2.1 SITE LOCATION AND PHYSICAL SETTING

CASs 07-08-01 and 18-99-10 sites covered under this task order are part of CAU 511, and are located in Areas 7 and 18, respectively, of the Nevada Test Site (NTS), which is approximately 65 miles northwest of Las Vegas, Nevada. The NTS site location is shown on Figure 2-1, and the location of CAU 511 is shown on Figure 2-2. The sites have generally level topography, and support limited growth of low vegetation due to the arid climate. The soils are notably rocky and gravelly. Additional information concerning the physical settings of the CAS sites is included in the Corrective Action Investigation Plan for Corrective Action Unit 511: Waste Dumps (Piles & Debris), Nevada Test Site, Nevada (DOE, August 2004).

2.2 SITE CHARACTERISTICS

Corrective Action Site (CAS) 07-08-01, Contaminated Mound, consists of a soil mound approximately 10 feet in height with a circumference of 375 feet, and is located in Area 7 of the NTS. Figure 2-3 shows a site map of CAS 07-08-01. Numerous communication wires/cables are strewn across and around the soil mound. Miscellaneous non-ordnance related debris, including concrete blocks, steel cables, wood and metal debris are present in and around the mound. A mock Russian TM-62 antitank mine (inert) was identified near the soil mound in 2002. Subsequently, a 0.5 mile area surrounding the mound was swept for unexploded ordnance (UXO) in a walkover survey in 2003. No additional ordnance was located during this survey. A geophysical survey of the soil mound area was conducted in 2002. Results from the geophysical survey identified anomalies described as partially buried metal waste, and were located on the south and north sides of the soil mound.

Corrective Action Site (CAS) 18-99-10 consists of four separate waste disposal areas located along a dirt road that runs perpendicular to Buckboard Mesa Road approximately 1.5 miles south of the Pahute Airstrip in Area 18 of the NTS. The sites are referred to as Site A (Ammunition

Dump), Site B (Debris Area), Site C (Debris Area) and Site D (Debris Pile). Figure 2-4 shows a site map of CAS 18-99-10. The following is a brief description of each of the four sites.

2.2.1 Site A, Ammunition Dump

Site A, Ammunition Dump consisted of a 30-by-50-by-5 feet high pile of rusted debris and munitions. The items identified included 50-caliber machine gun shells, 5-inch rocket motors, remains of the garbage truck target, mortars, bomb casings and miscellaneous metal debris. The soil in the area is silty sand with gravel and rocks, and is consistent with the surrounding area. No vegetation was growing in the pile of debris, and vegetation surrounding the pile is typical of the surrounding area. Site A was designated as a high contamination area.

2.2.2 Site B, Debris Area

Site B, Debris Area consisted of a shallow trench, approximately 10-feet wide by 40-feet long, located on the north side of the dirt road, approximately 0.25 miles east of the intersection of the dirt road and Buckboard Mesa Road; and a second debris area located approximately 80 feet north of the trench. The entire area was littered with twisted metal and wood debris and appeared disturbed, potentially from explosives operations. The debris included spent shell casings, casings from larger munitions, and the remains of a half-track vehicle. Soil in the area is light brown sand with gravel and rocks. Vegetation consists of low shrubs and is consistent with surrounding area.

2.2.3 Site C, Debris Area

Site C, Debris Area consisted of an approximately 200-by-600 foot debris area along the south side of the dirt road, approximately 0.25 miles west of the intersection of the dirt road and Buckboard Mesa Road. The area appeared to have been an excavation area. Ordnance is visible on the ground surface along the south side of the dirt road at the west end of the site. The site debris contained mortar rounds, remains of a garbage truck (former target), charred soil and

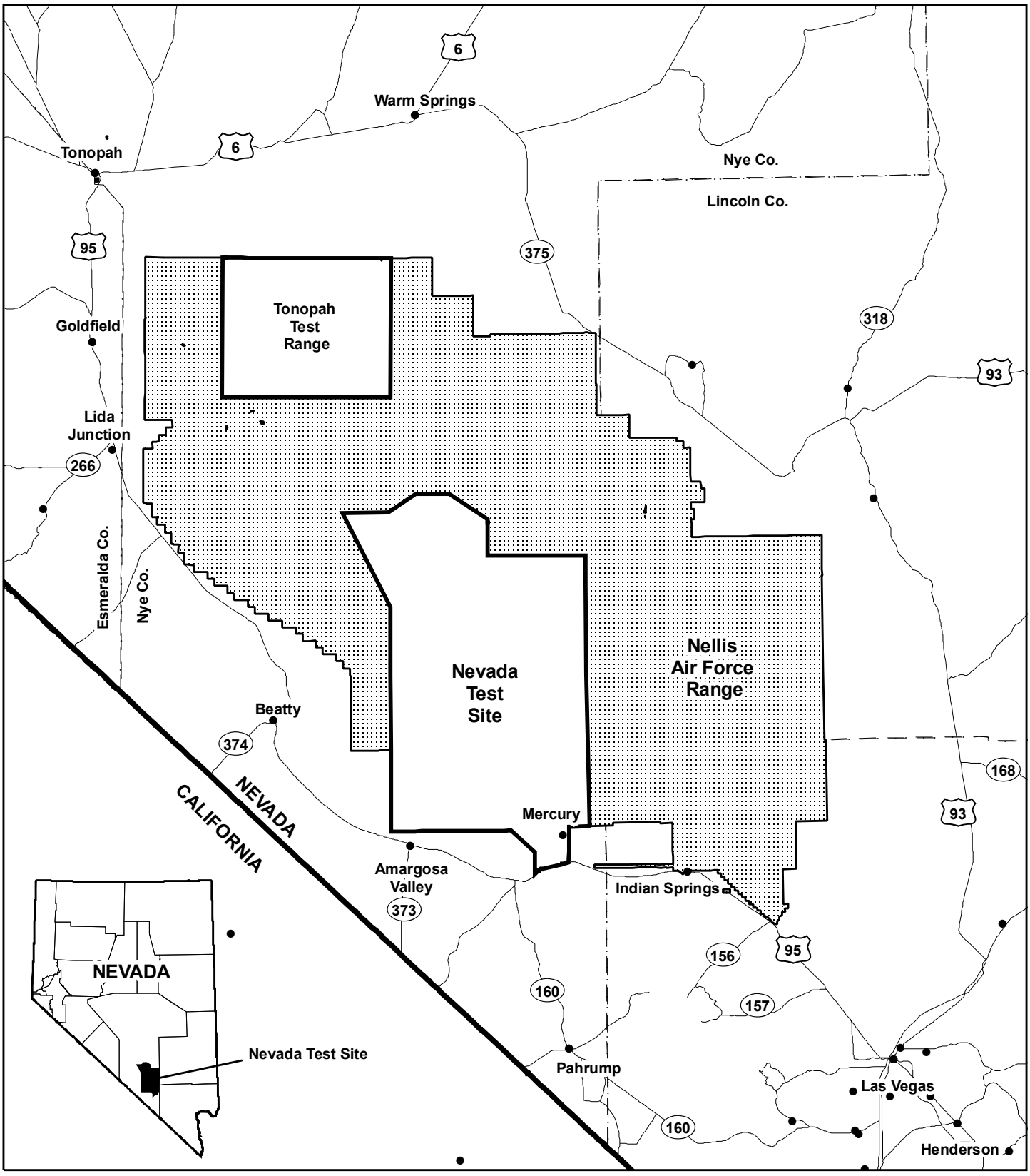
plants. The soil is light brown sand with gravel. The Site C area contains sparse low vegetation, with increasing vegetation within several hundred feet of the road.

2.2.4 Site D, Debris Pile

Site D, Debris Pile measured approximately 50-by-50 feet debris pile containing twisted metal, wood and soil. Site D is located immediately west of, and adjacent to Site C. This area appears to have been used for the detonation of unexploded ordnance based on the presence of spent primer cord. Metal debris was scattered along the surface, with the extent of debris being undetermined. The soil is light brown sand with gravel and contains rocks up to one foot in diameter. The vegetation appears normal for the surrounding area.

2.2.5 Scoping Visit

WESTON conducted an initial site visit at the two CAS sites in August 2004 to assist in scoping the appropriate remedial response for UXO contamination. A pre-field mobilization site visit occurred in December 2004 to finalize the work procedures and scope of clearance areas. Numerous subsurface magnetic anomalies were noted at the CAS 07-08-01 although no visual evidence of ordnance was observed at this site. Evidence of UXO contamination was noted at the CAS 18-99-10 sites during these site visits. Numerous subsurface magnetic anomalies were noted at the CAS 18-99-10 sites, and included the confirmation of the presence of numerous 5-inch rocket motors, rocket warheads with suspect high explosive (HE) fillers, and M38 100-pound practice bombs at Site A. No additional evidence of 40-mm munitions previously reported at Site C was noted during the December 2004 site visit, nor confirmed during this MEC clearance.



LEGEND

- City
- Road or Highway
- County Boundary
- State Boundary
- Test Site Area
- Nellis Air Force Range

N

0 10 20 40

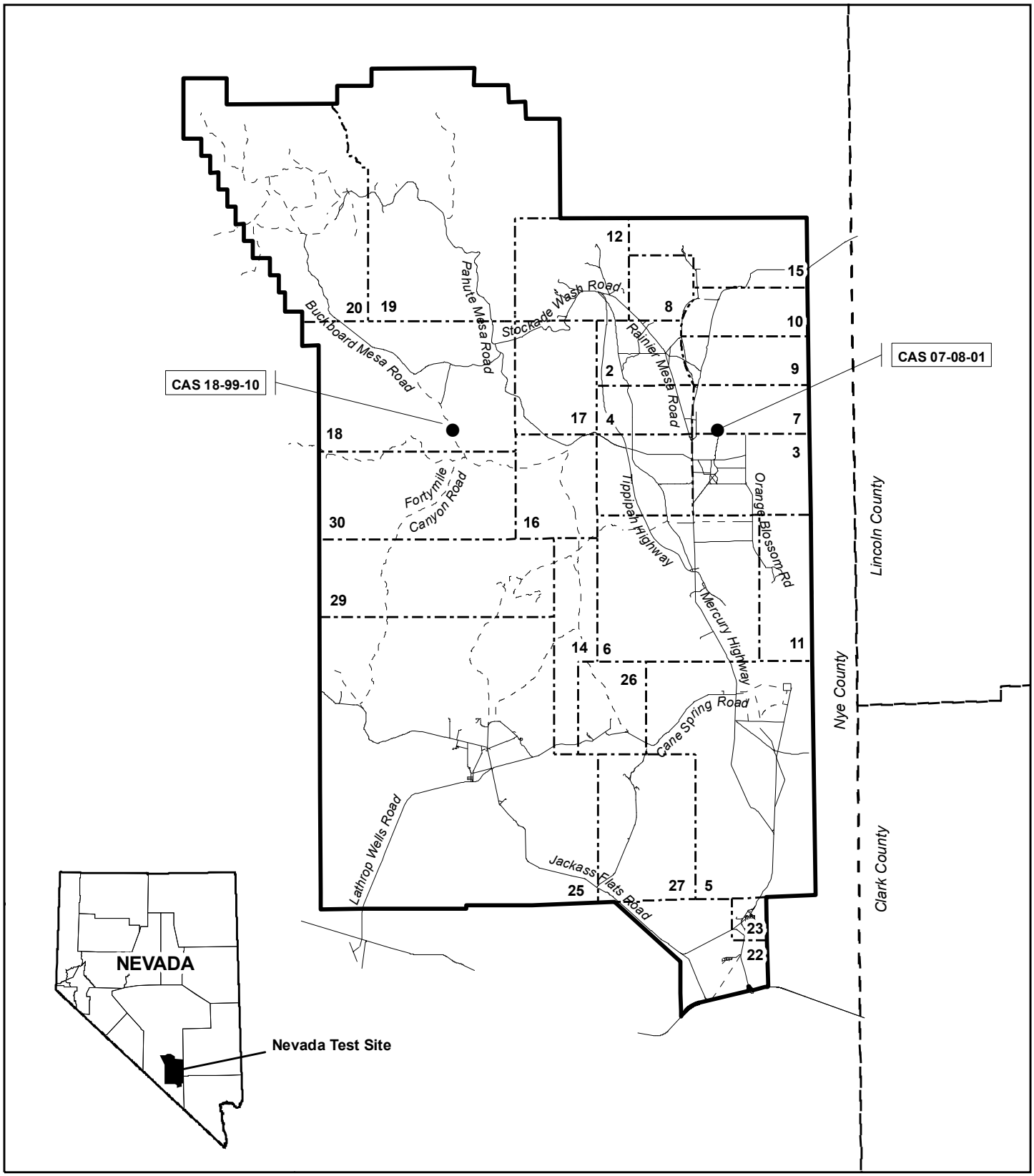
Miles

WESTON SOLUTIONS

FIGURE 2-1
NTS LOCATION MAP
Nye County, Nevada

Work Authorization ISO5 310
Stoller-Navarro Joint Venture

DATE:	PROJECT NO.:	SCALE:
JUNE '05	13142.015.003.0310	1" = 20 mi.



LEGEND

- CAS Location
- Paved Road
- Unpaved Road
- Area Boundary
- County Boundary
- Test Site Boundary

N

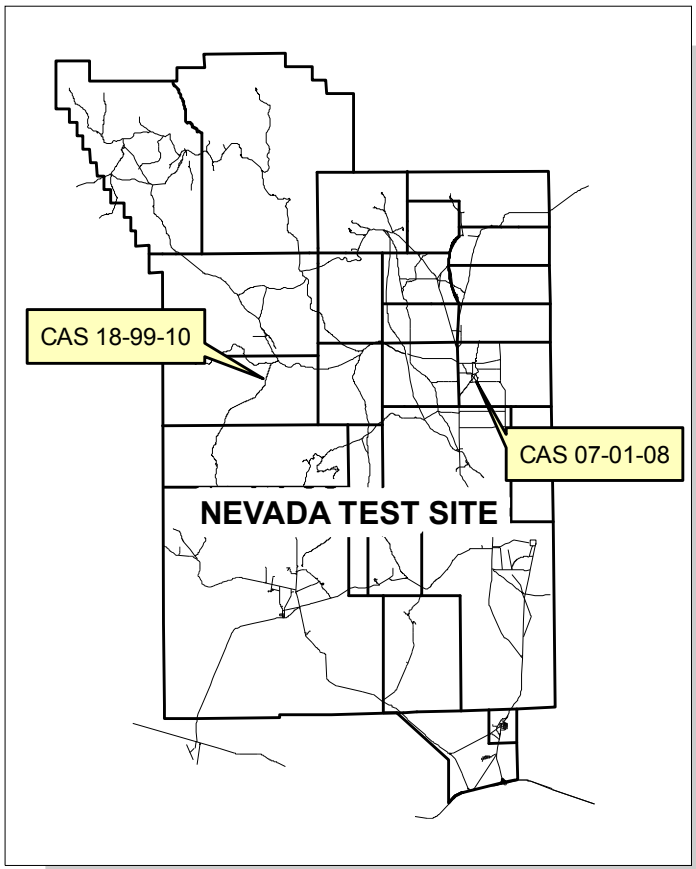
0 4 8 16

Miles

WESTON SOLUTIONS

FIGURE 2-2
SITE LOCATION MAP
CAS 07-08-01 & 18-99-10
Nevada Test Site
Nye County, Nevada
Work Authorization ISO5 310
Stoller-Navarro Joint Venture

DATE:	PROJECT NO.:	SCALE:
JUNE '05	13142.015.003.0310	1" = 8 mi.



