Nevada
Environmental
Restoration
Project

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Streamlined Approach for
Environmental Restoration
Closure Report for Corrective
Action Unit No. 456:
Underground Storage Tank
Release Site 23-111-1
Nevada Test Site, Nevada

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April 1998

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Environmental Restoration
Division

U.S. Department of Energy
Nevada Operations Office

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**STREAMLINED APPROACH FOR ENVIRONMENTAL
RESTORATION CLOSURE REPORT FOR
CORRECTIVE ACTION UNIT NO. 456:
UNDERGROUND STORAGE TANK
RELEASE SITE 23-111-1
NEVADA TEST SITE, NEVADA**

**Prepared for the
U. S. Department of Energy
Nevada Operations Office
Under Contract No. AC08-96NV11718**

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Controlled Copy No.: _____

Revision: 0

**Prepared by
Bechtel Nevada
Environmental Restoration**

April 1998

**STREAMLINED APPROACH FOR ENVIRONMENTAL
RESTORATION CLOSURE REPORT FOR
CORRECTIVE ACTION UNIT NO. 456:
UNDERGROUND STORAGE TANK
RELEASE SITE 23-111-1
NEVADA TEST SITE, NEVADA**

Approved by: Janet L. Appenzeller-Wing
Janet L. Appenzeller-Wing, Project Manager
Industrial Sites Subproject

Date: 4/14/98

Approved by: Robert M. Bangert Jr.
for Runore C. Wycoff, Project Manager
Nevada Environmental Restoration Project

Date: 4/14/98

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ACRONYMS AND ABBREVIATIONS

AST	Aboveground Storage Tank
bgs	Below Ground Surface
C	carbon
CAS	Corrective Action Site
CAU	Corrective Action Unit
CFR	Code of Federal Regulations
CGA	Combustible Gas Analyzer
cm	centimeter
CO ₂	Carbon Dioxide
CR	Closure Report
DOE	U.S. Department of Energy
FFACO	Federal Facility Agreement and Consent Order
ft	feet
gal	gallon
in	inch
LEL	Lower Explosive Limit
L	liter
m	meter
mg/kg	milligram per kilogram
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection

ACRONYMS AND ABBREVIATIONS (continued)

NEL	Nevada Environmental Laboratory
NTS	Nevada Test Site
OVM	Organic Vapor Monitor
O ₂	Oxygen
%	percent
ppm	part per million
SAFER	Streamlined Approach for Environmental Restoration
TPH	Total Petroleum Hydrocarbon
UST	Underground Storage Tank
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

The underground storage tank (UST) release site 23-111-1 is located in Mercury, Nevada. The site is in Area 23 of the Nevada Test Site, (NTS) located on the north side of Building 111. This site is identified in the Federal Facility Agreement and Consent Order (FFACO) as Corrective Action Site (CAS) Number 23-02-03, and is the only CAS assigned to Corrective Action Unit (CAU) 456. The tank associated with the release was closed in place using cement grout on September 6, 1990. The tank was not closed by removal due to numerous active underground utilities, a high-voltage transformer pad, and overhead power lines.

Soil samples collected below the tank bottom at the time of tank closure activities exceeded the Nevada Administrative Code Action Level of 100 milligrams per kilogram (mg/kg) for petroleum hydrocarbons. Maximum concentrations detected were 119 mg/kg. Two passive venting wells were subsequently installed at the tank ends to monitor the progress of biodegradation at the site. Quarterly air sampling from the wells was completed for approximately one year, but was discontinued since data indicated that considerable biodegradation was not occurring at the site.

This Closure Report (CR) provides documentation of the completed site evaluation as outlined in the Streamlined Approach for Environmental Restoration (SAFER) Work Plan for CAUs 452, 454, 456, and 464, Closure of Historical UST Release Sites. The evaluation consisted of collecting air samples from the two passive venting wells to determine if measurable biodegradation is occurring at the site and to gather data to support an administrative closure of the site.

Based upon the findings of the samples analyzed in the field and laboratory, and the low concentrations of petroleum hydrocarbons detected during the tank closure activities, it is requested that a Notice of Completion be provided by the Nevada Division of Environmental Protection and that CAU 456 be moved from Appendix III to Appendix IV in the FFACO.

1.0 INTRODUCTION

The underground storage tank (UST) release site 23-111-1 is located in Mercury, Nevada. The site is in Area 23 of the NTS and is located on the north side of Building 111 (Figure 1). Approximate Nevada coordinates for the site are N 694,000 and E 696,000 (Holmes and Narver, 1986). The tank was closed in place on September 6, 1990, due to numerous underground utilities, a high-voltage transformer pad, and overhead power lines (Figure 2). The tank was closed by filling it with low-strength cement grout. The tank had an approximate capacity of 3,400 liters (L) (900 gallons [gal]) and was used to store heating oil.

Soil samples collected below the tank bottom at an approximate depth of 3 meters (m) (10 feet [ft]) had total petroleum hydrocarbon (TPH) concentrations of 115 milligrams per kilogram (mg/kg) and 119 mg/kg. Two passive venting wells were installed at the tank ends to a depth of approximately 2 m (7 ft) to monitor the progress of biodegradation at the site. Quarterly air sampling from the wells was completed for analysis of volatile organic compounds (VOCs) using a photoionization detector, oxygen (O_2) using a Combustible Gas Analyzer (CGA), and carbon dioxide (CO_2) using Dräger® tubes. Monitoring was discontinued after a period of approximately one year since data indicated that considerable biodegradation was not occurring at the site. In addition, O_2 and CO_2 concentrations were observed at ambient atmospheric levels. In addition to the numerous utilities present at the site, the former tank is now covered by an aboveground storage tank (AST) and a concrete overspill protection pad.

Closure of the UST was accepted by the Nevada Division of Environmental Protection (NDEP) in a letter dated October 16, 1990 (NDEP, 1990). A copy of the Environmental Protection Agency Form 7530-1 and closure concurrence letter is provided as Attachment A. The petroleum hydrocarbon release associated with this site has not been closed. This site is identified in the Federal Facility Agreement and Consent Order (FFACO) as Corrective Action Site (CAS) Number 23-02-03, and is the only CAS assigned to Corrective Action Unit (CAU) 456.

