Closure Report for Corrective Action Unit 326: Areas 6 and 27 Release Sites, Nevada Test Site, Nevada

UNCONTROLLED

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Revision: 1

December 2002
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In the last sentence of Section 2.1.2.1 on Page 7 of the Closure Report for Corrective Action Unit 326: Areas 6 and 27 Release Sites, Nevada Test Site, Nevada, Appendix B was incorrectly referenced. The sentence should state that “The CAU Use Restriction Information form for this area and a figure showing the survey locations and coordinates are provided in Appendix C”.

CLOSURE REPORT
FOR CORRECTIVE ACTION UNIT 326:
AREAS 6 AND 27 RELEASE SITES,
NEVADA TEST SITE, NEVADA

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

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Revision: 1
December 2002
CLOSURE REPORT
FOR CORRECTIVE ACTION UNIT 326:
AREA 6 AND 27 RELEASE SITES,
NEVADA TEST SITE, NEVADA

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

Date: 12/16/02

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

Date: 12/16/02
# TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS ........................................... vii

EXECUTIVE SUMMARY .......................................................... ix

1.0 INTRODUCTION ........................................................................ 1
  1.1 PURPOSE ........................................................................ 1
  1.2 SCOPE ........................................................................... 1
  1.3 CLOSURE REPORT CONTENTS ........................................... 3

2.0 CLOSURE ACTIVITIES .......................................................... 5
  2.1 DESCRIPTION OF CORRECTIVE ACTION ACTIVITIES .......... 5
    2.1.1 Preplanning and Site Preparation ................................ 5
    2.1.2 CAS 06-25-01: CP-1 Heating Oil Release Closure Activities ........................................... 5
      2.1.2.1 CAS 06-25-01, CP-1 Heating Oil Release Phase I Closure Activities ........................................... 5
      2.1.2.2 CAS 06-25-01, CP-1 Heating Oil Release Phase II Closure Activities ........................................... 7
    2.1.3 CAS 06-25-02, UST Release Closure Activities ............... 14
    2.1.4 CAS 06-25-04, Petroleum Release Site Closure Activities ........................................... 15
    2.1.5 CAS 27-25-01, Petroleum Release - Site Maintenance Closure Activities ........................................... 15
    2.2 DEVIATIONS FROM SAFER PLAN AS APPROVED ............... 19
    2.3 CORRECTIVE ACTION SCHEDULE AS COMPLETED ............. 19
    2.4 SITE PLAN/SURVEY PLAT .............................................. 19

3.0 WASTE DISPOSITION .......................................................... 21

4.0 CLOSURE VERIFICATION .................................................... 23
  4.1 DATA QUALITY ASSESSMENT .......................................... 23
  4.2 USE RESTRICTIONS ....................................................... 24
    4.2.1 CAS 06-25-01, CP-1 Heating Oil Release Use Restrictions ........................................... 24
      4.2.1.1 CAS 06-25-01 A Through K Evaluation ........................................... 24
    4.2.2 CAS 06-25-02, UST Release Use Restrictions ............... 26
      4.2.2.1 CAS 06-25-02, A Through K Evaluation ........................................... 27

5.0 CONCLUSIONS AND RECOMMENDATIONS ............................ 29
  5.1 CONCLUSIONS .............................................................. 29
  5.2 RECOMMENDATIONS ...................................................... 29

6.0 REFERENCES ................................................................. 31
TABLE OF CONTENTS (continued)

FIGURES

FIGURE 1 - CAU 326 CORRECTIVE ACTION SITE LOCATIONS .......................... 2
FIGURE 2 - CAS 06-25-01 SAMPLE LOCATIONS ........................................ 6
FIGURE 3 - CAS 06-25-01 BOREHOLE LOCATIONS ....................................... 10
FIGURE 4 - CAS 27-25-01 INITIAL AND SECONDARY SOIL SAMPLING
LOCATIONS ......................................................................................... 16
FIGURE 5 - CAS 27-25-01 FINAL SOIL VERIFICATION SAMPLING LOCATIONS .... 17

TABLES

TABLE 1 - TPH RESULTS FOR CAS 06-25-01 PIPELINE GEOPROBE LOCATIONS .... 8
TABLE 2 - TPH RESULTS FOR CAS 06-25-01 BOREHOLE LOCATIONS ................... 11
TABLE 3 - TPH and PCB RESULTS FOR CAS 27-25-01 VERIFICATION SAMPLES ...... 18
TABLE 4 - TPH RESULTS FOR CAS 06-25-01 SOUTHERN PIPELINE GEOPROBE
LOCATIONS .......................................................................................... 20

APPENDICES

APPENDIX A: DATA QUALITY OBJECTIVES
APPENDIX B: VERIFICATION SAMPLE ANALYTICAL RESULTS
APPENDIX C: USE RESTRICTION DOCUMENTATION
APPENDIX D: WASTE DISPOSITION DOCUMENTATION
APPENDIX E: NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
CORRESPONDENCE
APPENDIX F: NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
DOCUMENT REVIEW SHEET

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</tr>
<tr>
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<td>Bechtel Nevada</td>
</tr>
<tr>
<td>CAS</td>
<td>Corrective Action Site</td>
</tr>
<tr>
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<td>Corrective Action Unit</td>
</tr>
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<td>Control Point</td>
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<td>CR</td>
<td>Closure Report</td>
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<td>Device Assembly Facility</td>
</tr>
<tr>
<td>DOE/NV</td>
<td>U.S. Department of Energy, Nevada Operations Office</td>
</tr>
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<td>Data Quality Objective</td>
</tr>
<tr>
<td>E</td>
<td>east</td>
</tr>
<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency</td>
</tr>
<tr>
<td>ft</td>
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</tr>
<tr>
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</tr>
<tr>
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<td>inch(es)</td>
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<td>m³</td>
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<tr>
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<tr>
<td>µg/kg</td>
<td>microgram(s) per kilogram</td>
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<td>Nevada Administrative Code</td>
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<td>Nevada Division of Environmental Protection</td>
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<tr>
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</tr>
<tr>
<td>N</td>
<td>north</td>
</tr>
<tr>
<td>NS</td>
<td>Not sampled</td>
</tr>
<tr>
<td>NTS</td>
<td>Nevada Test Site</td>
</tr>
<tr>
<td>PCB</td>
<td>Polychlorinated biphenyls</td>
</tr>
<tr>
<td>ppm</td>
<td>parts per million</td>
</tr>
<tr>
<td>S</td>
<td>south</td>
</tr>
<tr>
<td>SDG</td>
<td>Sample Delivery Group</td>
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**ACRONYMS AND ABBREVIATIONS (continued)**

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</tr>
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<td>SSHASP</td>
<td>Site-Specific Health &amp; Safety Plan</td>
</tr>
<tr>
<td>TPH</td>
<td>Total Petroleum Hydrocarbons</td>
</tr>
<tr>
<td>UST</td>
<td>underground storage tank</td>
</tr>
<tr>
<td>yd³</td>
<td>cubic yard(s)</td>
</tr>
<tr>
<td>W</td>
<td>west</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Corrective Action Unit (CAU) 326 consists of four Corrective Action Sites (CAS) located in Areas 6 and 27 of the Nevada Test Site. The Nevada Test Site is located approximately 100 kilometers (62 miles) northwest of Las Vegas, Nevada. CAU 326 is listed in the Federal Facility Agreement and Consent Order (FFACO, 1996) and consists of the following CASs:

- CAS 06-25-01, CP-1 Heating Oil Release
- CAS 06-25-02, UST (Underground Storage Tank) Release
- CAS 06-25-04, Petroleum Release Site
- CAS 27-25-01, Petroleum Release Site Maintenance

CAU 326 was closed in accordance with the FFACO and the Nevada Division of Environmental Protection-approved Streamlined Approach for Environmental Restoration Plan for CAU 326: Areas 6 and 27 Release Sites, Nevada Test Site, Nevada (U.S. Department of Energy, Nevada Operations Office, 2001). CAU 326 was closed by implementing the following corrective actions:

- CAS 06-25-01 is a fuel oil release caused by a break in a heating oil pipeline. The site was closed in place administratively by determining the extent of the hydrocarbon contamination, evaluating the risk associated with the hydrocarbon contamination, and implementing use restrictions to prevent inadvertent intrusion or exposure to the contaminated soil.

- CAS 06-25-02 is a hydrocarbon release associated with an active underground storage tank (UST) (tank 6-DAF-5) located west of Building 500 at the Device Assembly Facility. This site was closed in place administratively by implementing a use restriction.

- CAS 06-25-04 was clean closed during the closure of the associated UST, tank 6-619-4. This site was closed by taking no further action.

- CAS 27-25-01 was a petroleum release site associated with fuel and oil storage and equipment maintenance activities. In addition, polychlorinated biphenyls (PCBs) at concentrations greater than regulatory limits were found onsite. This site was clean closed by the removal and disposal of PCB-impacted soils.
1.0 INTRODUCTION

This Closure Report (CR) documents the activities undertaken to close Corrective Action Unit (CAU) 326, Areas 6 and 27 Release Sites, in accordance with the Federal Facility Agreement and Consent Order (FFACO) of 1996. Site closure was performed in accordance with the Nevada Division of Environmental Protection (NDEP)-approved Streamlined Approach for Environmental Restoration Plan (SAFER) Plan for CAU 326 (U.S. Department of Energy, Nevada Operations Office [DOE/NV, 2001]). CAU 326 consists of four Corrective Action Sites (CASs), 06-25-01, 06-25-02, 06-25-04, and 27-25-01 (Figure 1).

**CAS 06-25-01** is a release site associated with an underground pipeline that carried heating oil from the heating oil underground storage tank (UST), Tank 6-CP-1, located to the west of Building CP-70 to the boiler in Building CP-1 located in the Area 6 Control Point (CP) compound. This site was closed in place administratively by implementing use restrictions.

**CAS 06-25-02** is a hydrocarbon release associated with an active heating oil UST, Tank 6-DAF-5, located west of Building 500 at the Area 6 Device Assembly Facility. This site was closed in place administratively by implementing use restrictions.

**CAS 06-25-04** was a hydrocarbon release associated with Tank 6-619-4. This site was successfully remediated when Tank 6-619-4 was removed. No further action was taken at this site.

**CAS 27-25-01** is an excavation that was created in an attempt to remove hydrocarbon-impacted soil from the Site Maintenance Yard in Area 27. Approximately 53 cubic meters (m³) (70 cubic yards [yd³]) of soil impacted by total petroleum hydrocarbons (TPH) and polychlorinated biphenyls (PCBs) was excavated from the site in August of 1994. Clean closure of this site was completed in 2002 by the excavation and disposal of approximately 160 m³ (210 yd³) of PCB-impacted soil.

1.1 PURPOSE

The purpose of this CR is to document that the closure of CAU 326 complied with all of the closure requirements detailed in the NDEP-approved SAFER Plan (DOE/NV, 2001).

1.2 SCOPE

The closure strategy for CAU 326 was specified in the NDEP-approved SAFER Plan for CAU 326 (DOE/NV, 2001). The implemented closure strategy consisted of the following activities.

**CAS 06-25-01**
- Locate and pressure test the ruptured underground heating oil pipeline.
- Collect soil samples from locations along the pipeline where the pipeline fails pressure testing to identify any additional hydrocarbon release sites.
FIGURE 1
CAU 326 CORRECTIVE ACTION SITE LOCATIONS
• Collect soil samples using a drill rig, or equivalent, to identify the lateral and vertical extent of impacted soil at locations where releases were identified along the pipeline.

• Evaluate the site using the “A through K” criteria as stated in Section 445A.227 of the Nevada Administrative Code (NAC, 2002b) and, as warranted, administratively close the site by implementing use restrictions.

CAS 06-25-02

This site will be closed administratively by implementing use restrictions and evaluate the site using an “A through K” criteria (NAC, 2002b).

CAS 06-25-04

This site has been previously closed. No further activities occurred at this site.

CAS 27-25-01

• Collect soil samples from the bottom and sides of the excavation to identify the presence or absence of TPH and PCBs.

• Excavate and dispose of any PCB-impacted soil above the action limit.

• Collect verification soil samples from the bottom and sidewalls of the Area 27 excavation to verify that all PCB soil had been removed.

• Backfill the excavation with clean material.

1.3 CLOSURE REPORT CONTENTS

This CR is divided into the following sections:

• Section 1.0 - Introduction

• Section 2.0 - Closure Activities

• Section 3.0 - Waste Disposition

• Section 4.0 - Closure Verification Results

• Section 5.0 - Conclusions and Recommendations

• Section 6.0 - References

• Appendix A - Data Quality Objectives
• Appendix B - Verification Sample Analytical Results
• Appendix C - Use Restriction Documentation
• Appendix D - Waste Disposition Documentation
• Appendix E - Nevada Division of Environmental Protection Correspondence
• Appendix F - Nevada Division of Environmental Protection Document Review Sheet
• Distribution List

The following standard FFACO CR appendices are not included in this CR because they do not apply to closure of CAU 326.

• Closure Certification - Not applicable.
• As-Built Documentation - Not applicable, no engineered structures were constructed.
• Modifications to the Post-Closure Plan - Not applicable.

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

• Field Management Plan for Corrective Action Unit 326: Areas 6 and 27 Release Sites, Nevada Test Site, Nevada, (Bechtel Nevada [BN], 2001a).
• Site-Specific Health and Safety Plan for Corrective Action Unit 326: Areas 6 and 27 Release Sites, Nevada Test Site, Nevada (BN, 2001b).
• Nevada Environmental Restoration Project, Industrial Sites Quality Assurance Project Plan, Nevada Test Site, Nevada, Revision 3 (DOE/NV, 2002).
2.0 CLOSURE ACTIVITIES

This section details the specific corrective action activities completed during the closure of CAU 326: Areas 6 and 27 Release Sites. Copies of the analytical data reports for all verification samples are included in Appendix B.

2.1 DESCRIPTION OF CORRECTIVE ACTION ACTIVITIES

2.1.1 Preplanning and Site Preparation

Closure of CAU 326 was completed using the NDEP-approved SAFER Plan (DOE/NV, 2001). Prior to beginning site closure activities, the following pre-field activities were completed:

- Preparation of National Environmental Policy Act documentation (checklist).
- Preparation of the Site-Specific Health and Safety Plan for Closure Activities at Corrective Action Unit 326: Nevada Test Site, Nevada, (BN, 2001b).
- Preparation of a BN Excavation and Penetration Permit.

The following is the scope of the closure actions implemented for CAU 326.

2.1.2 CAS 06-25-01: CP-1 Heating Oil Release Closure Activities

Closure activities were performed in two phases. Phase I closure activities were conducted in January and February of 2002 and consisted of pressure testing the pipeline and collecting soil samples for TPH field screening along the pipeline. Phase II closure activities were conducted in June of 2002 and consisted of using a drill rig to collect soil samples to define the lateral and vertical extent of the TPH contamination associated with the original pipeline break.

2.1.2.1 CAS 06-25-01, CP-1 Heating Oil Release Phase I Closure Activities

The underground heating oil pipeline runs from Tank 6-CP-1 located immediately west of the Area 6 CP fire station (Building CP-70), to Building CP-1, located inside the CP security fencing (Figure 2). The approximate location of the original heating oil release was midway between the tank and building in the CP parking lot. To determine if other breaks in the pipeline may have occurred, the pipeline was pressure tested. The area of the original break and the east end of the pipeline were excavated to expose the pipeline. The excavation measured approximately 12 by 6 meters (m) (40 by 20 feet [ft]) and was 1.4 m (4.5 ft) deep. The excavated soil was disposed...
Section Closure Activities

Date: December 2002

Break in return line at surface. Area of southern sampling.

Underground pipeline - Fencing

Approximate Extent of heating oil release site excavation

Tank 6-CP-1

Breech in pipeline

Geoprobe sample location

Borehole location

Scale

0 15 30 Meters

0 50 100 Feet

FIGURE 2
CAS 06-25-01 SAMPLE LOCATIONS
of in the Nevada Test Site (NTS) Area 6 Hydrocarbon Landfill (Section 3.0). The ends of the pipeline were cut and fitted for pressure testing. Both the west and east pipeline segments failed pressure testing. Next, the approximate midpoints of the west and the east pipeline segments were excavated, cut, and fitted for pressure testing. All four pipeline segments failed pressure testing. It was concluded that the pipeline was badly deteriorated and that the possibility of other heating oil releases along the pipeline could not be ruled out by the results of the pressure testing.

Due to the inconclusive pressure testing results, soil samples were collected along the pipeline at 6-m (20-ft) intervals using the Geoprobe® (Figure 2). The soil samples were collected at typically 0.6 m (2 ft) and 1.2-m (4-ft) depths at each location and screened for TPH using a PetroFlag® field screening test kit. Results for TPH field screening and select samples submitted for laboratory analysis are given in Table 1 (analytical results are provided in Appendix B). The results presented in Table 1 demonstrate that portions of the east and west pipeline segments are clean. Specifically, the portion of pipeline extending from the location of Borehole 7 (Figure 2) to the Tank 6-CP-1 is clean; TPH levels are less than the Nevada State Action Level of 100 milligrams per kilogram (mg/kg) (NAC, 2002a) for this segment of pipeline. Also, the portion of pipeline extending from the sample 062501-01 location, 30.6 m (102 ft) west of the CP fence, to the sample 062501-26 location, 7 m (23 ft) east of the CP fence, is clean of TPH.

Due to the close proximity of a utility corridor and associated safety concerns, Geoprobe® samples were not collected along the segment of pipeline east from Building CP-1 to the sample 062501-31 location (Figure 2). For this reason and the inconclusive pressure test results, this segment of pipeline was closed in place with administrative controls by implementing use restrictions. The area with active use restrictions is centered about the pipeline and extends 7 m (24 ft) north, and 3 m (10 ft) south of the pipeline. The width of the use restriction area was established by borehole sample results obtained at the original pipeline break (see Phase II Activities below.). The CAU Use Restriction Information form for this area and a figure showing the survey locations and coordinates are provided in Appendix B.

2.1.2.2 CAS 06-25-01, CP-1 Heating Oil Release Phase II Closure Activities

Phase II closure activities consisted of determining the lateral and vertical extent of TPH contamination present at the heating oil pipeline release location. This was accomplished by using a hollow stem auger drill rig and split spoon soil sampler to advance and sample eight boreholes. The locations of the boreholes are shown in Figure 3. Soil samples were collected from each bore hole at 1.5-m (5-ft) intervals and field screened for TPH concentrations using a PetroFlag® test kit. In addition, selected soil samples were collected and submitted to an offsite laboratory for TPH analysis. The field screening and analytical results for all borehole samples are provided in Table 2 and Appendix B.

The vertical extent of the TPH contamination was established by results of samples collected from Boreholes 1 and 2. Borehole 1 was located at the approximate location of the pipeline break 18 m (60 ft) east of the CP fence, and was advanced to a total depth of 21 m (70.25 ft) below ground surface (bgs) where refusal (bedrock) was met. Field screening samples were collected at 1.5-m (5-ft) intervals and showed TPH levels greater than the 75 mg/kg screening limit established in the CAU 326 SAFER Plan (DOE/NV, 2001) along the entire depth of the
# TABLE 1 - TPH RESULTS FOR CAS 06-25-01 PIPELINE GEOPROBE LOCATIONS

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<thead>
<tr>
<th>SAMPLE ID</th>
<th>LOCATION</th>
<th>SDG</th>
<th>SAMPLE DEPTH bgs</th>
<th>TPH(^{4}) FIELD SCREENING RESULTS</th>
<th>TPH(^{4}) LABORATORY RESULTS</th>
<th>mg/kg(^{5})</th>
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<td>Midpoint of W. segment</td>
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<td>87</td>
<td>61</td>
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<td>2</td>
<td>191</td>
<td>84</td>
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<tr>
<td>062501-05</td>
<td>N stepout of excavation</td>
<td></td>
<td>2</td>
<td>0</td>
<td>NS(^{b})</td>
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<td>062501-13</td>
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<td>&gt;2,000(^{3})</td>
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<sup>a</sup> SDG - Sample Delivery Group number  
<sup>b</sup> bgs - below ground surface  
<sup>c</sup> ft - feet  
<sup>d</sup> TPH - Total Petroleum Hydrocarbons  
<sup>e</sup> ppm - parts per million  
<sup>f</sup> TPH Laboratory analysis by Method 8015 Modified, U.S. Environmental Protection Agency (EPA) 1996.  
<sup>g</sup> mg/kg - milligrams per kilogram  
<sup>h</sup> NS - Not Sampled  
<sup>i</sup> > 2,000 indicates a TPH concentration out of calibration range, i.e., greater than the high calibration end point.
FIGURE 3
CAS 06-25-01 BOREHOLE LOCATIONS
### TABLE 2 - TPH RESULTS FOR CAS 06-25-01 BOREHOLE LOCATIONS

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**BOREHOLE NUMBER 8**

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<th>SAMPLE IDENTIFICATION</th>
<th>SDGa</th>
<th>SAMPLE DEPTH bgsb (ft(^c))</th>
<th>TPH(^d) FIELD SCREENING RESULTS (ppm(^e))</th>
<th>TPH LABORATORY RESULTSf (mg/kg(^g))</th>
</tr>
</thead>
<tbody>
<tr>
<td>326-B8-05</td>
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<td>NS</td>
</tr>
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<td>326-B8-15</td>
<td></td>
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<td>16</td>
<td>NS</td>
</tr>
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<td>326-B8-20</td>
<td>V1640</td>
<td>20</td>
<td>23</td>
<td>ND</td>
</tr>
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<td>326-B8-25</td>
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<td>326-B8-30</td>
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**BOREHOLE NUMBER 9**

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<th>SDGa</th>
<th>SAMPLE DEPTH bgsb (ft(^c))</th>
<th>TPH(^d) FIELD SCREENING RESULTS (ppm(^e))</th>
<th>TPH LABORATORY RESULTSf (mg/kg(^g))</th>
</tr>
</thead>
<tbody>
<tr>
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<td>16</td>
<td>NS</td>
</tr>
<tr>
<td>326-B9-10</td>
<td></td>
<td>10</td>
<td>6</td>
<td>NS</td>
</tr>
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<td>326-B9-15</td>
<td></td>
<td>15</td>
<td>25</td>
<td>NS</td>
</tr>
<tr>
<td>326-B9-20</td>
<td></td>
<td>20</td>
<td>15</td>
<td>NS</td>
</tr>
<tr>
<td>326-B9-25</td>
<td></td>
<td>25</td>
<td>28</td>
<td>NS</td>
</tr>
<tr>
<td>326-B9-30</td>
<td>V1640</td>
<td>30</td>
<td>46</td>
<td>ND</td>
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<td>326-B9-45</td>
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</tr>
<tr>
<td>326-B9-50</td>
<td></td>
<td>50</td>
<td>2</td>
<td>NS</td>
</tr>
</tbody>
</table>

a SDG - Sample Delivery Group number  
b bgs - below ground surface  
c ft - feet  
d TPH - Total Petroleum Hydrocarbons  
e ppm - parts per million  
f TPH Laboratory analysis by Method 8015 Modified, EPA 1996.  
g mg/kg - milligrams per kilogram  
h > 3000 indicates a TPH concentration out of calibration range, i.e., greater than high calibration end point.  
i NS - Not Sampled  
j ND - Not Detected  
k Borehole Number 6 was not drilled based on elevated TPH field screening results for Borehole 4.
borehole (Table 2). Two samples were collected from Borehole 1 and submitted for laboratory analysis; both samples showed TPH levels greater than the Nevada State Action Level of 100 mg/kg (NAC, 2002a). Borehole 2 was located 39 m (127 ft) east of the CP fence and was advanced to a total depth of 16.7 m (55 ft) bgs. Screening samples collected at 1.5-m (5-ft) intervals showed TPH present at levels greater than 75 mg/kg the entire depth of the borehole (Table 2). Three samples were collected from the borehole at 1.5 m (5 ft), 13.7 m (45 ft), and 15.2 m (50 ft) bgs and submitted for laboratory analysis. Results showed TPH levels greater than 100 mg/kg action level (NAC, 2002a) present in the sample collected from 1.5 m (5 ft) bgs. No TPH above laboratory detection limits was found in the samples collected at 13.7 m (45 ft), and 15.2 m (50 ft) bgs (Table 2). Also, Borehole 7 which was located 3 m (10 ft) east of the bend in the pipeline showed no TPH contamination at 3 m (10 ft), 4.5 m (15 ft), or 22.5 m (75 ft) bgs.

Lateral extent was established by drilling and sampling stepout boreholes. Boreholes 3 and 5 were located 3 m (10 ft) south of the pipeline (Figure 3). TPH field screening samples were collected at 1.5 m (5 ft) intervals from the boreholes. The highest TPH field screening result from the two boreholes was 272 ppm (Table 2). Samples with the highest TPH field screening results from each borehole were submitted for laboratory analysis. A total of three samples from the two boreholes were submitted for laboratory analysis. Results showed TPH concentrations less than laboratory detection limits. This indicates that TPH contamination does not extend beyond 3 m (10 ft) south of the pipeline.

Borehole 4 was located 3 m (10 ft) north of the pipeline and was advanced to 13.5 m (45 ft) bgs. Screening samples indicated moderate levels of TPH present, and no samples were submitted for laboratory analysis. Borehole 6 was not drilled based on elevated TPH field screening results in Borehole 4. A second set of stepouts, Boreholes 8 and 9, were drilled 7.2 m (24 ft) north of the pipeline (Figure 3). TPH field screening results for samples collected from both these boreholes were low, and laboratory results confirmed that these boreholes were clean of TPH contamination (Table 2). Based on the borehole sampling results, the lateral extent of the TPH contamination was bounded to an area 3 m (10 ft) south and 7.2 m (24 ft) north of the pipeline, and extending from 7 m (23 ft) east of the CP fence (the location of Geoprobe® sample 062501-26) to 50 m (167 ft) east of the CP fence (the location of Borehole 7). See Figure 3 and the CAS 06-25-01 Use Restriction information provided in Appendix C.

2.1.3 CAS 06-25-02, UST Release Closure Activities

CAS 06-25-02, UST Release, is a hydrocarbon release site associated with over filling the underground heating oil tank (Tank 6-DAF-5). The spill was reported to NDEP (Nevada Division of Emergency Management spill number H930319B) and in March of 1993 approximately 1.7 m³ (2.2 yd³) of hydrocarbon impacted soil was excavated from around the fill port of the tank (DOE/NV, 2001). In August of 1993, three boreholes were drilled to the west, south, and southeast of the spill site, and soil samples were collected for TPH analysis. Sample results were less than the Nevada State Action Level of 100 mg/kg. In March of 1995, approximately 4.5 m³ (6 yd³) of soil was removed from the area of the fill port and spill containment equipment was installed. The three borehole locations effectively bounded any TPH contamination resulting from the spill. On August 15, 2002, the site was surveyed for use restrictions. The use restrictions form for this site is located in Appendix C.
2.1.4 CAS 06-25-04, Petroleum Release Site Closure Activities

This site was closed during the removal of Tank 6-619-4 in 1998 (DOE/NV, 2001). No further action was taken at this site during this field activities. Appendix E contains a copy of the correspondence from the NDEP to DOE/NV confirming the closure of Tank 6-619-4 and that no further action is required at this site.

2.1.5 CAS 27-25-01, Petroleum Release - Site Maintenance Closure Activities

During site characterization activities conducted in 1994, TPH and PCBs were found to be present in soil at levels greater than regulatory limits (DOE/NV, 2001). As a result the site was partially remediated in August 1994 by removing approximately 53.5 m³ (70 yd³) of soil and disposing of it in the NTS Area 6 Hydrocarbon Landfill. The excavation was left fenced, but open, following these activities.

In 2002 the site was clean closed by removing and disposing of impacted soil following the NDEP-approved SAFER Plan (DOE/NV, 2001). Three separate activities were undertaken to complete the clean closure of CAS 27-25-01.