A003	B003
A002	B002
A001	B001

LEGEND

A001 Survey Grids

N

25 0 25 50

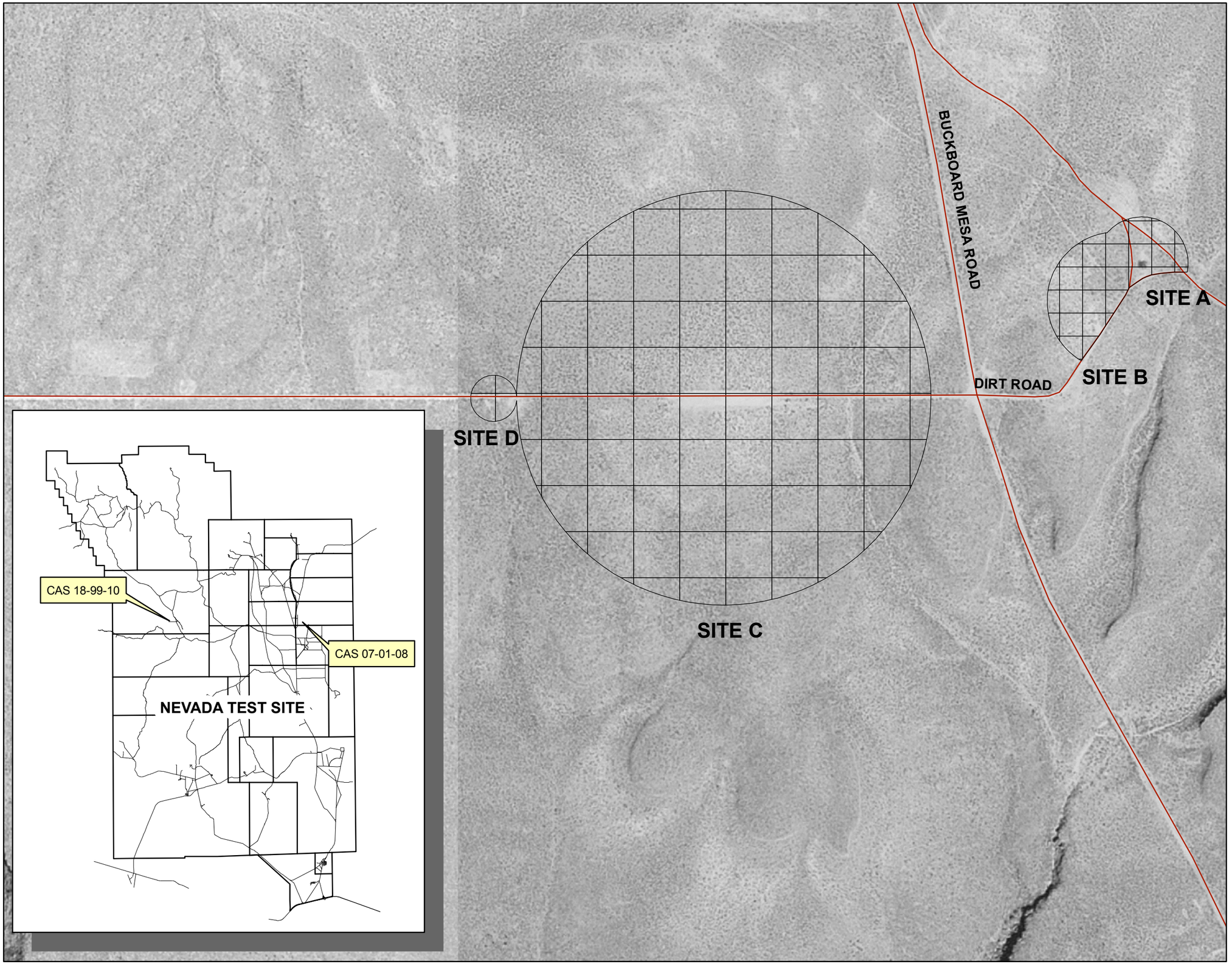
Feet

WESTON SOLUTIONS

FIGURE 2-3
CAS 07-08-01 Site Map
NEVADA TEST SITE
Nye County, NV

Work Authorization IS05 310
Stoller-Navarro Joint Venture

DATE:	PROJECT NO.:	SCALE:
JUNE 2005	13142.015.003.0310	1" = 50'



LEGEND

- Survey Grids
- Roads

400 200 0 400

Feet

WESTON SOLUTIONS

FIGURE 2-4
CAS 18-99-10 Clearance Sites
NEVADA TEST SITE
Nye County, NV

Work Authorization IS05 310
Stoller-Navarro Joint Venture

DATE:	PROJECT NO.:	SCALE:
JUNE 2005	13142.015.003.0310	1" = 400'

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3. GEOPHYSICAL DETECTION TECHNIQUES

3.1 CHRONOLOGY OF GEOPHYSICAL ACTIVITY AT NTS

WESTON performed geophysical surveys to identify the locations of anomalies that may represent MEC items, including UXO, MPPEH, DMM and MD, in support of the clearance activities at the CAS 07-08-01 and CAS 18-99-10 sites. A chronology of activities performed at CAS 07-08-01 and CAS 18-99-10 is provided in Table 3-1.

Table 3-1

Chronology of Activities for MEC Clearance, NTS

Action	Dates	Location	Comments
1st Mobilization	01/24 - 01/28	SNJV	Pre-Field Training - RAD Worker II, Security Briefings
GPO	02/03 - 02/05	CAS 18-99-10 (18C)	Geophysical Prove Out - Background and Seeded Grid Survey
18C-D DGM	02/05 - 03/02	CAS 18-99-10 (18C and 18D)	Digital Geophysical Mapping, Target Reacquisition, and Intrusive work at Site 18C-D
18A-B Mag and Flag	02/09 - 02/28	CAS 18-99-10 (18A and 18B)	Mag and Flag of CAS 18-99-10, Sites A and B
7A Mag and Flag	03/21 - 03/24	CAS 07-08-01	Mag and Flag of contaminated mound at CAS 07-08-01
2-Week Site Closure	03/28 - 04/11		Access restricted on CAS 18-99-10
2nd Mobilization	04/10	NTS Mercury, NV	
18A-B Final Clearance	04/11 - 4/20	CAS 18-99-10 (18A and 18B)	Radiological Debris Removal and QC DGM at CAS 18-99-10, Sites A and B
Demolition	04/25 - 04/27	CAS 18-99-10	
Demobilization	04/27		

3.2 GEOPHYSICAL SURVEY PROGRAM

The geophysical surveys consisted of three components which included performing a geophysical prove-out (GPO) survey, conducting the site wide mapping and detection surveys, and completing Quality Control (QC) surveys on specified cleared grids.

To validate that the selected geophysical technologies were effective in locating buried metallic items, a GPO grid was established and geophysically mapped. The GPO activities were performed in accordance with the project requirements documented in the *Final Munitions and Explosives of Concern (MEC) Clearance Work Plan*, (WESTON, January 2005). Electromagnetic and magnetic methodologies were tested to characterize the local background environment and the response characteristics of inert seeded ordnance buried at known locations in the GPO grid. The geophysical survey included a combination of mapping technologies to ensure metallic items of various compositions potentially located at the CASs were identified. The geophysical survey technologies utilized for clearance activities included the following digital methodologies:

- Towed Array of Geonics EM-61 Mark 2 sensors coupled with a Trimble RTK/GPS unit capable of centimeter positional accuracy.
- Schiebel All-Metals Ordnance Locator – electromagnetic pulse induction technology to identify and locate ferrous and non-ferrous metals.
- Schonstedt Ordnance Locator- vertical magnetic fluxgate gradiometer detection technology to identify and locate ferrous materials.

3.3 INSTRUMENTATION

WESTON tested the Geonics EM-61 MK2, the Schiebel All-Metals ordnance locator, and the Schonstedt ordnance locator on the GPO grid to validate and document instrument performance characteristics for use during the DGM surveying, MEC clearance and geophysical QC phases. Navigation was provided by interfacing the EM-61 MK2 instrument with the Trimble RTK/GPS. The Geophysics field crew tested the selected equipment over the GPO grid using the same practices to be used during the surveying. The raw geophysical data was processed using industry standards, including Oasis Montaj™ (UX-detect) geophysical data processing software

and techniques. The resulting anomaly detections and locations were compared to the known, actual locations of the seed items. GPO report and test results are documented in Appendix B-1.

The results from the prove-out demonstrated that a combination of the Geonics EM61-MK2™ Towed Array integrated with RTK GPS and handheld Schiebel and Schonstedt locators were the preferred geophysical instrumentation.

The project approach proposed as a result of the December 2004 site visit was revised to include the use the EM61-MK2™ Towed Array with the RTK/GPS surveying equipment in open expanse areas, predominantly CAS 18-99-10 Site C and D. The Schiebel All-Metals and the Schonstedt Magnetic Locators proved to be the most effective instruments for Mag and Dig investigations; specifically at CAS 07-08-01 and CAS 18-99-10 Sites A and B. These instruments were also used for reacquisition of DGM anomalies, and as screening and avoidance tools by MEC-qualified personnel.

3.3.1 EM61-MK2™ Towed-Array

A *Geonics, Ltd.* EM61-MK2™ towed-array system consisting of three EM61-MK2™ high-sensitivity metal detectors uses electromagnetic induction technology to detect both ferrous and non-ferrous metals. The system generates a pulsed magnetic field that induces eddy currents in conductive objects within the subsurface. These currents are proportional to the conductive nature of the material below the instrument. When a conductive object is located below the instrument, the amplitude and decay time of the induced eddy currents vary in response to the size, mass, depth and orientation of the object. Using the amplitude and duration of response of the object with respect to different time gates, the relative size and depth of the object can be estimated. The EM61-MK2™ utilized four time gates which recorded at 261, 376, 527, and 727 µsec (microsecond) after initial termination of the signal. The effective detection depth for the EM61-MK2™ towed-array is a function of target characteristic (i.e., composition, mass, and orientation) and local terrain noise.

The EM61-MK2™ towed-array system (see Photo 3-1) used for this project was constructed with fiberglass and plastic material to provide lightweight, rigid construction, and to prevent

noise introduction during data collection. Each coil was separated by three feet and arranged in a pyramid-shaped geometry on a tow-behind trailer. An all-terrain four-wheel drive vehicle pulled the towed-array during data collection at appropriate speeds at average speed of 2-3 miles per hour to achieve project data quality objectives. The system was integrated with a Model R8 Trimble RTK/GPS to accurately position the data collected for each coil. A GPS antenna was mounted over the center EM61-MK2™ coil and connected to a receiver unit attached to the ATV electronics mount. This receiver captured real-time differential corrections from a fixed local base station and outputs a NMEA GGA message directly into the field computer at 1 second intervals while electromagnetic data is digitally recorded at 10 Hertz (samples per second). Direct interfacing between the GPS and EM61-MK2™ utilizes a single clock and streams position information directly into the raw MK2 data file.



Photo 3-1 1 EM-61 MK-2 Towed Array Performing Digital Geophysical Mapping

3.3.2 Schiebel All-Metals Ordnance Locator

The Schiebel AN-19/2 consists of a hand-held two-coil design, which utilized the electromagnetic method to detect both ferrous and non-ferrous metals. As the UXO Technician sweeps a lane (see Photo 3-2) an audible signal will sound when the sensors are swept over conductive material. The volume and frequency of the signal changes as the sensor pinpoints the center of the source body. The instrument sensitivity can be adjusted to increase or decrease detection capability of small metallic material.



Photo 3-2 Technician Performing Sweep with Schiebel NTSC AS 18 A



Photo 3-3 Technician Performing Sweep with Schonstedt NTSC AS 18 A

3.3.3 Schonstedt Ordnance Locator

The Schonstedt GA-52Cx ordnance locator identifies magnetic field variations between two sensors spaced 20cm apart. An audible signal is used to identify any variation in the magnetic field as the sensor is passed over or near a ferromagnetic source (see Photo 3-3). The volume and frequency of the signal changes as the sensor pinpoints the center of the source body. Similar to the Schiebel, the instrument sensitivity can be adjusted to increase or decrease detection capability of small metallic material.

Schonstedt and Schiebel handheld detectors were used for initial screening and clearance of MEC in CAS 07-08-01 and CAS 18-99-10 Sites A, B; and in Site D prior to DGM. In CAS 18-99-10 Site C the handheld analog detectors used for reacquisition of anomalies previously detected and mapped using the Towed Array DGM system.

3.3.4 Navigational Equipment

Navigation equipment used in surveying, mapping and reacquisition activities on the project was a Trimble RTK/GPS system. Survey control was established with the RTK system, as there was no previously established USGS survey monuments located within range of the site. The location

of the control point was marked with a steel survey pin at 13472935.495 N, 1840280.429 E, NAD 83, UTM Zone 11, U.S. Survey Feet.

The Trimble RTK system was also used for reconnaissance and establishment of DGM grid node locations and navigating throughout CAS 07-08-01 and CAS 18-99-10 Sites, providing centimeter-level survey accuracy.

Prior to the start of DGM activities (02 February to 03 March 2005), two control points were established at CAS 07-08-01 and CAS 18-99-10. Horizontal positional control of these two survey monuments was established to centimeter-level accuracy. Navigational and monument data are presented in Universal Transverse Mercator (UTM), Zone 11N, NAD 83 coordinates in U.S. Survey Feet units.

3.4 DATA QUALITY OBJECTIVES (DQOS)

Data Quality Objectives (DQOs) were based on the concept that different data uses require different levels and types of quality. Goals for data quality are dependent on the decision(s) that will be made based on the data. Data quality is defined as the degree of certainty with respect to precision, accuracy, representativeness, completeness, and comparability required of a particular data set. The DQOs are both qualitative and quantitative statements specifying the quality of data required to support the project. The DQOs developed during planning of the DGM at CAS 07-08-01 and CAS 18-99-10 served as standards against which project objectives were measured. Throughout implementation of both the GPO and full-scale geophysical QC surveying activities, project personnel were required to meet the DQOs. This approach ensured that data of sufficient type, quality, and quantity were collected to document, and facilitates appropriate response actions and clearance.

3.5 GEOPHYSICAL DATA PROCESSING

Geophysical datasets were processed on a daily basis. Each dataset went though a set of processing steps designed to enhance and aid in the selection of potential MEC targets. Figure 3-1 illustrates the data processing routine. Raw DGM data were first opened in Magmap in which

the positions of each sensor were calculated from a known position and exported into XYZ format. The data were then imported into Oasis Montaj™ processing software, where the initial projection (NAD 83 UTM Zone 11 North U.S. Survey Feet) and views of the database where set. Initial daily QC checks were performed at this point. Daily function test along with latency analysis were checked. When the dataset passed the initial QC checks, the data were drift corrected. During data collection, the base value recorded on an instrument can drift up or down; the drift correction removed this drift from the database. The next step was to create a map, plot the symbol tracks on the map, and check for consistency. Finally, the data were gridded, using the minimum curvature algorithm (0.25-foot grid cell size, 2-foot blanking distance). The gridded data were checked for completeness and accuracy prior to selecting anomalies.

3.6 TARGET SELECTION

Once the data was compiled and gridded, an automated target selection routine was performed to select anomalies detected during the DGM surveys. Figure 3-2 illustrates the target selection process. The target picks for the DGM at NTS were compiled into a dig sheet through an anomaly selection process. The Geosoft Oasis Montaj™ UX-Detect software was used as the DGM processing platform. The anomaly selection process involved the following steps:

1. Initial target selection. The initial value of 25 mV, established by the GPO results, was used as the cut-off threshold. Subsequent to 10 March 2005, the threshold was raised to 50 mV, based on dig results of two grids and discussions with SNJV Industrial Sites Task Manager.

2. Automated target parameters include:

    a. Blakely test-The algorithm worked by selecting targets at peaks in the gridded data only where all adjacent cells were less than the peak

    b. Smoothing filter of 3

    c. Peak detection level of 4

3. Decay analysis was performed by calculating the percent difference between time gate channels 1 and 3. The analysis removed (masked) targets from the database that failed to meet the selected cutoff between channels 1 and 3.

4. Perform a manual review of all targets for validity:

a. Remove targets outside grid

b. Remove known operator and equipment-induced targets

c. Select appropriate targets

5. Run "target search radius" Access program to select peak response within a 2-ft radius of target.

   a. Remove duplicate targets and/or merge targets into one.

6. Add additional QC picks at/or below the cut-off threshold.

7. Finalize target selection after QC check by the Site Geophysicist and create dig sheet with accompanied map.

8. Upload to UXOFast^{SM} for reacquisition via PDAs.

3.6.1 Anomaly Dig Sheets

Following the identification of potential anomalies indicative of MEC from the geophysical data evaluation, the Site Geophysicist assigned each anomaly a unique target identifier and entered the corresponding information for the target into the database. An electronic version of the Target Dig Sheet and Target History Database Form was utilized to log excavated targets. The dig sheet data were uploaded into a PDA containing WESTON's UXOFast^{SM} software platform to facilitate target excavation and subsequent data transfer into a central GIS database.

The following information was included in the database for each targeted anomaly:

- Grid Cell
- Unique target ID (i.e., 18C-B004-010, [Site Location/Grid Cell /target pick]).
- Easting and Northing position.
- Channel ID (i.e., Time Gate channels, Ch 1 through 4 and Stacked Response).

The dig sheet also included QC target anomalies that were picked by the WESTON Site and/or Project Geophysicist. The anomaly plots and dig sheets for each DGM grid (following DID OE-005-05.01, Attachment C) and Mag and Dig grids are provided in Appendix B and C.

3.6.2 Anomaly Reacquisition

A total of 6,304 DGM anomalies were selected for reacquisition and subsequent intrusive investigation within Site C at CAS 18-99-10. Reacquisition of DGM grid anomalies was performed by utilizing the Trimble RTK/GPS for centimeter-level accuracy. The RTK was set up over the grid, each anomaly target was located, and the precise location of the EM target was fine-tuned using the Schonstedt or Schiebel magnetic locator. A pin flag was then placed at the refined target location identifying the anomaly for later excavation by the UXO team further documented in the following section.

3.7 QUALITY CONTROL

Quality Control was performed on two levels including;

- Quality Control intrinsic to the DGM process; to ensure that all aspects of field data acquisition, data processing and analyses were consistent with DQO metrics.
- Quality Control on the Mag and Dig anomaly removal operations to confirm that MEC items have been located and removed to the specified maximum clearance depth of four feet, or geophysical instrument detection depths for small-diameter MEC items.

3.7.1 QC DGM Data Acquisition and Processing

Quality Control (QC) checks were performed for the geophysical instruments at specified intervals. The QC checks monitored the instruments for noise, stability, and repeatability metrics, and provided information needed for DGM data processing. A table of QC tests, along with the test frequency, is provided in Appendix B-2. Data acquired from the QC checks, navigation function checks, and data processing QC steps were logged and reported on independent audit forms shown in Appendix B-2.

3.7.2 QC Mag and Flag Anomaly Operations

Quality Control (QC) DGM was performed to complement and validate the Mag and Flag operations completed at CAS 18-99-10, Sites A, B, and D and CAS 07-08-01. The objective of the QC was to identify geophysical anomalies, including potential MEC items, which may have

been overlooked during the initial MEC clearance activities. The QC was performed using DGM EM-61 MK2 Towed Array following the Quality Control Approach for CAS 18-99-10, Ammunition Dump, Sites A, B, and D and CAS 07-08-01 memo dated April 7, 2004, contained in Appendix B. The QC dig sheets contain both the signal strength of the identified anomaly and its position for reacquisition and subsequent excavation/management by the UXO Team during the QC phase.