1.1 PURPOSE

This Closure Report (CR) provides documentation of the completed site evaluation as outlined in the Streamlined Approach for Environmental Restoration (SAFER) Work Plan for CAUs 452, 454, 456, and 464, Closure of Historical UST Release Sites (DOE, 1997). The evaluation consisted of collecting air samples from the two passive venting wells to determine if active biodegradation is occurring at the site. The information collected is presented in this report in support of a request for administrative closure of the spill site (CAS 23-02-03).

FIGURE 1
SITE LOCATION MAP

FIGURE 2
SITE VICINITY MAP

1.2 SCOPE

The scope of the investigation was to collect air samples from the two wells identified as "23-111-1/E Well" and "23-111-1/W Well." Samples were collected and analyzed for the following:

- Carbon Monoxide (CO).
- CO₂.
- Organic Vapors.
- Lower Explosive Limit (LEL).
- TPH in air.

1.3 CLOSURE REPORT CONTENTS

This CR has been developed to support an administrative closure of CAS 23-02-03. The format of the report consists of the following:

- Section 1.0 - Introduction (Purpose, Scope, and CR Contents).
- Section 2.0 - Closure Activities (Description of Air Sampling, Deviations from SAFER Work Plan, Schedule, Site Plan, and A through K evaluation).
- Section 3.0 - Waste Disposition.
- Section 4.0 - Closure Results.
- Section 5.0 - Conclusions.
- Section 6.0 - References.

The site investigation was implemented using information and guidance provided from the following documents:

- SAFER Work Plan for CAUs 452, 454, 456, and 464, Closure of Historical UST Release Sites, Nevada Test Site (DOE, 1997).
- Site Specific Health and Safety Plan for SAFER Closure of Historical UST Release Sites - Areas 2, 9, 12, 23, & 25 (BN, 1997a).

- Field Management Plan for CAUs 452, 454, 456, and 464, Closure of Historical UST Release Sites, Nevada Test Site (BN, 1997b).
- Nevada Environmental Restoration Project, Project Management Plan (DOE, 1994).
- Nevada Environmental Restoration Project, Health and Safety Plan (DOE, 1996a).
- Nevada Environmental Restoration Project, Industrial Sites, Quality Assurance Project Plan, Nevada Test Site (DOE, 1996b).

2.0 CLOSURE ACTIVITIES

2.1. DESCRIPTION OF CORRECTIVE ACTION ACTIVITIES

Site activities consisted of collecting air samples from two passive monitoring wells on November 20, 1997. Samples were collected to evaluate if measurable hydrocarbon degradation was occurring at the site. Two new 10-L (2.6-gal) Tedlar bags were used to collect an air sample from each well. Air was drawn from within 15 centimeters (cm) (6 inches [in]) of each well bottom using an Aircon2 high-volume air sampler (Serial No. 622).

Once each bag was filled it was labeled with the well identification, sample time, sample date, and samplers initials. The bag contents were then analyzed on-site for; CO₂ using a QTRAC analyzer (Serial No. 11143); O₂, LEL, and CO using a CGA (MSA 361); and Volatile Organic Compounds (VOCs) using a Organic Vapor Monitor (OVM Model 580B) calibrated to 100 parts per million Isobutylene. The remaining sample (over 5-L volume) was submitted to a subcontract laboratory for TPH in air analysis. The laboratory analysis of the air sample was completed as an extra measure to evaluate whether or not hydrocarbons were degrading in the soils within the vicinity of the UST. The carbon chain C9 through C11 was analyzed using a gas chromatograph and flame ionization detector. Analysis of higher chain values was not completed due to instrumentation limitations (refer to Section 2.2).

2.2 DEVIATIONS FROM THE SAFER WORK PLAN

Only minor deviations from the SAFER Work Plan were completed. Additional field screening for CO and LEL were completed since the same instrumentation was being used for the O₂ analysis. CO₂ was analyzed using the QTRAC instead of a Dräger tube as it provides a more accurate reading.

It was requested to the laboratory that a hydrocarbon concentration in air be analyzed in the Carbon (C) 10 to C20 range; however, the laboratory reported that the analytical method used was "TPH in Air (C9 to C11) by gas chromatography/flame ionization detection." The laboratory reported that with the methodology used, if hydrocarbons were present in the C10 to C20 hydrocarbon range, that they would have also been identified in the C9 to C11 hydrocarbon range.

The laboratory data is provided in Appendix B and the discussion supporting the analysis is quoted as follows: "This carbon range (C9 to C11) was established by analysis of a carbon range standard containing the C9 to C11 constituents and recording the associated retention times. The calibration curve was established through analysis of air-diesel standards prepared in the same matrix (air) and analyzed under the same conditions as the samples. The diesel used to prepare the air standards was similar to that used for the soil analyses, which was reported to encompass

C12 to C32. Analysis of these air-diesel standards produced significant responses in the C9 to C11 range. The instrument response returned to background above the C11 range, indicating that the higher chain carbons are not sufficiently volatile for measurement in air. Similarly, if the site contained sufficient C10 to C20 contamination and conditions allowed for the evolution of hydrocarbons, analysis of the air samples would have exhibited a response in the C9 to C11 hydrocarbon range."

2.3 CORRECTIVE ACTION SCHEDULE AS COMPLETED

The air sampling and field screening was completed on November 20, 1997. In addition, Tedlar bag air samples were submitted to Nevada Environmental Laboratory (NEL) on November 20, 1997. Analytical results were received from the laboratory on December 1, 1997.

2.4 SITE PLAN

A site plan depicting the location of the two wells and general site layout has been provided as Figure 2 "Site Location Map." Since no modifications were made to the site, engineering "as-builts" were not warranted.

2.5 A THROUGH K EVALUATION

The following is the Nevada Administrative Code (NAC) "A through K" Analysis which supports the request for an Administrative Closure of CAS 23-02-03 (NAC, 1996).

State regulatory requirements - The state regulatory requirement affecting the closure of CAS 23-02-03 is the requirement of the NAC 459.9973, Action by Division When Excessive Petroleum Is Present in Soil, referred to as "A through K".

Depth of groundwater (A) - Depth to groundwater at the site is estimated to be at 335 meters (m) (1,100 feet [ft]) below ground surface (bgs). The estimated depth is based on the regional general potentiometric surface map provided in the U.S. Department of Energy (DOE) Environmental Impact Statement (DOE, 1996c).