In January 2002, approximately 15.3 m³ (20 yd³) of soil that had sloughed into the existing excavation was removed from the site and five soil samples were collected from the bottom of the excavation (Figure 4). The samples were field screened for TPH using a PetroFlag® test kit, and submitted to an offsite laboratory for TPH and PCB analyses. The sample results provided in Table 3 show that TPH was not present in the soil at levels greater than the Nevada State Action Level of 100 mg/kg. However, PCBs were present at levels exceeding the action limit of 1 mg/kg. For this reason, excavation activities continued in the southwest corner, where the PCB impacted soil was detected. In March 2002, approximately 23 m³ (30 yd³) of soil was removed from the southwest corner of the excavation (Figure 4). Using the PCB sampling grid method (40 Code of Federal Regulations, Part 761, [EPA, 2000]), seven samples were collected and sent to the laboratory for PCB analysis. Two of the seven samples exceeded the PCB action limit (Table 3). In addition, as a best management practice, approximately 11 liters (L) (3 gallons [gal]) of lead shot found at the site was placed into a 19-L (5-gal) bucket and transported to Area 23 for recycling.

Excavation activities resumed in June 2002. A PCB field test kit, with a minimum detection limit of 2 ppm, was used to identify and remove the PCB impacted soil on the western wall and floor of the excavation. Approximately 100 m³ (110 yd³) of soil was removed from the western wall and floor of the excavation. After field screening indicated that soil with PCB concentrations greater than 2 ppm had been removed, ten verification samples were collected from the western wall and floor using the PCB sampling grid method (Figure 5). The samples were then analyzed for Aroclor 1248 using an onsite gas chromatograph to assure PCB levels were less than 1 ppm. Once the gas chromatograph indicated that PCB levels for the verification samples were less than 1 ppm, the samples were submitted to an offsite laboratory for PCB analysis. Laboratory results confirmed that all ten verification samples contained PCB concentrations less than the 1 mg/kg action limit (Table 3). All soil excavated from the site during closure had PCB levels less than 50 mg/kg, and was therefore disposed of in the NTS
FIGURE 4
CAS 27-25-01 INITIAL AND SECONDARY SOIL SAMPLING LOCATIONS
## TABLE 3 - TPH and PCB RESULTS FOR CAS 27-25-01 VERIFICATION SAMPLES

<table>
<thead>
<tr>
<th>SAMPLE IDENTIFICATION</th>
<th>TOTAL PETROLEUM HYDROCARBONS&lt;sup&gt;a&lt;/sup&gt; (mg/kg)&lt;sup&gt;b&lt;/sup&gt;</th>
<th>POLYCHLORINATED BIPHENYLS&lt;sup&gt;c&lt;/sup&gt; (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NDEP&lt;sup&gt;d&lt;/sup&gt; Action Level</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>TSCA&lt;sup&gt;e&lt;/sup&gt; Action Level</td>
<td>-</td>
<td>1.0</td>
</tr>
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</table>

**First Excavation January 2002**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Action Level</th>
<th>Delivery Group (SDG)</th>
<th>TPH</th>
<th>PCB</th>
</tr>
</thead>
<tbody>
<tr>
<td>272501-01</td>
<td>ND</td>
<td>V1408</td>
<td>54.79</td>
<td>-</td>
</tr>
<tr>
<td>272501-02</td>
<td>ND</td>
<td>“</td>
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<td>272501-03</td>
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<td>“</td>
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<td>272501-04</td>
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**Second Excavation March 2002**

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<th>Action Level</th>
<th>Delivery Group (SDG)</th>
<th>TPH</th>
<th>PCB</th>
</tr>
</thead>
<tbody>
<tr>
<td>272501-V01</td>
<td>NS</td>
<td>V1503</td>
<td>NS</td>
<td>0.25</td>
</tr>
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<td>0.23</td>
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<td>272501-V03</td>
<td>NS</td>
<td>“</td>
<td>NS</td>
<td>33.00</td>
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<td>272501-V04</td>
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<td>NS</td>
<td>0.35</td>
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<td>272501-V05</td>
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<td>272501-V07</td>
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<td>0.43</td>
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<td>272501-V08 (Equip. rinseate)</td>
<td>ND</td>
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<td></td>
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<tr>
<td>272501-V09 (Dup of V08)</td>
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<td>“</td>
<td>ND</td>
<td>18.00</td>
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**Third Excavation June 2002**

<table>
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<tr>
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<th>Action Level</th>
<th>Delivery Group (SDG)</th>
<th>TPH</th>
<th>PCB</th>
</tr>
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<tbody>
<tr>
<td>CAU326-V15</td>
<td>ND</td>
<td>V1624</td>
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<td>CAU326-V19</td>
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<td>NS</td>
<td>ND</td>
</tr>
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<td>“</td>
<td>NS</td>
<td>ND</td>
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<td>CAU326-V22</td>
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<td>NS</td>
<td>ND</td>
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<td>CAU326-V24</td>
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<td>“</td>
<td>NS</td>
<td>ND</td>
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<td>CAU326-V25 (Dup of V15)</td>
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<td>“</td>
<td>NS</td>
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</tr>
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<td>CAU326-V26</td>
<td>ND</td>
<td>“</td>
<td>NS</td>
<td>ND</td>
</tr>
</tbody>
</table>

<sup>a</sup>Total Petroleum Hydrocarbon analysis by Method 8015 Modified (EPA, 1996).

<sup>b</sup>mg/kg - milligrams per kilogram

<sup>c</sup>Polychlorinated biphenyls (PCBs) analysis by Method 8082 (EPA, 1996). For all samples except CAU326-V22 only Aroclor 1248 was detected. Sample CAU326-V22 showed Aroclor 1248 and 1254 (see Appendix B).

<sup>d</sup>NDEP - Nevada Division of Environmental Protection. TPH regulatory limit set in Nevada Administrative Code, 445A.2272 (NAC, 2002a).

<sup>e</sup>PCB regulatory limit of 1 mg/kg is the Toxic Substance Control Act concentration for non-restricted use established by Title 40 Code of Federal Regulations 761.61 (EPA, 2000).

<sup>f</sup>ND - Not detected for the laboratory reporting limits.

<sup>g</sup>NS - Not Sampled.
Area 9 10c Landfill. In August 2002, the open excavation was backfilled with clean fill and compacted by wheel rolling. CAS 27-25-01 has been clean closed.

2.2 DEVIATIONS FROM SAFER PLAN AS APPROVED

The following deviation occurred from the approved scope of work as presented in the NDEP-approved SAFER Plan (DOE/NV, 2002).

At the request of NNSA/NV, a second southern pipeline located south of the Area 6 CP parking lot was characterized by TPH field screening and laboratory analysis. The pipeline was broken and exposed at the surface and was found to be the “return” line from Building CP-1 to the heating oil tank (Tank 6-CP-1) (Figure 2). A surface grab sample (Pipeline 2) was collected from the area of the pipeline break and screened for TPH levels using a PetroFlag® test kit. TPH screening results were greater than the Nevada State Action Level of 100 mg/kg. Beginning at the break in the pipeline, stepout locations to north, west, and east on 3-m (10-ft) intervals were sampled using the Geoprobe® (Figure 2). The TPH field screening and laboratory results for the stepout samples are given in Table 4. Based on the sampling results an area measuring 4.5 m by 4.5 m (15 ft by 15 ft) centered about the break in the southern pipeline was closed administratively by implementing use restrictions. The CAU Use Restriction Information form and a figure showing the area closed is provided in Appendix C.

2.3 CORRECTIVE ACTION SCHEDULE AS COMPLETED

The corrective action field activities began in January 2002 and were completed in August 2002. Details of the closure field activities schedule are provided below.

CAS 27-25-01 closure activities:

- Mobilize equipment/personnel to site: January 23, 2002
- Complete first excavation and sampling: January 24, 2002
- Complete second excavation and sampling: March 26, 2002
- Complete third excavation and sampling: June 10 - 12, 2002
- Backfill excavation and demobilize site: August 19 - 21, 2002

CAS 06-25-01 closure activities:

- Mobilize equipment and personnel to site: February 4, 2002
- Geoprobe® and pressure testing pipeline: February 4 - 13, 2002
- Drilling and sampling: June 6 - 26, 2002
- Demobilize site: June 26, 2002

2.4 SITE PLAN/SURVEY PLAT

CAS 06-25-01 and 06-25-02 were closed administratively by implementing use restrictions. Figures giving the site coordinates for the Use Restrictions are provided in Appendix C. These are the only sites that required any survey work. Because engineered construction was not part of this closure, as-built drawings are not included in this CR.
### TABLE 4 - TPH RESULTS FOR CAS 06-25-01 SOUTHERN PIPELINE GEOPROBE LOCATIONS

<table>
<thead>
<tr>
<th>SAMPLE ID</th>
<th>LOCATION</th>
<th>SDG(^a)</th>
<th>SAMPLE DEPTH bgs(^b) (ft(^c))</th>
<th>TPH(^d) FIELD SCREENING RESULTS (ppm(^e))</th>
<th>TPH LABORATORY RESULTS(^f) (mg/kg(^g))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipeline2</td>
<td>Surface grab from break</td>
<td>V1429</td>
<td>0</td>
<td>&gt; 2,000(^h)</td>
<td>11,000</td>
</tr>
<tr>
<td>062501-S1</td>
<td>10 ft west of break</td>
<td>V1535</td>
<td>2</td>
<td>27</td>
<td>ND(^i)</td>
</tr>
<tr>
<td>062501-S1L</td>
<td>10 ft west of break</td>
<td>V1535</td>
<td>4</td>
<td>0</td>
<td>NS(^j)</td>
</tr>
<tr>
<td>062501-S2</td>
<td>Equipment Rinsate</td>
<td>V1535</td>
<td>-</td>
<td>-</td>
<td>ND</td>
</tr>
<tr>
<td>062501-S3</td>
<td>10 ft east of break</td>
<td>V1535</td>
<td>1.5</td>
<td>723</td>
<td>NS</td>
</tr>
<tr>
<td>062501-S3L</td>
<td>10 ft east of break</td>
<td>V1535</td>
<td>3</td>
<td>224</td>
<td>NS</td>
</tr>
<tr>
<td>062501-S4</td>
<td>3 ft south of break</td>
<td>V1535</td>
<td>2</td>
<td>246</td>
<td>4,300</td>
</tr>
<tr>
<td>062501-S4L</td>
<td>3 ft south of break</td>
<td>V1535</td>
<td>4</td>
<td>&gt; 2,000(^h)</td>
<td>NS</td>
</tr>
<tr>
<td>062501-S5</td>
<td>10 ft north of break</td>
<td>V1535</td>
<td>2</td>
<td>323</td>
<td>ND</td>
</tr>
<tr>
<td>062501-S5L</td>
<td>10 ft north of break</td>
<td>V1535</td>
<td>4</td>
<td>0</td>
<td>NS</td>
</tr>
<tr>
<td>062501-S6</td>
<td>20 ft east of break</td>
<td>V1535</td>
<td>2</td>
<td>103</td>
<td>ND</td>
</tr>
<tr>
<td>062501-S6L</td>
<td>20 ft east of break</td>
<td>V1535</td>
<td>4</td>
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<td>NS</td>
</tr>
<tr>
<td>062501-S7</td>
<td>10 ft north of break</td>
<td>V1535</td>
<td>2</td>
<td>NS</td>
<td>ND</td>
</tr>
<tr>
<td>062501-S8</td>
<td>20 ft north of break</td>
<td>V1535</td>
<td>2</td>
<td>0</td>
<td>ND</td>
</tr>
<tr>
<td>062501-S8L</td>
<td>20 ft north of break</td>
<td>V1535</td>
<td>4</td>
<td>348</td>
<td>NS</td>
</tr>
<tr>
<td>062501-S9</td>
<td>30 ft east of break</td>
<td>V1535</td>
<td>2</td>
<td>324</td>
<td>NS</td>
</tr>
<tr>
<td>062501-S9L</td>
<td>30 ft east of break</td>
<td>V1535</td>
<td>4</td>
<td>0</td>
<td>NS</td>
</tr>
<tr>
<td>062501-S10</td>
<td>3 ft south of break</td>
<td>V1535</td>
<td>1.5</td>
<td>206</td>
<td>NS</td>
</tr>
<tr>
<td>062501-S10L</td>
<td>3 ft south of break</td>
<td>V1535</td>
<td>3</td>
<td>1,624</td>
<td>NS</td>
</tr>
<tr>
<td>062501-S11</td>
<td>30 ft north of break</td>
<td>V1535</td>
<td>2</td>
<td>439</td>
<td>ND</td>
</tr>
<tr>
<td>062501-S11L</td>
<td>30 ft north of break</td>
<td>V1535</td>
<td>4</td>
<td>0</td>
<td>NS</td>
</tr>
<tr>
<td>062501-S12</td>
<td>40 ft east of break</td>
<td>V1535</td>
<td>2</td>
<td>798</td>
<td>NS</td>
</tr>
<tr>
<td>062501-S12L</td>
<td>40 ft east of break</td>
<td>V1535</td>
<td>4</td>
<td>269</td>
<td>NS</td>
</tr>
</tbody>
</table>

\(^a\) SDG - Sample Delivery Group number

\(^b\) bgs - below ground surface

\(^c\) ft - feet

\(^d\) TPH - Total Petroleum Hydrocarbons

\(^e\) ppm - parts per million

\(^f\) TPH Laboratory analysis by Method 8015 Modified, U.S. Environmental Protection Agency (EPA) 1996.

\(^g\) mg/kg - milligrams per kilogram

\(^h\) > 2,000 indicates a TPH concentration out of calibration range, i.e., greater than high calibration end point.

\(^i\) ND - Not detected at the laboratory reporting limit.

\(^j\) NS - Not Sampled.
3.0 WASTE DISPOSITION

The following types of waste were produced at CAU 326 during closure activities: hydrocarbon-impacted soil, PCB-impacted soil, lead shot, spent methanol solvent, decontamination rinseate, sanitary waste, and some construction debris. All waste was managed in accordance with state and federal regulations, U.S. Department of Energy orders, and BN procedures.

During closure activities at CAS 06-25-01, approximately 34 m³ (45 yd³) of TPH-impacted soil was removed from the site. This soil was excavated in order to expose the area of the pipeline that had ruptured. All of the soil removed from the site was transported and disposed of at the NTS Area 6 Hydrocarbon Landfill. In addition, soil/cuttings from the eight drilled boreholes that were suspected to exceed the TPH action level, were placed into six 208-L (55-gal) drums. The six drum were disposed of in the Area 6 Hydrocarbon Landfill. Waste documentation is provided in Appendix D.

During closure of CAS 27-25-01, debris, including old snow fencing, pieces of wood, and miscellaneous types of construction waste, was removed and disposed of as sanitary waste. In addition, approximately 11 L (3 gal) of lead shot was discovered and was placed into a 19-L (5-gal) bucket and sent to Building 160 in Area 23 for recycling. Approximately 160 m³ (210 yd³) of PCB-impacted soil was removed from the site and was disposed of at the Area 9 10c Landfill.

Waste methanol that was produced as a result of PetroFlag® field screening test kits was placed into the a BN-approved hazardous waste Satellite Accumulation Area in Area 23.

Waste disposition records are provided in Appendix D.
CAU 326 closure was verified by:

- **CAS 06-25-01**: A total of 13 borehole soil samples and 12 Geoprobe® soil samples were collected and analyzed to confirm PetroFlag® results and to determine the lateral and vertical extent of TPH contamination along the underground pipelines at CAS 06-25-01 (Tables 1, 2 and 4). Samples were collected using a hollow stem auger drill rig and a Geoprobe® drill rig. Appendix C provides information on the use restrictions placed upon the area, and a figure showing the extent of TPH contamination at the site.

- **CAS 27-25-01**: The removal of soil with PCB levels greater than 1 mg/kg was verified by collecting and analyzing ten verification soil samples (Table 3). Figure 5 shows the locations of the verification samples. Verification samples showed that remaining soil was below the regulatory limit for unrestricted use for PCBs. After the verification sample results were obtained, the site was backfilled with approximately 266 m³ (350 yd³) of clean fill. The five samples that were initially collected showed that TPH levels were less than the action level.

### 4.1 DATA QUALITY ASSESSMENT

CAU 326 closure activities were performed to the criteria specified in the Data Quality Objectives (DQOs) presented in the NDEP-approved SAFER Plan (DOE/NV, 2002) (Appendix A). The DQOs primary conceptual site models are considered the probable scenarios for the conditions at the two release sites. The primary conceptual model for CAS 06-25-01 assumed that the observed hydrocarbon release was the only release from the heating oil pipe, and that the preferential pathways for the hydrocarbons would be along the underground pipe and, potentially, along the upper surface of the bedrock. The primary conceptual model for CAS 27-25-01 assumed that only TPH was present at the site, and that due to the low mobility, all PCBs were removed previously.

**CAS 06-25-01**

Once closure activities were initiated, it was clear that the site more closely resembled the alternative model. The alternative model is considered less likely than the conditions outlined in the primary model. The alternative site model assumed that additional releases of hydrocarbons occurred along the pipeline. The possibility that other hydrocarbon releases had occurred along the pipeline was supported by the failure of the pipeline to hold pressure. Further site characterization of soil samples by TPH field screening and laboratory analysis showed that two segments of the pipeline were clear of TPH contamination. One segment was closed by Use Restriction because characterization samples could not be collected due to safety concerns. The lateral and vertical of TPH contamination at the area of the pipeline break was determined and use restrictions implemented. The alternate site model of CAS 06-25-01 was an accurate representation of the site, and the data collected for the site met all DQOs.

**CAS 27-25-01**

Once closure activities were initiated, it was clear that the site more closely resembled the alternate model. The alternate model is considered less likely than the conditions outlined in the
primary model. The alternative site model assumed that PCBs were present at the site. Soil sample results from the site showed this to be the case. In fact, TPH was not present at concentration greater than the Nevada State Action Level; the only COCs present at levels greater than action levels were PCBs. Field screening and laboratory results showed that soil with PCB concentrations greater than or equal to 1 mg/kg have been removed from the site. The site was clean closed. The alternate site model of CAS 27-25-01 was an accurate representation of the site, and the data collected for the site met all DQOs.

4.2 USE RESTRICTIONS

Use restrictions have been implemented at two CASs, 06-25-01 and 06-25-02. CAS 06-25-04 and 27-25-01 have been clean closed and use of the areas associated with these sites is unrestricted. Use Restriction information is provided in Appendix C.

4.2.1 CAS 06-25-01, CP-1 Heating Oil Release Use Restrictions

The extent of the TPH plumes at CAS 06-25-01 have been bounded both laterally and vertically by field screening and soil sampling. Use restrictions will be implemented at three locations for this CAS. Use restrictions were implemented at the areas around the original pipeline break located in the Area 6 CP bus parking lot, the segment of pipeline adjacent to the Building CP-1 extending east over a utility corridor, and around the exposed broken southern pipeline located between the Area 6 CP access road and the south edge of the bus parking area. The Use Restriction form and a figure showing the location of the corner points for the areas at CAS 06-25-01 are contained in Appendix C.

4.2.1.1 CAS 06-25-01 A Through K Evaluation

Based on laboratory sample results, soil with a TPH concentration exceeding the State Action Level of 100 mg/kg continues to be present at the CAS 06-25-01 release site. Under these circumstances, the NAC 445A.227 requires an evaluation of the site conditions based on 11 factors that are listed as “A through K” (NAC, 2002b). This section provides the “A through K” criteria evaluation required under NAC 445A.227 for “Contamination of Soil.”

Depth to Groundwater (A)

Ground water is approximately 420.5 m (1,380 ft) bgs. The estimated depth is taken from Plate 1 of the Summary of Hydrogeologic Controls on Ground-Water Flow at the Nevada Test Site, Nye County, Nevada (Laczniak et. al., 1996). This plate shows the major controls on regional groundwater flow at the NTS.

Distance to Irrigation or Drinking Water Wells (B)

The nearest water supply is Water Well 4, which is approximately 4.8 kilometers (km) (3 miles [mi]) southwest of the site. In 2002, the static water level was measured at 255 m (837 ft) bgs (U.S. Geological Survey, 2002).

Type of Soil that is Contaminated (C)

The site is located at the NTS in Area 6. Soil at the site consists of interbedded sand and gravel. Drilling and Geoprobe® activities showed the soil to be very tight and containing some thin, interbedded caliche layers. The bedrock consists of a very hard, competent dolomite.
Annual Precipitation (D)
The average annual precipitation at the site is approximately 17 centimeters (cm) (6.7 inches [in]). This was obtained by averaging the precipitation records over a 40-year period (1958 to 1997) for the Yucca Monitoring Station, which is located in Area 6 at the NTS.

Type of Waste or Substance Released (E)
The underground pipeline was used to carry heating oil from Tank 6-CP-1, located west of Building CP-70, to a boiler at Building CP-1.

Extent of Contamination (F)
Soil along the northern pipeline was found to be TPH-impacted for a distance of approximately 51 m (167 ft) along the pipeline (i.e., approximately 18.6 m [61 ft] to the west and 32.3 m [106 ft] to the east of the original break in the pipeline.) Samples collected to the north and south of the pipeline, near the original break, showed that impacted soil was limited to less than 3 m (10 ft) laterally to the south of the pipeline and 7.3 m (24 ft) laterally to the north of the pipeline. Samples collected by drilling at the site of the original release showed impacted soil was present to a depth of 21.5 m (70.5 ft) bgs, where refusal was met using a hollow stem auger. Bedrock is expected to be present at that depth at that location. Samples collected at a location that is downslope (for both surface and anticipated subsurface horizons) and just outside of the impacted area showed no indication of impacted soil to a depth of 30 m (95 ft) bgs.

Soil along one other segment of the northern pipeline, to the west of the original release location, is also assumed to be impacted because this segment of pipeline failed a pressure test. Samples were not collected along this segment of pipe because of the presence of numerous underground utilities in this area. The extent of impact is assumed to be similar to that near the original release location. The extent is not expected to be greater than at the original release location to the east because a surface expression of a significant release would be expected based on the pipeline having been pressurized and the soil conditions being similar.

Along the southern pipeline, the extent of TPH impacted soil was found to be less than 3 m (10 ft) laterally in each direction from the surface break in the pipeline. This extent was identified through samples collected on each side of the pipeline. Vertical extent was not identified; however, it is expected to be less than the depth of impact at the northern pipeline based on relative concentrations at the two release sites.

Present and Potential Land Use (G)
The northern and southern pipelines extend between building CP-1, an active facility, and tank 6-CP-1, which has been drained and filled with concrete. The pipeline extends underneath the CP bus parking lot. Future use at this location is expected to remain the same. A land Use Restriction will be implemented for this site upon concurrence with administrative closure for this site.

Preferred Routes of Migration (H)
The pipeline backfill served as a preferential pathway of migration for leaks along the pipeline. Surface migration of the diesel would not likely occur since most of the pipeline is covered by 0.6 m (2 ft) of soil and topped with asphalt. Any subsurface migration would be vertical migration due to gravity. The maximum extent that the diesel would reach is bedrock, as seen in
the samples collected at Borehole 1 (Table 2). The most likely route of migration then becomes subsurface migration laterally, downslope along the top of the bedrock. However, further migration of hydrocarbons in the soil is not expected because the source of hydrocarbons was removed and the pipeline is no longer used.

The site does not have an exposure pathway because almost all of the impacted soil is below the ground surface and paved with asphalt. Physical contact with impacted soil will not occur unless the soil surrounding the pipeline is excavated to a depth greater than 0.6 m (2 ft). Any impacted soil that is not located beneath asphalt has a maximum migration depth of bedrock, approximately 21 m (70 ft), and since, groundwater is located approximately 420.5 m (1,380 ft) (Laczniak et. al., 1996) bgs, there is no threat of exposure. Volatile components of diesel are expected to be minimal because observations indicate that the diesel has been present in the soil for many years. A Land Use Restriction has been completed so that personnel will be aware of the presence of heating oil in the subsurface.

Location of Structures or Impediments (I)
Samples were not collected along the western segment of the pipeline located inside the Area 6 CP fence due to the presence of numerous underground utilities.

Potential for a Hazard Related to Fire, Vapor, or Explosion (J)
The potential for fire, vapor ignition, or explosion as a result of the diesel in the subsurface soil is low. Most of the areas that have been impacted are covered with asphalt, which impedes upward migration of vapors, and the areas that are not covered by asphalt are well ventilated and are not located near any ignition sources.

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:

- The underground pipelines are no longer in use.
- Tank 6-CP-1 has been filled with concrete and cannot be used to pump diesel through the breeched pipelines.
- The site is located within the secured boundaries of the NTS. The likelihood that the site will be used for future use is very low.

4.2.2 CAS 06-25-02, UST Release Use Restrictions
Use restrictions have been implemented at this site. The area of the hydrocarbon spill was previously bounded by soil sampling and analysis. Survey located four points bounding the spill. The Use Restriction form and figure showing the location of the corner points for CAS 06-25-02 are contained in Appendix C.
4.2.2.1 CAS 06-25-02, A Through K Evaluation

Based on laboratory sample results, soil with a TPH concentration exceeding the State Action Level of 100 mg/kg continues to be present at the CAS 06-25-02 release site. Under these circumstances, the NAC 445A.227 requires an evaluation of the site conditions based on 11 factors that are listed as “A through K” (NAC, 2002b). This section provides the “A through K” criteria evaluation required under NAC 445A.227 for “Contamination of Soil.”

**Depth to Groundwater (A)**
Ground water is approximately 378 m (1,240 ft) bgs. The estimated depth is taken from Plate 1 of the Summary of Hydrogeologic Controls on Ground-Water Flow at the Nevada Test Site, Nye County, Nevada (Laczniak et. al., 1996). This plate shows the major controls on regional groundwater flow at the NTS.

**Distance to Irrigation or Drinking Water Wells (B)**
The nearest water supply is Water Well 4, which is approximately 1.6 km (1 mi) west of the site. In 2002, the static water level was measured at 255 m (837 ft) bgs (U.S. Geological Survey, 2002).

**Type of Soil that is Contaminated (C)**
The site is located at the NTS in Area 6. Soil at the site is compacted Type II construction fill, underlain by Quaternary alluvium.

**Annual Precipitation (D)**
The average annual precipitation at the site is approximately 17 cm (6.7 in). This was obtained by averaging the precipitation records over a 40-year period (1958 to 1997) for the Yucca Monitoring Station, which is located in Area 6 at the NTS.

**Type of Waste or Regulated Substance Released (E)**
Heating oil used to fill Tank 6-DAF-5.

**Extent of Contamination (F)**
Contamination is limited to the southern third of the tank backfill material plus approximately 0.6 m (2 ft) of native soil laterally and vertically. This is based on the volume of material that was released (i.e., approximately 113 L (30 gal) of heating oil) and samples collected during previous drilling activities to identify extent of impact (DOE/NV, 2001).

**Present and Potential Land Use (G)**
This site is located next to the southwest corner of Building 500. Building 500 serves as mechanical/electrical support facility to the Device Assembly Facility (DAF). Future use at the site is expected to remain the same.

**Preferred Routes of Migration (H)**
Based on the conditions and limited precipitation in the area, continued migration of the heating oil from the site is expected to be minimal. The concrete slab covering the tank will inhibit precipitation from reaching the impacted material. The most likely route of any migration would be vertical, although exposure to groundwater is not a threat since the water table is
approximately 378 m (1,240 ft) bgs. Physical contact with impacted soil should not occur unless the site is excavated.

**Location of Structures or Impediments (I)**
The tank, which continues to be used to store heating oil for the facility, serves as the primary impediment to cleanup of the site. Building 500 is located approximately 10 m (30 ft) north of the spill location.

**Potential for a Hazard Related to Fire, Vapor, or Explosion (J)**
The potential for fire, vapor ignition, or explosion as a result of the diesel in the subsurface soil is essentially nonexistent. This is supported by the low concentration of petroleum hydrocarbons detected at the time of previous excavation activities and the limited area of impacted soil.

**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:

- Impacted soil from above the tank has been removed and disposed of in a landfill for hydrocarbon-containing soil. This removes the petroleum hydrocarbon source that would drive any further migration.

- Spill and overfill protection has been installed on the tank fill port. This reduces the potential for additional releases.

- Observations and analytical results indicate that the diesel detected in the subsurface soil is the result of historic spill or overfill of the tank. The tank was upgraded with spill and overfill protection in 1995. At that time, soil was excavated to the top of the tank and backfilled with clean material. There was no indication that any of the spill or overfill systems have failed since installation.

- The site is located within the secured boundaries of the NTS. In addition, it is located within the DAF security area within the NTS. This is an active site and will continue to be used in the future.
5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

The following site closure activities were performed at CAU 326 and are documented in the report:

CAS 06-25-01
The lateral and vertical extent of the TPH contaminated soil associated with the Area 6 CP fuel pipeline has been established. Use restrictions have been implemented for the area around the break in the pipeline, the area around a segment of pipeline adjacent to Building CP-1, and for the southern pipeline located between the Area 6 CP access road and the southern edge of the Area 6 CP parking lot.