Figure 3-1
Data Processing and Review Flowchart

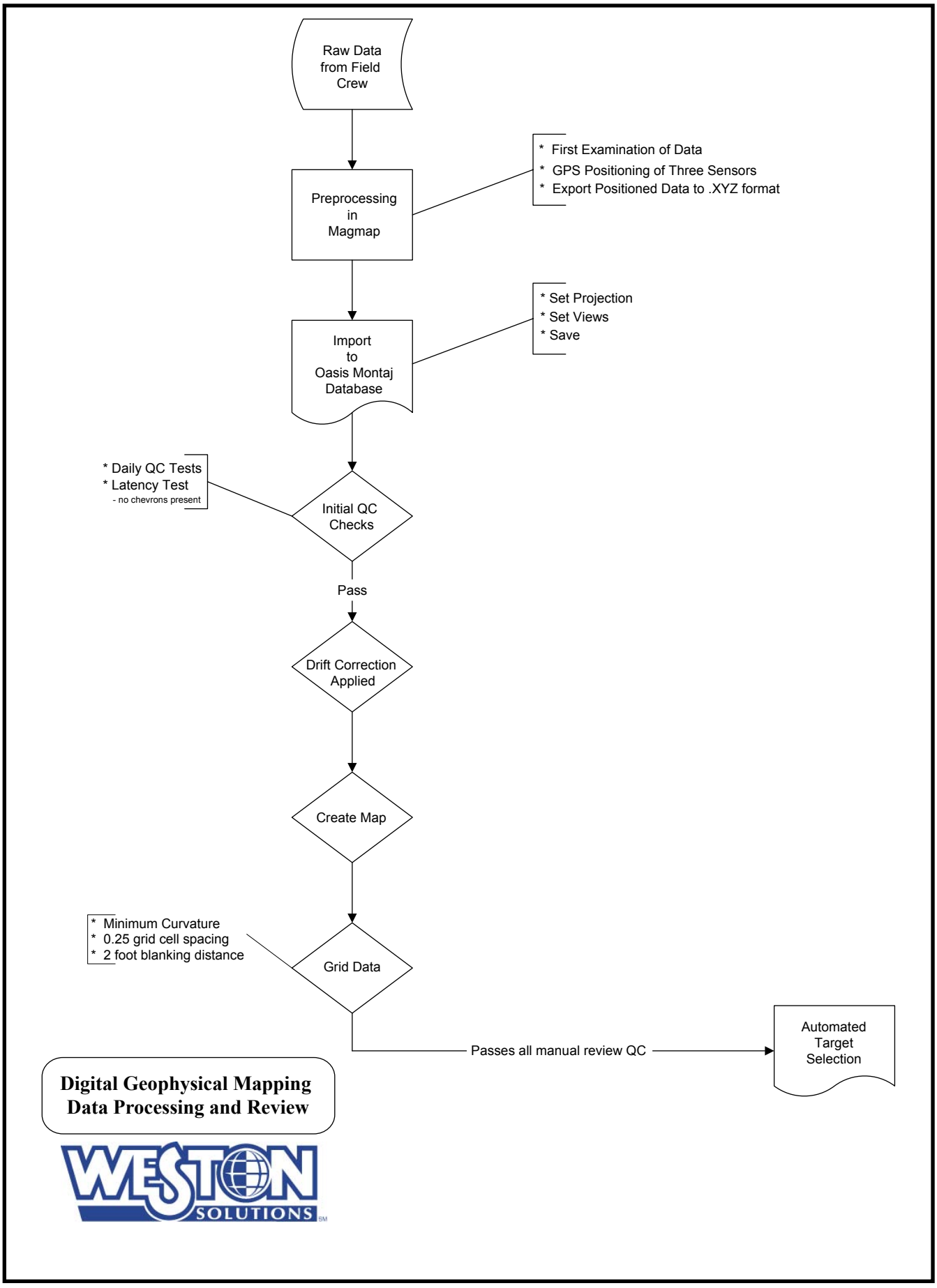
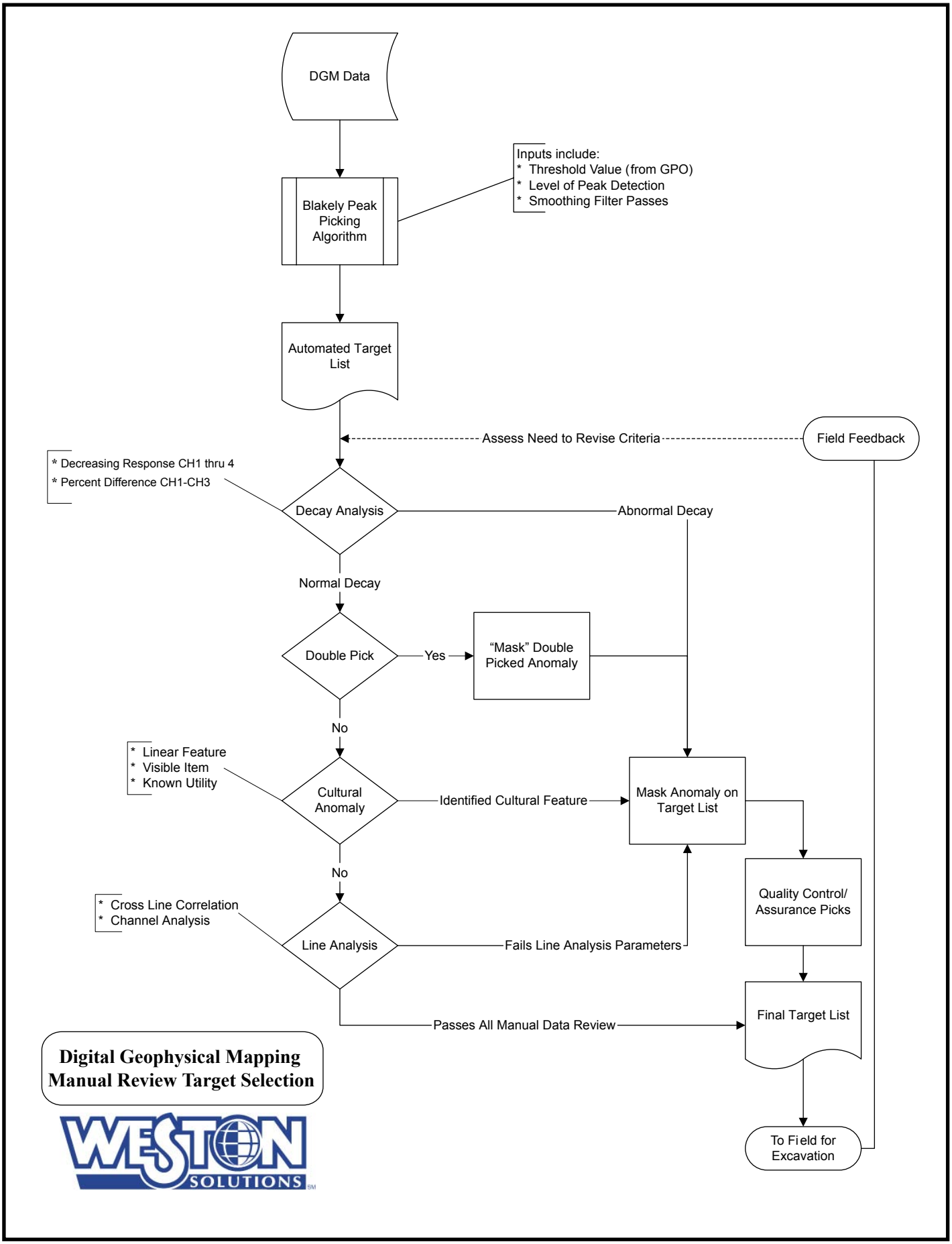


Figure 3-2
Target Selection and Review Flowchart



4. MEC REMOVAL TECHNIQUES

4.1 MEC REMOVAL

MEC removal requirements specific to the CAS 07-08-01 and 18-99-10 sites are described in the Final MEC Clearance Work Plan (WESTON, January 2005). These MEC removal requirements are listed below.

4.1.1 CAS 07-08-01, Contaminated Mound

The CAS 07-08-01 Contaminated Mound site consisted of a mound of soil and debris that is approximately 10 feet high and 375 feet in circumference. A borrow pit is included in this CAS but is located approximately 200 feet southeast of the mound. The borrow pit was not included in the MEC survey area. The area to be investigated and cleared of MEC included the mound and a 30-foot wide strip of soil surrounding the mound, including the subsurface anomalies identified during the 2002 geophysical survey. The WESTON Senior UXO Supervisor (SUXOS) communicated any necessary changes and received authorization from the SNJV Task Manager (TM) prior to conducting any removal activities beyond the identified area as necessary. SNJV marked the survey area prior to the initiation of clearance activities.

The unidentified metal (potential MEC items) within the CAS 07-08-01 mound were excavated and staged for disposal. WESTON provided the necessary equipment to safely execute the required activities. The MEC survey and clearance extended to a maximum depth of four feet below the soil surface.

All excavated debris was segregated into appropriate categories (i.e., scrap and MD, MPPEH, and UXO), staged onsite before transfer to trailers and then staged separately for final disposal by SNJV. Scrap material was certified by the WESTON SUXOS as being MEC-free before the scrap was placed in containers. MD were staged in separate areas, identified by SNJV, and subsequently certified by the WESTON SUXOS as being MEC-free before scrap was placed in containers. MD was staged in a separate area and certified to be non-reactive before loading onto trailers. MPPEH and UXO were identified and a determination made as to whether these items

could safely be moved to a detonation area or requires detonation in place. WESTON was responsible for the detonation of identified MPPEH and UXO.

4.1.2 CAS 18-99-10, Ammunition Dump

The CAS 18-99-10 Ammunition Dump site was comprised of four separate areas (Sites A, B, C, and D) along a half-mile stretch of dirt road that the runs perpendicular to Buckboard Mesa Road approximately 1.5 miles south of the Pahute Airstrip in Area 18 of the NTS. All survey activities were limited to the area north of the dirt road on Sites A and B.

- Site A, Ammunition Dump - This site consists of a 30 ft by 50 ft by 5 ft debris pile (see Photo 4-3). The area that was cleared of MEC is a circle with a radius of 200 feet with the debris pile as the center. This clearance area was approximately three (3) acres.

- Site B, Debris Area - Site B was located about 200 feet southwest of Site A, it consisted of a shallow trench approximately 10 ft by 40 ft and a second debris area approximately 15 feet by 30 feet located about 80 feet north of the trench. The area that was cleared for MEC is a semi-circle with a radius of 300 ft. with the debris area as the center. This clearance area was approximately six (6) acres. There was some overlap in clearance areas between Sites A and B.

- Site C, Debris Area - This site was located about 1,500 feet west of Site B along the dirt road, and consisted of an approximately 200 feet by 600 feet debris area in an excavated roadbed. The area that was cleared of MEC is a circle with a radius of 900 feet with the buried garbage truck (former target) located at the center. This clearance area was approximately fifty nine (59) acres.

- Site D, Debris Pile - Site D was located about 1,000 feet west of Site C along the same dirt road, and consisted of an approximately 50 ft by 50 ft debris pile. The area was cleared for MEC is a circle with a radius of 100 feet with the debris site as the center. This clearance area was approximately 0.75 acres. There was some overlap in clearance areas at Sites C and D.



Photo 4-1 Site A, Ammunition Dump

WESTON identified, cleared, and segregated MEC and metal debris within the four sites. The MEC survey included geophysical surveys identifying potential subsurface MEC and debris. The identified items were excavated to a maximum depth of four feet bgs, and staged for disposal. In general, excavation was conducted by hand to depths of 2-feet bgs. If deeper excavations were required, a backhoe was used.

WESTON provided the necessary equipment and material necessary to safely execute all activities; with the exception of the items and services provided by SNJV and listed in the Subsection 3.2 of this MEC Clearance Work Plan.

All excavated debris was segregated into appropriate categories (i.e., scrap and MD, MPPEH, and UXO) and staged separately for final disposal by SNJV. Scrap material and MD was staged in an area identified by SNJV, and certified by the WESTON SUXOS as being MEC-free. MD was staged in a separate area and certified to be non-reactive. MPPEH and UXO were identified and a determination made as to whether it could be safely moved to a detonation area or required detonation in place. WESTON was responsible for the detonation of recovered MPPEH and UXO items.



Photo 4-2 Scrap Material Container



Photo 4-3 MD Collection Trailer

As discussed in Section 3, WESTON performed analog geophysical surveying (Mag and Flag) identifying the locations of anomalies that may represent MEC items in support of the clearance activities at the CAS 07-08-01 and 18-99-10, Areas A, B and D sites. Geophysical surveying was performed in accordance with industry standard practices. The geophysical survey included a combination of geophysical detection technologies to ensure metallic items of various compositions potentially located at the CASs were identified. The geophysical survey performed during clearance activities included the following equipment:

- Schonstedt Ordnance Locator- utilizes passive vertical magnetic fluxgate gradiometer detection technology to identify ferrous materials;
- Schiebel All-Metals Ordnance Locator – utilizes digital electromagnetic pulse induction technology to identify both ferrous and non-ferrous metals

4.2 MAG & FLAG PROCEDURES

Each of the clearance sites was surveyed with the Trimble RTK/GPS equipment to establish a series of nominal 200-ft by 200-ft grids. The grid survey activities were conducted with the technical support of a WESTON UXO Technician, who provided Anomaly Avoidance support. The grid corners were staked with wooden stakes driven into the soil, and were assigned and marked with a unique number that represents the UTM coordinates of the grid corners. The benefits of using UTM coordinates as the grid corner numeric designators is that the spatial

location of the grid is independent of a site-specific monument, allowing the positional location of the clearance grid to be reacquired without reference to a man-made benchmark that may be removed/destroyed at a later date. Each surveyed grid was established with nominal 5-foot wide clearance lanes to ensure complete coverage of the grids. The clearance lanes were demarcated with nylon rope laid on the ground surface, as shown in Photo 3.3, and held in-place with a 6-inch spike at each end.

The analog geophysical surveying for clearance activities was conducted by a UXO Team, consisting of six UXO Technician IIs (Tech IIs) led by a UXO Technician-III (Tech III). The Tech IIs formed a line along one of the sides of the grid, and geophysically surveyed the area within the assigned clearance lanes. The UXO Technicians used the Schonstedt fluxgate magnetometers and Schiebel All-Metals Detector to investigate the area for ferrous and non-ferrous metal items. Upon identification of each anomaly, as evidenced by an audible signal, the Tech II inserted a non-metallic pin flag at the surface location of the anomaly. The pin flags had a unique numbering system specific to each CAS site, and each anomaly identified was excavated using the procedures identified below.

4.3 EXCAVATION PROCEDURES FOR MAG & FLAG

Prior to excavation, each work area was cleared for underground utilities by the SUXOS and the UXO Safety Officer (UXOSO), in conjunction with the SNJV Site Supervisor. Excavations were used to investigate each identified anomalies. Shallow excavations, initially identified as surface to two feet bgs, were generally dug by hand (Photos 4-4) while deeper anomalies were investigated using a backhoe respectively.



Photo 4-4 Hand Excavation

4.4 IDENTIFICATION PROCEDURES

Qualified UXO personnel performed all excavations so that identification procedures could be conducted. The UXO Team excavated each identified anomaly and performed Explosive Ordnance Reconnaissance (EOR) procedures, assessing all ordnance items to determine their condition and potential hazards. If the anomaly could not be uncovered within the specified depth, the UXO Team conspicuously marked the site with flagging material. The on-site WESTON SUXOS coordinated with the SNJV Site Supervisor and sought direction from SNJV TM prior to excavating deeper.

Every effort was made to identify a suspect MEC item. The MEC item was visually examined for markings and other external features such as shape, size, and external fittings. If an unknown MEC item was encountered, the SNJV Site Supervisor was notified immediately. Under no circumstances was fuzed UXO moved in an attempt to make a definitive identification. Only UXO-qualified personnel handled MEC items, and only during daylight hours. If the subsurface contact proved to be scrap metal or MD (non-reactive), it was removed and the hole rechecked with a geophysical instrument. If the recovered item was designated as MPPEH, it was re-located to a holding area for further evaluation and destruction. If the hole was "clean," it was refilled and tamped. If the contact was a UXO, it was marked with a pin flag for subsequent demolition and disposal. The area around the identified anomaly was checked to ensure the anomaly did not

mask additional anomalies. Each UXO item had its condition and identification determined by qualified UXO personnel.

WESTON maintained electronic records of all MEC items recovered on the project. These records were kept using an electronic data entry program on a hand-held personal digital assistant (PDA). The PDA databases were synchronized daily with the main project database server located off-site. The database files and digital pictures were subsequently loaded into the project GIS so that all identified anomaly information is captured in the project GIS.

4.5 DEMOLITION PROCEDURES

Demolition safety and operations were conducted in accordance with industry standard practices, the procedures outlined in EOD 60A-1-1-31 and the appropriate specific 60 Series EOD publications. The designated demolition supervisor was responsible for all aspects of conducting demolition operations. All recovered MEC items were detonated at the end of the project. An electrical demolition system was used for the demolition activities allowing positive control of all activities. Fire department and EMS personnel were present during demolition operations.