Distance to irrigation or drinking water wells (B) - The nearest drinking water supply well is Army Well 1 located approximately 7.2 kilometers (km) (4.5 miles [mi]) from the site. The well obtains water from the lower carbonate aquifer. The static water level measured in Army Well 1 in 1993 was measured at 210 m (690 ft) bgs. No perched aquifers are known to occur in this area (DOE, 1996c).

Type of soil (C) - The site is within the Mercury Valley where a thick alluvial sequence occurs in the area. Soils identified at the time of tank closure activities consisted of brown poorly graded sand with gravel and some cobbles.

Annual precipitation (D) - Annual rainfall over a three-year period (1995 to 1997) was provided by the NTS Weather Service. The average, over the three-year period, for the Area 23, Mercury region was 12.7 cm (5.0 in) per year.

Type of regulated substance released (E) - The tank was used to store heating oil for Building 111 and was identified as the regulated substance released. TPH as diesel/oil were detected below the west end of the tank at a concentration of 115 mg/kg and below the east end of the tank at a concentration of 191 mg/kg.

Extent of contamination (F) - The extent of contamination has not been determined. Field observations at the time of tank closure indicated that the visible staining was limited in extent and decreased with depth (maximum depth excavated was 1.2 m [4.0 ft] bgs). Based on field observations and the low concentration of TPH detected, it is believed that the release was likely a result of past overfilling and surface spillage.

Present and potential land use (G) - The tank site is adjacent to Building 111 which is still occupied. Immediate surrounding land use consists of a baseball field (abandoned since approximately 1995) to the east and open parking to the north and south. The parking areas are covered with asphalt and in some areas a chip seal mix. The Mercury Highway is to the west. The area also serves as a location for numerous active aboveground and underground utilities.

Preferred routes of migration/exposure pathways of concern (H) - The most likely route of migration would be vertically through the porous alluvial soils. However, due to the depth of groundwater, low amount of annual precipitation, large amount of evaporation, and the low TPH concentrations, it is unlikely that hydrocarbons would reach groundwater.

The site does not have an exposure pathway since all impacted soils are below the ground surface and are predominantly covered by the concrete overspill pad constructed for the replacement AST. Physical contact or disturbance of the soil will not occur unless excavation activity is completed within the tank area. In addition, VOCs have not been detected coming from the well, therefore, inhalation of VOCs is not an expected pathway.

Location of structures or impediments (I) - Building 23-111, located in close proximity to the release site, is still occupied and will likely remain one of the last buildings to remain occupied on the NTS as it serves as the DOE Field Office and provides office space for DOE contractors.

Potential for hazard related to fire, vapor, or explosion (J) - The potential for fire, vapor ignition, or explosion at the site as a result of this spill is extremely low. This is based on the field data collected and site conditions discussed below:

- Hydrocarbons concentrations detected at the time of tank closure did not exceed 191 mg/kg.
- The hydrocarbon present is from weathered heating oil which does not have high volatility.
- The LEL measured at the site was 0.0 percent.
- The tank site is currently covered with a concrete overspill pad for the AST presently in use.

Other factors specific to the site (K) - The following are additional factors specific to the site which should be considered in the evaluation for closure options;

- The site is located within the secured boundaries of the NTS. The likelihood that the site would be used for future private use is very low.
- No other regulated substances were identified at the site and the concentrations of the petroleum hydrocarbons detected at the time of tank closure were very low (maximum 191 mg/kg).

3.0 WASTE DISPOSITION

Sample and screening activities did not generate any waste requiring disposal.

4.0 CLOSURE RESULTS

The laboratory analytical and field screening results are summarized in Table 1. In general, there was no evidence that hydrocarbons were present in the samples collected. This implies that measurable degradation is not occurring at the site. The field readings and sample analysis were similar to the post closure monitoring and sampling completed after the first year of tank closure. The laboratory analytical data for the TPH in air analysis are provided in Appendix B.

TABLE 1: SUMMARY OF 23-111-1 AIR SAMPLING

SAMPLE ID	TPH IN AIR ⁽¹⁾ (mg/L)	VOCs ⁽²⁾ (ppm)	CO ⁽³⁾ (ppm)	O ₂ ⁽³⁾ (%)	LEL ⁽³⁾ (%)	CO ₂ ⁽⁴⁾ (ppm)
23-111/E. Well	<0.2	0	0	20.7	0	357
23-111/W. Well	<0.2	0	0	20.8	0	359

Notes:

1 Total Petroleum Hydrocarbons (TPH) in air analyzed using a gas chromatograph and flame ionization detector and reported in milligrams per liter.

2 Volatile Organic Compounds (VOCs) were measured using an OVM Model 580B calibrated to 100 ppm Isobutylene. An 11.8-electron volt lamp was used in the OVM and results were reported in ppm.

3 Carbon monoxide (CO), oxygen (O₂), and lower explosive limit (LEL), were measured using a Combustible Gas Analyzer (CGA). Results were reported in ppm for CO and percent (%) for O₂ and LEL.

4 Carbon dioxide (CO₂) was measured using a QTRAC meter. Atmospheric background CO₂ measured at the site was 391 ppm.

5.0 CONCLUSIONS

Based upon the findings of the samples analyzed in the field and laboratory, and the low concentrations of hydrocarbons detected in the soil during the tank closure activities, it is requested that a Notice of Completion be provided by the NDEP and that CAU 456 be moved from Appendix III to Appendix IV in the FFACO.

6.0 REFERENCES

BN, 1997a, Site Specific Health and Safety Plan for SAFER Closure of Historical UST release Sites - Areas 2, 9, 12, 23, & 25, prepared by Bechtel Nevada, September 1997.

BN, 1997b, Field Management Plan for CAUs 452, 454, 456, and 464, Closure of Historical UST Release Sites, prepared by Bechtel Nevada, November 1997.

Holmes and Narver, 1986, Nevada Test Site Road and Facility Map, prepared by Holmes and Narver, 1986 update.

NAC, 1996, Hazardous Materials: Storage Tanks, Nevada Administrative Code 459.9921 through 459.999.

NDEP, 1990, Letter to Donald Elle of DOE from Allen Biaggi of NDEP, dated October 16, 1990.