CAS 06-25-02
This site is associated with an active fuel storage tank. A Use Restriction has been implemented for the area of the fuel spill.

CAS 06-25-04
This spill site was clean closed when Tank 6-619-4 was closed. See Appendix E for a copy of the letter from NDEP acknowledging the closure of Tank 6-619-4 with no further action required.

CAS 27-25-01
160 m³ (210 yd³) of PCB-impacted soil was removed from the site and disposed of in the NTS Area 9 10c Landfill. All verification samples collected from the final excavation (samples CAU326-V15 through CAU326-V26) show that no PCBs are present in the soil at concentrations greater than the regulatory limit of 1 mg/kg. The excavation was backfilled with clean fill and graded to the original site contour. CAS 27-25-01 has been clean closed with no restrictions on the use of the site instituted.

5.2 RECOMMENDATIONS

Based on completion of site closure activities as documented by this CR, it is requested that a Notice of Completion be provided by the NDEP for CAU 326. Upon closure approval, CAU 326 will be promoted from Appendix III to Appendix IV of the FFACO (1996), "Closed Corrective Action Units."
6.0 REFERENCES

BN, see Bechtel Nevada.


EPA, see U.S. Environmental Protection Agency.

FFACO, see Federal Facility Agreement and Consent Order.


NAC, see Nevada Administrative Code.


Nevada Administrative Code. 2002b. Section 445A.227, “Contamination of Soil: Order by Director for Corrective Action; Factors to be Considered in Determining Whether Corrective Action is Required.” Carson City, NV.


APPENDIX A

DATA QUALITY OBJECTIVES
APPENDIX A
DATA QUALITY OBJECTIVES FOR CORRECTIVE ACTION UNIT 326: AREAS 6 AND 27 RELEASE SITES

The information presented is based on historical data generated from preliminary assessment activities for Corrective Action Unit (CAU) 326, at the Nevada Test Site (NTS). Data quality objective (DQO) information follow the U.S. Environmental Protection Agency (EPA) DQO guidance outline (EPA, 2000). The steps systematically build on the data acquired during preliminary assessment work and background research. Copies of the preliminary assessment work are retained in the project files.

Members of the Scoping Team and Decision Teams are as follows:

1. Scoping Team
      Janet Appenzeller-Wing
      Sabine Curtis
   b. Nevada Division of Environmental Protection (NDEP):
      Clem Goewert
      Greg Raab
   c. Bechtel Nevada (BN):
      Allison Urbon
      Don Cox
      Kraig Knapp
   d. International Technology Corporation (IT):

2. Core Decision Team
   Janet Appenzeller-Wing
   Sabine Curtis
   Allison Urbon

3. Primary Decision Makers
   Janet Appenzeller-Wing
   Sabine Curtis

1. PROBLEM STATEMENT

1.1 State the problem

Four petroleum hydrocarbon release sites have been identified that need to be properly closed. Some of the sites may have been adequately closed but have not been properly documented for closure of the site. The remaining sites may require the collection of additional data and possibly completion of remedial activities before the sites can be closed.
The following four Corrective Action Sites (CASs) are in this CAU:

- CAS 06-25-01, Control Point (CP)-1 Heating Oil Release
- CAS 06-25-02, Underground Storage Tank (UST) Release
- CAS 06-25-04, Petroleum Release Site
- CAS 27-25-01, Petroleum Release - Site Maintenance

1.2 Summarize the problem - combine the relevant background information into a concise description of the problem to be resolved and known or suspected sources of disposed waste

1.2.1 CAS 06-25-01: CP-1 Heating Oil Release (Nevada Division of Emergency Management [NDEM] #911101B)

This CAS addresses closure of the pipeline as well as any releases from the pipeline located in the Area 6 Control Point (CP) area. A known release of diesel to the surface and subsurface soil occurred from a rupture in the underground, pressurized pipe that carried heating oil (diesel) from an underground heating oil tank (Tank 6-CP-1) near Building 6-CP-70 to Building 6-CP-1, a distance of approximately 122 meters (m) (400 feet [ft]). Tank 6-CP-1 held 30,283 Liters (L) (8,000 gallons [gal]) and was installed in 1970. The tank was pumped clean and grouted closed in 1998. The pipeline is estimated to be approximately 0.6 m (2 ft) below ground surface. The release occurred approximately halfway between the two buildings in a paved parking area. Approximately 38 L (10 gal) of diesel were released to the ground surface; however, an unknown quantity of fuel was released to the subsurface soil. Soil near the rupture was sampled and found to contain 2,490 milligrams per kilogram (mg/kg) total petroleum hydrocarbons (TPH), which exceeds the 100 mg/kg state action level. Additional releases may have occurred from other portions of the piping, as may be indicated by failure of the piping to hold pressure after the known rupture had been repaired. Based on other investigations in the area, bedrock is expected to be a competent dolomite that is approximately 6 to 12 m (20 to 40 ft) below ground surface. Based on process knowledge, the Contaminant of Concern (COC) is diesel.

The lateral and vertical extent of impacted soil and the condition of buried piping that released the fuel are not known. A decision must be made of whether remediation of impacted soil is required or if impacted soil can be closed in place with implementation of a use restriction. The piping needs to be checked for closure and, if it has not been removed or filled with an inert material, the closure requirement for the pipe must be met.

1.2.2 CAS 06-25-02: UST Release (NDEM #H930319B)

Approximately 113.5 L (30 gal) of diesel were released by overfilling a heating oil tank at the Device Assembly Facility (DAF) (tank 6-DAF-5). Approximately 1.7 cubic meters (2.2 cubic yards) of impacted soil were removed at the time of the release. Soil contained 7,160 mg/kg TPH in a sample collected from excavated soil and non-detect to 261 mg/kg TPH in samples collected from the excavation, which exceeds the 100 mg/kg state action...
level. Additional samples collected from boreholes that were drilled adjacent to the tank backfill showed no indication of contamination either adjacent to the release site or at depths greater than the base of the tank backfill. Based on process knowledge, the COC is diesel.

Available information is adequate to show that the site can be properly closed through administrative closure; however, this information has not been adequately documented or presented to the State. The area that is subject to Use Restriction must be surveyed to identify the location of the remaining impacted soil.

1.2.3 CAS 06-25-04: Petroleum Release Site (no NDEM #)

This site consists of a release of used oil to the ground surface that occurred when emptying a used oil tank (Tank 6-619-4) at the Area 6 gas station. The asphalt that paved the area above the tank was cracked in numerous places. Documentation was not found that identifies either the date or quantity of the release. The asphalt and the three underground tanks that were present to the northwest of Building 6-619 were removed from the ground in March 1998. Stained soil was observed above and around the used oil tank during the closure of the tank. The stained soil was excavated, tested, and properly disposed of through the UST closure activities.

Closure for this site has already been performed, documented, and approved by the State through documentation of closure activities for UST 6-619-4.

1.2.4 CAS 27-25-01: Petroleum Release - Site Maintenance (NDEM #H940824A)

Stained soil was discovered around the base of a pad that was used by Site Maintenance to store equipment, tools, and supplies. Samples collected of the stained soil contained TPH at concentrations of 31,400 and 27,000 mg/kg as diesel and Polychlorinated Biphenyls (PCBs) at concentrations of <0.167 and 2.37 mg/kg as Aroclor 1248. Other analytical results were either less than detection levels or less than regulatory limits. Approximately 53.5 cubic meters (70 cubic yards) of impacted soil were excavated and disposed of as petroleum hydrocarbon waste. Based on observations at the completion of excavation, all of the impacted soil was not removed. Samples were not collected from the completed excavation. Based on analytical results from the most heavily impacted areas near the source of the release, the Contaminants of Potential Concern (COPCs) for this site are TPH (as diesel) and PCBs.

The concentrations of COPCs remaining in the soil and the lateral and vertical extent of impacted soil are not known. Concentrations of COPCs remaining at the site must be determined to identify if they exceed action levels. If action levels are exceeded, a decision must be made of whether remediation of impacted soil is required or if impacted soil can be closed in place with the implementation of use restrictions.
2. DEVELOP/REFINE THE CONCEPTUAL MODEL

Available information, including site process knowledge and historical background information, is sufficient to support the conceptual site models (CSM) for CAU 326. The CSMs describe the most probable scenarios for current conditions at each site and define the assumptions that are the basis for identifying appropriate sampling strategy and data collection methods.

All of the sites involve releases of petroleum hydrocarbons to surface or near-surface soil. The released substances will typically migrate downward due to gravity and will also flow downslope from the source if the soil conditions do not allow the fuel to seep in as quickly as the release is occurring. Previously disturbed ground, such as occurs along buried piping and utility corridors, will also serve as a preferential pathway. After the initial release has stopped, the fuel typically continues to migrate downward with gravity until equilibrium is reached and thereafter if additional pressure is added to the system, such as what occurs with a new release or as a result of rainfall.

2.1 Primary Models

The primary models are considered the most probable scenarios for current conditions at the CAU 326 sites. The proposed activities are based upon the assumption that only diesel- and oil-range petroleum hydrocarbons remain at the sites. All of the sites are expected to fit the basic conceptual model with minor variations caused by site-specific preferential pathways, as identified below for each individual site:

- **CAS 06-25-01, CP-1 Heating Oil Release**: The primary model assumes that the observed release of diesel was the only release from the piping. (Note: This model could be supported if the loss in pressure was caused by a valve that was not sealing properly and thus did not release product outside of the system tank system.) Preferential pathways for the released product would be along the underground pipe that is the source of the release and, if released product was substantial, along the upper surface of bedrock (see CSM for 06-25-01).

- **CAS 06-25-02, UST Release**: The preferential pathway for this site is along the fill pipe and into the tank backfill (see CSM for 06-25-02).

- **CAS 06-25-04, Petroleum Release Site**: A CSM has not been developed for this site because the release has been remediated. This site has been clean closed.

- **CAS 27-25-01, Petroleum Release - Site Maintenance**: The primary model for this site assumes that TPH (as diesel/oil) is present but, because of their low mobility, PCBs were removed during previously-conducted excavation activities (see CSM for 27-25-01). There are no identified preferential pathways for this site.
2.2 Alternate Models

The conditions under the alternate model are considered less likely than the conditions outlined in the primary model.

- **CAS 06-25-01, CP-1 Heating Oil Release**: The alternate model for this site provides for additional releases from the piping. Preferential pathways would be the same as for the primary model.

- **CAS 06-25-02, UST Release**: An alternate model has not been developed for this site because existing data show the primary model to be an adequate representation of current site conditions.

- **CAS 06-25-04, Petroleum Release Site**: An alternate model is not necessary for this site. This site has been clean closed.

- **CAS 27-25-01, Petroleum Release - Site Maintenance**: The alternate model provides for PCBs above detection limits.

3. IDENTIFY THE DECISION (Select the appropriate decision for the current phase of the site assessment process)

A SAFER Plan can be developed based on the currently available sampling data and available waste and site characterization data. The following decisions must be made to direct the planning phases.

3.1 CAS 06-25-01, CP-1 Heating Oil Release

Should the site be administratively closed in place with no remediation activities, closed in place with remediation activities, or clean closed?

3.2 CAS 06-25-02, UST Release

Are existing data sufficient to support administrative closure of the site with no further action other than implementation of a Use Restriction?

3.3 CAS 06-25-04, Petroleum Release Site

Are existing data sufficient to demonstrate clean closure of the site?

3.4 CAS 27-25-01, Petroleum Release - Site Maintenance

If PCBs are present at the site, should remedial actions be taken to satisfy Toxic Substances Control Act (TSCA) clean-up requirements?

If TPH is present in concentrations greater than action levels, should the site be
administratively closed in place with no remediation activities, closed in place with remediation activities, or clean closed?

4. IDENTIFY THE INPUTS TO THE DECISION

4.1 Identify the information inputs needed and resolve the decision.

4.1.1 CAS 06-25-01, CP-1 Heating Oil Release

a. Has the piping been properly closed? Locate both ends of the pipe and check if the pipe has been sealed.

b. Has the piping released product from areas other than the known rupture? Locate the underground piping. Collect samples from along the piping to check for evidence of other releases along the length of the pipe.

c. What is the lateral and vertical extent of the soil impacted by petroleum hydrocarbons in excess of 100 mg/kg? Collect samples to identify the lateral and vertical extent of soil that has been impacted by fuel that has been released from the piping.

d. Should the site be administratively closed in place with no remediation activities, closed in place after conducting some remediation activities, or clean closed? Evaluate the results of sampling against the A through K criteria to identify if implementation of a Use Restriction with no other actions will adequately protect human health and the environment. If results indicate that additional actions are required, then identify the actions that must be taken to adequately protect human health and the environment.

4.1.2 CAS 06-25-02, UST Release

No decision to be made. Facility is active. This site should be closed under a Use Restriction.

4.1.3 CAS 06-25-04, Petroleum Release Site

Existing documentation already describes remediation activities and clean closure of the site.

4.1.4 CAS 27-25-01, Petroleum Release - Site Maintenance

a. Identify the detection limit that should be established for PCBs. The suggested detection limit is 1 mg/kg, which is a conservative limit by the TSCA PCB regulations where the "quantifiable level/level of detection" is defined as 2 mg/kg in 40 Code of Federal Regulations Part 761.3 (EPA, 2000).
b. Are PCBs present at concentrations greater than the established detection limit? Collect samples to verify the presence or absence of PCBs.

c. Do TPH concentrations exceed the state action level of 100 mg/kg? Collect samples to identify if TPH concentrations exceed the action level.

d. What is the lateral and vertical extent of soil containing COPCs greater than the established action levels? Collect samples to identify the lateral and vertical extent of soil that has been impacted by the release.

e. Should the site be administratively closed in place with no remediation activities, closed in place after conducting some remediation activities, or clean closed?

   • If PCBs are present at concentrations greater than the established detection limit, should the site be cleaned up to meet TSCA remediation standards? Because the clean-up level for unrestricted use at PCB remediation sites is 1 mg/kg, recommend cleanup to that level.

   • For TPH impacted soil, evaluate the results of sampling against the A through K criteria to identify if implementation of a Use Restriction with no other actions will adequately protect human health and the environment. If results indicate that additional actions are required, then identify the actions that must be taken to adequately protect human health and the environment.

4.2 List types of COPCs and affected media.

The types of COPCs are:

   • Diesel fuel in soil (CAS 06-25-01, 06-25-02, and 27-25-01) and underground piping (CAS 06-25-01)
   • Oil in soil (CAS 27-25-01)
   • PCBs in soil (CAS 27-25-01)

4.3 Identify potential sampling approaches and appropriate analytical methods.

Existing documentation, data, and process knowledge are adequate to close two of the sites without collecting additional data: CAS 06-25-02 and 06-25-04. For these two sites, existing data will be referenced in the SAFER Plan and documented in the closure documentation to demonstrate adequate closure of the sites. Potential sampling approaches and analytical methods for the other two sites are as follows:

4.3.1 CAS 06-25-01, CP-1 Heating Oil Release

   a. Locate Pipeline: Locate the entire length of underground pipe. This is proposed to be done following standard buried pipeline location (e.g., Goldak equipment or similar).
b. **Check Pipeline for Proper Closure:** Check both ends of the pipe and verify if the pipe has been sealed at both ends. Some excavation may be necessary to expose the piping. If the ends of the piping are not in accessible locations (e.g., if structures have been constructed over the top of the piping), alternate locations along the pipeline may be exposed to check for grout. If the piping has not been sealed, then take measures to properly close the pipe.

c. **Check Soil Along Pipeline for Evidence of Releases:** Collect samples from soil adjacent to or beneath the piping to identify if and where releases may have occurred along the piping. Samples will be collected from as close to the piping as is practical, at a depth from 0-0.6 m (0-2 ft) below depth of the pipe. Samples to be collected every 6 m (20 ft) using Geoprobe. Alternative methods, such as excavation using backhoe or sampling using a drill rig, may be implemented as needed, depending on site conditions. Field screen the samples using the PetroFlag (or comparable) field test kit. Samples will be submitted for laboratory analysis if PetroFlag results indicate TPH concentrations greater than 75 parts per million (ppm). Laboratory analytical results will be used to determine if actual concentrations exceed the 100 mg/kg action level.

d. **Identify the lateral and vertical extent of TPH exceeding action levels:** Either using the Geoprobe or hollow-stem auger drill rig (as site conditions allow), collect samples to identify lateral and vertical extent of TPH greater than 100 mg/kg. Geoprobe/drill at locations where samples exceeded the action level and collect samples at 1.5-m (5-ft) intervals, starting with the interval 1.5 m (5 ft) below the pipeline sample. (Note: If two or more adjacent pipeline samples indicate a large plume, only that location with the highest concentration in that plume will be sampled for vertical definition.) Geoprobe/drill to a maximum depth indicating two intervals with field-screening less than 75 ppm TPH or drilling refusal, whichever occurs first.

The Geoprobe does not have the power that drilling has in penetrating tight soil; therefore, refusal by the Geoprobe will not be the limiting factor for vertical sample collection. If total depth of impacted soil is not determined, but samples at least 1.5 m (5 ft) apart are able to be collected that indicate a significant (at least 20 percent) decrease in TPH concentrations, then the results may be used to extrapolate the extent of impact.

Collect samples from step-out locations using the geoprobe/drill rig. Step-outs will be located 6 m (10 ft) perpendicularly away from the pipeline. Samples will be collected at 1.5-m (5-ft) intervals, starting at 1.5 m (5 ft) below ground surface. Additional step-outs will be drilled and sampled until field screening results indicate that the extent of petroleum hydrocarbons exceeding 100 mg/kg (i.e., 75 ppm with PetroFlag) has been identified.

Samples will be submitted for laboratory analysis using EPA Method 8015, modified for TPH-diesel (EPA, 1996). If field screening indicates the presence of TPH greater than 100 mg/kg (i.e., >75ppm with PetroFlag), then two samples will
be submitted for analysis: the sample with the highest field-screening concentration and the first sample below that indicates concentrations are less than 100 mg/kg. If field screening does not indicate TPH greater than 100 mg/kg, then only one sample will be submitted of the highest field screening result greater than 40 or, if none are greater than 40, of the sample collected from the interval where the highest concentration was detected in adjacent borehole/sampling locations. If the step-out is made to track potential migration along the bedrock, then the deepest sample before refusal is met will be submitted for analysis.

e. **Survey for Use Restriction:** Survey at least four points that will bound the area impacted with TPH and implement a Use Restriction.

### 4.3.4 CAS 27-25-01, Petroleum Release - Site Maintenance

a. **Verify the presence of TPH Greater than the action level and the absence of PCBs:** Using backhoe (or similar), collect samples from the center base and four corners of the existing excavation. Field-test for TPH using PetroFlag (or comparable). Submit for laboratory analysis using EPA Method 8015, modified for TPH-diesel/oil and EPA Method 8082 for PCBs (EPA, 1996).

b. **Identify the lateral and vertical extent of TPH exceeding action levels:** Drill and collect samples to identify lateral and vertical extent of TPH greater than 100 mg/kg. Drill at locations where samples exceeded the action level and collect samples at 1.5-m (5-ft) intervals, starting with the interval 1.5 m (5 ft) below the backhoe sample. Drill to a maximum depth indicating 2 intervals with field-screening less than 75 ppm TPH or 15 m (50 ft), whichever occurs first.

Collect samples from step-out locations using the drill rig. Step-outs will be spaced 6 m (10 ft) apart. Samples will be collected at 5-foot intervals, starting at 1.5 m (5 ft) below ground surface. Additional step-outs will be drilled and sampled until field screening results indicate that the extent of petroleum hydrocarbons exceeding 100 mg/kg (i.e., 75 ppm with PetroFlag) has been identified.

Samples will be submitted for laboratory analysis using EPA Method 8015, modified for TPH-diesel/oil (EPA, 1996). If field screening indicates the presence of TPH greater than 100 mg/kg (i.e., >75 ppm with PetroFlag), then two samples will be submitted for analysis: the sample with the highest field-screening concentration and the first sample below that indicates concentrations are less than 100 mg/kg. If field screening does not indicate TPH greater than 100 mg/kg, then only one sample will be submitted of the highest field screening result greater than 40 or, if none are greater than 40, of the sample collected from the interval where the highest concentration was detected in adjacent borehole/sampling locations.

c. **Backfill excavation:** Mark excavation location and backfill excavation.
d. **Survey for Use Restriction:** Survey at least four points that will bound the area impacted with TPH and implement a Use Restriction.

5. **DEFINE THE BOUNDARIES OF THE STUDY**

5.1 Define the geographic areas of the field investigation.

5.1.1 Define the geographic area within which all decisions must apply (in some cases this may be defined by the Corrective Action Unit)

- **CAS 06-25-01, CP-1 Heating Oil Release:** The length and location of the underground pipeline from the tank to where it was disconnected near the CP-1 boiler and 9 m (30 ft) laterally in each direction perpendicular to the piping.

- **CAS 06-25-02, UST Release:** The area identified as diesel-impacted by the conceptual model. Laterally, this consists of the southern third of the underground tank backfilled area plus an additional 0.6 m (2 ft) laterally and vertically.

- **CAS 06-25-04, Petroleum Release Site:** Not applicable - site has been closed.

- **CAS 27-25-01, Petroleum Release - Site Maintenance:** The contiguous area impacted by the release for which excavation had previously been started. This is anticipated to be no more than 15 m (50 ft) in diameter and 12 m (40 ft) deep.

5.1.2 Specify the characteristics that define the population of interest.

The population of interest consists of the following:

- Underground piping that has not been properly closed (CAS 06-25-01).
- Soil containing TPH in the diesel/oil range (diesel only for CAS 06-25-01) in concentrations greater than 100 mg/kg (CASs 06-25-01 and 27-25-01).
- Soil containing PCBs in concentrations greater than 1 mg/kg (CAS 27-25-01).

5.2 Define the time frame of the decision.

5.2.1 Determine the time frame to which the study data apply

Study data should be relevant for the length of time allowed for by the Streamlined Approach For Environmental Restoration (SAFER) process through the Federal Facilities Agreement and Consent Order (FFACO) agreement. Because the sites are located in desert areas with minimal surface water infiltration, migration (if occurring) is assumed to be imperceptibly slow. The only exception would be in the case of a new release at the active site (CAS 06-25-02).
5.2.2 Determine when to collect data.

Field activities (data collection) are anticipated to be scheduled for fiscal year 2002. Data will be collected after approval of the SAFER Plan and at times allowable for security and safety reasons, especially since several of the sites are within restricted access areas of the Nevada Test Site (NTS).

5.2.3 Define relevant time constraints.

The FFACO deadline for delivery of the final SAFER Plan is September 28, 2001.

The FFACO deadline for delivery of the final SAFER Closure Report has not been established but will depend on time constraints dictated by site access and receipt of sample analytical results. Field activities will not be performed during electrical storms, heavy winds, or during holidays.

5.3 Identify any practical constraints on data collection.

- Approval of the Data Quality Objectives (DQO) process and the SAFER Plan by the NDEP.
- Scheduled testing activities (NTS security constraints).
- Equipment and personnel access, which may be especially constrained in secure areas of the CP and DAF compounds and Area 27.
- Meteorological.
- Availability of heavy equipment.
- Health and safety of workers, especially around physical hazards such as the excavation at the CAS 27-25-01 site.

6. DEVELOP A DECISION RULE - DEFINE A LOGICAL BASIS FOR CHOOSING AMONG ALTERNATIVE ACTIONS

6.1 Specify the action level or preliminary action level for the decision.

The action level is 100 mg/kg TPH as diesel/oil and, for the Area 27 site, there is an additional action level of 1 mg/kg PCBs.

7. OPTIMIZE THE DESIGN - OUTLINE A SAMPLING DESIGN, SPECIFYING THE OPERATIONAL DETAILS OF THE SAMPLING PLAN WHICH FALLS WITHIN THE PROJECTS CONSTRAINTS

7.1 Develop general sampling and analysis design alternatives.

Refer back to Section 4.3 for sampling and analysis alternatives.
7.2 Select the most resource-effective design that satisfies all of the DQOs.

   a. Phase 1 Sampling: Sample at CAS 06-25-01 along the pipeline and at CAS 27-25-01 to verify the presence or absence of COPCs.

   b. Phase 2 Sampling: After receipt of analytical results, sample at step-out locations as identified by results of the phase 1 sampling.

   c. Survey and implement Use Restrictions after analytical results have been received and the use restricted area has been identified.

7.3 Document the operational details and theoretical assumptions of the selected design in the sampling and analysis plan.

   Detailed documentation of sampling and analysis will be discussed in the SAFER Plan.
REFERENCES


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APPENDIX B

VERIFICATION SAMPLE ANALYTICAL RESULTS
TABLE OF CONTENTS - SAMPLE ANALYTICAL RESULTS BY SAMPLE DELIVERY GROUP

Note: Analytical results are presented in this Appendix in order indicated below.

**CAS 27-25-01**
- SDG V1408: First Excavation Sample No. 272501-01...272501-05
- SDG V1503: Second Excavation Sample No. 272501-V01...272501-V09
- SDG V1624: Verification Sample No. CAU326-V15...CAU326-V26

**CAS 06-25-01**
- SDG V1429: Pipeline Sample No 062501-01...062501-13L
- SDG V1432: Pipeline Sample No 062501-22...062501-26
- SDG V1535: Southern Pipeline Sample No. 062501-S1...062501-S11
- SDG V1625: Borehole Sample No. 326-B1-10, and 326-B1-45
- SDG V1622: Borehole Sample No. 326-B2-5...326-B2-50
- SDG V1635: Borehole Sample No. 326-B3-45...326-B5-50
- SDG V1640: Borehole Sample No. 326-B7-10...326-B9-30
SAMPLE DELIVERY GROUP

V1408
26 February 2002

Mr. Theodore Redding
Bechtel Nevada Corporation
2621 Losee Road
Mail Stop NTS273
Las Vegas, NV 89030-4134

RE: Subcontract No. 30028, Task Order No. 1
Data Report for LVL Batch 0201L853
SDG#: V1408 Chain of Custody Record: None (Project CAU326)

Dear Mr. Redding:

Enclosed please find the data report for 5 soil samples received 25 January 2002 for analysis for PCBs and TPH GRO, DRO/ORO on a 28 day turnaround time. The invoice and copy of the chain of custody forms are enclosed. The EDD is also enclosed.

These data were faxed earlier and the duplicate sample was analyzed following the fax on sample 01 instead of 05 per your request.

Please do not hesitate to contact me at (610) 280-3029 with any questions or at any time we may be of service.

Very truly yours,

Lionville Laboratory Incorporated

Enclosure:
## PROJECT/CLIENT INFORMATION

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<td>ASL Prog:</td>
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<td>Wayne Johnson</td>
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<td>Phone:</td>
<td></td>
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## REPORT INFORMATION

| Send Report to: | MIKE Kuzmic | |
| Phone: | | 7260 |

## SAMPLE INFORMATION

- **Sampling Site:** Area-273 S - Metcalf Y-19
- **The samples submitted contain (check):**
  - ( ) Hazardous
  - ( ) Radioactive
  - ( ) Unknown contamination
- **If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.**

## ANALYTICAL SERVICES LABORATORY

### SERVICES REQUEST & CHAIN OF CUSTODY RECORD

#### SAMPLE INFORMATION

- **Sampling Site:** Area-273 S - Metcalf Y-19
- **The samples submitted contain (check):**
  - ( ) Hazardous
  - ( ) Radioactive
  - ( ) Unknown contamination
- **If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.**

#### LAB USE ONLY

- **Rad SGD:** V1408
- **Rad Packet:** Non-Rad SGD: V1408
- **Client Services Representative:**
- **Will these analyses be performed under a signed SOW?**
  - ( ) YES ( ) NO
  - If so, do analyses entered here agree with the SOW? ( ) YES ( ) NO ( ) N/A
  - If not, identify the variation:
  - CSR initials indicating review and approval:

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**Last ITEM**

#### SAMPLE RECEIPT INFORMATION

- **Are all sample containers received intact?**
  - ( ) Yes ( ) No
  - Comments:
- **Do the labels agree with this form?**
  - ( ) Yes ( ) No
  - Comments:
- **Was a Material Clearance Tag submitted?**
  - ( ) Yes ( ) No
  - Comments:

#### COMMENTS

- **Preservative, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.:**
  - RUN A DUPLICATE ANALYSIS FROM SAMPLE 272501-05 FOR BOTH TPH AND PCB.
  - R: 100, 25C, 6/24/02
  - (See Attached Env)

#### Transfer of samples submitted for analyses

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**LONONVILLE**

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#### Distribution

- **Original:** To be retained by laboratory performing final analysis
- **Copy 1:** To be retained by laboratory performing intermediate analysis
- **Copy 2:** To be retained by Analytical Services Laboratory
- **Copy 3:** To be retained by sampler

**BN-0732 (02/98)**
CASE NARRATIVE
Client: BECHTEL NEVADA
W.O. #: 60052-001-001-0001-00
LVL#: 0201L853
Date Received: 01-25-02

DIESEL RANGE ORGANICS

The set of samples consisted of five (5) soil samples collected on 01-23-02.