Recovered MEC-demolition operations took place at the end of the MEC clearance activities, based on the secure nature of the NTS, and the remote locations of the CAS 07-08-01 and 18-99-10 sites. This one-time, end-of-project demolition operations practice allowed clearance activities to proceed in a safe, effective and efficient manner; without the continuing interruptions of arranging for demolition materials to be delivered to the remote site(s). Additionally, this procedure did not require extended on-site storage of explosives for demolition. WESTON ordered the required explosives only at the completion of intrusive activities; and the delivery of explosives was arranged through SNJV project staff. The delivery of explosives onto the NTS, and to the site location(s), was coordinated through SNJV project staff and the Performance Based Management Contractor. Explosives delivery and transport on the NTS project site was conducted in accordance with DOE M440.1 Explosive Safety Manual. Explosive documentation records are provided in Appendix D.

The WESTON SUXOS, in consultation with the WESTON UXOSO, determined if a recovered ordnance item was safe-to-move, or had to be left in-place for the blow-in-place demolition operations. All safe-to-move MEC items were transported to the temporary magazine storage area located on site. During the demolition operations all MPPEH items were explosively vented. Only the demolition team, SUXOS, and UXOSO were permitted in the area where charges were being assembled and demolition operations were being conducted. Other non-demolition team UXO personnel left the demolition area and were used to provide perimeter security.

4.6 MANAGEMENT OF SCRAP AND MUNITIONS DEBRIS

During the execution of this project, MD and scrap metal were recovered from the CAS 07-08-01 and 18-99-10 sites. All recovered MPPEH items were visually inspected for the presence of explosive or other hazardous material, classified as MD and the MD items were secured in a roll-off container supplied by SNJV. The SUXOS and UXO Tech III inspected all MPPEH items at intervals consistent with the volume of MPPEH accumulated. Additionally, the UXO Quality Control Manager (UXOQC) inspected the MD and scrap to verify the process and insure that only inert items were contained in the scrap pile. A final visual inspection was conducted on each recovered MD item immediately prior to release of the MD container to SNJV. SNJV managed the disposal of all recovered debris and MD scrap.

Non-MEC scrap metal was collected, segregated and staged at the location specified by SNJV. The types, amounts and location of surface scrap was recorded and reported. The non-MEC subsurface scrap items recovered during anomaly investigations were removed from their location, catalogued and consolidated with surface scrap metal. SNJV assumed responsibility for the proper disposal of all recovered scrap and MD items.

5. RESULTS

The results of the Mag and Flag and quality control DGM operations on the two CAS sites 7A and 18AB as well as the full scale DGM in CAS 18CD are presented in this section. Table 5-1 shows a summary table of all MEC items found at each of the areas.

Table 5-1 MEC Summary Table

Corrective Action Site	Total No. of MEC Items	Description	No. of Each Item
CAS 07-08-01 Mag and Dig	14	Anti-Tank Landmine	14
CAS 18-99-10 Sites A&B (Mag and Dig)	142	Small Arms	2
		Frag	100
		Projectile	7
		HVAR Rocket	5
		Rocket	4
		Bomb	7
		HVAR Warhead	10
		Warhead	7
CAS 18-99-10 Sites C&D (DGM)	854	Small Arms	44
		Frag	602
		Projectile	163
		MK23 Bomb	2
		Rocket	6
		Mortar	9
		BDU 33	1
		Fuze	8
		M38A	3
		Bomb	2
		HVAR Warhead	2
		Warhead	7
		SCAR Rocket	2
		SCAR Warhead	1
		Grenade	1
		SCAR Motor	1
Total	**1010**		**1010**

Notes: HVAR = High Velocity Aircraft Rocket

SCAR = Sub-Caliber Aircraft Rocket

5.1 CAS 07-08-01

The mound located within CAS 07-08-01 has been cleared of identified MEC items within the 30-foot perimeter set forth in the work plan. Figure 5-1 shows the location of all MEC items found at CAS 07-08-01. A total of 14 inert anti-tank mines were located and recovered. The item specific information can be found in Appendix C, Table C-1. The mound has a circumference of approximately 375 feet, and with the 30 foot survey buffer required for the clearance action, measures approximately 1/2 acre. A digital mapping survey was completed for quality assurance to evaluate and validate the Mag and Dig operations performed previously at CAS 7. The geophysical plot of CAS 07-08-01 is provided in Appendix B-3.1.

5.2 CAS 18-99-10 SITES A&B

Sites A and B, located within CAS 18-99-10, have been cleared of MEC items within the boundaries set forth in the Final MEC Clearance Work Plan. Sites A and B total approximately four acres, with a debris pile located in the center of Site A and a 10ft by 40ft trench in the center of Site B. Figure 5-2 shows the location of all MEC items found at CAS 18-19-10 Sites A and B. A total of 142 MEC items were excavated throughout Sites A and B during Mag and Dig operations. The item specific information can be found in Appendix C, Table C-2. Radiological contaminated items discovered within the debris pile in Area A during Mag and Dig operations were also cleared from the site. A digital geophysical mapping survey was completed for quality assurance to evaluate and validate the Mag and Dig operations previously carried out at CAS 18-99-10 and is shown in Appendix B-3.2.

5.3 CAS 18-99-10 SITES C&D

Sites C and D, located within CAS 18-99-10, have been cleared of MEC items within the boundaries set forth in the Final MEC Clearance Work Plan. Sites C and D total e approximately 60 acres, with a target area located in the center of Site C, and a debris pile in the center of Site D. Figure 5-3 shows the location of all MEC items found at CAS 18-99-10 Sites C&D. A total of 854 MEC items were excavated throughout both sites during Mag and Dig and digital geophysical mapping operations. The item specific information can be found in Appendix C,

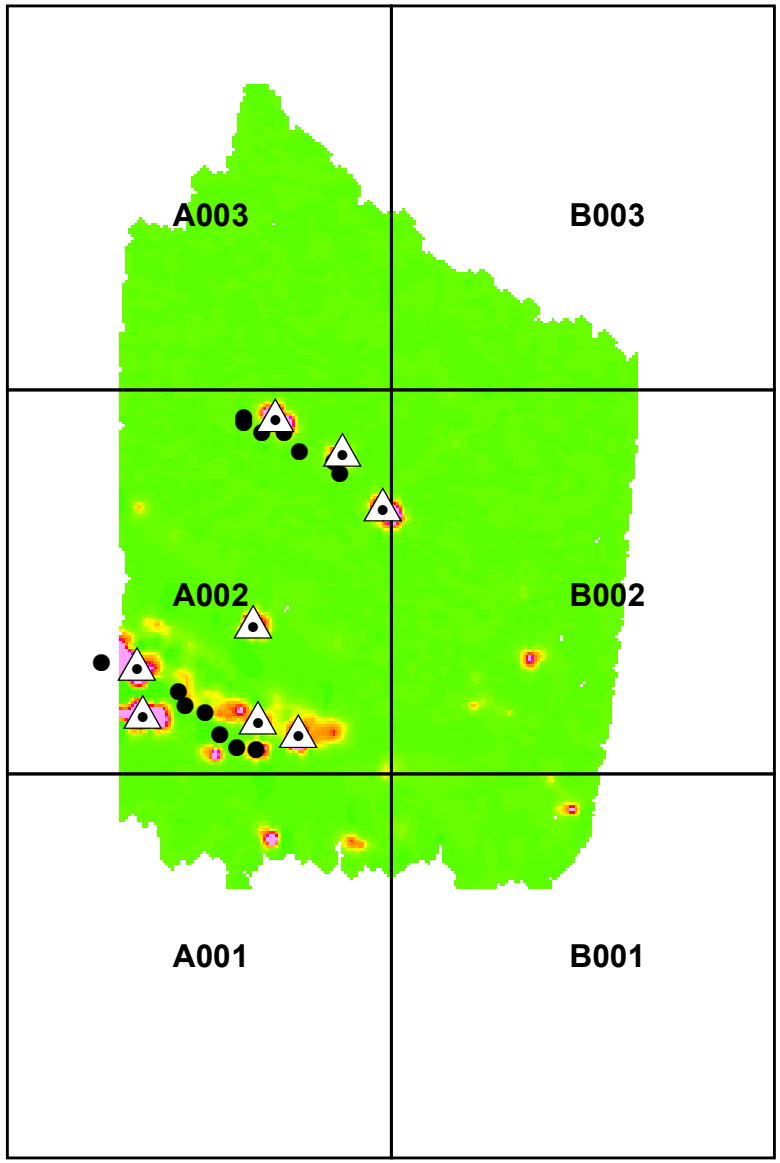
Table C-3. A DGM survey was completed at Site D for quality control to evaluate and validate the Mag and Flag operations previously carried out. A Geophysical plot of CAS 18-99-10 Sites C&D is presented in Appendix B-3.3.

Quality Control of the geophysical navigation and positional accuracy of selected anomalies was validated in the field. This was performed by comparing coordinates of selected anomalies (targets) to the known surveyed locations of 60-metal spikes (seeds) that were detected by the instrumentation. Table 5-2 shows the easting and northing coordinates for both the seed and target locations, and provides a comparison of the offset distance between two. The offsets for all 60 seed items were within the DQO metric of <2 feet.

Table 5-2

QC Seed Locations and Offsets Results

Grid ID	Seed Location		Target ID	Target Location		Offset (ft)
	Easting	Northing		Easting	Northing	
B005	1839800.00	13463600.00	64	1839801.90	13463599.50	1.96
C004	1840000.00	13463400.00	171	1839998.70	13463399.10	1.58
C005	1840000.00	13463600.00	127	1839999.60	13463599.50	0.64
C006	1840000.00	13463800.00	129	1839998.70	13463799.30	1.48
C007	1840000.00	13464000.00	47	1840000.50	13463999.10	1.03
C008	1840000.00	13464200.00	27	1840000.50	13464199.50	0.71
D003	1840200.00	13463200.00	206	1840200.60	13463199.30	0.92
D004	1840200.00	13463400.00	97	1840199.10	13463399.40	1.08
D005	1840200.00	13463600.00	59	1840199.10	13463598.60	1.66
D006	1840200.00	13463800.00	85	1840199.40	13463799.60	0.72
D007	1840200.00	13464000.00	52	1840200.90	13463999.70	0.95
D008	1840200.00	13464200.00	35	1840200.00	13464198.60	1.40
D009	1840200.00	13464400.00	34	1840198.80	13464400.20	1.22
E002	1840400.00	13463000.00	200	1840398.60	13462999.50	1.49
E003	1840400.00	13463200.00	94	1840400.70	13463199.00	1.22
E004	1840400.00	13463400.00	76	1840400.70	13463399.10	1.14
E005	1840400.00	13463600.00	99	1840399.80	13463598.60	1.41
E006	1840400.00	13463800.00	113	1840400.70	13463798.70	1.48
E007	1840400.00	13464000.00	44	1840401.30	13464000.00	1.30
E008	1840400.00	13464200.00	23	1840398.60	13464199.80	1.41
E009	1840400.00	13464400.00	27	1840399.80	13464399.30	0.73
F001	1840600.00	13462800.00	4	1840599.60	13462798.80	1.26
F002	1840600.00	13463000.00	164	1840599.00	13462999.20	1.28
F003	1840600.00	13463200.00	125	1840600.80	13463199.60	0.89
F004	1840600.00	13463400.00	93	1840599.30	13463399.10	1.14
F005	1840600.00	13463600.00	229	1840599.60	13463600.40	0.57
F006	1840600.00	13463800.00	329	1840598.70	13463799.30	1.48
F007	1840600.00	13464000.00	122	1840599.30	13463999.40	0.92
F008	1840600.00	13464200.00	61	1840599.30	13464199.20	1.06
F009	1840600.00	13464400.00	58	1840599.60	13464399.90	0.41
G001	1840800.00	13462800.00	7	1840800.90	13462799.70	0.95
G002	1840800.00	13463000.00	84	1840798.50	13462999.80	1.51
G003	1840800.00	13463200.00	100	1840801.20	13463198.70	1.77
G004	1840800.00	13463400.00	87	1840801.20	13463399.10	1.50
G005	1840800.00	13463600.00	119	1840800.60	13463599.80	0.63
G006	1840800.00	13463800.00	214	1840801.20	13463800.20	1.22
G007	1840800.00	13464000.00	174	1840800.60	13463999.70	0.67
G008	1840800.00	13464200.00	130	1840800.00	13464198.60	1.40
G009	1840800.00	13464400.00	111	1840800.60	13464399.60	0.72
H002	1841000.00	13463000.00	43	1841001.60	13462999.20	1.79
H003	1841000.00	13463200.00	55	1840998.60	13463198.70	1.91
H004	1841000.00	13463400.00	170	1840999.80	13463399.40	0.63
H005	1841000.00	13463600.00	206	1841000.70	13463598.30	1.84
H006	1841000.00	13463800.00	161	1841000.70	13463799.60	0.81
H007	1841000.00	13464000.00	89	1841001.90	13463999.40	1.99
H008	1841000.00	13464200.00	75	1841000.70	13464198.90	1.30
H009	1841000.00	13464400.00	50	1841000.40	13464399.90	0.41
I002	1841200.00	13463000.00	57	1841200.50	13462998.90	1.21
I003	1841200.00	13463200.00	96	1841199.60	13463200.00	0.40
I004	1841200.00	13463400.00	88	1841199.00	13463400.30	1.04
I005	1841200.00	13463600.00	84	1841200.94	13463599.03	1.35
I006	1841200.00	13463800.00	144	1841200.05	13463800.22	0.23
I007	1841200.00	13464000.00	91	1841199.97	13463998.78	1.22
I008	1841200.00	13464200.00	77	1841200.50	13464199.80	0.54
I009	1841200.00	13464400.00	41	1841200.20	13464399.00	1.02
J003	1841400.00	13463200.00	47	1841399.33	13463198.99	1.21
J005	1841400.00	13463600.00	71	1841399.40	13463599.50	0.78
J006	1841400.00	13463800.00	252	1841400.00	13463799.00	1.00
J007	1841400.00	13464000.00	121	1841399.10	13463999.40	1.08
J008	1841400.00	13464200.00	33	1841400.60	13464198.60	1.52



LEGEND

- MEC Items (Dug Pre-Survey)
- Non-MEC Items (Dug Post-Survey)
- A001 Survey Grids

Response Value (mV)

180
169
159
149
139
128
118
108
98
87
77
67
57
46
36
26
16
5
-5

Response (mV)

N

25 0 25 50

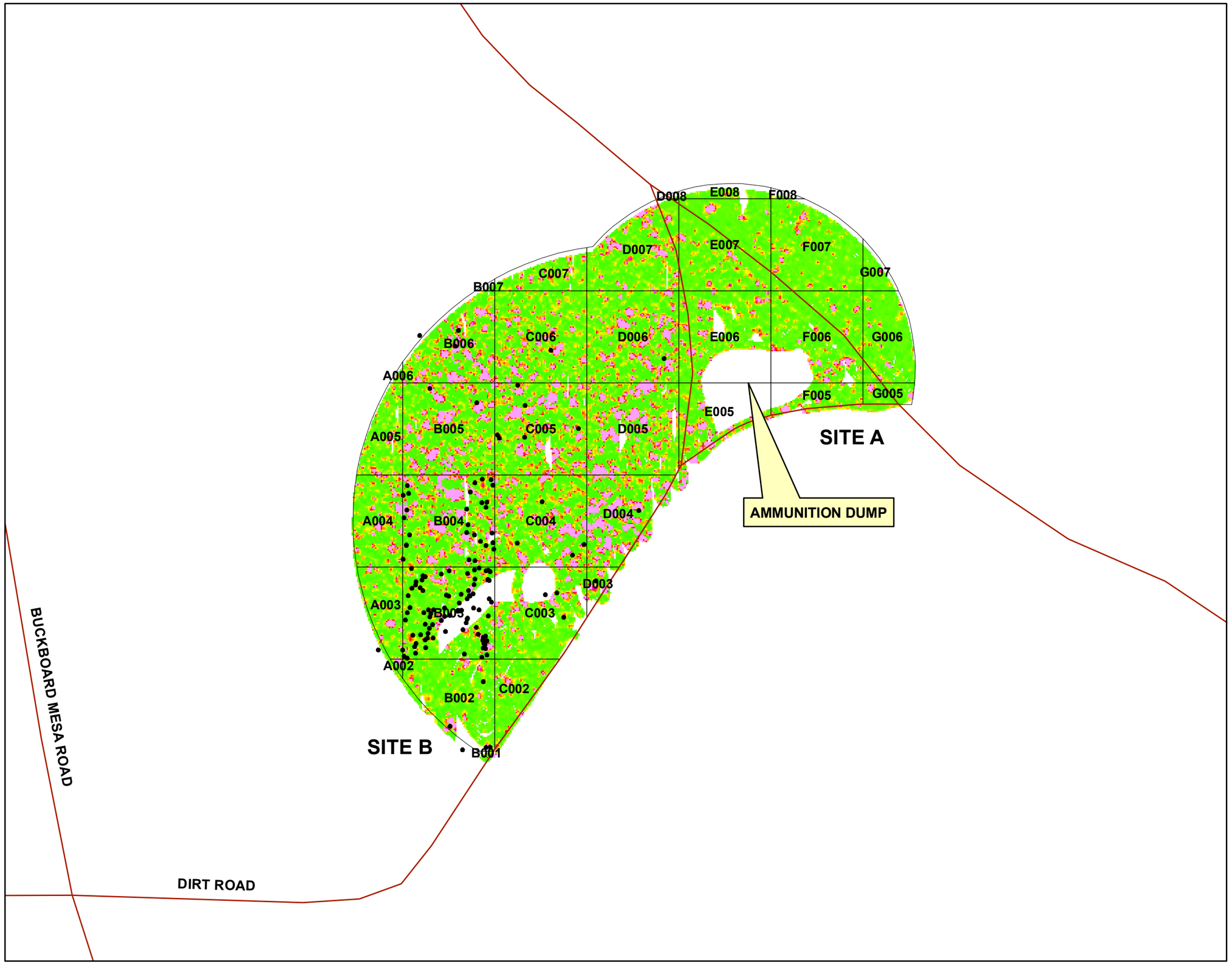
Feet

WESTON SOLUTIONS

FIGURE 5-1
CAS 07-08-01
NEVADA TEST SITE
Nye County, NV

Work Authorization IS05 310
Stoller-Navarro Joint Venture

DATE:	PROJECT NO.:	SCALE:
JUNE 2005	13142.015.003.0310	1" = 50'