U.S. DOE, 1994, Nevada Environmental Restoration Program, Project Management Plan, Revision 0.

U.S. DOE, 1996a, Nevada Environmental Restoration Program Health and Safety Plan.

U.S. DOE, 1996b, Department of Energy Environmental Impact Statement for the Nevada Test site and Off-Site Locations in the State of Nevada, Volume 1 Chapters 1-9, U.S. Department of Energy, Nevada Operations Office, Las Vegas, Nevada, August 1996.

U.S. DOE, 1996c, Nevada Environmental Restoration Program, Industrial Sites Quality Assurance Project Plan, Revision 1, July 1996.

U.S. DOE, 1997, SAFER Work Plan for CAUs 452, 454, 456, and 464 Nevada Environmental Restoration Program, Industrial Sites Quality Assurance Project Plan, Revision 1, July 1996.

APPENDIX A

UST CLOSURE DOCUMENTATION

Department of Energy

Nevada Operations Office

P. O. Box 98518

Las Vegas, NV 89193-8518

9102874

DEC 24 1990

Allen Biaggi
Waste Management
Nevada State Division of
Environmental Protection
123 West Nye Lane
Carson City, NV 89710

NOTIFICATION FOR UNDERGROUND STORAGE TANKS (UST)

Enclosed is a Notification for Underground Storage Tanks Form providing information on nine UST permanently out of use and nine UST temporarily out of use. All UST are located on the Nevada Test Site. The procedures used to remove the UST were provided to your office in a letter dated October 16, 1990.

The following three tables summarize the information about the eighteen UST reported:

TABLE 1 - 1990 UST Permanently Out of Use
And Closed in Place

<u>Tank Number</u>	<u>Substance Stored</u>	<u>Capacity (gals.)</u>	<u>Location</u>
23-111-1	Heating Oil	900	Building 111
23-116-4	Lube Oil	500	Building 116
23-116-5	Lube Oil	500	Building 116
23-119-1	Used Oil	2,500	Building 119
23-210-4	Gasoline	5,000	Building 210
23-210-5	Gasoline	5,000	Building 210

TABLE 2 - 1990 UST Permanently Out of Use
And Removed

<u>Tank Number</u>	<u>Substance Stored</u>	<u>Capacity (gals.)</u>	<u>Location</u>
12-T-1	Diesel	4,380	T tunnel
12-P-2	Diesel	550	P tunnel
12-N-1	Diesel	4,380	N tunnel

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JAN 15 1991

90-5650
FMS 10

TABLE 3 - 1990 UST Temporarily Out of Use

<u>Tank Number</u>	<u>Substance Stored</u>	<u>Capacity (gals.)</u>	<u>Location</u>
23-750-1	Used Oil	2,000	Building 750
23-751-1	Used Oil	2,000	Building 751
23-751-2	Used Oil	2,000	Building 751
23-752-1	Gasoline	10,000	Building 752
23-752-2	Gasoline	10,000	Building 752
23-752-3	Diesel	10,000	Building 752
25-4838-1	Gasoline	10,000	Building 4838
25-4838-2	Diesel	10,000	Building 4838
25-4838-3	Used Oil	550	Building 4838

A completed EPA Form number 7530-1 was faxed to your office on Friday, December 21, 1990. The original form is enclosed with this letter. If you have any questions, please contact David L. Wessman, of my staff, at (702) 295-2389.

Donald R. Elle, Ph.D., Director
Environmental Protection Division

EPD:DLW-542

Enclosure:
As stated

cc w/encl:
O. L. Haworth, REECO,
Mercury, NV

FOR
TANKS
IN
NVRETURN
COMPLETED
FORM
TOUnderground Storage Tanks
Division of Environmental Protection
Dept. of Conservation & Natural Resources
Capitol Complex, 201 S. Fall St. (800) 992-0900
Carson City, NV 89710 Ext. 4670

I.D. Number

STATE USE ONLY

Date Received

GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act, (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

Who Must Notify? Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means—

(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or dispensing of regulated substances; and

(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

What Tanks Are Included? Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of "regulated substances," and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel, and 2. industrial solvents, pesticides, herbicides or fumigants.

What Tanks Are Excluded? Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:

1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
2. tanks used for storing heating oil for consumptive use on the premises where stored;
3. septic tanks;

4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979 which is an intrastate pipeline facility regulated under State laws;

5. surface impoundments, pits, ponds, or lagoons;

6. storm water or waste water collection systems;

7. flow-through process tanks;

8. liquid traps or associated gathering lines directly related to oil or gas production or gathering operations;

9. storage tanks situated in an underground area (such as a basement, cell, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above surface of the floor.

What Substances Are Covered? The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception those substances regulated as hazardous waste under Subtitle C of RCRA. It includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

Where To Notify? Completed notification forms should be sent to the address given at the top of this page.

When To Notify? 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed \$10,000 for each tank for which notification is not given or for which false information is submitted.

INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. This form must be completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of
continuation sheets
attached

3

I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity)

U.S. Department of Energy, Nevada Operations Office

Street Address

Post Office Box 98518

County

Clark County

City

Las Vegas

State

NV

ZIP Code

89193-8518

Area Code

702

Phone Number

295-1146

Type of Owner (Mark all that apply ☒)

☐ Current

☐ State or Local Gov't

☐ Private or Corporate

☐ Former

☒ Federal Gov't
(GSA facility I.D. no. _____)

☐ Ownership uncertain

II. LOCATION OF TANK(S)

(If same as Section I, mark box here ☐)

Facility Name or Company Site Identifier, as applicable

Nevada Test Site, Areas 12, 23, 25

Street Address or State Road, as applicable

Highway 95

County

Nye

City (nearest)

Mercury

State

NV

ZIP Code

89023

Indicate
number of
tanks at this
location

94

Mark box here if tank(s)
are located on land within
an Indian reservation or
on other Indian trust lands ☐

III. CONTACT PERSON AT TANK LOCATION

Name (If same as Section I, mark box here ☐)

Donald R. Elle

Job Title

Director, Environmental Protection Division

Area Code

702

Phone Number

295-1146

IV. TYPE OF NOTIFICATION

☐ Mark box here only if this is an amended or subsequent notification for this location.