The samples and their associated QC samples were prepared on 01-29-02 and analyzed according to Lionville Laboratory OPs based on EPA Method 8015B for Diesel Range Petroleum Hydrocarbons on 01-31-02.

1. All results presented in this report are derived from samples that met LVLI's sample acceptance policy with the exception of cooler temperature, which has been recorded on the chain of custody.

2. All required holding times for extraction and analysis were met.

3. All initial calibrations associated with this data set were within acceptance criteria.

4. All continuing calibration standards analyzed prior to the sample extracts were within acceptance criteria.

5. All surrogate recoveries were within acceptance criteria.

6. All blank spike recoveries were within acceptance criteria.

Laboratory Manager
Lionville Laboratory Incorporated

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data.
GLOSSARY OF ODRO DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.
GLOSSARY OF ODRO DATA

P = This flag is used for an OLCSC target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.

C = This flag applies to a compound that has been confirmed by HPLC.
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SAMPLE DATA FOR EACH SAMPLE
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Client: BECHTEL NEVADA V1408

Matrix: SOIL
Sample wt/vol: 25.2 (g/mL) G
Level: (low/med) LOW
% Moisture: not dec. 6
Column: (pack/cap) CAP

Lab Sample ID: 0201L853-001
Lab File ID: BLKOOPPB
Date Received: 01/25/02
Date Analyzed: 01/31/02
Dilution Factor: 1.00

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12/88 Rev.
**ORGANICS ANALYSIS SHEET**

Lab Name: Lionville Labs, Inc. Work Order: 600520001001

Client: BECHTEL NEVADA V1408

Matrix: SOIL

Sample wt/vol: 25.3 (g/mL)

Level: (low/med) LOW

% Moisture: not dec. 5

Column: (pack/cap) CAP

Lab Sample ID: 0201L853-002

Lab File ID: BLK0000P

Date Received: 01/25/02

Date Analyzed: 01/31/02

Dilution Factor: 1.00

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS: (ug/L or ug/Kg)</th>
<th>ma/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>68334-30-5</td>
<td>Diesel Range Organics</td>
<td>12.4</td>
<td>U</td>
</tr>
<tr>
<td>00-00-0000</td>
<td>Motor Oil</td>
<td>12.4</td>
<td>U</td>
</tr>
</tbody>
</table>

12/88 Rev.
Lab Name: Lionville Labs, Inc. Work Order: 60052001001

Client: BECHTEL NEVADA V1408

Matrix: SOIL
Sample wt/vol: 25.1 (g/mL) G
Level: (low/med) LOW
% Moisture: not dec. 6
Column: (pack/cap) CAP

Lab Sample ID: 0201L853-003
Lab File ID: BLK000P03
Date Received: 01/25/02
Date Analyzed: 01/31/02
Dilution Factor: 1.00

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS: (ug/L or ug/Kg) mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>68334-30-5</td>
<td>Diesel Range Organics</td>
<td>14</td>
</tr>
<tr>
<td>00-00-0000</td>
<td>Motor Oil</td>
<td>14</td>
</tr>
</tbody>
</table>

12/88 Rev.
Lab Name: Lionville Labs, Inc. Work Order: 60052001001

Client: BECHTEL NEVADA V1408

Matrix: SOIL

Sample wt/vol: 25.2 (g/mL) G

Level: (low/med) LOW

% Moisture: not dec. 6

Column: (pack/cap) CAP

Lab Sample ID: 0201L853-004

Lab File ID: BLKOOPPB

Date Received: 01/25/02

Date Analyzed: 01/31/02

Dilution Factor: 1.00

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>68334-30-5</td>
<td>Diesel Range Organics</td>
<td></td>
</tr>
<tr>
<td>00-00-0000</td>
<td>Motor Oil</td>
<td></td>
</tr>
</tbody>
</table>

12/88 Rev.
Lab Name: Lionville Labs, Inc. Work Order: 60052001001

Client: BECHTEL NEVADA V1408

Matrix: SOIL

Sample wt/vol: 25.5 (g/mL)

Level: (low/med) LOW

% Moisture: not dec. 7

Column: (pack/cap) CAP

Lab Sample ID: 0201L853-005

Lab File ID: BLKOOPPB

Date Received: 01/25/02

Date Analyzed: 01/31/02

Dilution Factor: 1.00

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>68334-30-5----Diesel Range Organics</td>
<td>17</td>
<td>mg/kg</td>
</tr>
<tr>
<td>00-00-0000----Motor Oil</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

12/88 Rev.
CASE NARRATIVE
GASOLINE RANGE ORGANICS

The set of samples consisted of five (5) soil samples collected on 1-23-02

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on Method 8015B for Gasoline Range Organic (GRO) target compounds on 02-06-02.

1. All results presented in this report are derived from samples that met LVL1's sample acceptance policy with the exception of cooler temperature, which has been recorded on the chain of custody.

2. All surrogate recoveries were within acceptance criteria.

3. All blank spike recoveries were within acceptance criteria.

4. All initial calibrations associated with this data set were within acceptance criteria.

5. Due to the sample matrix, a medium level dilution was performed.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data.
GLOSSARY OF OGRO DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.
GLOSSARY OF OGRO DATA

P = This flag is used for an OGRO target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.

C = This flag applies to a compound that has been confirmed by HPLC.
OGRO DATA SUMMARY / SAMPLE QC
<table>
<thead>
<tr>
<th>Sample Information</th>
<th>RFW#</th>
<th>Matrix</th>
<th>D.F.</th>
<th>Units</th>
<th>Level</th>
<th>Fluorobenzene</th>
<th>Gasoline Range Organics (GRO)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>001</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>MED</td>
<td>77 %</td>
<td>3200 U</td>
</tr>
<tr>
<td></td>
<td>002</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>MED</td>
<td>78 %</td>
<td>3200 U</td>
</tr>
<tr>
<td></td>
<td>003</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>MED</td>
<td>80 %</td>
<td>3100 U</td>
</tr>
<tr>
<td></td>
<td>004</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>MED</td>
<td>84 %</td>
<td>3000 U</td>
</tr>
<tr>
<td></td>
<td>005</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>MED</td>
<td>84 %</td>
<td>3300 U</td>
</tr>
<tr>
<td></td>
<td>005 REF</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>MED</td>
<td>78 %</td>
<td>3300 U</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample Information</th>
<th>RFW#</th>
<th>Matrix</th>
<th>D.F.</th>
<th>Units</th>
<th>Level</th>
<th>Fluorobenzene</th>
<th>Gasoline Range Organics (GRO)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>02LVJ206-MBl</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>MED</td>
<td>89 %</td>
<td>3000 U</td>
</tr>
<tr>
<td></td>
<td>02LVJ206-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>MED</td>
<td>91 %</td>
<td>94 %</td>
</tr>
<tr>
<td></td>
<td>02LVJ206-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>MED</td>
<td>95 %</td>
<td>90 %</td>
</tr>
</tbody>
</table>

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
% = Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC
SAMPLE DATA FOR EACH SAMPLE
Lab Name: Lionville Labs, Inc. Work Order: 60052001001
Client: BECHTEL NEVADA V1408

Matrix: SOIL
Sample wt/vol: 9.84 (g/mL) G
Level: (low/med) MED
% Moisture: not dec. 6
Column: (pack/cap) CAP

Lab Sample ID: 0201L853-001
Lab File ID: BLKOOPPB
Date Received: 01/25/02
Date Analyzed: 02/06/02
Dilution Factor: 1.00

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>86290-81-5</td>
<td>Gasoline Range Organics (GRO)</td>
<td>3200 ug/L</td>
</tr>
</tbody>
</table>

12/88 Rev.
Lab Name: Lionville Labs, Inc. Work Order: 60052001001
Client: BECHTEL NEVADA V1408
Matrix: SOIL
Sample wt/vol: 9.92 (g/mL) G
Level: (low/med) MED
% Moisture: not dec. 5
Column: (pack/cap) CAP

CONCENTRATION UNITS:
CAS NO.    COMPOUND                             (ug/L or ug/Kg)  UG/KG
86290-81-5---Gasoline Range Organics (GRO)  3200  U

12/88 Rev.
Lab Name: Lionville Labs, Inc. Work Order: 60052001001
Client: BECHTEL NEVADA V1408

Matrix: SOIL
Sample wt/vol: 10.4 (g/mL) G
Level: (low/med) MED
% Moisture: not dec. ___6___
Column: (pack/cap) CAP

Lab Sample ID: 0201L853-003
Lab File ID: BLKOOPPB
Date Received: 01/25/02
Date Analyzed: 02/06/02
Dilution Factor: 1.00

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS: (ug/L or ug/Kg)</th>
<th>UG/KG</th>
</tr>
</thead>
<tbody>
<tr>
<td>86290-81-5------Gasoline Range Organics (GRO)</td>
<td>3100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12/88 Rev.
Lab Name: Lionville Labs, Inc. Work Order: 60052001001
Client: BECHTEL NEVADA V1408
Matrix: SOIL
Sample wt/vol: 10.6 (g/mL)
Level: MED
% Moisture: not dec. 6
Column: CAP
Lab Sample ID: 0201L853-004
Lab File ID: BLKOOPPB
Date Received: 01/25/02
Date Analyzed: 02/06/02
Dilution Factor: 1.00

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS (ug/L or ug/Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>86290-81-5-------Gasoline Range Organics (GRO)</td>
<td>3000 U</td>
<td></td>
</tr>
</tbody>
</table>

12/88 Rev.
Lab Name: Lionville Labs, Inc. Work Order: 60052001001
Client: BECHTEL NEVADA V1408
Matrix: SOIL
Sample wt/vol: 9.88 (g/mL) G
Level: (low/med) MED
% Moisture: not dec. 7
Column: (pack/cap) CAP
Lab Sample ID: 0201L853-005
Lab File ID: BLKOOPPP
Date Received: 01/25/02
Date Analyzed: 02/06/02
Dilution Factor: 1.00

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS: (ug/L or ug/Kg)</th>
<th>UG/KG</th>
</tr>
</thead>
<tbody>
<tr>
<td>86290-81-5</td>
<td>Gasoline Range Organics (GRO)</td>
<td>3300</td>
<td>U</td>
</tr>
</tbody>
</table>

12/88 Rev.
Lab Name: Lionville Labs, Inc. Work Order: 60052001001

Client: BECHTEL NEVADA V1408

Matrix: SOIL

Sample wt/vol: 9.67 (g/mL)

Level: MED

% Moisture: not dec. 7

Column: CAP

Lab Sample ID: 0201L853-005 REP

Lab File ID: BLKOOPPB

Date Received: 01/25/02

Date Analyzed: 02/06/02

Dilution Factor: 1.00

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>86290-81-5</td>
<td>Gasoline Range Organics (GRO)</td>
<td>3300 UG/KG</td>
</tr>
</tbody>
</table>

12/88 Rev.
PCB

The set of samples consisted of five (5) soil samples collected on 01-23-02.

The samples and their associated QC samples were extracted on 01-29-02, 02-06-02, and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 02-09, 10, 12-02. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082 for Aroclors only.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVLI's sample acceptance policy with the exception of cooler temperature, which has been recorded on the chain of custody.

2. All required holding times for extraction and analysis have been met.

3. The samples and their associated QC samples received a sulfuric acid cleanup.

4. All method blanks were below the reporting limits for all target compounds.

5. All obtainable surrogate recoveries were within acceptance criteria.

6. All blank spike recoveries were within acceptance criteria.

7. Most samples required instrument dilutions due to the high concentrations of target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.

8. All initial calibrations associated with this data set were within acceptance criteria.

9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data.
GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.
GLOSSARY OF PESTICIDE/PCB DATA

P  =  This flag is used for a PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

D  =  This flag identifies all compounds identified in an analysis at a secondary dilution factor.

C  =  This flag applies to a compound that has been confirmed by GC/MS.
DATA SUMMARY / SAMPLE QC
### Sample Information

<table>
<thead>
<tr>
<th>RFW#</th>
<th>Matrix</th>
<th>D.F.</th>
<th>Units</th>
<th>Surrogate: Tetrachloro-m-xylene</th>
<th>Decachlorobiphenyl</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>SOIL</td>
<td>100</td>
<td>UG/KG</td>
<td>D % 95 % 95 %</td>
<td>D % 95 %</td>
</tr>
<tr>
<td>002</td>
<td>SOIL</td>
<td>5.00</td>
<td>UG/KG</td>
<td>D % 98 % 97 %</td>
<td>D % 98 %</td>
</tr>
<tr>
<td>003</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>103 % 103 %</td>
<td></td>
</tr>
<tr>
<td>004</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>101 % 101 %</td>
<td></td>
</tr>
<tr>
<td>005</td>
<td>SOIL</td>
<td>5.00</td>
<td>UG/KG</td>
<td>180 U 180 U</td>
<td>33 U 33 U</td>
</tr>
<tr>
<td>02LE0092-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>360 U 360 U</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>180 U 180 U</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>33 U</td>
<td></td>
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<tr>
<td></td>
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<td>1.00</td>
<td>UG/KG</td>
<td>33 U</td>
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<tr>
<td></td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>33 U</td>
<td></td>
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<tr>
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<td>UG/KG</td>
<td>33 U</td>
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<tr>
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<tr>
<td></td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>33 U</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>33 U</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>33 U</td>
<td></td>
</tr>
</tbody>
</table>

### Analyzed Compounds

<table>
<thead>
<tr>
<th>Sample Information</th>
<th>RFW#</th>
<th>Matrix</th>
<th>D.F.</th>
<th>Units</th>
<th>Tetrachloro-m-xylene</th>
<th>Decachlorobiphenyl</th>
</tr>
</thead>
<tbody>
<tr>
<td>02LE0092-MB1</td>
<td>02LE0092-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>100 % 75 % 90 % 90 %</td>
<td>104 % 78 % 93 % 93 %</td>
</tr>
<tr>
<td>02LE0136-MB1</td>
<td>02LE0136-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>100 % 75 % 90 % 90 %</td>
<td>104 % 78 % 93 % 93 %</td>
</tr>
<tr>
<td>02LE0136-MB1</td>
<td>02LE0136-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>100 % 75 % 90 % 90 %</td>
<td>104 % 78 % 93 % 93 %</td>
</tr>
<tr>
<td>02LE0136-MB1</td>
<td>02LE0136-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>100 % 75 % 90 % 90 %</td>
<td>104 % 78 % 93 % 93 %</td>
</tr>
<tr>
<td>02LE0136-MB1</td>
<td>02LE0136-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>100 % 75 % 90 % 90 %</td>
<td>104 % 78 % 93 % 93 %</td>
</tr>
<tr>
<td>02LE0136-MB1</td>
<td>02LE0136-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>100 % 75 % 90 % 90 %</td>
<td>104 % 78 % 93 % 93 %</td>
</tr>
<tr>
<td>02LE0136-MB1</td>
<td>02LE0136-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>100 % 75 % 90 % 90 %</td>
<td>104 % 78 % 93 % 93 %</td>
</tr>
<tr>
<td>02LE0136-MB1</td>
<td>02LE0136-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>100 % 75 % 90 % 90 %</td>
<td>104 % 78 % 93 % 93 %</td>
</tr>
<tr>
<td>02LE0136-MB1</td>
<td>02LE0136-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>100 % 75 % 90 % 90 %</td>
<td>104 % 78 % 93 % 93 %</td>
</tr>
<tr>
<td>02LE0136-MB1</td>
<td>02LE0136-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>100 % 75 % 90 % 90 %</td>
<td>104 % 78 % 93 % 93 %</td>
</tr>
<tr>
<td>02LE0136-MB1</td>
<td>02LE0136-MB1</td>
<td>SOIL</td>
<td>1.00</td>
<td>UG/KG</td>
<td>100 % 75 % 90 % 90 %</td>
<td>104 % 78 % 93 % 93 %</td>
</tr>
</tbody>
</table>

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.

* Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC
SAMPLE DATA FOR EACH SAMPLE
**PESTICIDE ORGANICS ANALYSIS SHEET**

**Lab Name:** Lionville Labs, Inc.  **Work Order:** 60052001001

**Client:** BECHTEL NEVADA V1408

**Matrix:** SOIL  
**Sample wt/vol:** 30.1 (g/mL) G  
**Lab Sample ID:** 0201L853-001

**Sample wt/vol:** 30.1 (g/mL) G  
**Lab File ID:** 02110235.15

**Level:** (low/med) LOW  
**% Moisture:** not dec. 6 dec.

**Extraction:** (SepF/Cont/Sonc) N/A  
**Date Received:** 01/25/02

**Date Extracted:** 01/29/02

**Date Analyzed:** 02/12/02

**GCN Cleanup:** (Y/N) N  
**pH:** 7.0  
**Dilution Factor:** 100

<table>
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<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS (ug/L or ug/Kg)</th>
<th>UG/KG</th>
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<tbody>
<tr>
<td>12674-11-2</td>
<td>Aroclor-1016</td>
<td>3500</td>
<td>U</td>
</tr>
<tr>
<td>11104-28-2</td>
<td>Aroclor-1221</td>
<td>7000</td>
<td>U</td>
</tr>
<tr>
<td>11141-16-5</td>
<td>Aroclor-1232</td>
<td>3500</td>
<td>U</td>
</tr>
<tr>
<td>53469-21-9</td>
<td>Aroclor-1242</td>
<td>3500</td>
<td>U</td>
</tr>
<tr>
<td>12672-29-6</td>
<td>Aroclor-1248</td>
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<td></td>
</tr>
<tr>
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<td>Aroclor-1254</td>
<td>3500</td>
<td>U</td>
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<td>11096-82-5</td>
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</tbody>
</table>

**FORM 1 PEST**  
12/88 Rev.
Lab Name: Lionville Labs, Inc. Work Order: 60052001001

Client: BECHTEL NEVADA V1408

Matrix: SOIL Lab Sample ID: 0201L853-002

Sample wt/vol: 30.6 (g/mL) G Lab File ID: 02110235.16

Level: LOW Date Received: 01/25/02

% Moisture: not dec. 5 dec. Date Extracted: 01/29/02

Extraction: N/A Date Analyzed: 02/12/02

GPC Cleanup: N pH: 7.0 Dilution Factor: 5.00

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(ug/L or ug/Kg) UG/KG</td>
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<tr>
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<td>53469-21-9</td>
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<td>170 U</td>
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<td>12672-29-6</td>
<td>Aroclor-1248</td>
<td>710 U</td>
</tr>
<tr>
<td>11097-69-1</td>
<td>Aroclor-1254</td>
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</tr>
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<td>11096-82-5</td>
<td>Aroclor-1260</td>
<td>170 U</td>
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FORM 1 PEST 12/88 Rev.
<table>
<thead>
<tr>
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<td>U</td>
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<td>U</td>
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<td>11097-69-1</td>
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<td>35</td>
<td>U</td>
</tr>
<tr>
<td>11096-82-5</td>
<td>Aroclor-1260</td>
<td>35</td>
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</tbody>
</table>
**PESTICIDE ORGANICS ANALYSIS SHEET**

Lab Name: Lionville Labs, Inc. Work Order: 60052001001

Client: BECHTEL NEVADA V1408

Matrix: SOIL

Sample wt/vol: 30.0 (g/mL) G

Level: (low/med) LOW

% Moisture: not dec. 6 dec.

Extraction: (SepF/Cont/Sonc) N/A

GPC Cleanup: (Y/N) N

Lab Sample ID: 0201L853-004

Lab File ID: 02080235.31

Date Received: 01/25/02

Date Extracted: 01/29/02

Date Analyzed: 02/09/02

Dilution Factor: 1.00

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS:</th>
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</thead>
<tbody>
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<td>(ug/L or ug/Kg)</td>
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<td>UG/KG</td>
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<td>35</td>
<td>U</td>
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<tr>
<td>11104-28-2------Aroclor-1221</td>
<td>71</td>
<td>U</td>
</tr>
<tr>
<td>11141-16-5------Aroclor-1232</td>
<td>35</td>
<td>U</td>
</tr>
<tr>
<td>53469-21-9------Aroclor-1242</td>
<td>35</td>
<td>U</td>
</tr>
<tr>
<td>12672-29-6------Aroclor-1248</td>
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<td>11097-69-1------Aroclor-1254</td>
<td>35</td>
<td>U</td>
</tr>
<tr>
<td>11096-82-5------Aroclor-1260</td>
<td>35</td>
<td>U</td>
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</table>

**FORM 1 PEST**

12/88 Rev.
**Lab Name:** Lionville Labs, Inc.  **Work Order:** 6005200100

**Client:** BECHTEL NEVADA V1408

**Matrix:** SOIL  **Lab Sample ID:** 0201L853-005

**Sample wt/vol:** 30.2 (g/mL)  **Lab File ID:** 02110235.17

**Level:** (low/med) LOW  **Date Received:** 01/25/02

**% Moisture:** not dec. 7 dec.  **Date Extracted:** 01/29/02

**Extraction:** (SepF/Cont/Sonc) N/A  **Date Analyzed:** 02/12/02

**GPC Cleanup:** (Y/N) N  **pH:** 7.0  **Dilution Factor:** 5.00

**CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG**

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>COMPOUND</th>
<th>CONCENTRATION UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12674-11-2</td>
<td>Aroclor-1016</td>
<td>180 U</td>
</tr>
<tr>
<td>11104-28-2</td>
<td>Aroclor-1221</td>
<td>360 U</td>
</tr>
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<td>11141-16-5</td>
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<td>180 U</td>
</tr>
<tr>
<td>53469-21-9</td>
<td>Aroclor-1242</td>
<td>180 U</td>
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<td>12672-29-6</td>
<td>Aroclor-1248</td>
<td>540 U</td>
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<tr>
<td>11097-69-1</td>
<td>Aroclor-1254</td>
<td>180 U</td>
</tr>
<tr>
<td>11096-82-5</td>
<td>Aroclor-1260</td>
<td>180 U</td>
</tr>
</tbody>
</table>

**FORM 1 PEST 12/88 Rev.**
# TIER I REVIEW

## GENERAL INFORMATION

1. Project Name and/or Sample Delivery Group (SDG): 1/4/08
2. Date Samples taken: 1/23/02

<table>
<thead>
<tr>
<th>SAMPLE NUMBER</th>
<th>DATE RECEIVED</th>
<th>DATE ANALYZED</th>
</tr>
</thead>
<tbody>
<tr>
<td>272501-01</td>
<td>1/25/02</td>
<td></td>
</tr>
<tr>
<td>272501-02</td>
<td></td>
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</tr>
<tr>
<td>272501-03</td>
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<td>272501-04</td>
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<tr>
<td>272501-05</td>
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<td></td>
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</tbody>
</table>
3. Date of Review: 6/20/02

4. Chain of Custody (COC):
   Completed? ☑ Yes  ☐ No  Legible? ☑ Yes  ☐ No

5. Is a cover letter/case narrative attached? ☑ Yes  ☐ No
   If 'yes,' has it been reviewed for significant problems? ☑ Yes  ☐ No  ☑ NA

   Comments: Coolers arrived too warm. No other problems reported.

6. Analyses requested (Attach COC, Sample Request Form, and lab data packet to this review):
   ☑ Total VOCs  ☐ Total BNA  ☐ Total Metals  ☐ Radionuclides
   ☑ TCLP VOCs  ☐ TCLP BNA  ☐ TCLP Metals  ☑ TPH  ☑ PCBs  ☑ Other:

7. Were all requested analyses performed on all samples? ☑ Yes  ☐ No

8. Temperature on cooler: 7±5°C (parameters: 4°C ±2°C) or ☐ NA

10. Refer to Table 1. Was the proper preservation used? ☑ Yes  ☐ No  ☑ NA
    If 'no,' then explain:
## POLYCHLORINATED BIPHENYLS (PCB)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>EXTRACTION HOLD TIME</th>
<th>ANALYSIS HOLD TIME</th>
<th>DAYS HELD</th>
<th>PASS Y/N</th>
<th>SAMPLES NOT PASSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCB Compounds EPA Method 8082</td>
<td>Liquids - 7 days, Soils - 14 days, Oil - 14 days</td>
<td>NA</td>
<td>6 to 14</td>
<td>Y</td>
<td>-</td>
</tr>
<tr>
<td>PCB Compounds EPA Method 8082</td>
<td>NA</td>
<td>Liquids - 40 days, Soils - 40 days, Oil - 40 days</td>
<td>3 to 14</td>
<td>Y</td>
<td>-</td>
</tr>
</tbody>
</table>

Comments:

Were digestions done within the hold time limit? ☑ Yes  ☐ No

Were analyses run within the hold time limit? ☑ Yes  ☐ No

A. PCB reported as: ☐ mg/L  ☐ ug/L (liquids)  ☑ ug/kg (solids)  Other:

B. Hits above detection level found in LB, RBS, FB, RB, or other QA samples? ☐ Yes  ☑ No
   If 'yes,' explain:

C. Did laboratory report indicate any problems? ☐ Yes  ☑ No
   If 'yes,' explain:
# TOTAL PETROLEUM HYDROCARBONS (TPH)

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>EXTRACTION HOLD TIME</th>
<th>ANALYSIS HOLD TIME</th>
<th>DAYS HELD</th>
<th>PASS Y/N</th>
<th>SAMPLES NOT PASSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total TPH EPA Method 8015M or 8015B</td>
<td>Liquids - 14 days Soils - 14 days Oil - 14 days</td>
<td>NA</td>
<td>6</td>
<td>Y</td>
<td>-</td>
</tr>
<tr>
<td>Total TPH EPA Method 8015M or 8015B</td>
<td>NA</td>
<td>Liquids - 40 days Soils - 40 days Oil - 40 days</td>
<td>2</td>
<td>Y</td>
<td>-</td>
</tr>
</tbody>
</table>

Comments:

Was TPH digestion done within the hold time limit? ☑ Yes ☐ No

Were analyses run within the hold time limit? ☑ Yes ☐ No

A. TPH reported as: ☑ mg/Kg ☐ ug/Kg Other:

B. Hits above detection level found in LB, RBS, FB, RB, or other QA samples? ☐ Yes ☑ No
   If ‘yes,’ explain:

C. Did laboratory report indicate any problems? ☐ Yes ☑ No
   If ‘yes,’ explain:
SUMMARY

Laboratory log-in report check for completeness and errors: Yes ☑ No ☑

Are all field forms present and complete? Yes ☑ No ☑

Does the report forms inventory include all CLP or CLP-like forms? Yes ☑ No ☑

Are the reporting levels at the appropriate level? Yes ☑ No ☑

If 'no,' list the exceptions below:

<table>
<thead>
<tr>
<th>SAMPLE ID</th>
<th>PARAMETER/ANALYSIS</th>
<th>REPORTING LEVELS</th>
<th>ACTUAL LEVEL</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Was the sample count/type consistent with the COC? Yes ☑ No ☑

Were the results reported for both the field and laboratory QC samples? Yes ☑ No ☑

Is the analysis count/type consistent with the COC? Yes ☑ No ☑

Was the correct sample matrix used for each sample? Yes ☑ No ☑

Certificates of Analysis (COAs) checked for completeness? Yes ☑ No ☑ N/A

Condition-upon-receipt variance form included? Yes ☑ No ☑ N/A

Did the deliverable meet the overall objectives of the project? Yes ☑ No ☑

Are all signatures in place? On COC? Yes ☑ No ☑ On Data pkg.? Yes ☑ No ☑

Explanation for any problems:
18. Overall Comments:

19. Reviewed by:  

Kraig Kragg  

Date: 6/20/02  

Signature:  