LEGEND

- MEC Items
- A001 Survey Grids
- Roads

Response Value (mV)

180
169
159
149
139
128
118
108
98
87
77
67
57
46
36
26
16
5
-5

Response (mV)

100 50 0 100

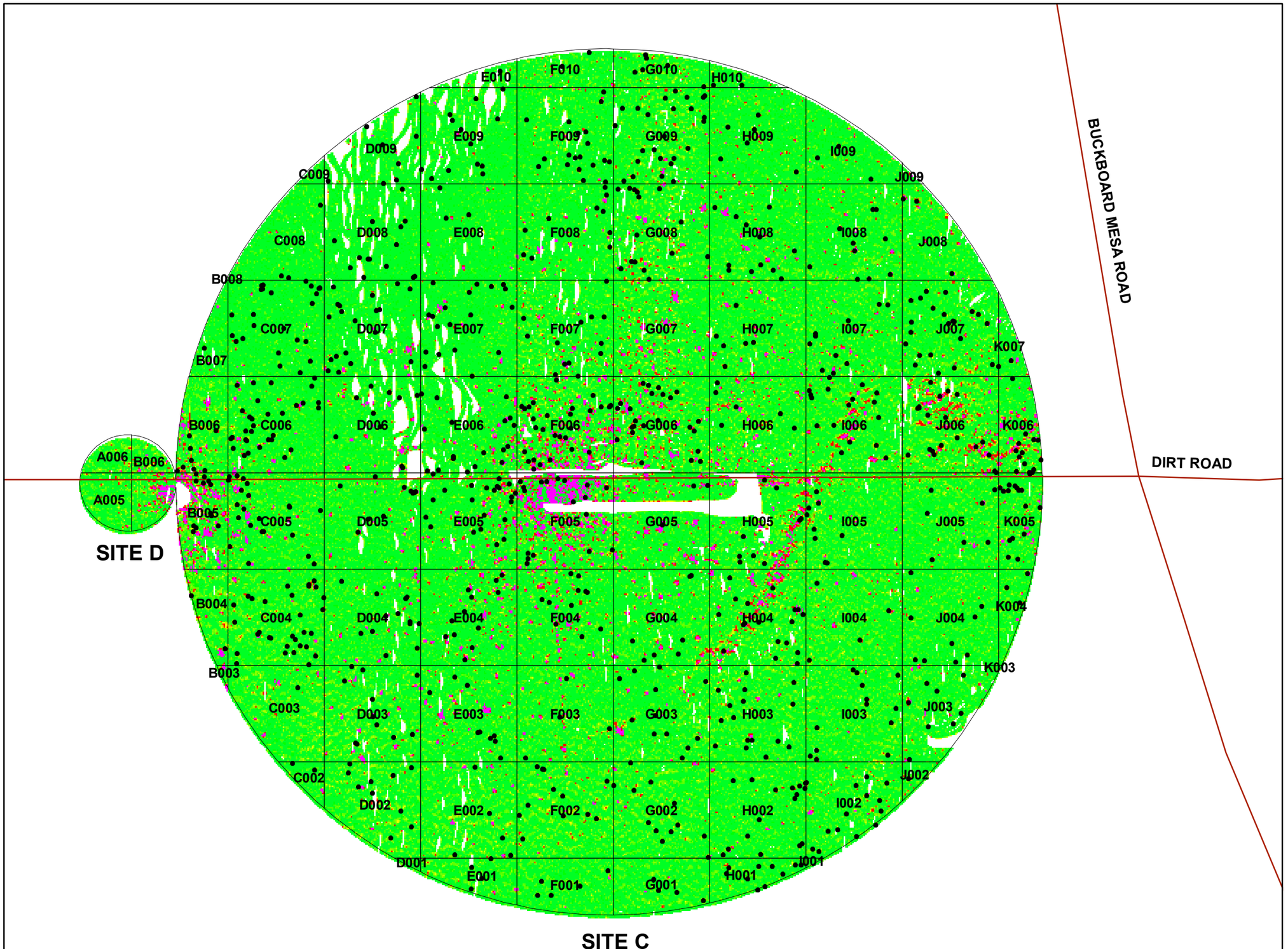
Feet

WESTON SOLUTIONS

FIGURE 5-2
CAS 18-99-10
NEVADA TEST SITE
Nye County, NV

Work Authorization IS05 310
Stoller-Navarro Joint Venture

DATE:	PROJECT NO.:	SCALE:
JUNE 2005	13142.015.003.0310	1" = 100'



LEGEND

- MEC Items
- A001 Survey Grids
- Roads

Response Value (mV)

95
90
85
79
74
69
64
59
54
49
44
38
33
28
23
18
13
8
3

Response (mV)

N

200 100 0 200

Feet

WESTON SOLUTIONS

FIGURE 5-3
CAS 18-99-10
NEVADA TEST SITE
Nye County, NV

Work Authorization IS05 310
Stoller-Navarro Joint Venture

DATE:	PROJECT NO.:	SCALE:
JUNE 2005	13142.015.003.0310	1" = 200'

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6. SUMMARY AND CONCLUSIONS

WESTON performed a MEC Clearance on portions of CAS 07-08-01 and 18-99-10, Nevada Test Site, Nye County, NV, between 2 February 2005 and 29 April 2005. The objective of this project was to safely locate, identify and dispose of Munitions of Explosive Concern (MEC) items to a maximum depth of 4-feet bgs. The primary tasks of this project were to 1) perform UXO Mag and Flag investigations at two designated sites within Site 18 and one designated site within Site 7; 2) perform digital geophysical mapping on approximately 60 acres of land within Area 18 that had formerly been used as an artillery range; and, 3) identify and remove anomalies that are, or could represent, munitions and explosives of concern (MEC) previously used at this site.

The digital geophysical mapping (DGM) was accomplished using a towed array consisting of three EM-61 MK2 high sensitivity metal detection systems. The DGM provided detailed anomaly mapping to develop a target database relating the location and identification of potential MEC and MD within Area 18C. The target database was provided to WESTON's UXO team, which in turn carried out a full scale clearance action of selected anomalies at the site. Anomalies were reacquired using a survey-grade RTK GPS, hand-held Schonstedt magnetometers, and Schiebel all metal detectors.

A total of 6,304 anomalies identified using DGM were excavated from Area 18C. Of these 6,304 excavations, 854 represented MEC items. Mag and Dig efforts in Area 7A and 18AB yielded 14 and 142 MEC items respectively.

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7. REFERENCES

DOE (U.S. Department of Energy). 2004. *Corrective Action Investigation Plan for Corrective Action Unit 511: Waste Dumps (Piles & Debris), Nevada Test Site, Nevada.* August 2004.

U.S. Army Engineering and Support Center (USACE). 2001. *Geophysical Investigation Plan.* USACE DID OE-005-07.01. Huntsville, AL. revised 2001.

U.S. Army. 2003. Memorandum dated 28 October 2003 establishing standard definitions of MEC terminology by the Deputy Assistant Secretary of the Army for Installations and Environment.

WESTON (Weston Solutions, Inc.). 2005. *Final Munitions and Explosives of Concern (MEC) Clearance Work Plan*. January 2005.

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APPENDIX A

MUNITIONS RESPONSE (MR) TERMINOLOGY

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On 28 October 2003, the Deputy Assistant Secretary of the Army for Installations and Environment issued a memorandum providing standard definitions to be used in Munitions Responses (MR). The purpose was to ensure clarity and consistency in the use of terms for a MR. Discussions contained herein will adhere to the terminology as set forth in the memorandum (U.S. Army, 2003b). While most of the terminology in the memorandum is well established, several terms are a departure from the traditional terminology.

Munitions and Explosives of Concern (MEC) – This term distinguishes specific categories of military munitions that may pose unique explosive safety risks, such as:

- Unexploded Ordnance (UXO), as defined in 10 U.S.C. 2710 (e) (9).
- DMM, as defined in 10 U.S. C. 2710 (e) (2).
- Munitions constituents (e.g., trinitrotoluene [TNT], Royal Demolition Explosive [RDX]) present in high enough concentrations to pose an explosive hazard (U.S. Army, 2003b).

Unexploded Ordnance (UXO) – Military munitions that fulfill the following criteria:

1. Have been primed, fuzed, armed, or otherwise prepared for action;
2. Have been fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or material; and
3. Remain unexploded either by malfunction, design, or any other cause (U.S.C. §2710 (e) (9)).

Discarded Military Munitions (DMM) – Military munitions that have been abandoned without proper disposal or removed from storage in a military magazine or other storage area for the purpose of disposal. The term does not include UXO, military munitions that are being held for future use or planned disposal, or military munitions that have been properly disposed of consistent with applicable environmental laws and regulations. (10 United States Code [U.S.C.] §2710 (e) (2)).

Material Potentially Presenting an Explosive Hazard (MPPEH) – Material potentially containing explosives or munitions (e.g., munitions containers and packaging material; munitions debris remaining after munitions use, demilitarization, or disposal; and range-related

debris); or material potentially contaminated with a high enough concentration of explosives such that the material presents an explosive hazard (e.g., equipment, drainage systems, holding tanks, piping, ventilation ducts associated with munitions production, demilitarization, or disposal operations). Excluded from MPPEH are munitions within a U.S. Department of Defense (DOD)-established munitions management system and other hazardous items that may present explosion hazards (e.g., gasoline cans, compressed gas cylinders) that are not munitions and are not intended for use as munitions (U.S. Army, 2003b).

Munitions Constituents (MC) – Any materials originating from UXO, discarded military munitions, or other military munitions, including explosive and non explosive materials, and emission, degradation, or breakdown elements of such ordnance or munitions (10 U.S.C. 2710 (e)(4)). For the TOAR site, potential MC consists of metals and explosives residuals.

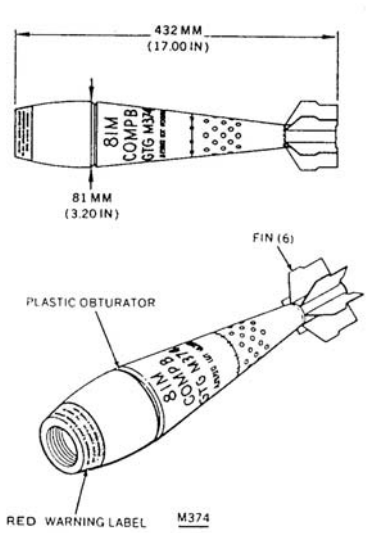
Munitions Debris – Remnants of munitions (e.g., penetrators, projectiles, shell casings, links, fins) remaining after munitions use, demilitarization or disposal (U.S. Army, 2003b).

Range-Related Debris – Debris other than munitions debris collected from operational ranges or from former ranges (e.g., targets). Note: Range Related Debris is considered MPPEH until technically qualified personnel have done the following:

4. Inspected, verified, and certified that it does not present an explosive hazard, and consequently is safe for any person (e.g., the general public) to receive; or
5. Inspected, verified, and certified it as to the explosive hazard it may present to a qualified receiver (U.S. Army, 2003b).

Munitions Response (MR) – Response actions, including investigation, removal, and remedial actions to address the explosives safety, human health, or environmental risks presented by UXO, DMM, or munitions constituents (MC) (U.S. Army, 2003b).

U.S. PROJECTILE, 81-MM, SMOKE, MORTAR, RP, M819





Use :
Target practice.

Description :

This is an Army, fin-stabilized, base-ejecting, mortar-fired projectile used to provide screening smoke.

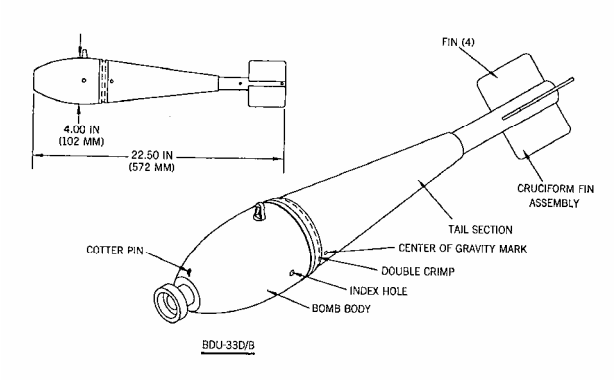
Markings :

The body and tail cone are painted light green. The body has a stenciled brown band and black markings. The boom and fins are unpainted aluminum.

Hazardous Components :

- 1.2 kg Red Phosphorous

U.S. BOMB, PRACTICE / SIMULATED, 25-LB, BDU-33D/B





Use :
Target practice.

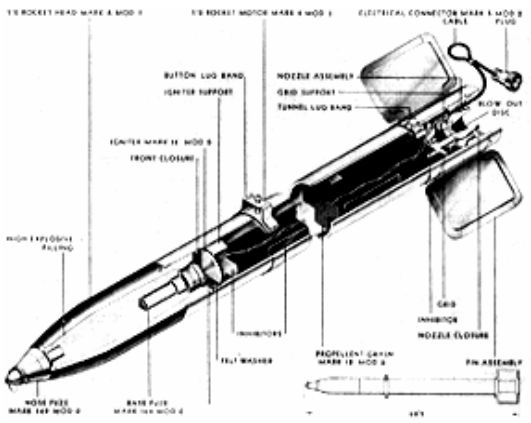
Description :
These bombs are signal-generating, impact-or impact-inertia-fired practice/simulated bombs. The BDU-33-series bombs are painted light blue; additionally, the BDU-33/B has white arrowheads and white stenciled markings. The BDU-33A/B, 33B/B, and 33D/B have white stenciled markings only. The BDU-33-series bombs are cast iron with sheet steel fin assemblies.

Markings :
The BDU-33-series bombs are painted light blue; additionally, the BDU-33/B has white arrowheads and white stenciled markings. The BDU-33A/B, 33B/B, and 33D/B have white stenciled markings only.

Hazardous Components :

- Hazardous components are contained in the signal cartridge or spotting charge.

8. U.S. ROCKET, 5 INCH, PRACTICE, HVAR





Use :
Target practice.

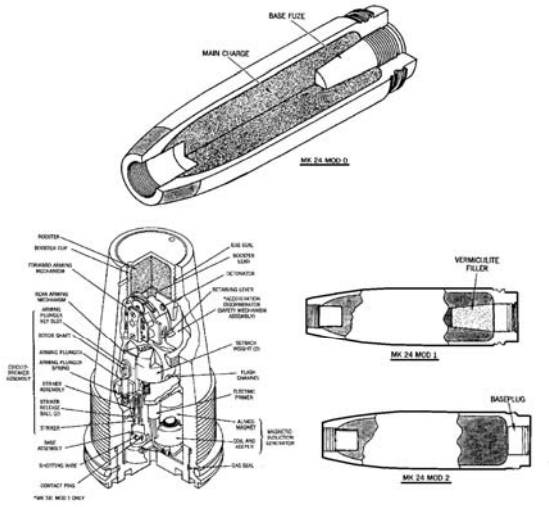
Description :
The 5.0-inch high-velocity aircraft rockets are used for forward firing from aircraft against heavy tanks, gun emplacements, bridges, and supply concentrations. The rockets are painted olive drab. The rocket uses a 5.0-inch motor which imparts a velocity to the rocket of 1,360 feet per second, which is nearly double that of the 3.25-inch aircraft rocket motor.

Markings :
Rockets are painted olive drab.

Hazardous Components :

- Composition B

U.S. WARHEAD, ROCKET, 5-IN, GP, MK 24 MOD 0, 1, & 2 (ZUNI)





Use :
Target practice.

Description :
These are general purpose (GP) warheads. They use the Mk 191 Mod 0 & 1 fuzes which are sustained-acceleration-armed, impact-inertia-fired, electromechanical, base-detonating (BD) fuzes. The Mk 191 Mod 1 fuze has an acceleration-discrimination feature that prevents the fuze from arming if the rocket is accidentally released. The Mod 0 fuze does not have this feature. When the Mk 24 Mod 0 warhead is fitted with an ogival nose plug, it is used to penetrate hard targets. When the Mk 24 Mod 0 warhead is fitted with a nose fuze, it is used against personnel and light-material targets. The Mk 191 Mod 1 BD fuze is permanently installed in the Mk 24 Mod 0 warhead. The warheads weigh approximately 20.4 kilograms (45.0 pounds).