V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative

Donald R. Elle, Ph.D., Environmental Prot. Div.

Signature

Donald R. Elle

Date Signed

12/20/90

CONTINUE ON REVERSE SIDE

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. 12-T-1	Tank No. 12-N-1	Tank No. 12-P-2	Tank No. 23-111-1	Tank No. 23-111-2
1. Status of Tank (Mark all that apply ☒) Currently in Use Temporarily Out of Use Permanently Out of Use Brought into Use after 5/8/86	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐
2. Estimated Age (Years)	7	5	6	33	NO DATA
3. Estimated Total Capacity (Gallons)	4,380	4,300	550	900	2,000
4. Material of Construction (Mark one ☒) Steel Concrete Fiberglass Reinforced Plastic Unknown Other, Please Specify	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☒ ☐ ☐ ☐	☒ ☐ ☐ ☐
5. Internal Protection (Mark all that apply ☒) Cathodic Protection Interior Lining (e.g., epoxy resins) None Unknown Other, Please Specify	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐
6. External Protection (Mark all that apply ☒) Cathodic Protection Painted (e.g., asphaltic) Fiberglass Reinforced Plastic Coated None Unknown Other, Please Specify	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐
7. Piping (Mark all that apply ☒) Bare Steel Galvanized Steel Fiberglass Reinforced Plastic Cathodically Protected Unknown Other, Please Specify	☒ ☐ ☐ ☐ ☐	☒ ☐ ☐ ☐ ☐	☒ ☐ ☐ ☐ ☐	☒ ☐ ☐ ☐ ☐	☒ ☐ ☐ ☐ ☐
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply ☒) a. Empty b. Petroleum Diesel Kerosene Gasoline (including alcohol blends) Used Oil Other, Please Specify c. Hazardous Substance Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No. Mark box ☒ if tank stores a mixture of substances d. Unknown	☐ ☒ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☒ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☒ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
9. Additional Information (for tanks permanently taken out of service) a. Estimated date last used (mo/yr) Estimated quantity of substance remaining (gal.) c. Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	2 / 84 0 Removal ☐	- / 87 0 Removal ☐	7 / 89 0 Removal ☐	- / 89 0 Cement ☐	Unknown - / 0 Cement ☒

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. 23-210-4	Tank No. 23-210-5	Tank No. 23-116-4	Tank No. 23-116-5	Tank No. 23-750-1
1. Status of Tank (Mark all that apply) <div> Currently in Use ☐ Temporarily Out of Use ☐ Permanently Out of Use ☒ Brought into Use after 5/8/86 ☐ </div>	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☐ ☒ ☐ ☐
2. Estimated Age (Years)	NO DATA	NO DATA	NO DATA	NO DATA	22
3. Estimated Total Capacity (Gallons)	5,000	5,000	2,500	2,500	2,000
4. Material of Construction (Mark one) <div> Steel ☒ Concrete ☐ Fiberglass Reinforced Plastic ☐ Unknown ☐ Other, Please Specify _____ </div>	☒ ☐ ☐ ☐	☒ ☐ ☐ ☐	☒ ☐ ☐ ☐	☒ ☐ ☐ ☐	☒ ☐ ☐ ☐
5. Internal Protection (Mark all that apply) <div> Cathodic Protection ☐ Interior Lining (e.g., epoxy resins) ☐ None ☒ Unknown ☐ Other, Please Specify _____ </div>	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐	☐ ☐ ☒ ☐
External Protection (Mark all that apply) <div> Cathodic Protection ☐ Painted (e.g., asphaltic) ☒ Fiberglass Reinforced Plastic Coated ☐ None ☐ Unknown ☐ Other, Please Specify _____ </div>	☐ ☒ ☐ ☐ ☐	☐ ☒ ☐ ☐ ☐	☐ ☒ ☐ ☐ ☐	☐ ☒ ☐ ☐ ☐	☐ ☐ ☐ ☒ ☐
Piping (Mark all that apply) <div> Bare Steel ☒ Galvanized Steel ☐ Fiberglass Reinforced Plastic ☐ Cathodically Protected ☐ Unknown ☐ Other, Please Specify _____ </div>	☒ ☐ ☐ ☐ ☐	☒ ☐ ☐ ☐ ☐	☒ ☐ ☐ ☐ ☐	☒ ☐ ☐ ☐ ☐	☒ ☐ ☐ ☐ ☐
Substance Currently or Last Stored (Mark all that apply) <div> a. Empty ☐ b. Petroleum <div> Diesel ☐ Kerosene ☐ Gasoline (including alcohol blends) ☒ Used Oil ☐ Other, Please Specify _____ </div> c. Hazardous Substance ☐ </div>	☐ ☐ ☐ ☒ ☐	☐ ☐ ☐ ☒ ☐	☐ ☐ ☐ ☒ ☐	☐ ☐ ☐ ☒ ☐	☐ ☐ ☐ ☒ ☐
Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No. Mark box ☐ if tank stores a mixture of substances	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
Additional Information (for tanks permanently taken out of service) <div> a. Estimated date last used (mo/yr) _____ </div>	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	
Estimated quantity of substance remaining (gal.) _____	0	0	0	0	
Mark box ☒ if tank was filled with inert material (e.g., sand, concrete)	Cement ☒	Cement ☒	Cement ☒	Cement ☒	