20. Task Manager or TPO  

Date:  

Signature:
SAMPLE DELIVERY GROUP

V1503
THIS PAGE INTENTIONALLY LEFT BLANK
Dear Ted Redding:

NEL Laboratories, Las Vegas received 9 samples on 3/27/02 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications unless noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

St Van Wagenen
Laboratory Manager

Certifications:

Reno Las Vegas
Arizona AZ0520 AZ0518
California 1707 2002
Idaho Certified Certified
Montana Certified Certified
Nevada NV033 NV052
New Mexico Certified Certified
US Army Corps of Engineers Certified
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Result</th>
<th>Unit</th>
<th>Limit</th>
<th>DF</th>
<th>Method</th>
<th>Prep Date</th>
<th>Analyzed</th>
<th>Analyst</th>
</tr>
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<tbody>
<tr>
<td>Aroclor 1016</td>
<td>ND</td>
<td>µg/Kg</td>
<td>20</td>
<td>1</td>
<td>SW8082</td>
<td>03/29/02</td>
<td>04/02/02</td>
<td>JRW-LV</td>
</tr>
<tr>
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<td>µg/Kg</td>
<td>20</td>
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<td>SW8082</td>
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<td>04/02/02</td>
<td>JRW-LV</td>
</tr>
<tr>
<td>Aroclor 1232</td>
<td>ND</td>
<td>µg/Kg</td>
<td>20</td>
<td>1</td>
<td>SW8082</td>
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<td>04/02/02</td>
<td>JRW-LV</td>
</tr>
<tr>
<td>Aroclor 1242</td>
<td>ND</td>
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<tr>
<td>Aroclor 1260</td>
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<td>µg/Kg</td>
<td>20</td>
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<td>04/02/02</td>
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<tr>
<td>Surr: Tetrachloro-m-xylene</td>
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<td>%REC</td>
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<tr>
<td>Surr: Decachlorobiphenyl</td>
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<td>SW8082</td>
<td>03/29/02</td>
<td>04/02/02</td>
<td>JRW-LV</td>
</tr>
</tbody>
</table>

**Report Limits**
- ND - Not Detected at the Reporting Limit
- DF - Dilution Factor

**Date:** 05-Apr-02

**Legend:**
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- E - Value above quantitation range
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Result</th>
<th>Unit</th>
<th>Reporting Limit</th>
<th>DF</th>
<th>Method</th>
<th>Prep Date</th>
<th>Analyzed</th>
<th>Analyst</th>
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<tbody>
<tr>
<td>Aroclor 1016</td>
<td>ND</td>
<td>μg/Kg</td>
<td>20</td>
<td>1</td>
<td>SW8082</td>
<td>03/29/02</td>
<td>04/02/02</td>
<td>JRW-LV</td>
</tr>
<tr>
<td>Aroclor 1221</td>
<td>ND</td>
<td>μg/Kg</td>
<td>20</td>
<td>1</td>
<td>SW8082</td>
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<td>04/02/02</td>
<td>JRW-LV</td>
</tr>
<tr>
<td>Aroclor 1232</td>
<td>ND</td>
<td>μg/Kg</td>
<td>20</td>
<td>1</td>
<td>SW8082</td>
<td>03/29/02</td>
<td>04/02/02</td>
<td>JRW-LV</td>
</tr>
<tr>
<td>Aroclor 1242</td>
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<td>20</td>
<td>1</td>
<td>SW8082</td>
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<td>04/02/02</td>
<td>JRW-LV</td>
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<tr>
<td>Aroclor 1248</td>
<td>230</td>
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<td>04/02/02</td>
<td>JRW-LV</td>
</tr>
<tr>
<td>Aroclor 1254</td>
<td>ND</td>
<td>μg/Kg</td>
<td>20</td>
<td>1</td>
<td>SW8082</td>
<td>03/29/02</td>
<td>04/02/02</td>
<td>JRW-LV</td>
</tr>
<tr>
<td>Aroclor 1260</td>
<td>ND</td>
<td>μg/Kg</td>
<td>20</td>
<td>1</td>
<td>SW8082</td>
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<td>04/02/02</td>
<td>JRW-LV</td>
</tr>
<tr>
<td>Surr: Tetrachloro-m-xylene</td>
<td>82.0</td>
<td>%REC</td>
<td>48-136</td>
<td>1</td>
<td>SW8082</td>
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<td>04/02/02</td>
<td>JRW-LV</td>
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<tr>
<td>Surr: Decachlorobiphenyl</td>
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<td>1</td>
<td>SW8082</td>
<td>03/29/02</td>
<td>04/02/02</td>
<td>JRW-LV</td>
</tr>
</tbody>
</table>

ND - Not Detected at the Reporting Limit
DF - Dilution Factor
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
E - Value above quantitation range
### Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Result</th>
<th>Unit</th>
<th>Reporting Limit</th>
<th>DF</th>
<th>Method</th>
<th>Prep Date</th>
<th>Analyzed</th>
<th>Analyst</th>
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</thead>
<tbody>
<tr>
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<td>ND</td>
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<td>04/02/02</td>
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<tr>
<td>Aroclor 1221</td>
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<tr>
<td>Aroclor 1232</td>
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ND - Not Detected at the Reporting Limit  
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**Date:** 05-Apr-02  

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S - Spike Recovery outside accepted recovery limits  
E - Value above quantitation range
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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 05-Apr-02

Page 4 of 9
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- **ND** - Not Detected at the Reporting Limit
- **DF** - Dilution Factor
- **B** - Analyte detected in the associated Method Blank
- **S** - Spike Recovery outside accepted recovery limits
- **E** - Value above quantitation range

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E - Value above quantitation range
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**Reporting Limit**

- ND: Not Detected at the Reporting Limit
- DF: Dilution Factor
- SW8082: Method
- Prep Date: Preparation Date
- Analyzed: Analysis Date
- Analyst: Analyst Name

**Results**

- Aroclor 1016: ND
- Aroclor 1221: ND
- Aroclor 1232: ND
- Aroclor 1242: ND
- Aroclor 1248: ND
- Aroclor 1254: ND
- Aroclor 1260: ND
- Tetrachloro-m-xylene: 121 %REC
- Decachlorobiphenyl: 118 %REC

**Notes**

- B: Analyte detected in the associated Method Blank
- S: Spike Recovery outside accepted recovery limits
- E: Value above quantitation range

**Date:** 05-Apr-02
# Analytical QC Summary Report

**Sample ID:** MB-214  
**SampType:** MBLK  
**TestCode:** 8082_s  
**Units:** μg/Kg  
**Prep Date:** 3/29/02  
**Run ID:** L_ECD-1_020402n  
**Analysis Date:** 4/2/02

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Qualifiers:  
- **ND** - Not Detected at the Reporting Limit  
- **C** - Unspiked sample >5 times the amount spiked  
- **B** - Analyte detected in the associated Method Blank  
- **JI** - MS or MSD outside acceptance limits. LCS acceptable  
- **R** - RPD outside accepted recovery limits  
- **J** - This concentration is considered an estimate due to LCS failure.
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Qualifiers:  
ND - Not Detected at the Reporting Limit  
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J1 - MS or MSD outside acceptance limits. LCS acceptable.  
R - RPD outside accepted recovery limits  
J - This concentration is considered an estimate due to LCS failure.

Date: 05-Apr-02
### ANALYTICAL QC SUMMARY REPORT

#### 8082_w Test Method: SW8082

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Page 3 of 3

Date: 05-Apr-02
ANALYTICAL SERVICES LABORATORY
SERVICES REQUEST & CHAIN OF CUSTODY RECORD

PROJECT/CLIENT INFORMATION

Send Report to: Mike Kruzic

REPORT INFORMATION

ANALYSES & METHOD

SAMPLE INFORMATION

ANALYTICAL SERVICES LABORATORY

PROJECT/CLIENT INFORMATION

Send Report to: Mike Kruzic

REPORT INFORMATION

ANALYSES & METHOD

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REPORT INFORMATION

ANALYSES & METHOD

SAMPLE INFORMATION
**ANALYTICAL SERVICES LABORATORY**

**SERVICES REQUEST & CHAIN OF CUSTODY RECORD**

**PROJECT/CLIENT INFORMATION**
- Project: CAU326
- BN Org#: A435
- Send Report to: Mike Kruzic
- Phone: 502-295-7346
- Fax: 502-295-7741
- WS: ANL 306

**REPORT INFORMATION**
- Turnaround: 15 days
- Standard: 30 days Non-rad, 60 Days Rad, Other:
- Final report format: ( ) Standard ( ) NTS-WAC ( ) Other:

**SAMPLE INFORMATION**
- Samples submitted contain: (check)
  - ( ) Hazardous ( ) Radioactive ( ) Unknown contamination
- If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

**LAB USE ONLY**
- Rad SGD: Non-Rad SGD: V503
- Rad Packet: Non-Rad Packet:
- Client Services Representative:

**SAMPLE RECEIPT INFORMATION**
- Do the labels agree with this form? ( ) Yes ( ) No
- Comments:
- Was a Material Clearance Tag submitted? ( ) Yes ( ) No
- Comments:

**COMMENTS**
- (Preservative, size/volume, MS/MSD, special analyses, rad matrix code, count time, etc.)
  - I-6 glass bottle
  - 1-45 gram capsule
  - Samples free of Rad

**ANALYSES & METHOD**

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Transfer of samples submitted for analyses

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Complete for samples shipped to an OFF-SITE Subcontract Laboratory

**Distribution**
- Original - To be retained by laboratory performing final analysis
- Copy 1 - To be retained by laboratory performing intermediate analysis
- Copy 2 - To be retained by Analytical Services Laboratory
- Copy 3 - To be retained by sampler

**BN-0732 (02/98)**
SAMPLE DELIVERY GROUP

V1624
Ted Redding  
Bechtel Nevada  
P.O. Box 98521, M/S NTS273  
Las Vegas, NV  89193-8521  
TEL: 702-295-7220

RE Project: V1624  
Order No.: L0206245

Dear Ted Redding:

NEL Laboratories, Las Vegas received 11 samples on 6/17/02 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications unless noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

[Signature]  
Date: 6/26/02

Laboratory Manager

Certifications:  
Reno Las Vegas  
Arizona AZ0520 AZ0518  
California 1707 2002  
Idaho Certified Certified  
Montana Certified Certified  
Nevada NV033 NV052  
New Mexico Certified Certified

NEL LABORATORIES

Corporate Headquarters / Reno Laboratory  
4750 Longley Lane, Suite 106  
Reno, NV 89502  
Phone: 775.348.2522  
Fax: 775.348.2546

Las Vegas Laboratory  
4208 Arcata Way, Suite A  
Las Vegas, NV 89030  
Phone: 702.657.1010  
Fax: 702.657.1577
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**ND** - Not Detected at the Reporting Limit

**DF** - Dilution Factor

**Date**: 26-Jun-02
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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 26-Jun-02

B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
E - Value above quantitation range
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**Notes:**

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- B - Analyte detected in the associated Method Blank
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**Date:** 26-Jun-02

**Page 4 of 11**
CLIENT: Bechtel Nevada
CLIENT ID: CAU326-V19
PROJECT ID: V1624
PROJECT #: 30033
MATRIX: SOLID

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### NEL LABORATORIES

**CLIENT:** Bechtel Nevada  
**PROJECT ID:** V1624  
**PROJECT #:** 30033  
**MATRIX:** SOLID  

**CLIENT ID:** CAU326-V25  
**DATE SAMPLRED:** 6/12/02  
**NEL SAMPLE ID:** L0206245-006A

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**Parameter:** Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, Aroclor 1260, Surr: Decachlorobiphenyl, Surr: Tetrachloro-m-xylene

**Result:** ND (Not Detected), 20, 120, 250, 91.0, 83.0

**Unit:** µg/Kg, %REC

**Limit:** 20

**DF:** 1

**Method:** SW8082

**Prep Date:** 06/20/02

**Analyzed:** 06/21/02

**Analyst:** JRW-LV

---

**ND** - Not Detected at the Reporting Limit

**DF** - Dilution Factor

**B** - Analyte detected in the associated Method Blank

**S** - Spike Recovery outside accepted recovery limits

**E** - Value above quantitation range

**Date:** 26-Jun-02

---

**Page 8 of 11**
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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 26-Jun-02

B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
E - Value above quantitation range
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ND - Not Detected at the Reporting Limit
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Date: 26-Jun-02

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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 26-Jun-02

B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
E - Value above quantitation range
### Analytical QC Summary Report

**Project:** V1624  
**Batch ID:** 494

#### Sample ID: 020620PCBS-MB

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**Qualifiers:**  
- **ND** - Not Detected at the Reporting Limit  
- **S** - Spike Recovery outside accepted recovery limits  
- **B** - Analyte detected in the associated Method Blank  
- **J** - Analyte detected below quantitation limits  
- **R** - RPD outside accepted recovery limits
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**Qualifiers:**
- ND - Not Detected at the Reporting Limit
- S - Spike: Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- B - Analyte detected in the associated Method Blank
### Project/Client Information
- **Project:** CAU 326
- **Charge Number:** 5H09D223
- **Project Manager:** Jeff Smith
- **Phone:** 295-7396
- **Fax:** 295-7361
- **M/S:** NTS 3006

### Sample Information
- **Sampling Site:** C/J @ 3
- **A/C:** ...
- **Yr:** ...
- **L<:** ...

- **The samples submitted contain (check):**
  - [ ] Radioactive - (list)
  - [ ] Hazardous - (list)
  - [ ] Unknown contamination. If known, identify contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

### Sample Management Information
- **SDG:** (Non-Rad Env) YES (NO) N/A
- **Samples submitted are associated with a signed Project SOW.**
- **Analyses entered here agree with the SOW.**
- **If not, identify the variation:**
- **Subcontract Lab(s) used for this work:** NEL

### Sample Management Information Table

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<th>ID/DESCRIPTION</th>
<th>SAMPLING DATE</th>
<th>TIME</th>
<th>MATRIX</th>
<th>CONTAINER #</th>
<th>Ext. Vol</th>
<th>QC</th>
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- **Retention Code:** ENV 5.c(1)
- **BN-0732**
## Project Information

**Project Manager:** [Name]

**Phone:** [Number]

**Fax:** [Number]

## Sample Information

### Sampling Site:
- **Location**
- **Date**

### Materials:
- **Hazardous (list)**
- **Radioactive (list)**
- **Unknown contamination.**

If known, identify contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

### Turnaround Information:
- **Standard:** 4 days
- **Fast:** 1 day
- **Rad Env:** 6 days (Radiological Env)
- **Non-Rad Env:** 4 days (Non-Rad Env)

## Sample Management Information

- **Sample Number:** [Number]
- **Analysis Method:** [Method]

## Custody Transfer

**Received by:** [Name]

**Date/Time:** [Date/Time]

**Signature:** [Name] (with a wax)

**Checked:** [Name]

**Date/Time:** [Date/Time]
SAMPLE DELIVERY GROUP

V1429
Dear Ted Redding:

NEL Laboratories, Las Vegas received 8 samples on 2/13/02 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Stan Van Wagenen
Laboratory Manager

Certifications:

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<tr>
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<th>Las Vegas</th>
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Order No.: L0202135
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JD - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 27-Feb-02
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ND - Not Detected at the Reporting Limit
DF - Dilution Factor
### Reporting Result

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**ND** - Not Detected at the Reporting Limit

**DF** - Dilution Factor

*Date: 27-Feb-02*
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ND - Not Detected at the Reporting Limit

DF - Dilution Factor

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**Not Detected at the Reporting Limit**

**DF** - Dilution Factor

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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 27-Feb-02
### ANALYTICAL QC SUMMARY REPORT

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#### Diesel Range Organics (12-C22)

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### Qualifiers:
- **ND**: Not Detected at the Reporting Limit
- **S**: Spike Recovery outside accepted recovery limits
- **B**: Analyte detected in the associated Method Blank
- **J**: Analyte detected below quantitation limits
- **R**: RPD outside accepted recovery limits
**ANALYTICAL QC SUMMARY REPORT**  
TestCode: 8015ffp_s

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**Qualifiers:**
- ND - Not Detected at the Reporting Limit
- S - Spike Recovery outside accepted recovery limits
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- R - RPD outside accepted recovery limits
**ANALYTICAL SERVICES LABORATORY**

**SERVICES REQUEST & CHAIN OF CUSTODY RECORD**

**PROJECT/Clients INFORMATION**

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**ANALYSES & METHOD**

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**SAMPLE INFORMATION**

Sampling Site: A6 06-25-01

The samples submitted contain (check):

- Hazardous
- Radioactive
- Unknown contamination. If known, attach a brief narrative summary identifying contaminants. This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

**SAMPLE RECEIPT INFORMATION**

- Are all sample containers received intact? Yes ( ) No ( ) Comments:
- Do the labels agree with this form? Yes ( ) No ( ) Comments:
- Was a Material Clearance Tag submitted? Yes ( ) No ( ) Comments:

**COMMENTS**

(Preservative, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.)

- Original - To be retained by laboratory performing final analysis
- Copy 1 - To be retained by laboratory performing intermediate analysis
- Copy 2 - To be retained by Analytical Services Laboratory
- Copy 3 - To be retained by sampler

**Distribution**

- Original - To be retained by laboratory performing final analysis
- Copy 1 - To be retained by laboratory performing intermediate analysis
- Copy 2 - To be retained by Analytical Services Laboratory
- Copy 3 - To be retained by sampler
SAMPLE DELIVERY GROUP

V1432
Dear Ted Redding:

NEL Laboratories, Las Vegas received 12 samples on 2/13/02 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Stan Van Wagenen
Laboratory Manager

Certifications:

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<tr>
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<th>Las Vegas</th>
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<td>US Army Corps of Engineers</td>
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**Parameter** | **Result** | **Units** | **Limit** | **DF** | **Method** | **Prep Date** | **Analyzed** | **Analyst**
---|---|---|---|---|---|---|---|---
Diesel Range Organics (12-C22) | 3000 | mg/Kg | 10 | 1 | SW8015 | 02/15/02 | 02/20/02 | PXC-LV
Oil Range Organics (C22-C34) | ND | mg/Kg | 20 | 1 | SW8015 | 02/15/02 | 02/20/02 | PXC-LV
Total TPH | 3000 | mg/Kg | 10 | 1 | SW8015 | 02/15/02 | 02/20/02 | PXC-LV
Surr: n-Octacosane | 81.1 | %REC | 55-130 | 1 | SW8015 | 02/15/02 | 02/20/02 | PXC-LV

ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 27-Feb-02
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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 27-Feb-02
### NEL LABORATORIES

**CLIENT:** Bechtel Nevada  
**CLIENT ID:** 062501-23L  
**PROJECT ID:** V1432  
**PROJECT #:** 30033  
**MATRIX:** SOIL  
**DATE SAMPLED:** 2/12/02  
**NEL SAMPLE ID:** L0202134-004A

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**ND** - Not Detected at the Reporting Limit  
**DF** - Dilution Factor

**Date:** 27-Feb-02  
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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 27-Feb-02
**NEL LABORATORIES**

**CLIENT:** Bechtel Nevada  
**PROJECT ID:** V1432  
**PROJECT #:** 30033  
**MATRIX:** SOIL  
**CLIENT ID:** 062501-24 DUP  
**DATE SAMPLED:** 2/12/02  
**NEL SAMPLE ID:** L0202134-012A

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*ND - Not Detected at the Reporting Limit  
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**CLIENT:** Bechtel Nevada  
**Work Order:** LO202134  
**Project:** V1432

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**Qualifiers:**  
- ND - Not Detected at the Reporting Limit  
- S - Spike Recovery outside accepted recovery limits  
- B - Analyte detected in the associated Method Blank  
- J - Analyte detected below quantitation limits  
- R - RPD outside accepted recovery limits  

Page 1 of 2
## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 8015ffp_s

### Sample Information
- **Sample ID:** L0202135-001AMSD
- **Sample Type:** MSD
- **Test Code:** 8015FFP_S
- **Units:** mg/Kg
- **Prep Date:** 2/15/02
- **Run ID:** L_FID-1_020220B
- **Analysis Date:** 2/20/02
- **SeqNo:** 2268

### Analyte Results

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### Qualifiers
- **ND** - Not Detected at the Reporting Limit
- **S** - Spike Recovery outside accepted recovery limits
- **B** - Analyte detected in the associated Method Blank
- **J** - Analyte detected below quantitation limits
- **R** - RPD outside accepted recovery limits
**ANALYTICAL SERVICES LABORATORY**

**SERVICES REQUEST & CHAIN OF CUSTODY RECORD**

**PROJECT/CLIENT INFORMATION**

<table>
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<tr>
<th>Project</th>
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**CHARGE NO.**

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**PROJECT MANAGER:**

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<th>Wayne Johnson</th>
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**PHONE:**

| 345-2857 | FAX: 5761 | M/S: NTS 306 |

**LAB USE ONLY**

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<th>Rad SGD:</th>
<th>Non-Rad SGD:</th>
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**Rad Packet:**

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**SAMPLE INFORMATION**

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The samples submitted contain (check):

- [ ] Hazardous
- [ ] Radioactive
- Unknown contamination

**REPORT INFORMATION**

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</thead>
</table>

| Phone: 345-7286 | Fax: 7761 | M/S: NTS 306 |

**ANALYSES & METHOD**

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<tr>
<th>ID DESCRIPTION</th>
<th>SAMPLING DATE TIME</th>
<th>MATRIX</th>
<th>TPH Total</th>
<th>% SIC TPH</th>
<th>Run Direct</th>
<th>Direct Comment</th>
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<td>Soil</td>
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**SAMPLE RECEIPT INFORMATION**

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<table>
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<tr>
<th>Do the labels agree with this form?</th>
<th>[ ] Yes [ ] No</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Was a Material Clearance Tag submitted?</th>
<th>[ ] Yes [ ] No</th>
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**COMMENTS**

Preservative, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.

**Transfer of samples submitted for analyses**

<table>
<thead>
<tr>
<th>Sampled/Released (Signature/Organization)</th>
<th>DATE / TIME</th>
<th>Received by (Signature/Organization)</th>
<th>Relinquished (BN Representative Signature)</th>
<th>DATE / TIME</th>
<th>Received (Courier &amp; Tracking Info)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Udora Lauro</td>
<td>3/10/2013</td>
<td>Laura Lauro</td>
<td>MCARDO Canada LLC</td>
<td>3/10/2013</td>
<td>FNBU Courier</td>
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<tr>
<td>Relinquished (Courier &amp; Tracking Info)</td>
<td>3/10/2013</td>
<td>Received (1st tier Subcontractor Rep)</td>
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<tr>
<td>Relinquished (1st tier Subcontractor Rep)</td>
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<td>Received (2nd tier Subcontractor Rep)</td>
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</table>

**COMPLETE FOR SAMPLES SHIPPED TO AN OFF-SITE SUBCONTRACT LABORATORY**

**BN 0732 (02/08)**

**Distribution:**

- Original - To be retained by laboratory performing final analysis
- Copy 1 - To be retained by laboratory performing intermediate analysis
- Copy 2 - To be retained by Analytical Services Laboratory
- Copy 3 - To be retained by sampler

---

Note: The image contains a detailed chain of custody record with specific details about sample submission, analyses, and transfer. Each entry includes the ID, description, sampling date and time, matrix, and various comments related to the sample's condition and analysis.
### Project/Client Information
- **Project:** CAU 326
- **BN Org:** 2156
- **Charge No.:** M498225
- **ASL Prog.:**
- **Project Manager:** Wayne Johnson
- **Phone:** 295-7373

### Sample Information
- **Collection Site:** PW 06-25-01
- **Sample:** Red Packet Non-Rad

### Services Request
- **Services Requested:** Chain of Custody Record

### Sample Receipt Information
- **Sample ID:** 1432
- **Material:** Non-Rad Packet

### Analyses & Method
- **Matrix:** SiO2
- **Method:** XRF

### Reporting
- **Send Report to:** Mike Kruse
- **Phone:** 295-7373
- **Fax:** 7761

### Client Services Representative
- **Representative:** John Johnson
- **Signature:**

### Sample Information
- **Sample Description:** Red Packet Non-Rad
- **Sample Date:** 06-25-01
- **Sample Time:** 12:15
- **Sample Location:** SiO2
- **Sample Matrix:** XRF

### Comments
- **Preservation:** None
- **Additional Information:** Sample 06-25-01 was split for duplicate analysis.

### Distribution
- **Copy 1:** To be retained by laboratory performing final analysis
- **Copy 2:** To be retained by Analytical Services Laboratory
- **Copy 3:** To be retained by sampler
- **BN 0732 (07/98)**
SAMPLE DELIVERY GROUP

V1535
Dear Ted Redding:

NEL Laboratories, Las Vegas received 8 samples on 4/18/02 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications unless noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Stan Van Wagenen
Laboratory Manager

Certifications: Reno Las Vegas
Arizona AZ0520 AZ0518
California 1707 2002
Idaho Certified Certified
Montana Certified Certified
Nevada NV033 NV052
New Mexico Certified Certified
US Army Corps of Engineers Certified Certified

Order No.: L0204298

Date: 4/29/02
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<tr>
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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 29-Apr-02

B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
E - Value above quantitation range
<table>
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- **E** - Value above quantitation range

**Date:** 29-Apr-02
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**ND** - Not Detected at the Reporting Limit

**DF** - Dilution Factor

**Date:** 29-Apr-02

**B** - Analyte detected in the associated Method Blank

**S** - Spike Recovery outside accepted recovery limits

**E** - Value above quantitation range

Page 3 of 8
<table>
<thead>
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<td>Oil Range Organics (C22-C34)</td>
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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 29-Apr-02

B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
E - Value above quantitation range
### Parameter Reporting Limit DF Method Prep Date Analyzed Analyst

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<td>PXC-LV</td>
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</table>

**ND** - Not Detected at the Reporting Limit

**DF** - Dilution Factor

**Date**: 29-Apr-02

**B** - Analyte detected in the associated Method Blank

**S** - Spike Recovery outside accepted recovery limits

**E** - Value above quantitation range
<table>
<thead>
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<th>Parameter</th>
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</table>

**Parameter Interpretations:**
- **ND:** Not Detected at the Reporting Limit
- **DF:** Dilution Factor
- **B:** Analyte detected in the associated Method Blank
- **S:** Spike Recovery outside accepted recovery limits
- **E:** Value above quantitation range

**Date:** 29-Apr-02

**Page:** 6 of 8
<table>
<thead>
<tr>
<th>Parameter</th>
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- ND - Not Detected at the Reporting Limit
- DF - Dilution Factor
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- E - Value above quantitation range
<table>
<thead>
<tr>
<th>Parameter</th>
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</tbody>
</table>

- ND - Not Detected at the Reporting Limit
- DF - Dilution Factor
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- E - Value above quantitation range

Date: 29-Apr-02
## ANALYTICAL QC SUMMARY REPORT

**Sample ID:** MB-302  
**Sample Type:** MBIK  
**Test Code:** SW8015p_s  
**Units:** mg/Kg  
**Prep Date:** 4/22/02  
**Run ID:** L_FID-1_020424H  
**Test Method:** SW8015Ext

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**Sample ID:** LCS-302  
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**Units:** mg/Kg  
**Prep Date:** 4/22/02  
**Run ID:** L_FID-1_020424H  
**Test Method:** SW8015Ext

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**Sample ID:** LCSD-302  
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**Units:** mg/Kg  
**Prep Date:** 4/22/02  
**Run ID:** L_FID-1_020424H  
**Test Method:** SW8015Ext

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</table>

**Qualifiers:**  
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- J - This concentration is considered an estimate due to LCS failure.

**Date:** 29-Apr-02
### ANALYTICAL QC SUMMARY REPORT

**CLIENT:** Bechtel Nevada  
**Work Order:** L0204298  
**Project:** V1535

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**Date:** 29-Apr-02
ANALYTICAL SERVICES LABORATORY
SERVICES REQUEST & CHAIN OF CUSTODY RECORD

Bechtel Nevada

PROJECT/CLIENT INFORMATION
Project: CAU 326  BN Org: AY35
Charge No: 5HC9B223
ASL Prog:
Project Manager: Jeff Smith
Phone: 5-0573  Fax: 5-7761

REPORT INFORMATION
Send Report to: Mike Krusic
Phone: 5-7396  Fax: 5-7761
MIS: ANTS 506

SAMPLE INFORMATION
Sampling Site:
The samples submitted contain (check):
( ) Hazardous  ( ) Radioactive  ( ) Unknown
contamination. If known, attach a brief narrative summary
identifying contaminants. This information will ensure
compliance with applicable regulations and allow for the safe
handling of the sample materials.