Markings :
The warheads are painted olive drab, with a yellow band around the forward end. The nomenclature and manufacturing data are stenciled in yellow on the cases. The mark and mod of the base fuze is stenciled in yellow on the side of the Mk 24 Mod 0 warhead. Fuze nomenclature and loading data are stenciled in black on the fuze baseplug.

Hazardous Components :

- 4.3 kg Composition B

U.S. BOMB, 100-LB, PRACTICE, M38A2





Use :
Target practice.

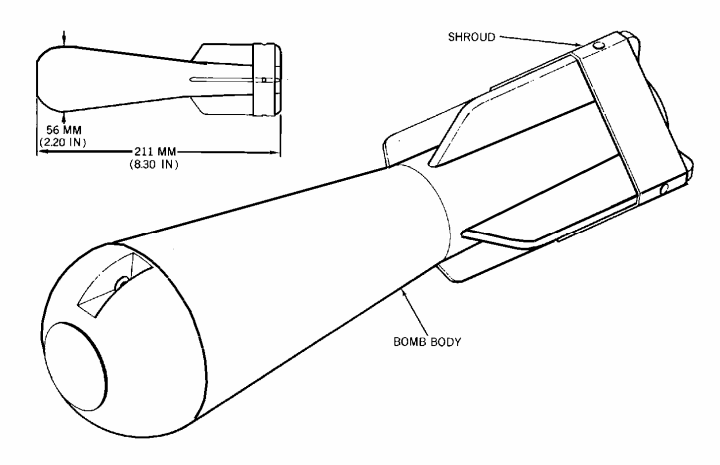
Description :
The M38A2 is a round-nosed cylindrical bomb designed to simulate GP bombs. As issued, the fin is assembled to the bomb body which is empty. The spotting charge is assembled in a sleeve at the base of the bomb. Bomb body is steel.

Markings :
The bomb is painted blue with white markings.

Hazardous Components :

- 1.36 kg black powder

U.S. BOMB, 3-LB, PRACTICE, MK 23





Use :
Target practice.

Description :
These bombs are impact fired signal-generating, practice bombs used for training aircrews.

Markings :
Mk 23 Mods 0 & 1 bombs are unpainted with markings cast or stamped into the bomb body. Mk 23 Mods 0 & 1 bombs are cast iron.

APPENDIX B

GEOPHYSICAL MAPPING SURVEY DATA

(ELECTRONIC FILES ONLY)

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APPENDIX C

DIG SHEET DATABASE

(ELECTRONIC FILES ONLY)

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APPENDIX D

EXPLOSIVES ACCOUNTABILITY RECORDS

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Weston Solutions, Inc.

Magazine Data Card

1. Project Name, Location:	Project Number:	3. Explosive Manufacturer	4. Marks of Identification:
Nevada Test Site, Mercury, NV	13142.015.003.0320	Halliburton Energy Services	SAP# 101310802
5. Storage Location:	**6. Explosive Description:**		
Magazine 1	Charges, Shaped 4" RDX 19.5 GRAM		

7. Date	8. Action/Purpose	9. Qty In	10. Qty Out	11. Balance	12. Printed Name	13. Signature
25-Apr-05	Received into Inventory	400		400	E. F. Richardson	E. F. Richardson
26APR05	DISPOSAL/DEMIL		400	Ø	E.F. Richardson	E. F. Richardson

Weston Solutions, Inc.

Magazine Data Card

1. Project Name, Location:	Project Number:	3. Explosive Manufacturer	4. Marks of Identification:
Nevada Test Site, Mercury, NV	13142.015.003.0320	Halliburton Energy Services	Spool # 12343

5. Storage Location:	6. Explosive Description:
Magazine 1	Cord Detonating

7. Date	8. Action/Purpose	9. Qty In	10. Qty Out	11. Balance	12. Printed Name	13. Signature
15-Apr-05	Received into Inventory	500'		500'	E. F. Richardson	E.F. Richardson
26 APR 05	DISPOSAL/DEMIL		500'	Ø	E.F. RICHARDSON	E.F. Richardson

Weston Solutions, Inc.
4801 University Square St. 13
Huntsville, AL 35816
256-430-3781 ● Fax 256-430-3784
www.westonsolutions.com

4 May 2005

MEMORANDUM FOR THE RECORD

Subject: Expenditure of Company Explosives

From: E. F. "Sonny" Richardson

I certify that I expended the following company-procured explosives on 26 April to destroy or vent Munitions and Explosives of Concern (MEC) recovered during the performance of clearance work on the Nevada Test Site, near Mercury, Nevada. The explosives materials were ordered from Halliburton Energy Services, Inc. on invoice number 93190976. A copy of this invoice is attached for record purposes.

Item Description	**Quantity**
Charges, Shaped 4"	400 each
Cord, Detonating 80 gr/ft	500 Feet

No company procured explosives were left in storage within the Department of Energy magazines on the Nevada Test Site at Mercury, Nevada. All Packaging material was carefully inspected for the presence of unexpended explosive materials prior to being discarded.

E. F. "Sonny" Richardson
Senior UXO Technical Manager

Enclosure (1)

Halliburton Invoice No: 93190976

Cc: Gerald Moore

Appendix G

Nevada Test Site Landfill Load Verification Forms for CAU 511

(101 Pages)

(1)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 6 9 LANDFILL

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ CJH This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: CJ Holes DATE: 2/8/05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 22,000 Signature of Certifier: Danny Choate

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

2

SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood	☒ Soil
☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)
☒ Cement & concrete	☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)					

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CJN ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C.L. Hoke DATE: 2-18-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 21,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

(3)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 3 4 9 LANDFILL

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-2-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CJA ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C.L. Hales DATE: 2/18/05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 25000 Signature of Certifier: Dave Schrock

Retention Code: ENV 6.b

BN-0918 (04/03)

(4)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~3~~ ~~4~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CSH ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C.S. Hales DATE: 2/18/05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 23,000 Signature of Certifier: Dana M

Retention Code: ENV 6.b

BN-0918 (04/03)

(5)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 X 9 LANDFILL

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and, to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials listed as allowable waste for the disposal site. I have verified this through the waste characterization method identified above. The waste does not contain any prohibited and allowable waste items.

Print Name: DAVID SCHRACK

Signature: David Schrack Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

SW ☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 2/18/05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 20,000 Signature of Certifier: Dan Chrodo

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

6

SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHAOLK

Signature: David Schaolk Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

SA ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C. L. Hales DATE: 2/8/05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 22,300 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

(17)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 6 9 LANDFILL

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHMOCK

Signature: David Schmock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CSA ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C. L. Nolan DATE: 2/8/05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 22 CY Signature of Certifier: Jerry Chuvala

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 X 9 LANDFILL

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma site. I have verified this through the waste characterization method identified abc prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: CS Hales DATE: 2/18/05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 24,000 Signature of Certifier: Donald

Retention Code: ENV 6.b

BN-0918 (04/03)

(1)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 X (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified at prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☒ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 20,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

(8)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground Tanks
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Other _____

Additional waste accepted at the Area 6 Hydrocarbon Landfill:

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are allowed for... site. I have verified this through the waste characterization method identified abo... prohibited and allowable waste items.

Print Name: DAVID SCHRADER

Signature: David Schrader Date: 2-7-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒SN This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: CS Hales DATE: 2-11-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 20,000 Signature of Certifier: Dennis Pfeifer

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

3

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are allowed for disposal at this site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain ac require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☒ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: CJ Hales DATE: 2-11-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 20.000 Signature of Certifier:

Retention Code: ENV 6.b

BN-0918 (04/03)

LOAD # 4

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~2~~ ~~3~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- GSN ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C F Hales DATE 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 22,000 Signature of Certifier: Kan Jam

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~6~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m... site. I have verified this through the waste characterization method identified ab... prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a ... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- CJN ☒ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C J Nales DATE: 2-11-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 20 cy Signature of Certifier: D Chavez

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

(10)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CSH ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C S Hobbs DATE: 2-11-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 20000 Signature of Certifier: Lisa Illy

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are allowed for disposal at this site. I have verified this through the waste characterization method identified above-mentioned prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain radiological clearance. require a

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: CJ Nabs DATE 2-11-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate) 20,000 Signature of Certifier:

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

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SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CSK ☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C Hall DATE 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain ad[illegible]ity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate) 20000 Signature of Certifier: Dennis Pfeifer

Retention Code: ENV 6.b

BN-0918 (04/03)

9

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☒ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C J Nailes DATE: 11-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 21,000 Signature of Certifier: Ken Jam

Retention Code: ENV 6.b

BN-0918 (04/03)

10

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHRUCK

Signature: David Schruck Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C. L. Hales DATE: 11-16-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 21,000 Signature of Certifier: Patricia L. Thomas

Retention Code: ENV 6.b

BN-0918 (04/03)

(11)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 6 9 LANDFILL

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters	
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million	

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CJH ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C.L. Hayes DATE: 11-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 22 cy Signature of Certifier: Doug Edwards

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

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SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one) ☐ Commercial ☒ Industrial

Waste Type: (check one) ☐ NTS ☐ Putrescible ☒ FFACO-onsite ☐ WAC Exception ☐ Non-Putrescible ☐ Asbestos Containing Material ☐ FFACO-offsite ☐ Historic DOE/NV

Pollution Prevention Category: (check one) ☒ Environmental management ☐ Defense Projects ☐ YMP

Pollution Prevention Category: (check one) ☒ Clean-Up ☐ Routine

Method of Characterization: (check one) ☒ Sampling & Analysis ☐ Process Knowledge ☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill: ☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☐ Asphalt ☒ Metal ☒ Wood ☒ Soil ☒ Rubber (excluding tires) ☐ Demolition debris

☒ Plastic ☒ Wire ☒ Cable ☒ Cloth ☐ Insulation (non-Asbestosform) ☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos ☐ Drained automobiles and military vehicles ☐ Solid fractions from sand/oil/water separators

☐ Light ballasts (contact SWO) ☐ Drained fuel filters (gas & diesel) ☐ Deconned Underground and Above Ground

☐ Hydrocarbons (contact SWO) ☐ Other _____ ☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge ☐ Rags ☐ Drained fuel filters (gas & diesel) ☐ Crushed non-terne plated oil filters

☐ Plants ☐ Soil ☐ Sludge from sand/oil/water separators ☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: [signature] DATE: 11-8-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 25.000 Signature of Certifier: [signature]

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

13

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

DA ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 2-7-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 20000 Signature of Certifier: Dennis Mayfield

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification (14)

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 X 9 LANDFILL

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☒ SH This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C L Hales DATE 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 20,000 Signature of Certifier: [signature]

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CSH ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: Curtis J. Hoss DATE: 11-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain ad ...activity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 21,500 Signature of Certifier: Ken Jam

Retention Code: ENV 6.b

(16)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~6~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

SN ☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: S. L. Hales DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 21,600 Signature of Certifier: Patricia L. Thomas

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Manage... and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat... site. I have verified this through the waste characterization method identified abo... prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 20,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

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SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one) ☐ Commercial ☒ Industrial

Waste Type: (check one) ☐ NTS ☐ Putrescible ☒ FFACO-onsite ☐ WAC Exception ☐ Non-Putrescible ☐ Asbestos Containing Material ☐ FFACO-offsite ☐ Historic DOE/NV

Pollution Prevention Category: (check one) ☒ Environmental management ☐ Defense Projects ☐ YMP

Pollution Prevention Category: (check one) ☒ Clean-Up ☐ Routine

Method of Characterization: (check one) ☒ Sampling & Analysis ☐ Process Knowledge ☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☐ Asphalt ☒ Metal ☒ Wood ☒ Soil ☒ Rubber (excluding tires) ☐ Demolition debris

☒ Plastic ☒ Wire ☒ Cable ☒ Cloth ☐ Insulation (non-Asbestosform) ☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos ☐ Drained automobiles and military vehicles ☐ Solid fractions from sand/oil/water separators

☐ Light ballasts (contact SWO) ☐ Drained fuel filters (gas & diesel) ☐ Deconned Underground and Above Ground

☐ Hydrocarbons (contact SWO) ☐ Other _____ ☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge ☐ Rags ☐ Drained fuel filters (gas & diesel) ☐ Crushed non-terne plated oil filters

☐ Plants ☐ Soil ☐ Sludge from sand/oil/water separators ☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 20000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

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SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Manag knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☒ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 30000 Signature of Certifier: Dennis Pfeifer

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma site. I have verified this through the waste characterization method identified abc prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CSH ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 2/1/05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 20,500 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

(21)

Bechtel Nevada NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~X~~ ~~X~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain ac require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CJN ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C. J. Nolan DATE 2-11-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 20,600 Signature of Certifier: Patricia L. Thomas

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

(22)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one) ☐ Commercial ☒ Industrial

Waste Type: (check one) ☐ NTS ☐ Putrescible ☒ FFACO-onsite ☐ WAC Exception ☐ Non-Putrescible ☐ Asbestos Containing Material ☐ FFACO-offsite ☐ Historic DOE/NV

Pollution Prevention Category: (check one) ☒ Environmental management ☐ Defense Projects ☐ YMP

Pollution Prevention Category: (check one) ☒ Clean-Up ☐ Routine

Method of Characterization: (check one) ☒ Sampling & Analysis ☐ Process Knowledge ☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☐ Asphalt ☒ Metal ☒ Wood ☒ Soil ☒ Rubber (excluding tires) ☐ Demolition debris

☒ Plastic ☒ Wire ☒ Cable ☒ Cloth ☐ Insulation (non-Asbestosform) ☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos ☐ Drained automobiles and military vehicles ☐ Solid fractions from sand/oil/water separators

☐ Light ballasts (contact SWO) ☐ Drained fuel filters (gas & diesel) ☐ Deconned Underground and Above Ground

☐ Hydrocarbons (contact SWO) ☐ Other _____ ☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge ☐ Rags ☐ Drained fuel filters (gas & diesel) ☐ Crushed non-terne plated oil filters

☐ Plants ☐ Soil ☐ Sludge from sand/oil/water separators ☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mai site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: David Schrock

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: [signature] DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate) 20000 Signature of Certifier: [signature]

Retention Code: ENV 6.b

BN-0918 (04/03)

23

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~12~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abov prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CJH ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C J Hales DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 21,570 Signature of Certifier: Dany Chavez

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

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(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one) ☐ Commercial ☒ Industrial

Waste Type: (check one) ☐ NTS ☐ Putrescible ☒ FFACO-onsite ☐ WAC Exception ☐ Non-Putrescible ☐ Asbestos Containing Material ☐ FFACO-offsite ☐ Historic DOE/NV

Pollution Prevention Category: (check one) ☒ Environmental management ☐ Defense Projects ☐ YMP

Pollution Prevention Category: (check one) ☒ Clean-Up ☐ Routine

Method of Characterization: (check one) ☒ Sampling & Analysis ☐ Process Knowledge ☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☐ Asphalt ☒ Metal ☒ Wood ☒ Soil ☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☒ Plastic ☒ Wire ☒ Cable ☒ Cloth ☒ Rubber (excluding tires) ☐ Demolition debris

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.) ☐ Insulation (non-Asbestosform) ☒ Cement & concrete

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos ☐ Drained automobiles and military vehicles ☐ Solid fractions from sand/oil/water separators

☐ Light ballasts (contact SWO) ☐ Drained fuel filters (gas & diesel) ☐ Deconned Underground and Above Ground

☐ Hydrocarbons (contact SWO) ☐ Other _____ ☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge ☐ Rags ☐ Drained fuel filters (gas & diesel) ☐ Crushed non-terne plated oil filters

☐ Plants ☐ Soil ☐ Sludge from sand/oil/water separators ☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: [signature] DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 20000 Signature of Certifier: [signature]

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

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SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters	
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million	

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mate site. I have verified this through the waste characterization method identified above prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C Wales DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 20000 Signature of Certifier: Dennis Klepper

Retention Code: ENV 6.b

BN-0918 (04/03)

(26)

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~2~~ ~~3~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☒ CJH This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C J Hales DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 22650 Signature of Certifier: Patricia L. Thomas

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(27)

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CJ ☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C L Nabs DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain a[illegible] require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 22000 Signature of Certifier:

Retention Code: ENV 6.b

BN-0918 (04/03)

(28)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☒ DS This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: [illegible] DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (not from scale or estimate): 23,500 Signature of Certifier: [signature]

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification 29

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are allowed for disposal at this site. I have verified this through the waste characterization method identified above and a review of the above-mentioned prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain ad require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C Hales DATE: 2-11-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 20000 Signature of Certifier:

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

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SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill: ☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☐ Asphalt ☒ Metal ☒ Wood ☒ Soil ☒ Rubber (excluding tires) ☐ Demolition debris

☒ Plastic ☒ Wire ☒ Cable ☒ Cloth ☐ Insulation (non-Asbestosform) ☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos ☐ Drained automobiles and military vehicles ☐ Solid fractions from sand/oil/water separators

☐ Light ballasts (contact SWO) ☐ Drained fuel filters (gas & diesel) ☐ Deconned Underground and Above Ground

☐ Hydrocarbons (contact SWO) ☐ Other _____ ☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge ☐ Rags ☐ Drained fuel filters (gas & diesel) ☐ Crushed non-terne plated oil filters

☐ Plants ☐ Soil ☐ Sludge from sand/oil/water separators ☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma site. I have verified this through the waste characterization method identified abc prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 2-11-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 20000 Signature of Certifier: Dennis Kerfoot

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mate... site. I have verified this through the waste characterization method identified abov... prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain ad... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☒ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE 2-11-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 23600 Signature of Certifier: Patricia L. Thomas

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

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SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mate site. I have verified this through the waste characterization method identified abov prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CJH ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: CJHales DATE: 2-11-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 20000 Signature of Certifier:

Retention Code: ENV 6.b

BN-0918 (04/03)

(33)

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: [signature] DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 25,000 Signature of Certifier: [signature]

Bechtel Nevada

NTS Landfill Load Verification

(34)

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ☒ ☒ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mate site. I have verified this through the waste characterization method identified above prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

CSN ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: [illegible] DATE: 2/11/05

BN-0648 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 22,000 Signature of Certifier: [signature]

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

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SWO USE (Circle One Area) AREA 23 X (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood
☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mate site. I have verified this through the waste characterization method identified abov prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain adc require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☒ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: CJ Hales DATE: 2-16-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): ~~22000~~ 2000 Signature of Certifier: Dennis Pfeifer

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

36

SWO USE (Circle One Area) AREA 23 6 (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture (SNJV) Phone Number: 5-2147

Location / Origin: CAU 511, CAS 03-08-02 Waste Piles and Debris

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☐ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those r site. I have verified this through the waste characterization method identified a prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-7-05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

C3N ☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: C. L. Hales DATE: 2-11-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estir. e): 20,000 Signature of Certifier: Lonie Day

Retention Code: ENV 6.b

BN-0918 (04/03)

(3)

129231

Bechtel Nevada NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA X X (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: ~~CAU 357, CAS 19-09-02, NTS, Area 19~~ (1 rolloff) CAU 511, CAS 06-16-01, NTS Area 6

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses; Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☐ Asphalt	☒ Metal	☒ Wood	☐ Soil
☐ Rubber (excluding tires)	☐ Demolition debris	☒ Plastic	☒ Wire	☒ Cable	☐ Cloth	☐ Insulation (non-Asbestosform)
☐ Cement & concrete						

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Decanned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill:

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Other _____
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ Crushed non-terne plated oil filters
			☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those i site. I have verified this through the waste characterization method identified a prohibited and allowable waste items.