VI. DESCRIPTION OF UNDERGROUND

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. 23-751-1	Tank No. 23-751-2	Tank No. 23-752-1	Tank No. 23-752-2	Tank No. 23-752-3
1. Status of Tank (Mark all that apply ☐) <div style="display: flex; justify-content: space-between;"> <div> Currently in Use Temporarily Out of Use Permanently Out of Use Brought into Use after 5/8/86 </div> <div> ☐ ☒ ☐ ☐ </div> </div>	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐	☐ ☒ ☐ ☐
2. Estimated Age (Years)	22	22	22	22	
3. Estimated Total Capacity (Gallons)	2,000	2,000	10,000	10,000	
4. Material of Construction (Mark one ☐) <div style="display: flex; justify-content: space-between;"> <div> Steel Concrete Fiberglass Reinforced Plastic Unknown Other, Please Specify </div> <div> ☒ ☐ ☐ ☐ <hr/> </div> </div>	☐ ☒ ☐ ☐ <hr/>	☐ ☒ ☐ ☐ <hr/>	☐ ☒ ☐ ☐ <hr/>	☐ ☒ ☐ ☐ <hr/>	☐ ☒ ☐ ☐ <hr/>
5. Internal Protection (Mark all that apply ☐) <div style="display: flex; justify-content: space-between;"> <div> Cathodic Protection Interior Lining (e.g., epoxy resins) None Unknown Other, Please Specify </div> <div> ☐ ☐ ☒ ☐ <hr/> </div> </div>	☐ ☐ ☒ ☐ <hr/>	☐ ☐ ☒ ☐ <hr/>	☐ ☐ ☒ ☐ <hr/>	☐ ☐ ☒ ☐ <hr/>	☐ ☐ ☒ ☐ <hr/>
6. External Protection (Mark all that apply ☐) <div style="display: flex; justify-content: space-between;"> <div> Cathodic Protection Painted (e.g., asphaltic) Fiberglass Reinforced Plastic Coated None Unknown Other, Please Specify </div> <div> ☐ ☐ ☐ ☒ ☐ <hr/> </div> </div>	☐ ☐ ☐ ☒ ☐ <hr/>	☐ ☐ ☐ ☒ ☐ <hr/>	☐ ☐ ☐ ☒ ☐ <hr/>	☐ ☐ ☐ ☒ ☐ <hr/>	☐ ☐ ☐ ☒ ☐ <hr/>
7. Piping (Mark all that apply ☐) <div style="display: flex; justify-content: space-between;"> <div> Bare Steel Galvanized Steel Fiberglass Reinforced Plastic Cathodically Protected Unknown Other, Please Specify </div> <div> ☒ ☐ ☐ ☐ ☐ <hr/> </div> </div>	☐ ☒ ☐ ☐ ☐ <hr/>	☐ ☒ ☐ ☐ ☐ <hr/>	☐ ☒ ☐ ☐ ☐ <hr/>	☐ ☒ ☐ ☐ ☐ <hr/>	☐ ☒ ☐ ☐ ☐ <hr/>
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply ☐) <div style="display: flex; justify-content: space-between;"> <div> a. Empty b. Petroleum Diesel Kerosene Gasoline (including alcohol blends) Used Oil Other, Please Specify c. Hazardous Substance Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No. Mark box ☐ if tank stores a mixture of substances d. Unknown </div> <div> ☐ ☐ ☐ ☐ ☒ ☐ ☐ <hr/> ☐ <hr/> ☐ ☐ </div> </div>	☐ ☐ ☐ ☐ ☒ ☐ ☐ <hr/> ☐ <hr/> ☐ ☐	☐ ☐ ☐ ☐ ☒ ☐ ☐ <hr/> ☐ <hr/> ☐ ☐	☐ ☐ ☐ ☐ ☒ ☐ ☐ <hr/> ☐ <hr/> ☐ ☐	☐ ☐ ☐ ☐ ☒ ☐ ☐ <hr/> ☐ <hr/> ☐ ☐	☐ ☐ ☐ ☐ ☒ ☐ ☐ <hr/> ☐ <hr/> ☐ ☐
Additional Information (for tanks permanently taken out of service) <div style="display: flex; justify-content: space-between;"> <div> a. Estimated date last used (mo/yr) b. Estimated quantity of substance remaining (gal.) c. Mark box ☐ if tank was filled with inert material (e.g., sand, concrete) </div> <div> <hr/> <hr/> ☐ </div> </div>	<hr/> <hr/> ☐	<hr/> <hr/> ☐	<hr/> <hr/> ☐	<hr/> <hr/> ☐	<hr/> <hr/> ☐

VI. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank at this location.)

Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. 25-4838-1	Tank No. 25-4838-2	Tank No. 25-4838-3	Tank No.	Tank No.
1. Status of Tank (Mark all that apply ☐) Currently in Use Temporarily Out of Use Permanently Out of Use Brought into Use after 5/8/86	☐	☐	☐	☐	☐
2. Estimated Age (Years)	22	22	22		
3. Estimated Total Capacity (Gallons)	10,000	10,000	550		
4. Material of Construction (Mark one ☐) Steel Concrete Fiberglass Reinforced Plastic Unknown Other, Please Specify	☒	☒	☒	☐	☐
5. Internal Protection (Mark all that apply ☐)	☐	☐	☐	☐	☐
Cathodic Protection	☐	☐	☐	☐	☐
Interior Lining (e.g., epoxy resins)	☐	☐	☐	☐	☐
None	☒	☒	☒	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
6. External Protection (Mark all that apply ☐) Cathodic Protection Painted (e.g., asphaltic) Fiberglass Reinforced Plastic Coated None Unknown Other, Please Specify	☐	☐	☐	☐	☐
Cathodic Protection	☐	☐	☐	☐	☐
Painted (e.g., asphaltic)	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic Coated	☐	☐	☐	☐	☐
None	☒	☒	☒	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
7. Piping (Mark all that apply ☐) Bare Steel Galvanized Steel Fiberglass Reinforced Plastic Cathodically Protected Unknown Other, Please Specify	☒	☒	☒	☐	☐
Bare Steel	☒	☒	☒	☐	☐
Galvanized Steel	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Cathodically Protected	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, Please Specify					
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply ☐) a. Empty b. Petroleum Diesel Kerosene Gasoline (including alcohol blends) Used Oil Other, Please Specify c. Hazardous Substance	☐	☐	☐	☐	☐
a. Empty	☐	☐	☐	☐	☐
b. Petroleum					
Diesel	☐	☒	☐	☐	☐
Kerosene	☐	☐	☐	☐	☐
Gasoline (including alcohol blends)	☒	☐	☐	☐	☐
Used Oil	☐	☐	☒	☐	☐
Other, Please Specify					
c. Hazardous Substance	☐	☐	☐	☐	☐
Please Indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No. Mark box ☐ if tank stores a mixture of substances d. Unknown	☐	☐	☐	☐	☐
d. Unknown	☐	☐	☐	☐	☐
9. Additional Information (for tanks permanently taken out of service) a. Estimated date last used (mo/yr) Estimated quantity of substance remaining (gal.) c. Mark box ☐ if tank was filled with inert material (e.g., sand, concrete)	/	/	/	/	/
a. Estimated date last used (mo/yr)	/	/	/	/	/
Estimated quantity of substance remaining (gal.)					
c. Mark box ☐ if tank was filled with inert material (e.g., sand, concrete)	☐	☐	☐	☐	☐