SAMPLE RECEIPT INFORMATION
Are all sample containers received intact? ( ) Yes ( ) No
Comments:
Do the labels agree with this form? ( ) Yes ( ) No
Comments:
Was a Material Clearance Tag submitted? ( ) Yes ( ) No
Comments:

COMMENTS
(Preservative, size/volume, MS/MSD,
special analysis, rad matrix code, count time, etc.)

ANALYSES & METHOD

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Transfer of samples submitted for analyses

Sampled/Relinquished (Signature/Organization)

Complete for samples shipped to an OFF-SITE Subcontract Laboratory

BN 0732 (02/98)

Distribution: Original - To be retained by laboratory performing final analysis
Copy 1 - To be retained by laboratory performing intermediate analysis
Copy 2 - To be retained by Analytical Services Laboratory
Copy 3 - To be retained by sampler
## Project/Client Information
- **Project:** CHU 326
- **BN Org#:** A435
- **Charge No.:** 5H00B223
- **ASL Prog.:** 5H00B223

## Send Report to:
- **Name:** Mike Kruzich
- **Phone:** 5-7596
- **Fax:** 5-7761
- **MIS:** NTS 306

## Report Information
- **Project Manager:** Jeff Smith
- **Phone:** 5-0573
- **Fax:** 5-7761
- **MIS:** NTS 306

## Client Information
- **Org#:** 7172
- **Charge No.:** ASL
- **Prog.:** 5200

## Lab Use Only
- **Rad SGD:** 7172
- **Non-Rad SGD:** 7172

## Rad Packet:
- **Non-Rad Packet:**

## Client Services Representative:

## Will these analyses be performed under a signed SOW?
- ( ) YES
- ( ) NO

If so, do analyses entered here agree with the SOW?
- ( ) YES
- ( ) NO
- ( ) N/A

## CSR initials indicating review and approval:
- **Date:**

## Analyses & Method

## Sampling Information

<table>
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<tr>
<th>ID / Description</th>
<th>Sampling Date</th>
<th>Sampling Time</th>
<th>Matrix</th>
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<td>4/11/01</td>
<td>10:00</td>
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Transfer of samples submitted for analyses

## Complete for samples shipped to an OFF-SITE Subcontractor Laboratory

## Sample Receipt Information

- **Are all sample containers received intact?**
  - ( ) YES
  - ( ) NO

- **Do the labels agree with this form?**
  - ( ) YES
  - ( ) NO

- **Was a Material Clearance Tag submitted?**
  - ( ) YES
  - ( ) NO

## Comments

(Presewvate, size/volume, MS/MSD, special analysis, rad matrix code, count time, etc.)

- **L glass loc
  - Sample free of Rad**

## Distribution:
- Original - To be retained by laboratory performing final analysis
- Copy 1 - To be retained by laboratory performing intermediate analysis
- Copy 2 - To be retained by Analytical Services Laboratory
- Copy 3 - To be retained by sampler
SAMPLE DELIVERY GROUP

V1625
Ted Redding  
Bechtel Nevada  
P.O. Box 98521, M/S NTS273  
Las Vegas, NV  89193-8521  
TEL: 702-295-7220

RE Project: V1625  
Order No.: L0206246

Dear Ted Redding:

NEL Laboratories, Las Vegas received 2 samples on 6/17/02 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications unless noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Stan Van Wagenen  
Laboratory Manager  

Certifications:  
Reno Las Vegas  
Arizona AZ0520 AZ0518  
California 1707 2002  
Idaho Certified Certified  
Montana Certified Certified  
Nevada NV033 NV052  
New Mexico Certified Certified
# NEL LABORATORIES

**CLIENT:** Bechtel Nevada  
**PROJECT ID:** V1625  
**PROJECT #:** 30033  
**MATRIX:** SOLID  
**CLIENT ID:** 326-B1-10  
**DATE SAMPLED:** 6/13/02  
**NEL SAMPLE ID:** L0206246-001A

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<td>PXC-LV</td>
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**ND** - Not Detected at the Reporting Limit  
**DF** - Dilution Factor  
**B** - Analyte detected in the associated Method Blank  
**S** - Spike Recovery outside accepted recovery limits  
**E** - Value above quantitation range

**Date:** 26-Jun-02
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<th>Parameter</th>
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<th>Prep Date</th>
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</table>

ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 26-Jun-02
**ANALYTICAL LABORATORY**

**SERVICES REQUEST & CHAIN OF CUSTODY RECORD**

**PROJECT/CLIENT INFORMATION**
- **Project:** CAU 326
- **BN Org #:** A455
- **Charge Number:** 5H04B2-23
- **Project Manager:** Jeffrey L. Smith
- **Phone:** 702-295-7261

**REPORT & TURNAROUND INFORMATION**
- **Send Report to:** Mike Kruzic
- **Phone:** 702-295-7261
- **Fax:** 702-295-7261
- **MIS:** N75306
- **Turnaround:** Standard - 14 days IH, 20 days Non-rad Env, 45 Days Rad Env, (IH) Rush Preliminary by:
  - 1
  - 2
  - 7
  - 14 (non-Rad Env)
  - 1
  - 7
  - 14
  - 28 (Radiological Env)

**SAMPLE INFORMATION**
- **Sampling Site:** CAU326 CP Floor
- **The samples submitted contain (check):**
  - Hazardous (list)
  - Radioactive (list)
  - Unknown contamination.
- **If known, identify contaminants:**
- **This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.**

**SAMPLE MANAGEMENT INFORMATION**
- **SDG:** N11.25 (IH) U11.25 (Non-Rad Env) N11.25 (Rad Env)
- **Samples submitted are associated with a signed Project SOW:**
  - Yes
  - No
- **Analyses entered here agree with the SOW:**
  - Yes
  - No
  - N/A
- **Subcontract Lab(s) used for this work:** NEL

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<th>TIME</th>
<th>MATRIX</th>
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<th>MS</th>
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</tr>
</tbody>
</table>

**CUSTODY TRANSFER**
- **Sampled/Relinquished (print):**
  - CASTANEDA
  - Michael Kruzic
- **Signature:**
  - Michael Kruzic
- **Date/Time:** 6-17-02 08:53
  - CASTANEDA
- **Received by (print):**
  - CASTANEDA
  - 6-17-02 08:33
  - CASTANEDA
- **Signature:**
  - CASTANEDA
- **Date/Time:** 6-17-02 13:00
  - COURIER
  - 6-17-02 13:00
  - MIKE CROCKETT
- **Signature:**
  - MIKE CROCKETT
- **Date/Time:** 6-17-02 13:45
SAMPLE DELIVERY GROUP

V1622
THIS PAGE INTENTIONALLY LEFT BLANK
Dear Ted Redding:

NEL Laboratories, Las Vegas received 5 samples on 6/13/02 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications unless noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Stan Van Wagenen
Laboratory Manager

Certifications:

<table>
<thead>
<tr>
<th>State</th>
<th>Certification</th>
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<th>Code</th>
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Date: 6/24/02
### Results

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<th>Method</th>
<th>Prep Date</th>
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<th>Analyst</th>
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<tr>
<td>Diesel Range Organics (C12-C22)</td>
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<td>Oil Range Organics (C22-C34)</td>
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</tr>
</tbody>
</table>

**Legend:**
- **ND** - Not Detected at the Reporting Limit
- **DF** - Dilution Factor
- **B** - Analyte detected in the associated Method Blank
- **S** - Spike Recovery outside accepted recovery limits
- **E** - Value above quantitation range

**Date:** 24-Jun-02
<table>
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<th>Parameter</th>
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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 24-Jun-02
<table>
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<tr>
<th>Parameter</th>
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</table>

ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 24-Jun-02

B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
E - Value above quantitation range
<table>
<thead>
<tr>
<th>Parameter</th>
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ND - Not Detected at the Reporting Limit
DF - Dilution Factor
Date: 24-Jun-02

B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
E - Value above quantitation range
## Report Details

**Client:** Bechtel Nevada  
**Project ID:** V1622  
**Project #:** 30033  
**Matrix:** SOIL  
**Client ID:** 326-B2-50  
**Date Sampled:** 6/12/02  
**NEL Sample ID:** L0206211-005A

## Reporting Parameters

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<tr>
<th>Parameter</th>
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</table>

**Reporting Limits:**
- ND - Not Detected at the Reporting Limit
- DF - Dilution Factor
- Date: 24-Jun-02

**Method Details:**
- B - Analyte detected in the associated Method Blank
- S - Spike Recovery outside accepted recovery limits
- E - Value above quantitation range
<table>
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<th>Sample ID: 020617TPHS-MB</th>
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<th>Units: mg/Kg</th>
<th>Prep Date: 6/17/02</th>
<th>Run ID: L_FID-1_020617B</th>
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<th>RPD Ref Val</th>
<th>%RPD</th>
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<th>High Limit</th>
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**Qualifiers:**
- ND - Not Detected at the Reporting Limit
- S - Spike Recovery outside accepted recovery limits
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- R - RPD outside accepted recovery limits
<table>
<thead>
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<th>Analyte</th>
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<tbody>
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Qualifiers:
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- R - RPD outside accepted recovery limits
**PROJECT CLIENT INFORMATION**

- **Project:** CAU 326
- **BN Org #:** A 435

**REPORT & TURNAROUND INFORMATION**

- **Send Report to:** Michael Kruzel
- **Phone:** 702-245-7761
- **Fax:** 702-245-7775
- **MS:** A 73304
- **Turnaround:** Standard - 14 days IH, 28 days Non-rad Env, 45 Days Rad Env, Rush Preliminary by
- **1** 2 3 4 5 6 7 8 9 10 11 12 13 14 (non-Rad Env)
- **2** 3 4 5 6 7 8 9 10 11 12 13 14 28 (Rad Env)

**SAMPLE INFORMATION**

- **Sampling Site:** CAU 326
- **NDU:** YES
- **Hazardous (HS):** N
- **Radioactive (RS):** N
- **Unknown contamination:** N
- **If known, identify contaminants:** N
- **This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.**

**SAMPLE MANAGEMENT INFORMATION**

- **SDG:** 162326 (IH) 162326 (Non-Rad Env) 162326 (Rad Env)
- **Samples submitted are associated with a signed Project SOW:** Yes
- **Analyses entered here agree with the SOW:** Yes
- **If not, identify the variation:** N/A
- **Subcontract Lab(s) used for this work:** NEL

<table>
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<tr>
<th>ID/DESCRIPTION</th>
<th>DATE/TIME</th>
<th>MATRIX</th>
<th>CONTAINER</th>
<th>QC</th>
<th>Pres - Analysis eg. HCl - Vocs</th>
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<tr>
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<td>1</td>
<td>2</td>
<td>Lab</td>
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**CUSTODY TRANSFER**

- **Sampled/Relinquished (print):** Marcus Dixon
- **Signature:** Marcus Dixon
- **Date/Time:** 6/12/02 9:26
- **Received by (print):** CA Castaneda
- **Signature:** CA Castaneda
- **Date/Time:** 6/12/02 9:30

**Via Courier:** CA Castaneda
**Signature:** T- Sendija
**Date/Time:** 6/17/02 1:30
SAMPLE DELIVERY GROUP

V1635
Dear Ted Redding:

NEL Laboratories, Las Vegas received 3 samples on 6/24/02 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications unless noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Stan Van Wagener
Laboratory Manager

Certifications:
Reno Las Vegas
Arizona AZ0520 AZ0518
California 1707 2002
Idaho Certified Certified
Montana Certified Certified
Nevada NV033 NV052
New Mexico Certified Certified

Order No.: L0206374

7/15/02 Date
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<td>Total Petroleum Hydrocarbons</td>
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**ND** - Not Detected at the Reporting Limit

**DF** - Dilution Factor

**Date:** 15-Jul-02

**B** - Analyte detected in the associated Method Blank

**S** - Spike Recovery outside accepted recovery limits

**E** - Value above quantitation range
### Reporting Limit

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**Date:** 15-Jul-02

**Surr:** n-Octacosane

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**ND** - Not Detected at the Reporting Limit

**DF** - Dilution Factor

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**S** - Spike Recovery outside accepted recovery limits

**E** - Value above quantitation range
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ND - Not Detected at the Reporting Limit
DF - Dilution Factor

Date: 15-Jul-02
## Analytical Laboratory Services Request & Chain of Custody Record

### Project/Client Information
- **Project:** CAU 326
- **BN Org #:** A935

### Report & Turnaround Information
- **Send Report to:** Mike Knaiz
- **Phone:** 702-275-3024, Fax: 702-285-5761
- **M/S:** 306
- **Turnaround:** Standard - 14 days IH, 28 days Non-rad Env, 45 Days Rad Env.
- **Rush Preliminary by:**
  - 1
  - 7
  - 14
  - (Non-Rad Env)
  - 14 (Rad Env)

### Sample Information
- **Sample Site:** Chico 326 Area
- **The samples submitted contain (check):**
  - [ ] Hazardous (Hd)
  - [ ] Radioactive (Rad)
  - [ ] Unknown contamination
- **If known, Identify contaminants:**

### Sample Management Information
- **SDG:** (IH) 11635 (Non-Rad Env) (Rad Env)

### Pay Item, Analysis, Method
- **Pay Item:** 0,21
- **Analysis, Method:** D-11

### Subcontract Lab(s) used for this work:
- NEL

### Sample Details

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**Last ITEM**

### Custody Transfer

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<td>6/20/02 9:30</td>
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<td>Michael Knaiz</td>
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<td>Michael S. Knaiz</td>
<td>6/20/02 9:30</td>
</tr>
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<td>Michael Knaiz</td>
<td>6/20/02 8:30</td>
<td>Michael S. Knaiz</td>
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<td>6/20/02 9:30</td>
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<td>Michael S. Knaiz</td>
<td>Michael S. Knaiz</td>
<td>6/20/02 9:30</td>
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</table>

**Retention Code:** ENV 3.0(1)
Dear Ted Redding:

NEL Laboratories, Las Vegas received 3 samples on 6/24/02 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications unless noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Stan Van Wagenen
Laboratory Manager

Certifications:

- Arizona
  - Certified
  - AZ0520

- California
  - Certified
  - 1707

- Idaho
  - Certified

- Montana
  - Certified

- Nevada
  - NV033

- New Mexico
  - Certified

Order No.: L0206374

RE Project: V1635
**Sample ID:** 020626TPHS-MB  
**Sample Type:** MBLK  
**Test Code:** 8015FFP_S  
**Units:** mg/Kg  
**Prep Date:** 6/28/02  
**Analysis Date:** 6/27/02  
**Run ID:** L_FID-1_020627B  
**Seq No:** 41785

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<tr>
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**Analyzer Result:** 020626TPHS-LCS  
**Sample Type:** LCS  
**Test Code:** 8015FFP_S  
**Units:** mg/Kg  
**Prep Date:** 6/28/02  
**Analysis Date:** 6/27/02  
**Run ID:** L_FID-1_020627B  
**Seq No:** 41783

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<tr>
<td>Sun</td>
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**Sample ID:** 020626TPHS-LCS  
**Sample Type:** LCSD  
**Test Code:** 8015FFP_S  
**Units:** mg/Kg  
**Prep Date:** 6/28/02  
**Analysis Date:** 6/27/02  
**Run ID:** L_FID-1_020627B  
**Seq No:** 41784

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</table>

**Qualifiers:**  
ND - Not Detected at the Reporting Limit  
S - Spike Recovery outside accepted recovery limits  
J - Analyte detected below quantitation limits  
R - RPD outside accepted recovery limits  
B - Analyte detected in the associated Method Blank
## Analytical QC Summary Report

### Sample ID: 020701TPHS-MB

**Sample ID:** 020701TPHS-MB  
**Sample Type:** MBLK  
**Batch ID:** 549  
**Test Code:** 8015FFP_S  
**Units:** mg/Kg  
**Prep Date:** 7/1/02  
**Run ID:** L_FID-1_020702A  
**Analysis Date:** 7/2/02  
**Seq No:** 44124

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<td>Diesel Range Organics (C12-C22)</td>
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<tr>
<td>Oil Range Organics (C22-C34)</td>
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<td>93.1</td>
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<tr>
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<td>93.1</td>
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<tr>
<td>Surrogate n-Octacosane</td>
<td>3.097</td>
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### Sample ID: 020701TPHS-LCS

**Sample ID:** 020701TPHS-LCS  
**Sample Type:** LCS  
**Batch ID:** 549  
**Test Code:** 8015FFP_S  
**Units:** mg/Kg  
**Prep Date:** 7/1/02  
**Run ID:** L_FID-1_020702A  
**Analysis Date:** 7/5/02  
**Seq No:** 44122

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<tr>
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### Sample ID: 020701TPHS-LCSD

**Sample ID:** 020701TPHS-LCSD  
**Sample Type:** LCS  
**Batch ID:** 549  
**Test Code:** 8015FFP_S  
**Units:** mg/Kg  
**Prep Date:** 7/1/02  
**Run ID:** L_FID-1_020702A  
**Analysis Date:** 7/5/02  
**Seq No:** 44123

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<tr>
<td>Surrogate n-Octacosane</td>
<td>3.164</td>
<td>0.010</td>
<td>3.327</td>
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<td>95.1</td>
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### Sample ID: L0206374-003A

**Sample ID:** L0206374-003A  
**Sample Type:** MS  
**Batch ID:** 549  
**Test Code:** 8015FFP_S  
**Units:** mg/Kg  
**Prep Date:** 7/1/02  
**Run ID:** L_FID-1_020702A  
**Analysis Date:** 7/6/02  
**Seq No:** 47298

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<td>Surrogate n-Octacosane</td>
<td>3.262</td>
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### Qualifiers:

- **ND** - Not Detected at the Reporting Limit
- **J** - Analyte detected below quantitation limits
- **S** - Spike Recovery outside accepted recovery limits
- **B** - Analyte detected in the associated Method Blank
- **R** - RPD outside accepted recovery limits
**Analytical QC Summary Report**

**Sample ID:** L0206374-003A  
**Sample Type:** MSD  
**Test Code:** 8015FFP_S  
**Units:** mg/Kg  
**Prep Date:** 7/1/02  
**Run ID:** L_FID-1_020702A

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**Qualifiers:**  
- **ND** - Not Detected at the Reporting Limit  
- **S** - Spike Recovery outside accepted recovery limits  
- **J** - Analyte detected below quantitation limits  
- **R** - RPD outside accepted recovery limits  
- **B** - Analyte detected in the associated Method Blank
SAMPLE DELIVERY GROUP

V1640
Dear Ted Redding:

NEL Laboratories, Las Vegas received 5 samples on 7/1/02 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications unless noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

[Signature]

Stu Van Wagenen
Laboratory Manager

Certifications:                   Reno     Las Vegas
Arizona                  AZ0520     AZ0518
California              1707 2002
Idaho                     Certified    Certified
Montana                  Certified    Certified
Nevada                   NV033      NV052
New Mexico               Certified    Certified
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ND - Not Detected at the Reporting Limit
DF - Dilution Factor
Date: 10-Jul-02

B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
E - Value above quantitation range
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</table>

ND - Not Detected at the Reporting Limit  
DF - Dilution Factor  
B - Analyte detected in the associated Method Blank  
S - Spike Recovery outside accepted recovery limits  
E - Value above quantitation range

Date: 10-Jul-02
### Parameter Results

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<td>1</td>
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<td>PXC-LV</td>
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</table>

**ND** - Not Detected at the Reporting Limit  
**DF** - Dilution Factor  
**Surr:** n-Octacosane  
**S** - Spike Recovery outside accepted recovery limits  
**E** - Value above quantitation range  

**Date:** 10-Jul-02
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<th>Parameter</th>
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ND - Not Detected at the Reporting Limit  
DF - Dilution Factor  

Date: 10-Jul-02
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<td>mg/Kg</td>
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<td>07/01/02</td>
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</table>

ND - Not Detected at the Reporting Limit

DF - Dilution Factor

Date: 10-Jul-02

B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
E - Value above quantitation range

Page 5 of 5
The samples submitted contain (check):
- [ ] Hazardous (Hg)
- [ ] Radioactive (Ra)
- [ ] Unknown contamination.

If known, identify contaminants:

This information will ensure compliance with applicable regulations and allow for the safe handling of the sample materials.

### Pay Item, Analysis, Method

<table>
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### SAMPLE MANAGER INFORMATION

- SDG: (IH) V1640 (Non-Rad Env) (Rad Env)
- Samples submitted are associated with a signed Project SOW [ ] Yes [ ] No
- Analyses entered here agree with the SOW: [ ] Yes [ ] No [ ] N/A
- If not, identify the variation: ____________
- Subcontract Lab(s) used for this work: NCL

### SAMPLING INFORMATION

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<td>Perez Rinio</td>
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</tbody>
</table>
Ted Redding
Bechtel Nevada
P.O. Box 98521, M/S NTS273
Las Vegas, NV 89193-8521
TEL: 702-295-7220

RE Project: V1640  
Order No.: L0207008

Dear Ted Redding:

NEL Laboratories, Las Vegas received 5 samples on 7/1/02 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications unless noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Stan VanWagenen
Laboratory Manager

Date

Certifications:  
Arizona 
California 
Idaho  
Montana  
Nevada  
New Mexico  

Reno  Las Vegas  
AZ0520  AZ0518  
1707  2002  
Certified  Certified  
Certified  Certified  
NV033  NV052  
Certified  Certified  

Albuquerque  866.360.5726  Boise  800.200.2952  Las Vegas  888.368.3282  Phoenix  888.238.2514  Reno  800.368.5221  Sacramento  800.368.5221
## ANALYTICAL QC SUMMARY REPORT

**Batch ID:** 549

### Sample ID: 020701TPHS-MB

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### Qualifiers:
- **ND** - Not Detected at the Reporting Limit
- **S** - Spike Recovery outside accepted recovery limits
- **B** - Analyte detected in the associated Method Blank
- **J** - Analyte detected below quantitation limits
- **R** - RPD outside accepted recovery limits
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**Qualifiers:**
- ND - Not Detected at the Reporting Limit
- S - Spike Recovery outside accepted recovery limits
- B - Analyte detected in the associated Method Blank
- J - Analyte detected below quantitation limits
- R - RPD outside accepted recovery limits
APPENDIX C

USE RESTRICTION DOCUMENTATION
CAU Use Restriction Information

CAU Number/Description: CAU 326: Area 6 and 27 Release Sites, Nevada Test Site, Nevada

Applicable CAS Numbers/Descriptions: CAS 06-25-01: CP-1 Heating Oil Release / Heating Oil release associated with broken feed and return pipelines running from Tank 6-CP-1 to Building CP-1 in Area 6 CP.

Contact (organization/project): NNSA/NV Industrial Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NAD 27): Three areas around the feeder and return pipelines were surveyed for use restriction.

Area Inside CP fenced compound from the north west corner and moving clockwise:
NW corner: 4,087,847.009 m N, 584,310.243 m E
N. Point 1: 4,087,847.188 m N, 584,324.116 m E
N. Point 2: 4,087,838.228 m N, 584,334.606 m E
NE corner: 4,087,837.982 m N, 584,368.923 m E
SE corner: 4,087,827.594 m N, 584,369.000 m E
S. Point 1: 4,087,827.955 m N, 584,334.497 m E
S. Point 2: 4,087,836.648 m N, 584,309.977 m E
SW corner: 4,087,836.511 m N, 584,399.978 m E

Area in parking lot west of Building CP-70, site of original pipeline break
NW corner: 4,087,836.511 m N, 584,399.978 m E
NE corner: 4,087,835.570 m N, 584,444.461 m E
SE corner: 4,087,825.222 m N, 584,445.108 m E
SW corner: 4,087,826.235 m N, 584,400.331 m E

Area covering break in southern pipeline, south of the parking lot, north of the CP access road.
NW corner: 4,087,791.385 m N, 584,414.991 m E
NE corner: 4,087,790.554 m N, 584,420.998 m E
SE corner: 4,087,781.988 m N, 584,419.358 m E
SW corner: 4,087,783.001 m N, 584,413.405 m E

Survey Date 08/14/2002  Survey Method (GPS, etc.) Transit Survey  Datum NAD 1927
Site Monitoring Requirements: NONE
Monitoring Frequency (quarterly, annually?): N/A

Use Restrictions
The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE or Air Force activity that may alter or modify the containment control as approved by the state and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.
Comments: Petroleum hydrocarbons (heating oil) are present in the soil at the locations in the above surveyed locations and where identified in the associated drawing. Advance approval must be obtained from NNSA/NV Industrial Sites group (phone number 295-0461) prior to any subsurface activities at these locations, including routine maintenance, repair, or other activities. Emergencies are the only exception to obtaining advance approval, and notification should be provided to NNSA/NV Industrial Sites group when emergency activities are required. Refer to the Closure Report for Corrective Action Unit 326: Areas 6 and 27 Release Sites, Nevada Test Site, Nevada, DOE/NV–859, October 2002, for additional information on conditions at the site.

Submitted By: [Signature] Date: 12/19/02

Attachments: Site diagram showing survey locations and coordinates.
USE RESTRICTION INFORMATION
CAU 326: Area 6 and 27 Release Sites
CAS 06-25-01: CP-1 Heating Oil Release
CAU Use Restriction Information

CAU Number/Description: CAU 326: Area 6 and 27 Release Sites, Nevada Test Site, Nevada

Applicable CAS Numbers/Descriptions: CAS 06-25-02: UST Release / Fuel spill associated with filling underground storage tank. Tank 6-DAF-5 located west of Building 500 at the Area 6 DAF facility.

Contact (organization/project): NNSA/NV Industrial Sites Project Manager

Surveyed Area (UTM coordinates, Zone 11, NAD 27):

Area of fuel release located about Tank 6-DAF-5 fill port

NW corner: 4,083,700.850 m N, 584,977.075 m E
NE corner: 4,083,697.961 m N, 584,982.613 m E
SE corner: 4,083,692.489 m N, 584,979.897 m E
SW corner: 4,083,695.340 m N, 584,974.165 m E

Survey Date: 08/15/2002  Survey Method (GPS, etc.): Transit Survey  Datum: NAD 1927
Site Monitoring Requirements: NONE  Monitoring Frequency (quarterly, annually?): N/A

Use Restrictions

The future use of any land related to this Corrective Action Unit (CAU), as described by the above surveyed location, is restricted from any DOE or Air Force activity that may alter or modify the containment control as approved by the state and identified in the CAU Closure Report or other CAU documentation unless appropriate concurrence is obtained in advance.

Comments: Petroleum hydrocarbons (heating oil) are present in the soil at the locations in the above surveyed locations and where identified in the associated drawing. Advance approval must be obtained from NNSA/NV Industrial Sites group (phone number 295-0461) prior to any subsurface activities at these locations, including routine maintenance, repair, or other activities. Emergencies are the only exception to obtaining advance approval, and notification should be provided to NNSA/NV Industrial Sites group when emergency activities are required. Refer to the Closure Report for Corrective Action Unit 326: Areas 6 and 27 Release Sites, Nevada Test Site, Nevada, DOE/NV--859, October 2002, for additional information on conditions at the site.