Print Name: DAVID SCHRECK

Signature: David Schreck Date: 2-15-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- ☒ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: [signature] DATE: 2/15/05

BN-8645 (08/03)

SWO USE ONLY

Load Weight (tons): ESTIMATE 15000

(3) 123

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 6 7 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511, CAS 18-99-10, Area 18, NTS

Waste Category: (check one) ☐ Commercial ☒ Industrial

Waste Type: (check one) ☐ NTS ☐ Putrescible ☒ FFACO-onsite ☐ WAC Exception ☐ Non-Putrescible ☐ Asbestos Containing Material ☐ FFACO-offsite ☐ Historic DOE/NV

Pollution Prevention Category: (check one) ☒ Environmental management ☐ Defense Projects ☐ YMP

Pollution Prevention Category: (check one) ☒ Clean-Up ☐ Routine

Method of Characterization: (check one) ☐ Sampling & Analysis ☐ Process Knowledge ☒ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses; Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Asphalt ☒ Metal ☒ Wood ☐ Soil ☒ Rubber (excluding tires) ☐ Empty containers
☒ Plastic ☒ Wire ☒ Cable ☐ Cloth ☐ Insulation (non-Asbestosform) ☐ Demolition debris
☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.) ☐ Cement & concrete

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos ☒ Drained automobiles and military vehicles ☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO) ☐ Drained fuel filters (gas & diesel) ☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO) ☐ Other _____ ☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge ☐ Rags ☐ Drained fuel filters (gas & diesel) ☐ Crushed non-terne plated oil filters
☐ Plants ☐ Soil ☐ Sludge from sand/oil/water separators ☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are allowed for disposal at this site. I have verified this through the waste characterization method identified above and a review of the above mentioned prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 2-16-05

Note: Food waste, office trash and/or animal carcasses are considered not to contain radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 2/16/05

SWO USE ONLY

Load Weight (net from scale or estimate): 9000 Signature of Certifier: Keith Kreiger

Retention Code: ENV 6.b

SN-0818 (04/03)

02/17/2005 06:48 17022957582 PAGE 04

(11) ✓ Shrock cas

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 6 9 LANDFILL

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: SNJV Phone Number: 295-2033

Location / Origin: CAS 03-11-01 Area 3 Subdock CH-511 ms/439 Dave Schrock HILL DAY

Waste Category: (check one)		☐ Commercial	☑ Industrial	
Waste Type: (check one)	☑ NTS Kew Station	☐ Putrescible	☒ FFACO-onsite 7/18/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☑ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☑ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☑ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☐ Asphalt	☑ Metal	☐ Wood	☐ Soil	☐ Paper	☐ Rocks / unaltered geologic materials	☐ Empty containers
☐ Plastic	☑ Wire	☑ Cable	☐ Cloth	☐ Rubber (excluding tires)	☐ Insulation (non-Asbestosform)	☑ Demolition debris
☐ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)						☐ Cement & concrete

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☑ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those site. I have verified this through the waste characterization method identified prohibited and allowable waste items.

Print Name: Robert Bammert

Signature: Robert Bammert Date: 7/14/05

Note: Food waste, office trash and/or animal carcasses are considered not to conta require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☑ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radiological analysis.

SIGNATURE: _____ DATE: 7/14/05

BN-0948 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 4500 Signature of Certifier: Patricia L. Thomas

Retention Code: ENV 6.b

BN-0918 (04/03)

13

100

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

Area 5 Landfill Cell Area: AREA 5 LANDFILL

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7893.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511, CAS 18-99-10, Area 18, NTS (rolloff)

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☐ Sampling & Analysis	☐ Process Knowledge	☒ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Asphalt	☒ Metal	☒ Wood	☐ Soil	☒ Rocks / unaltered geologic materials	☐ Empty containers
☒ Plastic	☒ Wire	☒ Cable	☐ Cloth	☒ Rubber (excluding tires)	☐ Demolition debris
☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)				☐ Insulation (non-Asbestosform)	☐ Cement & concrete

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☒ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are allowed for disposal at this site. I have verified this through the waste characterization method identified above and a review of the above-mentioned prohibited and allowable waste items.

Print Name: David Schrock 5-2147

Signature: David Schrock Date: 7/20/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain [illegible] require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- ☒ This containerload is free of external radioactive contamination.
- ☐ This containerload is exempt from survey due to process knowledge and origin.
- ☐ This containerload is free of radioactive contamination based on radiological analysis.

SIGNATURE: DATE:

SOLID WASTE ONLY

Total Amount (net from scale or estimate): 21,300 Signature of Receiver:

Retention Code: ENV 5.b

BN-0978 (04/05)

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511, CAS 06-16-01, Area 6, NTS (drums 511E02, 511E03)

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☐ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☐ Asphalt	☒ Metal	☒ Wood	☐ Soil	☐ Rubber (excluding tires)	☐ Demolition debris
☒ Plastic	☐ Wire	☐ Cable	☐ Cloth	☐ Insulation (non-Asbestosform)	☐ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are allowed for disposal at this site. I have verified this through the waste characterization method identified above and prohibited and allowable waste items.

Print Name: DAVID SCHROCK

Signature: David Schrock Date: 7/27/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- MV — This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: M. Vega DATE: 7/27/05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 700 Signature of Certifier: Keith Kenyon

Retention Code: ENV 6.b

BN-0918 (04/03)

(1) Bpkg's ALL To 10c Landfill 8/10/05 RJS

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA X X (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite RJS 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Rubber (excluding tires)	☐ Insulation (non-Asbestosform)	☒ Demolition debris
☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)						☒ Cement & concrete

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are allowed at this site. I have verified this through the waste characterization method identified above and the prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain radiological contamination and do not require a radiological clearance.

Radiation Survey Release for Waste Disposal
RCT Initials
☐ This container/load is free of external radioactive contamination based on radiosurvey.
☐ This container/load is exempt from survey due to process knowledge and origin.
☐ This container/load is free of radioactive contamination based on radioanalysis.
SIGNATURE DATE 8-9-05
BN-0646 (04/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 18,600 Signature of Certifier:

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	~~☒~~ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects	☐ YMP	
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents	

CS 8/11/05

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

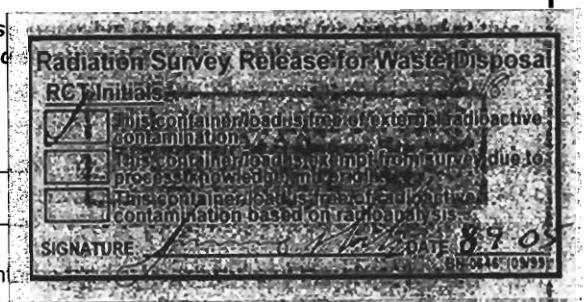
Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only thos site. I have verified this through the waste characterization method identifie prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 3/8/05



Note: Food waste, office trash and/or animal carcasses are considered not to con require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 18,600 Signature of Certifier:

Retention Code: ENV 6.b

BN-0918 (04/03)

(4)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~6~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those n site. I have verified this through the waste characterization method identified a prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 3/8/05

Radiation Survey Release for Waste Disposal
RCT Initials
- This container/load is free of external radioactive contamination.
- This container/load is exempt from survey due to process knowledge and origin.
- This container/load is free of radioactive contamination based on radianalysis.

SIGNATURE _____ DATE 3-9-05
BN-0618 (04/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contai require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 38,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

10

(5)

Bechtel Nevada NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects		☐ YMP
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge		☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood	☒ Soil
☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)
☒ Cement & concrete						

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground Tanks
☐ Hydrocarbons (contact SWO)	☐ Other _____	

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m... site. I have verified this through the waste characterization method identified ab... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain ... require a radiological clearance.

Radiation Survey Release for Waste Disposal
RCT Initials
☐ This container/load is free of external radioactive contamination.
☐ This container/load is exempt from survey due to process knowledge and origin.
☒ This container/load is free of radioactive contamination based on radioanalysis.
SIGNATURE _____ DATE 8/9/05
BN-0646 (09/...

SWO USE ONLY

Load Weight (net from scale or estimate): 32,650 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

(6)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects	☐ YMP	
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents	

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JM *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m... site. I have verified this through the waste characterization method identified at... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain ... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials _____

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8-9-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 20000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

2

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Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood	☒ Soil
☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)
☒ Cement & concrete						

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JL *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma... site. I have verified this through the waste characterization method identified abo... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials: _____

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☑ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8-9-05

BN-0446 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate) 20,000 Signature of Certifier: Robert D. Mills

Retention Code: ENV 6.b

BN-0918 (04/03)

(8)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~X~~ ~~X~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

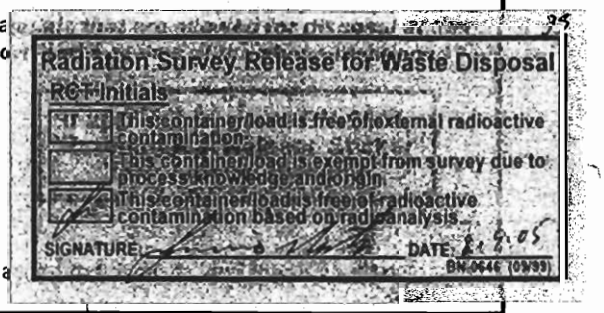
Initials: JM *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma... site. I have verified this through the waste characterization method identified abo... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05



Note: Food waste, office trash and/or animal carcasses are considered not to contain a... require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 39980 Signature of Certifier: Valerie Q

Retention Code: ENV 6.b

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Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~3~~ ~~4~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects	☐ YMP	
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents	

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JL *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma... site. I have verified this through the waste characterization method identified abo... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination...

☐ This container/load is exempt from survey due to process knowledge and origin.

☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.8.05

BN-0646 (05/03)

SWO USE ONLY

Load Weight (net from scale or estimate): 38,000 Signature of Certifier: J. Mc...

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~12~~ ~~11~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial CGS 8/11/05	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects	☐ YMP	
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents	

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood	☒ Soil
☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)
☒ Cement & concrete						

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a require a radiological clearance.

Radiation Survey Release for Waste Disposal
RCT Initials
☐ This container/load is free of external radioactive contamination.
☐ This container/load is exempt from survey due to process knowledge and origin.
☒ This container/load is free of radioactive contamination based on radioanalysis.
SIGNATURE _____ DATE 8.9.05
BN-0446 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 30,980 Signature of Certifier: _____

Retention Code: ENV 6.b BN-0918 (04/03)

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Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~2~~ ~~3~~ **9** **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	9/5/05	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite	8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite		☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects		☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge		☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma... site. I have verified this through the waste characterization method identified abo... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials: _____

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and/or origin.

☒ This container/load is free of radioactive contamination based on rad analysis.

SIGNATURE: _____ DATE: 8/9/05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 7,700 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~2~~ ~~3~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters	
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million	

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mate site. I have verified this through the waste characterization method identified abov prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain ad require a radiological clearance.

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Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radionalysis.

SIGNATURE: _____ DATE: 8.9.05

BN-0646 (03/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 20,000 Signature of Certifier: Robert D White

Retention Code: ENV 6.b

BN-0918 (04/03)

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(16)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~2~~ ~~3~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: ***WASTE GENERATOR INFORMATION***

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects	☐ YMP	
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents	

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: ***WASTE CONTENTS ALLOWABLE WASTES***

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: ***WASTE GENERATOR SIGNATURE***

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mate site. I have verified this through the waste characterization method identified abov prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radio analysis.

SIGNATURE: _____ DATE: 8.9.05

BN-0636 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain ad require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 34711 Signature of Certifier: Valerie A

Retention Code: ENV 6.b

BN-0918 (04/03)

17

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Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~2~~ ~~3~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects	☐ YMP	
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents	

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JR *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 5/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- This container/load is free of external radioactive contamination.
- This container/load is exempt from survey due to process knowledge and origin.
- This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 5/8/05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 38,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

20

(18)

Bechtel Nevada NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~20~~ ~~12~~ **9** **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a require a radiological clearance.

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Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☒ This container/load is free of radioactive contamination based on radiological analysis.

SIGNATURE: _____ DATE: 8-9-05

BN-0648 (03/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 30950 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

91

(19)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ✖ ✖ **9** **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial		
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite		☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite		☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects		☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge		☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma... site. I have verified this through the waste characterization method identified abo... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 9/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a... require a radiological clearance.

Radiation Survey Release for Waste Disposal
RCT Initials:
☐ This container/load is free of external radioactive contamination.
☐ This container/load is exempt from survey due to process knowledge and origin.
☒ This container/load is free of radioactive contamination based on radioanalysis.
SIGNATURE: _____ DATE: 9.9.05
BN-0448 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 25,000 Signature of Certifier: _____

Retention Code: ENV 6.b BN-0918 (04/03)

22

(20)

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ✖ ✖ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture — Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	CMS 8/11/05	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite		☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite		☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects		☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge		☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma... site. I have verified this through the waste characterization method identified abo... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination based on process knowledge and origin.

☐ This container/load is exempt from survey due to process knowledge and origin.

☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.9.05

BN-0645 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 21,000 Signature of Certifier: Robert D White

Retention Code: ENV 6.b

BN-0918 (04/03)

23

91

Bechtel Nevada NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified a prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

Radiation Survey Release for Waste Disposal
RCT Initials:
☐ This container/load is free of external radioactive contamination.
☐ This container/load is exempt from survey due to process knowledge and origin.
☑ This container/load is free of radioactive contamination based on radioanalysis.
SIGNATURE _____ DATE 8.9.05
BN-0446 (03/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 31119 Signature of Certifier: Valerie Q

Retention Code: ENV 6.b

BN-0918 (04/03)

24

22

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~2~~ ~~3~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 9/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JMA *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m… site. I have verified this through the waste characterization method identified ab… prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 9/8/05

Radiation Survey Release for Waste Disposal
RCT Initials: _____
☐ This container/load is free of external radioactive contamination.
☐ This container/load is exempt from survey due to process knowledge and origin.
☒ This container/load is free of radioactive contamination based on radioanalysis.
SIGNATURE: [signature] DATE: 9.9.05
BN-1645 (09/03)

Note: Food waste, office trash and/or animal carcasses are considered not to contain… require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 38,000 Signature of Certifier: [signature]

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(23)

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~3~~ ~~4~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture — Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mate... site. I have verified this through the waste characterization method identified abov... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain ac... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.9.05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 32,000 Signature of Certifier: _____

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(26)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~3~~ ~~4~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma... site. I have verified this through the waste characterization method identified abo... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain a... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.9.05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 20,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

27

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Bechtel Nevada NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~3~~ ~~4~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	8/11/05	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite		☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite		☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects		☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge		☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma... site. I have verified this through the waste characterization method identified abo... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Radiation Survey Release for Waste Disposal
RCT Initials
☐ This container/load is free of external radioactive contamination.
☐ This container/load is exempt from survey due to process knowledge and origin.
☒ This container/load is free of radioactive contamination based on radioanalysis.
SIGNATURE: _____ DATE: 8/9/05
BN-0648 (03/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain a... require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 20,000 Signature of Certifier: Robert D White

Retention Code: ENV 6.b BN-0918 (04/03)

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Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~3~~ ~~4~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m… site. I have verified this through the waste characterization method identified ab… prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain … require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials: _____

- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE _____ DATE: 8/9/05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 31,261 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~2~~ ~~3~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	9/11/05
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JM *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m... site. I have verified this through the waste characterization method identified a... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain ... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

1. ☐ This container/load is free of external radioactive contamination.
2. ☐ This container/load is exempt from survey due to process knowledge and/or data.
3. ☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE _____ DATE 8.9.05

BN-0448 (08/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 38,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

30

(31)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ✖ ✖ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m... site. I have verified this through the waste characterization method identified ab... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Radiation Survey Release for Waste Disposal
RCT Initials: _____
- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8-9-05
BN-0648 (04/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain ... require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 31,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~2~~ ~~3~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	9/5	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite	8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite		☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects		☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge		☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m… site. I have verified this through the waste characterization method identified ab… prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain … require a radiological clearance.