Administration (702) 687-4670
Air Quality 687-5065
Mining Regulation and Reclamation 687-4670
Waste Management (702) 687-5872

STATE OF NEVADA

Water Permits and Compliance 687-
Water Quality Planning 687-
Wastewater Treatment Services 687-

91026

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION

123 W. Nye Lane
Carson City, Nevada 89710

October 16, 1990

Mr. Donald Elle
Director, Environmental Protection Division
Department of Energy
P.O. Box 98518
Las Vegas, Nevada 89193-8518

Dear Mr. Elle:

On September 24, 1990 I received the results of soil testing and a proposed remediation report for tank 23-111-1 at the Nevada Test Site. This heating oil tank was found to have hydrocarbon soil contamination as a result of overfilling and spillage at the fill port.

The Division has reviewed this document and concurs with the method of tank closure, soil excavation and disposal and soil venting for residual soil contamination remediation. The Division also agrees that ground water monitoring will not be required given the extreme depth to ground water (1,400 feet) and the small amount of released material.

Please be advised that the NDEP may require the future testing of soils in the area of the spill to demonstrate the effectiveness of the venting procedure. Additionally, all testing data, including air monitoring, should be provided to this office.

If questions or comments arise, please feel free to contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read "Allen Biaggi".

Allen Biaggi
Supervisor, UST Branch
Bureau of Waste Management

AJB/DOE

cc: Verne Rosse, Bureau Chief

APPENDIX B

LABORATORY ANALYTICAL DATA

Bechtel Nevada

Interoffice Memorandum

To: S. J. Nacht

Date: January 12, 1998

From: T. P. Van Sittert
Analytical Services Laboratory, 295-7472

No.: 2150-AL-98-0093

Subject: **DATA REPORT FOR SAMPLE DELIVERY GROUP (SDG) V323**
Project No. 04001

Nevada Environmental Laboratory's results have been reported to J. F. Bonn for the total petroleum hydrocarbons (TPH) - diesel and oil analyses of five samples and the TPH in air analyses of two samples collected on November 18, 19, and 20, 1997. Also included was a statement of services which indicated the charge number associated with this SDG.

Since the client performed many of the services usually provided by Sample Management personnel, the standard recharge of 35% of the subcontract invoice will not be applied. This statement was generated only to resolve this data package in Analytical Services Laboratory (ASL) Data Analysis System. ASL personnel involved with the processing of these samples and the associated data have charged their time to the project charge number, as instructed by the client.

SPECIFIC:

Total Petroleum Hydrocarbons - Diesel and Oil:

Method associated quality assurance and control criteria were met. Sample 12-B-1/West is identified as 12-B-/West in the report.

The multipeak chromatograms produced from the analyses of samples 12-B-1/East and 12-B-1/West did not identically match the lab's diesel or oil standards, but eluted between them, overlapping much of the diesel elution range. The responses were quantitated using the diesel calibration and should be considered estimates of the hydrocarbon concentration.

Sample 12-B-1/East was used for the matrix spike and matrix spike duplicate. Recoveries were outside the upper control limit. Affected data have been flagged accordingly.

TPH in Air:

Appropriate quality assurance and quality control practices were employed.

The client requested the determination of hydrocarbon components in the carbon 10 (C10) to carbon 20 (C20) range; however, the laboratory reported that the analytical method used was "TPH in Air (C9 to C11) BY GC/FID." This carbon range was established by analysis of a carbon range standard containing the C9 to C11 constituents and recording the associated retention times.

2150-AL-98-0093

S. J. Nacht

Page 2 of 2

January 12, 1998

The calibration curve was established through analysis of air-diesel standards prepared in the same matrix (air) and analyzed under the same conditions as the samples. The diesel used to prepare the air standards was similar to that used for the soils analyses, which was reported to encompass C12 to C32. Analysis of these air-diesel standards produced significant responses in the C9 to C11 range. The instrument response returned to background above the C11 range, indicating that the higher chain hydrocarbons are not sufficiently volatile for measurement in air. Similarly, if the site contained sufficient C10 to C20 contamination and conditions allowed for the evolution of hydrocarbons, analysis of the air samples would have exhibited a response in the C9 to C11 hydrocarbon range.

Please direct any questions you may have to your Client Service Representative, Ted Redding, at 295-7220.

T. P. Van Sittert

TPV:mm

Subject Code: ENV3

cc: Correspondence Control, NLV008

K. A. Mobley, NLV022

J. F. Bonn (results enc.), NTS306

ASL SDG V323 file (results enc.), NTS273

NEL LABORATORIES

Reno • Las Vegas
Phoenix • Burbank

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, NV 89030
(702) 657-1010 • Fax: (702) 657-1577
1-888-368-3282

CLIENT: Bechtel Nevada Corp.
P.O. Box 98521, M/S NTS273
Las Vegas, NV 89193-8521
ATTN: Ted Redding

PROJECT NAME: NA
PROJECT NUMBER: PO 16874

NEL ORDER ID: L9711185

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 11/20/97.

Samples were analyzed as received.

Where applicable we have included the following quality control data:

Method blank - used to demonstrate absence of contamination or interferences in the analytical process.
Laboratory Control Spike (LCS) - used to demonstrate laboratory ability to perform the method within specifications by spiking representative analytes into a clean matrix.
Surrogates - compounds added to each sample to ensure that the method requirements are met for each individual sample.

Should you have any questions or comments, please feel free to contact our Client Services department at (702) 657-1010.

Some results have been flagged as follows:

JI - The batch MS and/or MSD were outside acceptance limits. The batch LCS was acceptable.