Submitted By: Sabine Curtis  Date: 12/19/02

Attachments: Site diagram showing survey locations and coordinates.
Approximate extent of hydrocarbon plume

Scale

0 15 30 Meters

0 50 100 Feet

BUILDING 500

N.4083700.850
E.584977.075

Tank 6-DAF-5

Concrete Pads

N.4083697.961
E.584982.613

Borehole Locations

N.4083692.489
E.584979.897

N.4083695.340
E.584974.165

Approximate extent of hydrocarbon plume

USE RESTRICTION INFORMATION
CAU 326: Area 6 and 27 Release Sites
CAS 06-25-02: UST Release
USE RESTRICTION INFORMATION
CAU 326: Area 6 and 27 Release Sites
CAS 06-25-02: UST Release
APPENDIX D

WASTE DISPOSITION DOCUMENTATION
### Waste Management System - Sanitation Module

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<th>Clean-up</th>
<th>Weight</th>
<th>Area No.</th>
<th>Building No.</th>
<th>Comments</th>
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<td>AREA 9</td>
<td>27-MAR-2002</td>
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<th>Type of Waste</th>
<th>EM or Route of Clean-up</th>
<th>Weight Pounds</th>
<th>Area</th>
<th>Building No.</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>AREA 6</td>
<td>22/JUL/2002</td>
<td>FFACO-ONSITE</td>
<td></td>
<td>EM CLEAN-UP</td>
<td>4500</td>
<td>O28</td>
<td>CAU326</td>
<td></td>
</tr>
<tr>
<td>AREA 9</td>
<td>17/JUL/2002</td>
<td>FFACO-ONSITE</td>
<td></td>
<td>EM CLEAN-UP</td>
<td>4300</td>
<td>27</td>
<td>CAU326</td>
<td></td>
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<tr>
<td>AREA 9</td>
<td>17/JUL/2002</td>
<td>FFACO-ONSITE</td>
<td></td>
<td>EM CLEAN-UP</td>
<td>4500</td>
<td>27</td>
<td>CAU326</td>
<td></td>
</tr>
<tr>
<td>AREA 9</td>
<td>3/JUL/2002</td>
<td>FFACO-ONSITE</td>
<td></td>
<td>EM CLEAN-UP</td>
<td>4400</td>
<td>27</td>
<td>CAU326</td>
<td></td>
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<tr>
<td>AREA 9</td>
<td>9/JUL/2002</td>
<td>FFACO-ONSITE</td>
<td></td>
<td>EM CLEAN-UP</td>
<td>3900</td>
<td>27</td>
<td>CAU326</td>
<td></td>
</tr>
<tr>
<td>AREA 9</td>
<td>13/JUL/2002</td>
<td>FFACO-ONSITE</td>
<td></td>
<td>EM CLEAN-UP</td>
<td>3800</td>
<td>27</td>
<td>CAU326</td>
<td></td>
</tr>
</tbody>
</table>

If you Save data, a report on records that have been changed today will be printed to your default printer when you Exit.
Site Conditions:

Do berms/walls need repair? [ ] No  [ ] Yes

Yes, the prohibited waste identified below were found.

- Putrescible waste (prohibited in U10c and Area 6 Landfills).
- Hazardous waste per NAC 444.580
- PCB waste regulated by TSCA
- Waste containing free liquids
- TSCA-regulated
- Waste failing the "no added radioactivity" per the POC requirement.
- Friable asbestos (prohibited in U10c and Area 6 Landfills)
- Hydrocarbon soil at >100 ppm TPH (prohibited in 23, allowed in U10c provided less than 50 cubic yards/week are disposed)

Corrective Actions Taken: (description, name, date, who notified):

Inspected by (date/time):  2-7-02  7:30

Inspected by (date/time):  Knox E. Williams  2/7/02 11:00
Riechel 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 5-7398.

REQUiRED: WASTE GENERATOR INFORMATION
(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

<table>
<thead>
<tr>
<th>Waste Generator</th>
<th>Environmental Restoration, D.Cox</th>
<th>Phone Number: 5-5576</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location / Origin</td>
<td>Area 23, Site Maintenance Yard, CAU 326</td>
<td></td>
</tr>
</tbody>
</table>

Waste Category: (check one)

- [X] NTS
- [ ] Commercial
- [ ] Industrial
- [ ] Non-NTS
- [ ] Putrescible
- [ ] Non-Putrescible
- [ ] Asbestos Containing Material
- [ ] FFACO-on-site
- [ ] FFACO-offsite
- [ ] WAC Exception
- [ ] Historic DOE/NV

Pollution Prevention Category: (check one)

- [X] Environmental management
- [ ] Defense Projects
- [ ] Clean-Up
- [ ] Routine
- [ ] 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 (measles, sharp, bloody clothing).

Additional Prohibited Waste at the Area 9 U10c Landfill:

- Sewage Sludge
- Animal carcasses
- Wet garbage (food waste)
- 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
- Jet fuel
- Diesel fuel
- Lubricants and hydraulic fluids
- Kerosene
- Asphaltic Petroleum Hydrocarbon
- Ethylene Glycol

- [X] Paper
- [ ] Rocks / unshattered geologic materials
- [ ] Empty containers
- [ ] Asphalt
- [ ] Metal
- [X] Wood
- [ ] Soil
- [ ] Rubber (excluding tires)
- [ ] Demolition debris
- [ ] Plastic
- [ ] Wire
- [ ] Cable
- [ ] Cloth
- [ ] Insulation (non-Asbestos form)
- [ ] Cement & concrete
- [ ] Manufactured items: (avamps 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)

**REQUiRED: WASTE GENERATOR SIGNATURE**

Initiais: ______________________ (If initialed, no radiological clearance is necessary.)

The above mentioned waste was generated outside of a Controlled Waste knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only the site. I have verified this through the waste characterization method (identi forbidden and allowable waste items).

Print Name: Donald H. Cox
Signature: ______________________ Date: 18JUL02

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): 19.870
Signature of Certifier: ______________________
### LANDFILL DAILY ACCESS REGISTER

- **Name, Phone #:**
  - B 27
  - A-23 13
  - E. R. Don Cox

- **Area, Building:**
  - Area 9 - 23
  - Area 6 Hydrocarbon - A-27

- **Waste Code:**
  - C

- **Ticket Number:**
  - 10

- **Net Weight:**
  - 22,000 lbs

- **Time In:**
  - 11:15

- **Time Out:**
  - 12:37

- **Driver:**
  - Hogan, T.

---

**Site Conditions:**

- Do berms/walls need repair? **No**
- Does cover need repair? **No**
- Does fence need repair? **No**
- Is cover in evidence of settling? **No**
- Does road(s) need repair? **No**
- Has litter accumulated? **Yes**
- Has water accumulated? **Yes**

---

**Corrective Actions Needed:**

- Corrective Actions Taken: (description, name, date):

---

**INSPECTION INFORMATION**

- **Random Load Inspection:**
  - Ticket Number: __________

- **Corrective Actions Taken:** (description, name, date, who notified):

---

**INSPECTED BY:**

- (date/time): __________
**NTS Landfill Load Verification**

(Waste definitions are available on page 2)

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:** Environmental Restoration, Don Cox  
**Phone Number:** 5-5576

**Location / Origin:** Area 27, Site Maintenance Yard, CAU 326

#### Waste Category:

- [ ] Commercial  
- [x] Industrial

#### Waste Type:

- [x] NTS  
- [ ] Putrescible  
- [ ] FFACO-onsite  
- [ ] FFACO-offsite  
- [ ] WAC Exception  
- [ ] Non-Putrescible  
- [ ] Asbestos Containing Material  
- [ ] Historic DOE/NV

#### Pollution Prevention Category:

- [x] Environmental management  
- [ ] Defense Projects

#### Pollution Prevention Category:

- [x] Clean-Up  
- [ ] Routine

#### Method of Characterization:

- [ ] Sampling & Analysis  
- [x] 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:

- [ ] 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

### Acceptable waste at any NTS landfill:

- [ ] Plastic  
- [x] 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:  
- [ ] Non-Friable (contact SWO if regulated load)  
- [ ] Non-Friable asbestos

### Additional waste accepted at the Area 9 U10c Landfill:

- [ ] Drained automobiles and military vehicles  
- [ ] Solid fractions from sand/oil/water separators  
- [ ] Deconned Underground and Above Ground  
- [ ] Tanks  
- [ ] Light ballasts (contact SWO)  
- [ ] Drained fuel filters (gas & diesel)  
- [ ] Crushed non-terme plated oil filters  
- [ ] Plants  
- [ ] Sludge from sand/oil/water separators  
- [x] PCBs below 50 parts per million

### Additional waste accepted at the Area 6 Hydrocarbon Landfill:

- [ ] Septic sludge  
- [ ] Rags  
- [ ] Drained fuel filters (gas & diesel)  
- [ ] Crushed non-terme plated oil filters  
- [ ] Plants  
- [ ] Sludge from sand/oil/water separators  
- [x] PCBs below 50 parts per million

### REQUIRED: WASTE GENERATOR SIGNATURE

The above mentioned waste was generated outside of a Controlled Waste knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only that site. I have verified this through the waste characterization method identified by prohibited and allowable waste items.

**Print Name:** Donald H. Cox  
**Signature:** [Signature]  
**Date:** 26 MAR 02

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

**Load Weight (net from scale estimate):** 29,000  
**Signature of Certifier:** [Signature]  
**SWO USE ONLY**
NTS Landfill Load Verification
(Waste definitions are available on page 2)

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: Environmental Restoration, Don Cox
- Phone Number: 5-5576

Location / Origin: Area 27, Site Maintenance Yard, CAU 326

- Waste Category: (check one)
  - Commercial
  - Industrial

- Waste Type: (check one)
  - NTS
  - Non-putrescible
  - Putrescible
  - Asbestos Containing Material
  - FFACO-onsite
  - FFACO-offsite
  - WAC Exception

- Pollution Prevention Category: (check one)
  - Non-Putrescible
  - Asbestos Containing Material
  - Historic DOE/NV

- Method of Characterization: (check one)
  - Sampling & Analysis
  - Process Knowledge

- Additional Prohibited Waste: 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 8 Hydrocarbon Landfill must have come into contact with petroleum hydrocarbons or coolants such as:
  - gasoline (no benzene, lead); jet fuel; diesel fuel; lubricants and hydraulic fluid; 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-Asbestos form)
  - 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: (check one)
  - Friable
  - Non-Friable (contact SWO if regulated load)

- Additional waste accepted at the Area 9 U10c Landfill:
  - Non-friable asbestos
  - Drained automobiles and military vehicles
  - Drained fuel filters (gas & diesel)
  - Deconned Underground and Above Ground Tanks
  - Solid fractions from sand/oil/water separators

- Additional waste accepted at the Area 6 Hydrocarbon Landfill:
  - Drained sludge
  - Drained fuel filters (gas & diesel)
  - Crushed non-terne plated oil filters
  - Sludge from sand/oil/water separators
  - PCBs below 50 parts per million

REQUIRED: WASTE GENERATOR SIGNATURE

Signature of Certifier:

Radiation Survey Release for Waste Disposal

- 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 radioanalysis.

Signature: [Signature]

Date: 26 MAR 02

Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

Weight (net from scale or estimate): 32,000

Signature of Certifier: [Signature]

BN-0918 (2/02)
### Site Conditions:
- Do berms/walls need repair? [ ] No [ ] Yes
- Does cover need repair? [ ] No [ ] Yes
- Does fence need repair? [ ] No [ ] Yes
- Does road(s) need repair? [ ] No [ ] Yes
- Has litter accumulated? [ ] No [ ] Yes
- Has water accumulated? [ ] No [ ] Yes

### Corrective Actions Needed:

### Corrective Actions Taken: (description, name, date):

---

### INSPECTION INFORMATION

#### Random Load Inspection:
- Ticket Number:

- [ ] No prohibited waste was found
- [ ] Yes, the prohibited waste(s) identified below were found.
  - [ ] Putrescible waste (prohibited in U10c and Area 6 Landfills)
  - [ ] Hazardous waste per NAC 444.580
  - [ ] PCB waste regulated by TSCA
  - [ ] Waste containing free liquids
  - [ ] TSCA-regulated
  - [ ] Waste failing the "no added radioactivity" per the POC requirement.
  - [ ] Friable asbestos (prohibited in U10c and Area 6 Landfills)
  - [ ] Hydrocarbon soil at >100 ppm TPH (prohibited in 23, allowed in U10c provided less than 50 cubic yards/week are disposed)

---

### INSPECTED BY (date/time):

---

### INSPECTED BY (date/time):

NRA 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.)

<table>
<thead>
<tr>
<th>Waste Generator:</th>
<th>Environmental Restoration, Don Cox</th>
<th>Phone Number: 5-5576</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location / Origin:</td>
<td>Area 27, Site Maintenance Yard, CAU 326</td>
<td></td>
</tr>
</tbody>
</table>

**Waste Category:**
- Commercial
- Industrial

**Waste Type:**
- NTS
- Putrescible
- Non-Putrescible
- Asbestos Containing Material
- FFAO-on-site
- FFAO-offsite
- WAC Exception
- Historic DOE/NV

**Pollution Prevention Category:**
- Environmental management
- Defense Projects

**Method of Characterization:**
- Sampling & Analysis
- Process Knowledge
- Routine

**Prohibited Waste:**
- Radioactive waste
- RCRA waste
- Hazardous waste
- Free liquids
- PCBs above TSCA regulatory levels-
- Medical wastes
- Needles, sharps, bloody clothing
- Friable asbestos

**Additional Prohibited Waste:**
- Sewage Sludge
- Animal carcasses
- Wet garbage (food waste)
- Friable asbestos

**Required: Waste Contents Allowable Wastes**
Check all allowable wastes that are contained within this load:

- 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.)
- Asbestos: Non-Friable (contact SWO if regulated load)

**Additional Waste Accepted at the Area 23 Mercury Landfill:**
- Office waste
- Food Waste
- Animal Carcasses
- Non-Friable asbestos

**Additional Waste Accepted at the Area 9 U10c Landfill:**
- Non-friable asbestos
- Drained automobiles and military vehicles
- Drained fuel filters (gas & diesel)
- Tanks
- Hydrocarbons
- Asbestos: Non-Friable
- Light ballasts (contact SWO)
- Plants
- Crushed non-terne plated oil filters
- PCBs below 50 parts per million

**Initials:**
If initialed, no radiological clearance is necessary.

The above mentioned waste was generated outside of a Controlled Waste knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only prohibited and allowable waste items.

Print Name: Donald H. Cox
Signature: ____________________________ Date: ________

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): 30,000 Signature of Certifier: ________
# 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:** Environmental Restoration, Don Cox  
**Phone Number:** 5-5576

**Location / Origin:** Area 27, Site Maintenance Yard, CAU 326

<table>
<thead>
<tr>
<th>Waste Category: (check one)</th>
<th>Commercial</th>
<th>Industrial</th>
</tr>
</thead>
<tbody>
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<td>Waste Type: (check one)</td>
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<td>Putrescible</td>
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<td>NTS</td>
<td>Putrescible</td>
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<tr>
<td></td>
<td>Putrescible</td>
<td>Asbestos Containing Material</td>
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<td>Putrescible</td>
<td>FFACO-onsite</td>
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<tr>
<td></td>
<td>Putrescible</td>
<td>FFACO-offsites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Historic DOE/NV</td>
</tr>
</tbody>
</table>

**Pollution Prevention Category: (check one)**

- Environmental management
- Defense Projects

**Pollution Prevention Category: (check one)**

- Clean-Up
- Routine

**Method of Characterization: (check one)**

- Sampling & Analysis
- Process Knowledge

**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 UlOc 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-Asbestos form)
- 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

**Additional waste accepted at the Area 9 UlOc Landfill:**

- Non-Friable Asbestos
- Drained Automobiles and Military Vehicles
- Solids Fractions from Sand/Oil/Water Separators
- Light Ballasts (Contact SWO)
- Drained Fuel Filters (Gas & Diesel)
- Decomposed Underground and Above Ground Tanks
- Hydrocarbons (Contact SWO)
- Crushed Non-Tere Plated Oil Filters
- Plants
- Sludge from Sand/Oil/Water Separators
- PCBs Below 50 Parts per Million

**Required: Waste Generator Signature**

(If initialed, no radiological clearance is necessary.)

The above mentioned waste was generated outside of a Controlled Waste Site, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only prohibited and allowable waste items.

**Print Name:** Donald H. Cox  
**Signature:** [Signature]  
**Date:** 26 MAR 02

**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): 27,000  
  **Signature of Certifier:** [Signature]
<table>
<thead>
<tr>
<th>WASTE GENERATOR Name, Phone #</th>
<th>WASTE ORIGIN Area, Building</th>
<th>WASTE CODE</th>
<th>TICKET NUMBER</th>
<th>NET WEIGHT (lbs)</th>
<th>TIME IN</th>
<th>TIME OUT</th>
<th>DRIVER Last Name, Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>(b)</td>
<td>2800</td>
<td>8:05</td>
<td>9:00</td>
<td>JONES S</td>
</tr>
<tr>
<td>Mike Kruzic</td>
<td>A-12, MY/EX X</td>
<td>C</td>
<td>2</td>
<td>32,000</td>
<td>8:32</td>
<td>9:49</td>
<td>Kaczay R</td>
</tr>
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<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>4</td>
<td>28,800</td>
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<td>HARRIE E</td>
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<td>BN</td>
<td>A-12</td>
<td>C</td>
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<td>14,000</td>
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<td>JONES S</td>
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<td>A-12</td>
<td>C</td>
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<td>HARRIE E</td>
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<td>7</td>
<td>39,000</td>
<td>10:32</td>
<td>10:49</td>
<td>Kaczay R</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site Conditions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do berms/walls need repair?</td>
</tr>
<tr>
<td>Does cover need repair / evidence of settling?</td>
</tr>
<tr>
<td>Does fence need repair?</td>
</tr>
<tr>
<td>Does road(s) need repair?</td>
</tr>
<tr>
<td>Has litter accumulated?</td>
</tr>
<tr>
<td>Has water accumulated?</td>
</tr>
</tbody>
</table>

Corrective Actions Needed:

Corrective Actions Taken: (description, name, date, who notified):

Random Load Inspection: Ticket Number:
- No prohibited waste was found
- Yes, the prohibited waste(s) identified below were found:
  - Putrescible waste (prohibited in U10c and Area 6 Landfills).
  - Hazardous waste per NAC 444.580
  - PCB waste regulated by TSCA
  - Waste containing free liquids
  - TSCA-regulated
  - Waste failing the "no added radioactivity" per the POC requirement.
  - Friable asbestos (prohibited in U10c and Area 6 Landfills)
  - Hydrocarbon soil at >100 ppm TPH (prohibited in 23, allowed in U10c provided less than 50 cubic yards/week are disposed)

Corrective Actions Taken: (description, name, date, who notified):

INSPRECTED BY (date/time):
### LANDFILL DAILY ACCESS REGISTER

**Date:** 01/21/02

| WASTE GENERATOR | WASTE ORIGIN | WASTE CODE | TICKET NUMBER | NET WEIGHT (lbs) | TIME IN | TIME OUT | DRIVER
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>10</td>
<td>26,420</td>
<td>11:15</td>
<td>11:30</td>
<td>Jones S</td>
</tr>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>11</td>
<td>24,210</td>
<td>11:25</td>
<td>11:40</td>
<td>Jones S</td>
</tr>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>12</td>
<td>18,000</td>
<td>11:30</td>
<td>11:45</td>
<td>TOLLDAY C</td>
</tr>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>13</td>
<td>12,000</td>
<td>11:35</td>
<td>12:10</td>
<td>LUCAS K</td>
</tr>
<tr>
<td>Mike Kuzic</td>
<td>A-27</td>
<td>C</td>
<td>14</td>
<td>Est. 36,000</td>
<td>11:54</td>
<td>12:10</td>
<td>Krisay K</td>
</tr>
<tr>
<td>TN</td>
<td>A-12</td>
<td>C</td>
<td>15</td>
<td>12,000</td>
<td>12:25</td>
<td>12:50</td>
<td>Jones S</td>
</tr>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>16</td>
<td>10,000</td>
<td>11:35</td>
<td>11:50</td>
<td>TOLLDAY C</td>
</tr>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>17</td>
<td>22,360</td>
<td>1:30</td>
<td>1:45</td>
<td>Kozarik E</td>
</tr>
</tbody>
</table>

*Waste Codes: ASB - Asbestos; C - Construction; H - Hydrocarbon; P - Putrescible; NP - Non-Putrescible; S - Sewage Sludge; F - FFACO*

### Site Conditions:

- Do berms/walls need repair? [ ] No [ ] Yes
- Does cover need repair / evidence of settling? [ ] No [ ] Yes
- Does fence need repair? [ ] No [ ] Yes
- Does road(s) need repair? [ ] No [ ] Yes
- Has litter accumulated? [ ] No [ ] Yes
- Has water accumulated? [ ] No [ ] Yes

**Corrective Actions Taken:**

**Corrective Actions Taken:** (description, name, date, who notified):

---

**INSPECTED BY**

(date/time):
## LANDFILL DAILY ACCESS REGISTER

**Date:** 10/12/03  
**Site Conditions:**  
- Do berms/walls need repair? [ ] No [ ] Yes  
- Does cover need repair / evidence of settling? [ ] No [ ] Yes  
- Does fence need repair? [ ] No [ ] Yes  
- Does road(s) need repair? [ ] No [ ] Yes  
- Has litter accumulated? [ ] No [ ] Yes  
- Has water accumulated? [ ] No [ ] Yes  

**Corrective Actions Needed:**

**Corrective Actions Taken:** (description, name, date):

**INSPECTED BY**  
(date/time):

---

**INSPECTION INFORMATION**

**Random Load Inspection:**  
Ticket Number:  
- No prohibited waste was found  
- Yes, the prohibited waste(s) identified below were found.  
  - Putrescible waste (prohibited in U10c and Area 6 Landfills)  
  - Hazardous waste per NAC 444.580  
  - PCB waste regulated by TSCA  
  - Waste containing free liquids  
  - TSCA-regulated  
  - Waste failing the "no added radioactivity" per the POC requirement.  
  - Friable asbestos (prohibited in U10c and Area 6 Landfills)  
  - Hydrocarbon soil at >100 ppm TPH (prohibited in 23, allowed in U10c provided less than 50 cubic yards/week are disposed)  

**Corrective Actions Taken:** (description, name, date, who notified):

**INSPECTED BY (date/time):**
**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:** Mike Kruzic  
**Phone Number:** 5-7396

**Location / Origin:** Area 27, Maintenance Yard / Excavation

<table>
<thead>
<tr>
<th>Waste Category: (check one)</th>
<th>Commercial</th>
<th>Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Type: (check one)</td>
<td>NTS</td>
<td>Putrescible</td>
</tr>
<tr>
<td>Pollution Prevention Category: (check one)</td>
<td>Environmental management</td>
<td>Defense Projects</td>
</tr>
<tr>
<td>Method of Characterization: (check one)</td>
<td>Sampling &amp; Analysis</td>
<td>Process Knowledge</td>
</tr>
</tbody>
</table>

**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: Non-Friable
- Non-Friable (contact SWO if regulated load)

**Additional waste accepted at the Area 9 U10c Landfill:**

- Non-friable asbestos
- Drained automobiles and military vehicles
- Drained fuel filters (gas & diesel)
- Decommissioned Underground and Above Ground
- Hydrocarbons (contact SWO)

**Additional waste accepted at the Area 6 Hydrocarbon Landfill:**

- Septic sludge
- Rags
- Drained fuel filters (gas & diesel)
- Crushed non-terne plated oil filters
- Plants
- 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 knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials. I have verified this through the waste characterization method identified above and allowable waste items.

**Print Name:** Michael Kruzic  
**Signature:** Michael Kruzic  
**Date:** 6/11/02

**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):** 32,000  
**Signature of Certifier:**
**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.)

Vaste Generator: Mike Kruzic  
Phone Number: 5-7396

**Location / Origin:** Area 27 Maintenance Yard / Excavation

<table>
<thead>
<tr>
<th>Vaste Category (check one):</th>
<th>Commercial</th>
<th>☑ Industrial</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Waste Type (check one):</th>
<th>☑ NFS</th>
<th>Non-Putrescible</th>
<th>Putrescible</th>
<th>FFACO-onsite</th>
<th>FFACO-offsite</th>
<th>WAC Exception</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Pollution Prevention Category (check one):</th>
<th>☑ Environmental management</th>
<th>☑ Clean-Up</th>
<th>☑ Process Knowledge</th>
</tr>
</thead>
</table>

**Prohibited Waste at all three NTS landfills:** Radioactive waste; RCRA waste; Hazardous waste; Free liquids; PCs 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 hydraulic fluids, kerosene, asphalts sands/terne plated oil filters; and ethylene glycol.

<table>
<thead>
<tr>
<th>Acceptable waste at any NTS landfill:</th>
<th>☑ Paper</th>
<th>☑ Rocks / unaltered geologic materials</th>
<th>☑ Empty containers</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Asphalt</td>
<td>☑ Metal</td>
<td>☑ Wood</td>
<td>☑ Soil</td>
</tr>
<tr>
<td>☑ Plastic</td>
<td>☑ Wire</td>
<td>☑ Cable</td>
<td>☑ Cloth</td>
</tr>
<tr>
<td>☑ Manufactured items: (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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:**

<table>
<thead>
<tr>
<th>☑ Non-friable asbestos</th>
<th>☑ Drained automobiles and military vehicles</th>
<th>☑ Solid fractions from sand/oil/water separators</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Light ballasts (contact SWO)</td>
<td>☑ Drained fuel filters (gas &amp; diesel)</td>
<td>☑ Deconned Underground and Above Ground Ground</td>
</tr>
<tr>
<td>☑ Hydrocarbons (contact SWO)</td>
<td></td>
<td>☑ Tanks</td>
</tr>
</tbody>
</table>

**Additional waste accepted at the Area 6 Hydrocarbon Landfill:**

<table>
<thead>
<tr>
<th>☑ Septic sludge</th>
<th>☑ Rags</th>
<th>☑ Drained fuel filters (gas &amp; diesel)</th>
<th>☑ Crushed non-terne plated oil filters</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Plants</td>
<td>☑ Sludge from sand/oil/water separators</td>
<td>☑ PCBs below 50 parts per million</td>
<td></td>
</tr>
</tbody>
</table>

**REQUIRED: WASTE GENERATOR SIGNATURE**

(If initialed, no radiological clearance is necessary.)

*The above mentioned waste was generated outside of a Controlled Waste Management, and does not contain radiological materials.*

To the best of my knowledge, the waste described above contains only those materials I have verified this through the waste characterization method identified above, prohibited and allowable waste items.

**Print Name:** Michael Kruzic  
**Signature:** Michael Kruzic  
**Date:** 6/17/02

**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): 39,000  
Signature of Certifier: 

**Radiation Survey Release for Waste Disposal**

RGT 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:** 6/17/02

**BN-0918 (99/00)**
NTS Landfill Load Verification

(Waste definitions are available on page 2)

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.)

<table>
<thead>
<tr>
<th>Waste Generator:</th>
<th>Phone Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mike Krutic</td>
<td>5-7396</td>
</tr>
</tbody>
</table>

### Location / Origin:
- Area 27 Maintenance Yard / Excavation
- CAV 326

### Waste Category:
- □ Commercial
- □ Industrial

### Waste Types:
- □ Radioactive
- □ Non-Putrescible
- □ Asbestos Containing Material
- □ FFACO-onsite
- □ FFACO-offsites
- □ Historic DOE/NV

### Pollution Prevention Category:
- □ Environmental management
- □ Defere Projects

### Method of Characterization:
- □ 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:

<table>
<thead>
<tr>
<th>Acceptable waste at any NTS landfill:</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Paper</td>
</tr>
<tr>
<td>□ Rocks / unaltered geologic materials</td>
</tr>
<tr>
<td>□ Empty containers</td>
</tr>
<tr>
<td>□ Asphalt</td>
</tr>
<tr>
<td>□ Metal</td>
</tr>
<tr>
<td>□ Wood</td>
</tr>
<tr>
<td>□ Soil</td>
</tr>
<tr>
<td>□ Rubber (excluding tires)</td>
</tr>
<tr>
<td>□ Demolition debris</td>
</tr>
<tr>
<td>□ Insulation (non-Asbestosform)</td>
</tr>
<tr>
<td>□ Cement &amp; concrete</td>
</tr>
<tr>
<td>□ Scrap (manufactured items): (swamp coolers, furniture, rugs, carpet, electronic components, PPE, etc.)</td>
</tr>
</tbody>
</table>

### Additional waste accepted at the Area 23 Mercury Landfill:
- Office waste
- Food Waste
- Animal Carcasses

### Additional waste accepted at the Area 9 U10c Landfill:
- Asbestos: □ Friable □ Non-Friable (contact SWO if regulated load)

### Additional waste accepted at the Area 6 Hydrocarbon Landfill:
- Non-friable asbestos
- Light ballasts (contact SWO)
- Hydrocarbons (contact SWO)

### Additional waste accepted at the Area 9 U10c Landfill:
- Solid fractions from sand/oil/water separators
- Deconned Underground and Above Ground
- Tanks

### Additional waste accepted at the Area 6 Hydrocarbon Landfill:
- Septic sludge
- Drained fuel filters (gas & diesel)
- Crushed non-ferrous plated oil filters
- Plants
- Sludge from sand/oil/water separators
- PCBs below 50 parts per million

### Initials:  
(If initialed, no radiological clearance is necessary.)

The above mentioned waste was generated outside of a Controlled Waste Manage knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials listed on the form. I have verified this through the waste characterization method identified above and the prohibited and allowable waste items.