9

Radiation Survey Release for Waste Disposal

RCT Initials _____

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE _____ DATE 8.9.05

BN-0846 (09/03)

SWO USE ONLY

Load Weight (net from scale or estimate) 24,500 Signature of Certifier: _____

32

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Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 2 3 9 LANDFILL

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	CAS 8/11/05	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite		☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite		☐ Historic DOE/NV
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects			☐ YMP
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine			
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge			☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JM *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma… site. I have verified this through the waste characterization method identified abo… prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain … require a radiological clearance.

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Radiation Survey Release for Waste Disposal

RCT Initials: _____

- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8-9-05

BN-0644 (03/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 25,000 Signature of Certifier: Robert D. White

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 23 X 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial		
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite		☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite		☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects		☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge		☐ Contents

GS 8/11/05

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JL *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those ma... site. I have verified this through the waste characterization method identified ab... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Radiation Survey Release for Waste Disposal
RCT Initials
☐ This container/load is free of external radioactive contamination.
☐ This container/load is exempt from survey due to process knowledge and origin.
☒ This container/load is free of radioactive contamination based on radioanalysis.
SIGNATURE: [signature] DATE: 8/9/05
BN-0646 (03/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain ... require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 27901 Signature of Certifier: [signature]

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Bechtel Nevada NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~12~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects	☐ YMP	
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents	

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those n site. I have verified this through the waste characterization method identified a prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☑ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.9.05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 38000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~2~~ ~~3~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture — Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial		
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite		☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite		☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects		☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge		☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JN *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified al prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

Radiation Survey Release for Waste Disposal
RCT Initials:
1. ☐ This container/load is free of external radioactive contamination.
2. ☐ This container/load is exempt from survey due to process knowledge and origin.
3. ☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8/9/05
BN-0446 (03/99)

SWO USE ONLY

Load Weight (net from scale or estimate) 32,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial		
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception	
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV	
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects	☐ YMP		
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine			
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents		

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those i… site. I have verified this through the waste characterization method identified a… prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 3/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contai… require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and/or…
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 3/8/05

BN-0445 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 21,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

5 1

(4)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~2~~ ~~3~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	9S 8/11/05	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite		☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite		☐ Historic DOE/NV
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects	☐ YMP		
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine			
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents		

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- _____ This container/load is free of external radioactive contamination.
- _____ This container/load is exempt from survey due to process knowledge and origin.
- _____ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 9-9-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate) 21,500 Signature of Certifier: Robert D White

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture — Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects	☐ YMP	
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents	

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JM *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials: _____

- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.9.05

BN-0648 (03/03)

SWO USE ONLY

Load Weight (net from scale or estimate): 29067 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~25~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS 9/21/05 KEW	☐ Putrescible	☒ FFACO-onsite 8/15/05 CDS	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground Tanks
☐ Hydrocarbons (contact SWO)	☐ Other _____	

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified at prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 3/8/05

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 5-10-05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 25,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

10

Bechtel Nevada NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~1~~ ~~2~~ **9** **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS KEW 9/28/05	☐ Putrescible	☒ FFACO-onsite 8/15/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JW *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those site. I have verified this through the waste characterization method identified a prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contai require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.10.05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 31076 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

(4)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~3~~ ~~4~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	CGS
Waste Type: (check one)	☒ NTS KNW 9/21/05	☐ Putrescible	☒ FFACO-onsite 8/15/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JM *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those r site. I have verified this through the waste characterization method identified a prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

(9)

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.10.05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 24,000 Signature of Certifier: Robert D White

Retention Code: ENV 6.b

BN-0918 (04/03)

(5)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~1~~ ~~2~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial (RGS 9/15/05)	
Waste Type: (check one)	☒ NTS (KEW 9/2/05)	☐ Putrescible	☒ FFACO-onsite (RGS 9/15/05)	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood	☒ Soil
☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)
☒ Cement & concrete	☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)					

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground Tanks
☐ Hydrocarbons (contact SWO)	☐ Other _____	

Additional waste accepted at the Area 6 Hydrocarbon Landfill:

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

☐ Other _____

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: (BS) ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m... site. I have verified this through the waste characterization method identified ab... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 9/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain ... require a radiological clearance.

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Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.10.05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 31,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~2~~ ~~3~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those site. I have verified this through the waste characterization method identified prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to conta require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials: /

- ☒ This container/load is free of external radioactive contamination. Release Sticker
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8-9-05

BN-0646 (03/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 20,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~X~~ ~~X~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture — Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS KW 9/21/05	☐ Putrescible	☒ FFACO-onsite 8/15/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JW *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m… site. I have verified this through the waste characterization method identified al… prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain … require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.10.05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 19,800 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

(8)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~3~~ ~~6~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS 9/21/05 Kew	☐ Putrescible	☒ FFACO-onsite 8/15/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks
		☐ Other _____

Additional waste accepted at the Area 6 Hydrocarbon Landfill:

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those n site. I have verified this through the waste characterization method identified al prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 9/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.10.05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 31000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: ***WASTE GENERATOR INFORMATION***

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS 9/21/05	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: ***WASTE CONTENTS ALLOWABLE WASTES***

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☒ Rocks / unaltered geologic materials	☒ Empty containers
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)				☐ Insulation (non-Asbestosform)	☒ Cement & concrete

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters	
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million	

REQUIRED: ***WASTE GENERATOR SIGNATURE***

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are allowed for disposal at this site. I have verified this through the waste characterization method identified ***prohibited and allowable waste items.***

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to con require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials

☒ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8-9-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 28,300 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

5

(9)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~3~~ ~~4~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS KAW 9/21/05	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground Tanks
☐ Hydrocarbons (contact SWO)	☐ Other _____	

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are allowed for disposal at this site. I have verified this through the waste characterization method identified a... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 9/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contai... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials 29

☑ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8-9-05

BN-0946 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 34,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

(10)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~25~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)	KRW 9/21/05	☐ Commercial	☒ Industrial 8/15/05	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JH *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those n... site. I have verified this through the waste characterization method identified a... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 9/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain... require a radiological clearance.

23

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☑ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.10.05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate) 27,500 Signature of Certifier: Robert D. White

Retention Code: ENV 6.b

BN-0918 (04/03)

(11)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA 2 3 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS ISRW 9/21/05	☐ Putrescible	☒ FFACO-onsite 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are allowed for disposal at this site. I have verified this through the waste characterization method identified above and the list of prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 9/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain radiological materials and do not require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials: SL

- ☒ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 9-8-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate) 31850 Signature of Certifier: Valerie Quintana

Retention Code: ENV 6.b

BN-0918 (04/03)

(12) T/O Ba

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS KSW 9/2/05	☐ Putrescible	☒ FFACO-onsite CGS 8/11/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are allowed for disposal at this site. I have verified this through the waste characterization method identified a… prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to conta… require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials 28

- ☑ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8-9-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 31850 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

(13)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~3~~ ~~4~~ **9** **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS KEW 9/2/05	☐ Putrescible	☒ FFACO-onsite 8/15/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those n... site. I have verified this through the waste characterization method identified a... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 9/8/05

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☒ This container/load is free of radioactive contamination based on [illegible] analysis.

SIGNATURE: _____ DATE: 9.10.05

BN-0446 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 19900 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

(14)

Bechtel Nevada NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~25~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS 9/21/05 KEW	☐ Putrescible	☒ FFACO-onsite 8/15/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood	☒ Soil
☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)
☒ Cement & concrete	☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)					

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground Tanks
☐ Hydrocarbons (contact SWO)	☐ Other _____	

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: JM *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m... site. I have verified this through the waste characterization method identified at... prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 9/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain ... require a radiological clearance.

Radiation Survey Release for Waste Disposal

RCT Initials _____

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8-10-05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or ~~estimate~~): 30,000 Signature of Certifier: _____

Retention Code: ENV 6.b

(15)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~3~~ ~~4~~ (9) **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: dr *(If initialed, no radiological clearance is necessary.)*

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: Barbara Dunn

Signature: Barbara Dunn Date: 8/8/05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☑ This container/load is free of radioactive contamination based on radio analysis.

SIGNATURE: _____ DATE: 8.10.05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 22,000 Signature of Certifier: Robert D. Watts

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~6~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles For Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial 995	
Waste Type: (check one)	☒ NTS	☐ Putrescible	☒ FFACO-onsite 8/16/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☒ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those mat site. I have verified this through the waste characterization method identified abo prohibited and allowable waste items.

Print Name: Rick Deghlor

Signature: Rick Deghlor For Barbara Quinn Date: 8/11/05

Radiation Survey Release for Waste Di

RCT Initials

☐ This container/load is free of external rad contamination.

☒ This container/load is exempt from surve process knowledge and origin.

☐ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8 BN-

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 350 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS 9/21/05	☐ Putrescible	☒ FFACO-onsite 8/15/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects	☐ YMP	
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine		
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents	

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps; bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers			
☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those n site. I have verified this through the waste characterization method identified at prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☒ This container/load is free of radioactive contamination based on radiological analysis.

SIGNATURE: _____ DATE: 8.10.05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 31,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

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Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~X~~ **9** **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Stoller-Navarro Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10C landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS 9/24/05	☐ Putrescible	☒ FFACO-onsite 8/15/05	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Asphalt	☒ Metal	☒ Wood	☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris
☒ Plastic	☒ Wire	☒ Cable	☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete

☒ Paper ☒ Rocks / unaltered geologic materials ☒ Empty containers

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: Barbara Quinn

Signature: Barbara Quinn Date: 8/8/05

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

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Radiation Survey Release for Waste Disposal

RCT Initials

☐ This container/load is free of external radioactive contamination.

☐ This container/load is exempt from survey due to process knowledge and origin.

☒ This container/load is free of radioactive contamination based on radioanalysis.

SIGNATURE: _____ DATE: 8.10.05

BN-0646 (09/99)

SWO USE ONLY

Load Weight (net from scale or estimate): 21,000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-0918 (04/03)

Bechtel Nevada

NTS Landfill Load Verification

(Waste definitions are available on page 2)

SWO USE (Circle One Area) AREA ~~23~~ ~~6~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: STOLLER NAVARRO JOINT VENTURE Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at 10c landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial	
Waste Type: (check one)	☒ NTS 9/21/05 Kew	☐ Putrescible	☒ FFACO-onsite 8/16/05 CJS	☐ WAC Exception
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV
Pollution Prevention Category: (check one)		☒ Environmental management	☐ Defense Projects	☐ YMP
Pollution Prevention Category: (check one)		☒ Clean-Up	☐ Routine	
Method of Characterization: (check one)		☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medic wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debri	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concr			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separa
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Grou
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: (L) ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those m site. I have verified this through the waste characterization method identified ab prohibited and allowable waste items.

Print Name: Rick Deshler

Signature: Rick Deshler For Barbara Quinn Date: 8/11/05

Radiation Survey Release for Waste

RCT Initials

☐ This cont ainerload is free of exter nal contamin ation.

☐ Th is cont ainerload is exempt fro m su process knowledge and/or ga.

☒ This contai nerload is free of radioac contamination a sed on radi analys

SIGNATURE: _____ DAT

Note: Food waste, office trash and/or animal carcasses are considered not to contain require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate) 24 000 Signature of Certifier: _____

Retention Code: ENV 6.b

BN-09

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(20)

Bechtel Nevada — NTS Landfill Load Verification

(Waste definitions are available on page 2)

2

SWO USE (Circle One Area) AREA ~~23~~ ~~8~~ 9 **LANDFILL**

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

REQUIRED: WASTE GENERATOR INFORMATION

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: STOLLER NAVARRO Joint Venture Phone Number: 5-2033

Location / Origin: CAU 511 CAS 03-99-11 Soil Piles for Disposal at U0c landfill

Waste Category: (check one)		☐ Commercial	☒ Industrial		
Waste Type: (check one)	☒ NTS KAW 9/21/05	☐ Putrescible	☒ FFACO-onsite 8/15/05	☐ WAC Exception	
	☐ Non-Putrescible	☐ Asbestos Containing Material	☐ FFACO-offsite	☐ Historic DOE/NV	
Pollution Prevention Category: (check one)	☒ Environmental management	☐ Defense Projects	☐ YMP		
Pollution Prevention Category: (check one)	☒ Clean-Up	☐ Routine			
Method of Characterization: (check one)	☒ Sampling & Analysis	☐ Process Knowledge	☐ Contents		

Prohibited Waste at all three NTS landfills: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels-, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill: Sewage Sludge; Animal carcasses-, Wet garbage (food waste); and Friable asbestos

REQUIRED: WASTE CONTENTS ALLOWABLE WASTES

Check all allowable wastes that are contained within this load:

NOTE: Waste disposed at the Area 6 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as: gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulics; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

Acceptable waste at any NTS landfill:

☒ Paper	☒ Rocks / unaltered geologic materials	☒ Empty containers	☒ Asphalt	☒ Metal	☒ Wood
☒ Soil	☐ Rubber (excluding tires)	☒ Demolition debris	☒ Plastic	☒ Wire	☒ Cable
☒ Cloth	☐ Insulation (non-Asbestosform)	☒ Cement & concrete			

☒ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)

Additional waste accepted at the Area 23 Mercury Landfill: ☐ Office waste ☐ Food Waste ☐ Animal Carcasses

☐ Asbestos: ☐ Friable ☐ Non-Friable (contact SWO if regulated load) Quantity: _____

Additional waste accepted at the Area 9 U10c Landfill:

☐ Non-friable asbestos	☐ Drained automobiles and military vehicles	☐ Solid fractions from sand/oil/water separators
☐ Light ballasts (contact SWO)	☐ Drained fuel filters (gas & diesel)	☐ Deconned Underground and Above Ground
☐ Hydrocarbons (contact SWO)	☐ Other _____	☐ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill: ☐ Other _____

☐ Septic sludge	☐ Rags	☐ Drained fuel filters (gas & diesel)	☐ Crushed non-terne plated oil filters
☐ Plants	☐ Soil	☐ Sludge from sand/oil/water separators	☐ PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Initials: _____ ***(If initialed, no radiological clearance is necessary.)***

The above mentioned waste was generated outside of a Controlled Waste Management Area (CWMA) and to the best of my knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those n… site. I have verified this through the waste characterization method identified a… prohibited and allowable waste items.

Print Name: Rick Deshler

Signature: for Barbara Quinn Date: 8/11/05

Radiation Survey Release for Waste Disposal

RCT Initials

- ☐ This container/load is free of external radioactive contamination.
- ☐ This container/load is exempt from survey due to process knowledge and origin.
- ☒ This container/load is free of radioactive contamination based on gross analysis.

SIGNATURE: _____ DATE: 8.10.05

BN-0646 (09/99)

Note: Food waste, office trash and/or animal carcasses are considered not to contain… require a radiological clearance.

SWO USE ONLY

Load Weight (net from scale or estimate): 25,000 Signature of Certifier: Robert D White

Retention Code: ENV 6.b

BN-0918 (04/03)

Appendix H

Project Organization for CAU 511

H.1.0 Project Organization

The NNSA/NSO Acting Project Manager is Kevin Cabble. He can be contacted at (702) 295-5000. The NNSA/NSO Task Manager is Sabine Curtis. She can be contacted at (702) 295-0542.

The identification of the project Health and Safety Officer and the Quality Assurance Officers can be found in the appropriate plan. However, personnel are subject to change and it is suggested that the appropriate U.S. Department of Energy Project Manager be contacted for further information. The Task Manager is identified in the FFACO Monthly Activity Report.

Appendix I

Nevada Division of Environmental Protection Document Review Sheets

NEVADA ENVIRONMENTAL RESTORATION PROJECT DOCUMENT REVIEW SHEET

1. Document Title/Number Draft Corrective Action Decision Document/Closure Report for Corrective Action Unit 511: Waste Dumps (Piles and Debris), Nevada Test Site, Nevada

2. Document Date October 2005

3. Revision Number 0

4. Originator/Organization Stoller-Navarro

5. Responsible DOE/NV ERP Project Mgr. Janet Appenzeller-Wing

6. Date Comments Due November 17, 2005

7. Review Criteria Full

8. Reviewer/Organization/Phone No. Don Elle, NDEP, 486-2874

9. Reviewer's Signature

10. Comment Number/ Location	11. Type[a]	12. Comment	13. Comment Response	14. Accept
1) Section 2.3 Page 33 of 39 End of 1st Paragraph		The reference to Appendix E should instead be Appendix C.	Text corrected.	Yes
2) Section 2.3.1 Page 33 of 39 1st Paragraph		The reference to Table E.5-1 should instead be Table C.1-3.	Text corrected.	Yes
3) Section 2.3.2 Page 33 of 39 1st Paragraph		The reference to Table E.5-1 should be instead Table C.1-3.	Text corrected.	Yes

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

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