Stan Van Wagenen
Laboratory Manager

12/1/97
Date

CERTIFICATIONS:

	Reno	Las Vegas	Burbank
Arizona	AZ0520	AZ0518	AZ0325
California	1707	2002	1192
US Army Corps of Engineers	Certified	Certified	Certified

	Reno	Las Vegas	Burbank
Idaho	Certified	Certified	
Montana	Certified	Certified	
Nevada	NV033	NV052	CA084
Washington			Certified

NEL LABORATORIES

CLIENT: Bechtel Nevada Corp.
PROJECT NAME: P.O. Box 98521, M/S NTS273
PROJECT NUMBER: PO 16874

ANALYST: SVW

METHOD: TPH in Air (C9 to C11) BY GC/FID
SAMPLE MATRIX: AIR

<u>CLIENT ID</u>	<u>NEL ID</u>	<u>DATE SAMPLED</u>	<u>RESULT µg/L</u>	<u>REPORTING LIMIT</u>	<u>DATE ANALYZED</u>
23-111/E.Well	L9711185-06	11/20/97	ND	0.2 mg/L	11/22/97
23-111/W.Well	L9711185-07	11/20/97	ND	0.2 mg/L	11/22/97

QUALITY CONTROL DATA (Total for Gasoline Range):

<u>Sample ID</u>	<u>Result</u>	<u>Acceptable Range</u>
971122-ABLK	ND	< 0.20 mg/L
971122-CCV	90% Recovery	73-121%

ND - Not Detected

SAMPLE DELIVERY GROUP: V323CLIENT: RP - JERRY BONNLABORATORY: NELFINAL REPORT RECEIVED: 12/12/97DATE REVIEWED: 12/29/97REVIEWED BY:

Carbon 10 - Carbon 20 by Gas Chromatography-Flame Ionization Detection:

MATRIX: AIRARE DATA ACCEPTABLE: YESARE CRITERIA MET

1. QC SAMPLES ACCEPTABLE	<u>YES</u>
2. MATRIX SPIKE ACCEPTABLE	<u>N/A</u>
3. METHOD BLANK ACCEPTABLE	<u>YES</u>
4. HOLDING TIMES ACCEPTABLE	<u>YES</u>

		<u># DAYS</u>	<u>ACCEPTABLE</u>
a. Date Sampled:	<u>11/20/97</u>	<u>0</u>	<u>0</u>
b. Date ASL Received:	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
c. Date Contract Lab Received:	<u>11/20/97</u>	<u>0</u>	<u>YES</u>
d. Date Analyzed:	<u>11/22/97</u>	<u>2</u>	<u>2</u>
5. CALCULATIONS ACCEPTABLE:	<u>YES</u>		
6. CORRECT CONC. UNITS USED:	<u>YES</u>		
7. FORMS ACCEPTABLE:	<u>YES</u>		
8. CHAIN-OF-CUSTODY AGREES:	<u>YES</u>		

COMMENTS: Appropriate quality assurance and quality control practices were employed. The laboratory reported the analytical method used as "TPH in Air (C9 to C11) BY GC/FID". This range was established through the analysis of a standard containing the identified carbon chain length constituents and recording of their associated retention times. The calibration curve was established through analysis of air-diesel standards prepared in the same matrix and analyzed under the same circumstances as the samples. The diesel used to prepare the standards was similar to that used for the soils analyses. Inspection of the standard chromatograms reveals that a significant portion of the diesel was volatilized and detected. If the potential contamination in the air samples was expected to be similar to that seen in samples 12-B-1/East and 12-B-1/West (similar to the diesel standards), the constituents in the air samples would have been detected.

L9711185

BECHTEL NEVADA CORPORATION

12/1

Page 1 of 1

ANALYTICAL SERVICES LABORATORY SERVICES REQUEST AND CHAIN OF CUSTODY

PROJECT INFORMATION

ORG#: 2150 Charge #: C4N-3A0DE

Project #: PO 16874 Funded by: X EM

O DP

Project Manager: Steve Nacht/ Jerry Bonn

Phone: J. Bonn 295-7341 M/S: NTS306

REPORT INFORMATION

*DATE DUE: 12-1-97 Preliminary ☐ YESReport ☐ NO

*There may be additional charges for reports due in less than the standard turnaround time. See back.

Send Report to: Ted Redding M/S: NTS273

Phone: 295-7220 Fax: 295-4773

LAB USE ONLY

SDG#: V323 12/1/97 PACKET #: W1344

SDG#: R PACKET #: R 12/1/97

Is the radioactivity level in any of these samples above typical environmental or bioassay levels?

REQUESTER'S SIGNATURE

DATE: 11/20/97

NON-RAD ANALYSIS CODES

RCRA TF = TPH - Full PH = pH
V = VOA TG = TPH - Gas IND HYGIENE
TCLP VOA TD = TPH - Diesel APC = Asb/PCM
B = BNA TO = TPH - Oil APL = Asb/PLM
TB = TCLP BNA M = Metals AT = Asb/TEM
PS = Pesticide TM = TCLP Metals PBF = Pb/filter
P = PCB C = Clor-d-tect G = Gravimetric
PSP = Pest & PCB F = Flashpoint OTHERS - SEE BACK

RAD ANALYSIS CODES

01 = TRITIUM 11 = PU OTHERS -
02 = GROSS ALPHA 13 = TH SEE
03 = GROSS BETA 22 = SR-89 BACK
04 = GAMMA (20 min) 23 = SR-90
05 = GFP 31 = GAMMA (1000 min)
07 = ISO U 33 = GAMMA (300 min)
08 = AM 93 = U NAT (KPA)

RAD MATRIX CODES (RAD MC)

SAMPLE COLLECTION LOCATION

Area 12 B Tunnel - Site Location 12-B-1

Area 9 - Site Location 9-300-1

Area 12 Site Location 12-Comm-1

ITEM	ID/DESCRIPTION	RAD MC	ANALYSIS CODES										SAMPLING		MATRIX	COMMENTS Preservative, size/volume, special analysis, count time
													DATE	TIME		
0	12-B-1/East (01)		TD										11/18/97	1400	soil	TPH using 8015M
1	12-B-1/West (02)		TD										11/18/97	1405	soil	TPH using 8015M
2	9-300-1/S (03)		TD										11/19/97	1140	soil	TPH using 8015M
3	12-Comm-1/S9 (04)		TO	TD									11/19/97	1450	soil	TPH using 8015M
	12-Comm-1/N9 (05)		TO	TD									11/19/97	1455	soil	TPH using 8015M
5	23-111/E.Well (06)												11/20/97	0830	air	C10-C20 analysis
6	23-111/W.Well (07)												11/20/97	0840	air	C10-C20 analysis
7																
8																
9																

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