Print Name: Michael Krutic
Signature: Michael Krutic  Date: 6/11/10

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

Load Weight (net from scale or estimate): 36,000  Signature of Certifier:  

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 radioanalysis.

Signature:  
Date: 6/11/10

(Signature of SWO Officer)
NTS Landfill Load Verification
(Waste definitions are available on page 2)

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.)

<table>
<thead>
<tr>
<th>Waste Generator</th>
<th>Mike Kruzic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location / Origin</td>
<td>Area 27 Maintenance Yard / Excavation</td>
</tr>
</tbody>
</table>

### Waste Category:
- [ ] Commercial
- [X] Industrial

### Waste Type:
- [X]適用
- [ ] Non-適用

### Pollution Prevention Category:
- [X] Clean-Up
- [ ] Routine

### Method of Characterization:
- [ ] Sampling & Analysis
- [X] Process Knowledge

### 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:

- [X] Paper
- [ ] Rocks / unaltered geologic materials
- [ ] Empty containers

### Additional Prohibited Waste at the Area 9 U10c Landfill:
- Drained automobiles and military vehicles
- Solid fractions from sand/oil/water separators
- Deconned Underground and Above Ground Tanks

### Additional Waste accepted at the Area 9 U10c Landfill:
- Crushed non-terne plated oil filters
- PCBs below 50 parts per million

### Required: Waste Generator Signature

Signature: Michael Kruzic  Date: 6/1/102

**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): 34,000 Signature of Certifier: [Signature]
<table>
<thead>
<tr>
<th>Date:</th>
<th>6-13-02</th>
</tr>
</thead>
</table>

**LANDFILL DAILY ACCESS REGISTER**

<table>
<thead>
<tr>
<th>Waste Generator Name, Phone #</th>
<th>Waste Origin Area, Building</th>
<th>Waste Code</th>
<th>Ticket Number</th>
<th>Net Weight (lbs)</th>
<th>Time In</th>
<th>Time Out</th>
<th>Driver Last Name, Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>V. N.</td>
<td>A-25</td>
<td>C</td>
<td>I</td>
<td>31,260</td>
<td>9:30</td>
<td>9:45</td>
<td>Don E</td>
</tr>
<tr>
<td>Mike Kauzic</td>
<td>A-27 Myth Ex</td>
<td>C</td>
<td>E</td>
<td>51,920</td>
<td>9:15</td>
<td>9:30</td>
<td>Kaspers K</td>
</tr>
<tr>
<td>B. N.</td>
<td>A-12</td>
<td>C</td>
<td>II</td>
<td>60,390</td>
<td>10:30</td>
<td>10:45</td>
<td>Don E</td>
</tr>
<tr>
<td>Mike Kauzic</td>
<td>A-27 Myth Ex</td>
<td>C</td>
<td>5</td>
<td>46,49</td>
<td>11:00</td>
<td>11:16</td>
<td>Wright R</td>
</tr>
<tr>
<td>B. N.</td>
<td>A-12</td>
<td>C</td>
<td>8</td>
<td>38,000</td>
<td>12:56</td>
<td>1:08</td>
<td>Kaspers K</td>
</tr>
</tbody>
</table>

*Waste Codes: ASB - Asbestos; C - Construction; H - Hydrocarbon; P - Putrescible; NP - Non-Putrescible; S - Sewage Sludge; F - FFACO.

**INSPECTION INFORMATION**

**Site Conditions:**
- Do berms/walls need repair? [ ] No [ ] Yes
- Does cover need repair? [ ] No [ ] Yes
- Does fence need repair? [ ] No [ ] Yes
- Does road(s) need repair? [ ] No [ ] Yes
- Has litter accumulated? [ ] No [ ] Yes
- Has water accumulated? [ ] No [ ] Yes

**Corrective Actions Needed:**

**Corrective Actions Taken:** (description, name, date, who notified):

**INSPECTED BY** (date/time):

**INSPECTED BY** (date/time):
**LANDFILL DAILY ACCESS REGISTER**

**DATE:** 6/13/02

(check one) [ ] Area 9 - U10c  [ ] Area 6 Hydrocarbon  [ ] Area 23 Landfill

<table>
<thead>
<tr>
<th>WASTE GENERATOR</th>
<th>WASTE ORIGIN</th>
<th>WASTE CODE</th>
<th>TICKET NUMBER</th>
<th>NET WEIGHT (lbs)</th>
<th>TIME IN</th>
<th>TIME OUT</th>
<th>DRIVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN</td>
<td>4.11</td>
<td>C</td>
<td>10</td>
<td>2209</td>
<td>2:37</td>
<td>2:48</td>
<td>J. Clark</td>
</tr>
<tr>
<td>Mike Kazic</td>
<td>A27 M4/6X</td>
<td>C</td>
<td>11</td>
<td>4100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Waste Codes:**
- ASB - Asbestos
- C - Construction
- H - Hydrocarbon
- P - Putrescible
- NP - Non-Putrescible
- S - Sewage Sludge
- F - FFACO

**Site Conditions:**
- Do berms/walls need repair? [ ] No  [ ] Yes
- Do cover need repair / evidence of settling? [ ] No  [ ] Yes
- Does fence need repair? [ ] No  [ ] Yes
- Does road(s) need repair? [ ] No  [ ] Yes
- Has litter accumulated? [ ] No  [ ] Yes
- Has water accumulated? [ ] No  [ ] Yes

**Corrective Actions Needed:**

**Corrective Actions Taken:** (description, name, date):

---

**INSPECTION INFORMATION**

**Random Load Inspection:**
- Ticket Number: ___

- [ ] No prohibited waste was found
- [ ] Yes, the prohibited waste(s) identified below were found:
  - Putrescible waste (prohibited in U10c and Area 6 Landfills)
  - Hazardous waste per NAC 444.580
  - PCB waste regulated by TSCA
  - Waste containing free liquids
  - TSCA-regulated
  - Waste failing the "no added radioactivity" per the POC requirement.
  - Friable asbestos (prohibited in U10c and Area 6 Landfills)
  - Hydrocarbon soil at >100 ppm TPH (prohibited in 23, allowed in U10c provided less than 50 cubic yards/week are disposed)

**Corrective Actions Taken:** (description, name, date, who notified):

---

**INSPECTED BY:**

**TIME DRIVER:**

---
## NTS Landfill Load Verification

**Waste definitions are available on page 2**

<table>
<thead>
<tr>
<th>SWO USE (Circle One Area)</th>
<th>AREA</th>
<th>23</th>
<th>6</th>
<th>9</th>
<th>LANDFILL</th>
</tr>
</thead>
<tbody>
<tr>
<td>For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### REQUIRED: WASTE GENERATOR INFORMATION

This form is for rolloffs, dump trucks, and other onsite disposal of materials.

- **Waste Generator:** Mike Kruzic
- **Location / Origin:** Area 27, Maintenance Yard / Excavation
- **Phone Number:** 5-7396
- **Waste Generator:** Mike Kruzic

### Waste Category

- (check one)
  - Commercial
  - Industrial

### Waste Type

- (check one)
  - NSTs
  - Non-Putrescible
  - Putrescible
  - Asbestos Containing Material
  - FFACO-onsite
  - FFACO-offsite
  - WAC Exception

### Pollution Prevention Category

- (check one)
  - Environmental management
  - Defense Projects
  - 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).
- Sewage Sludge; Animal carcasses; Wet garbage (food waste); and Friable asbestos

### Additional Prohibited Waste

- at the Area 9 U10c Landfill:
  - Non-Friable asbestos

### 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)

### 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)
- Additional waste accepted at the Area 6 Hydrocarbon Landfill:
  - Septic sludge
  - Rags
  - Drained fuel filters (gas & diesel)
  - Crushed non-terne plated oil filters
  - Plants
  - Sludge from sand/oil/water separators
  - PCBs below 50 parts per million

### Additional waste accepted at the Area 6 Hydrocarbon Landfill:

- Drained fuel filters (gas & diesel)
- Drained fuel filters (gas & diesel)
- Crushed non-terne plated oil filters
- Plants
- Sludge from sand/oil/water separators
- PCBs below 50 parts per million

### 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 hydraulic; kerosene; asphalts petroleum hydrocarbon; and ethylene glycol.

- Additional waste accepted at the Area 23 Mercury Landfill:
  - Office waste
  - Food Waste
  - Animal Carcasses
- Asbestos: Friable
- Non-Friable (contact SWO if regulated load)

### 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)

### Additional waste accepted at the Area 6 Hydrocarbon Landfill:

- Septic sludge
- Rags
- Drained fuel filters (gas & diesel)
- Crushed non-terne plated oil filters
- Plants
- Sludge from sand/oil/water separators
- PCBs below 50 parts per million

### Initials

- **(If initialed, no radiological clearance is necessary.)**

### The above mentioned waste was generated outside of a Controlled Waste Management knowledge, does not contain radiological materials.

### To the best of my knowledge, the waste described above contains only those materials, I have verified this through the waste characterization method identified above prohibited and allowable waste items.

### Print Name

- Michael Kruzic

### Signature

- Michael Kruzic

## SWO USE ONLY

**Load Weight (net from scale or estimate):** 42,000

**Signature of Certifier:**

**Note:** Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not 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 radioanalyses.

**SIGNATURE:**

**DATE:** 6/11/02

**Note:** Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.
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: Mike Kruzic
Phone Number: 5-7396

Location / Origin: Area 27 Maintenance Yard / Excavation

Waste Category: (check one) ☐ Commercial ☒ Industrial

Waste Type: (check one) ☒ Non-Putrescible ☐ Putrescible ☐ FFACO-onsite ☐ FFACO-offsites ☐ WAC Exception

Pollution Prevention Category: (check one) ☐ Environmental management ☐ Defense Projects

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 hydraulic; 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) ☐ Empty 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)

Additional waste accepted at the Area 6 Hydrocarbon Landfill:
☐ Septic sludge ☐ Rags ☐ Drained fuel filters (gas & diesel) ☐ Crushed non-terne plated oil filters
☐ Plants ☐ Sludge from sand/oil/water separators ☐ PCBs below 50 parts per million

Initials: __________ (If initialed, no radiological clearance is necessary.)

The above mentioned waste was generated outside of a Controlled Waste Management knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials I have verified this through the waste characterization method identified above prohibited and allowable waste items.

Print Name: Michael Kruzic
Signature: Michael Kruzic Date: 6/11/02

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) 39,000 Signature of Certifier: Keith Kuykendall

Radiation Survey Release for Waste Disposal

RCT Initials
☐ This container/lot is free of external radioactive contamination.
☐ This container/lot is exempt from survey due to process knowledge and origin.
☐ This container/lot is free of radioactive contamination based on radioanalysis.

Signature: __________________ Date: 6-11-02

45 DOH, 5964 (09/00)
### 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 5-7998.

**REQUIRED: WASTE GENERATOR INFORMATION**

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

<table>
<thead>
<tr>
<th>Waste Generator: Mike Kruzic</th>
<th>Phone Number: 5-7396</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location / Origin: Area 27 Maintenance Yard / Excavation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Waste Category: (check one)</th>
<th>Commercial</th>
<th>Industrial</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Type: (check one)</td>
<td>NTE-</td>
<td>Putrescible</td>
<td></td>
</tr>
<tr>
<td>Environmental management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defense Projects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Routine</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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:

<table>
<thead>
<tr>
<th>Acceptable waste at any NTS landfill:</th>
<th>Paper</th>
<th>Rocks / unaltered geologic materials</th>
<th>Empty containers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td></td>
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<td></td>
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<td>Plastic</td>
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<td>Wire</td>
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<tr>
<td>Cable</td>
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<tr>
<td>Insulation (non-Asbestosform)</td>
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<td></td>
</tr>
</tbody>
</table>

**Additionl waste accepted at the Area 23 Mercury Landfill:**
- Office waste
- Food Waste
- Animal Carcasses

**Additional waste accepted at the Area 9 U10c Landfill:**
- Non-friable asbestos
- Drained automobiles and military vehicles
- Solid fractions from sand/oil/water separators
- Décenoned Underground and Above Ground
- Tanks

**Additional waste accepted at the Area 6 Hydrocarbon Landfill:**
- Septic sludge
- Drained fuel filters (gas & diesel)
- Crushed non-term plated oil filters
- PCBs below 50 parts per million
- Drained fuel filters (gas & diesel)
- Sludge from sand/oil/water separators

**REQUIRED: WASTE GENERATOR SIGNATURE**

The above mentioned waste was generated outside of a Controlled Waste Manage knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

Print Name: Michael Kruzic
Signature: Michael Kruzic Date: 6/11/02

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): 38 tons Signature of Certifier: Michael Kruzic

---

**Radiation Survey Release for Waste Disposal**

**RCT Initials:**

- This container/food is free of external radioactive contamination.
- This container/food is exempt from survey due to process knowledge and origin.
- This container/food is free of radioactive contamination based on radioanalysis.

**Signature and Date:** 6/11/02

---

**Bechtel Nevada**

(Waste definitions are available on page 2)
**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.)

<table>
<thead>
<tr>
<th>Waste Generator:</th>
<th>Mike Kruzic</th>
<th>Phone Number: 5-7396</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location / Origin:</td>
<td>Area 27 Maintenance Yard / Excavation</td>
<td>376</td>
</tr>
</tbody>
</table>

**Waste Category (check one):**
- [ ] Commercial
- [x] Industrial

**Waste Type (check one):**
- [x] NTS
- [ ] Putrescible
- [ ] FFACO-onsite
- [ ] WAC Exception
- [ ] Non-Putrescible
- [ ] Asbestos Containing Material
- [ ] FFACO-offsite
- [ ] Historic DOE/NV

**Pollution Prevention Category (check one):**
- [x] Environmental management
- [ ] Defense Projects

**Method of Characterization (check one):**
- [x] Sampling & Analysis
- [ ] Process Knowledge

**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 23 Mercury 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:

**Acceptable waste at any NTS landfill:**
- [ ] Paper
- [x] 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)

**Additional waste accepted at the Area 9 U10c Landfill:**
- [ ] 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)

**Additional waste accepted at the Area 6 Hydrocarbon Landfill:**
- [ ] Septic sludge
- [ ] Rags
- [ ] Crushed non-terne plated oil filters
- [ ] Drained fuel filters (gas & diesel)
- [ ] Sludge from sand/oil/water separators
- [ ] PCBs below 50 parts per million
- [ ] Plants

**Initials:** [ ]

(The above mentioned waste was generated outside of a Controlled Waste Management knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials prohibited and allowable waste items.

Print Name: [ ]

Signature: [ ]

Date: 6/11/02

**SWO USE ONLY**

Load Weight (net from scale or estimate): 41,000

Signature of Certifier: [ ]
### Site Conditions:

- **Berms/walls need repair?**
  - No ☐
  - Yes ☐

- **Cover need repair / evidence of settling?**
  - No ☐
  - Yes ☐

- **Fence need repair?**
  - No ☐
  - Yes ☐

- **Road(s) need repair?**
  - No ☐
  - Yes ☐

- **Litter accumulated?**
  - No ☐
  - Yes ☐

- **Waste accumulated?**
  - No ☐
  - Yes ☐

**Corrective Actions Needed:**

---

### Random Load Inspection:

**Ticket Number:**

- **No prohibited waste was found**
- **Yes, the prohibited waste(s) identified below were found.**
  - Putrescible waste (prohibited in U10c and Area 6 Landfills).
  - PCB waste regulated by TSCA
  - Waste containing free liquids
  - Waste failing the "no added radioactivity" per the POC requirement.
  - Friable asbestos (prohibited in U10c and Area 6 Landfills)
  - Hydrocarbon soil at >100 ppm TPH (prohibited in 23, allowed in U10c provided less than 50 cubic yards/week are disposed)

**Corrective Actions Taken:** (description, name, date, who notified):

---

**INSPECTED BY**

*(date/time):*
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: Mike Kruzic
Location / Origin: Area 27 Maintenance Yard / Excavation

Waste Type: Check one
- Putrescible
- Non-Putrescible
- Asbestos Containing Material
- FFAC Offsite
- FFAC Onsite

Pollution Prevention Category: Check one
- Environmental Management
- Defense Projects
- 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
- Medical wastes

Additional Prohibited Waste at the Area 9 UlOc Landfill:
- Sewage Sludge
- Animal carcasses
- Wet garbage
- Friable asbestos

Required: Waste Contents Allowable Wastes
Check all allowable wastes that are contained within this load:

- 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-Asbestos form)
  - 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

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)
- Decoressed Underground and Above Ground Tanks
- Hydrocarbons (contact SWO)

Additional waste accepted at the Area 6 Hydrocarbon Landfill:
- Septic sludge
- Rags
- Drained fuel filters (gas & diesel)
- Crushed non-terne plated oil filters
- Plants
- Sludge from sand/oil/water separators
- PCBs below 50 parts per million

Required: Waste Generator Signature

The above mentioned waste was generated outside of a Controlled Waste Management site. I have verified this through the waste characterization method identified above and prohibited and allowable waste items.

Print Name: Michael Kruzic
Signature: Date: 6/11/02

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: Wayne Antar
## LANDFILL DAILY ACCESS REGISTER

### DATE: 6-12-02

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Area 9 - U10c</th>
<th>Area 6 Hydrocarbon</th>
<th>Area 23 Landfill</th>
</tr>
</thead>
</table>

### Inspectors:
- **Tolladay, C**
- **Weight, R**
- **Lamanna, M**
- **Bates, S**

### Random Load Inspection:

#### Ticket Number:

<table>
<thead>
<tr>
<th>Waste Generator Name, Phone #</th>
<th>Waste Origin Area, Building</th>
<th>Waste Code*</th>
<th>Ticket Number</th>
<th>Net Weight (lbs)</th>
<th>Time In</th>
<th>Time Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>10</td>
<td>2,360</td>
<td>10:55</td>
<td>11:10</td>
</tr>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>13</td>
<td>8,171</td>
<td>11:15</td>
<td>11:30</td>
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<tr>
<td>BN</td>
<td>A-12</td>
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<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>17</td>
<td>4,408</td>
<td>1:00</td>
<td>1:15</td>
</tr>
</tbody>
</table>

**Corrective Actions Taken:**
- Description: [Description]
- Name: [Name]
- Date: [Date]

**Inspected By:** [Name] (date/time)

---

### Site Conditions:

- Do berms/walls need repair? [ ] No [ ] Yes
- Does cover need repair? [ ] No [ ] Yes
- Evidence of settling? [ ] No [ ] Yes
- Does fence need repair? [ ] No [ ] Yes
- Does road(s) need repair? [ ] No [ ] Yes
- Has litter accumulated? [ ] No [ ] Yes
- Has water accumulated? [ ] No [ ] Yes

**Corrective Actions Needed:**

**Corrective Actions Taken:**
- Description: [Description]
- Name: [Name]
- Date: [Date]

**Inspected By:** [Name] (date/time)

---

### Inspection Information:

- **Random Load Inspection:**
- **Ticket Number:** [Ticket Number]

**Site Conditions:**

- No prohibited waste was found
- Yes, the prohibited waste(s) identified below were found.
  - Putrescible waste (prohibited in U10c and Area 6 Landfills)
  - Hazardous waste per NAC 444.580
  - PCB waste regulated by TSCA
  - Waste containing free liquids
  - TSCA-regulated
  - Waste failing the "no added radioactivity" per the POC requirement
  - Friable asbestos (prohibited in U10c and Area 6 Landfills)
  - Hydrocarbon soil at >100 ppm TPH (prohibited in 23, allowed in U10c provided less than 50 cubic yards/week are disposed)

**Corrective Actions Taken:**
- Description: [Description]
- Name: [Name]
- Date: [Date]
- Who notified: [Who notified]

**Inspected By:** [Name] (date/time)
# LANDFILL DAILY ACCESS REGISTER

**DATE:** 6-17-02  
(check one) □ Area 9 - U10c □ Area 6 Hydrocarbon □ Area 23 Landfill

<table>
<thead>
<tr>
<th>WASTE GENERATOR Name, Phone #</th>
<th>WASTE ORIGIN Area, Building</th>
<th>WASTE CODE*</th>
<th>TICKET NUMBER</th>
<th>NET WEIGHT (lbs)</th>
<th>TIME IN</th>
<th>TIME OUT</th>
<th>DRIVER Last Name, Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>18</td>
<td>3760</td>
<td>13:05</td>
<td>13:20</td>
<td>JONES S</td>
</tr>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>19</td>
<td>2,320</td>
<td>13:15</td>
<td>13:30</td>
<td>TOLLADAY C</td>
</tr>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>16</td>
<td>230</td>
<td>12:30</td>
<td>14:05</td>
<td>JONES S</td>
</tr>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>21</td>
<td>3124</td>
<td>2:05</td>
<td>2:15</td>
<td>Wright R</td>
</tr>
<tr>
<td>BN</td>
<td>A-12</td>
<td>C</td>
<td>22</td>
<td>2,920</td>
<td>2:15</td>
<td>2:30</td>
<td>TOLLADAY C</td>
</tr>
<tr>
<td>Mike Kruzie</td>
<td>A27, M4/16</td>
<td>C</td>
<td>24</td>
<td>49,000</td>
<td>2:35</td>
<td>2:50</td>
<td>Kaczynski K</td>
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<td>51,080</td>
<td>3:15</td>
<td>3:30</td>
<td>TOLLADAY C</td>
</tr>
</tbody>
</table>

*Waste Codes: ASB - Asbestos; C - Construction; H - Hydrocarbon; P - Putrescible; NP - Non-Putrescible; S - Sewage Sludge; F - FFACO

## SITE CONDITIONS:
- Do berms/walls need repair? [ ] No [ ] Yes
- Does cover need repair / evidence of settling? [ ] No [ ] Yes
- Does fence need repair? [ ] No [ ] Yes
- Does road(s) need repair? [ ] No [ ] Yes
- Has litter accumulated? [ ] No [ ] Yes
- Has water accumulated? [ ] No [ ] Yes

## CORRECTIVE ACTIONS NEEDED:

## CORRECTIVE ACTIONS TAKEN: (description, name, date, who notified):

## INSPECTED BY (date/time):

## INSPECTION INFORMATION

**Random Load Inspection:**  
Ticket Number:  
- [ ] No prohibited waste was found  
- [ ] Yes, the prohibited waste(s) identified below were found.
  - [ ] Putrescible waste (prohibited in U10c and Area 6 Landfills)
  - [ ] Hazardous waste per NAC 444.580
  - [ ] PCB waste regulated by TSCA
  - [ ] Waste containing free liquids
  - [ ] TSCA-regulated
  - [ ] Waste failing the "no added radioactivity" per the POC requirement.
  - [ ] Friable asbestos (prohibited in U10c and Area 6 Landfills)
  - [ ] Hydrocarbon soil at >100 ppm TPH (prohibited in 23, allowed in U10c provided less than 50 cubic yards/week are disposed)

## CORRECTIVE ACTIONS TAKEN: (description, name, date, who notified):

## INSPECTED BY (date/time):

**NOTE:** This document contains a table with detailed information about waste management, including waste codes and specific notes on corrective actions and site conditions. It also includes a section for random load inspections, indicating whether prohibited waste was found and specifying various types of waste and regulatory requirements. The document is structured to reflect the daily access register of a landfill, providing a clear record of waste handling activities.
**NTS Landfill Load Verification**

(Waste definitions are available on page 2)

For waste characterization, approval, and/or assistance, contact Solid Waste Operations (SWO) at 5-7898.

**REQUIRED: WASTE GENERATOR INFORMATION**

(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Mike Kruzic
Phone Number: 5-7396

**Location / Origin:** Area 27 Maintenance Yard / Excavation

**Area:** 23
**Landfill Number:** 6
**SWO Use (Circle One Area):** 9

**Waste Category:** (check one)
- [ ] Commercial
- [x] Industrial

**Waste Type:** (check one)
- [ ] Non-Putrescible
- [ ] FFACO-offsite
- [x] FFACO-onsite
- [ ] Putrescible
- [ ] WAC Exception
- [ ] Asbestos Containing Material
- [ ] FFACO-eligible

**Pollution Prevention Category:** (check one)
- [x] Environmental management
- [ ] Defense Projects

**Method of Characterization:** (check one)
- [x] 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
- Medical wastes (needles, sharps, bloody clothing)

**Additional Prohibited Waste at the Area 6 Hydrocarbon Landfill:**
- Sewage sludge
- Animal carcasses
- Wet garbage (food waste)
- Friable asbestos

**Waste Definitions are available on page 2**

---

**Waste Generator Signature**

The above mentioned waste was generated outside of a Controlled Waste Management knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials, and I have verified this through the waste characterization method identified above and prohibited and allowable waste items.

Print Name: Michael Kruzic
Signature: Michael Kruzic
Date: 6/11/02

Note: Food waste, office trash and/or animal carcasses are considered not to contain added radioactivity, and therefore do not require a radiological clearance.

---

**Load Weight (net from scale or estimate):** 47,000

Signature of Certifier: Kevin Krause
NTS Landfill Load Verification
(Waste definitions are available on page 2)

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

Waste Generator Information
(This form is for rolloffs, dump trucks, and other onsite disposal of materials.)

Waste Generator: Mike Kruzic
Phone Number: 5-7396

Location / Origin: Area 27 Maintenance Yard / Excavation

Waste Category: (check one) □ Commercial □ Industrial
□ NTS □ Non-NTS
□ Putrescible □ FFAC-on-site □ WAC Exception
□ Non-Putrescible □ Asbestos Containing Material □ FFAC-offsite □ Historic DOE/NV

Pollution Prevention Category: (check one) □ Environmental management □ Defense Projects
□ Clean-Up □ Routine

Prohibited Waste: Radioactive waste; RCRA waste; Hazardous waste; Free liquids, PCBs above TSCA regulatory levels, and Medical wastes (needles, sharps, bloody clothing).

Additional Prohibited Waste: Sewage Sludge; Animal carcasses; Wet garbage (food waste); and Friable asbestos at the Area 9 U10c Landfill.

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 hydraulic; 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-Asbestos form) □ 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) □ Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill:
□ Septic sludge □ Rags □ Drained fuel filters (gas & diesel) □ Crushed non-terme plated oil filters
□ Plants □ Sludge from sand/oil/water separators □ PCBs below 50 parts per million

Required: Waste Generator Signature

The above mentioned waste was generated outside of a Controlled Waste Management knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials. I have verified this through the waste characterization method identified above prohibited and allowable waste items.

Print Name: Michael Kruzic
Signature: Michael Kruzic Date: 6/11/10

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): 45,000
Signature of Certifier:
# NTS Landfill Load Verification

(Waste definitions are available on page 2)

For waste characterization, approval, and/or assistance, contact Solid Waste Operation (SWO) at 5-7898.

**Waste Generator Information**

This form is for rolloffs, dump trucks, and other onsite disposal of materials.

<table>
<thead>
<tr>
<th>Waste Generator: Mike Kruzic</th>
<th>Phone Number: 5-7396</th>
</tr>
</thead>
</table>

**Location / Origin:** Area 27, Maintenance Yard / Excavation

**Waste Category:** (check one)

- [x] Commercial
- [ ] Industrial

**Waste Type:** (check one)

- [x] NTS Kva
- [ ] Non-Putrescible
- [ ] Putrescible
- [ ] FFFACO-on-site
- [ ] FFFACO-offsite
- [ ] WAC Exception

**Pollution Prevention Category:** (check one)

- [ ] Environmental management
- [ ] Defense Projects
- [x] Clean-Up

**Method of Characterization:** (check one)

- [x] 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 UlOc 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:

<table>
<thead>
<tr>
<th>Acceptable waste at any NTS landfill:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
</tr>
<tr>
<td>Asphalt</td>
</tr>
<tr>
<td>Plastic</td>
</tr>
</tbody>
</table>

**Additional waste accepted at the Area 23 Mercury Landfill:**

- Office waste
- Food Waste
- Animal Carcasses
- Asbestos: [ ] Friable [ ] Non-Friable (contact SWO if regulated load)

**Additional waste accepted at the Area 9 UlOc Landfill:**

- Non-friable asbestos
- Light ballasts (contact SWO)
- Hydrocarbons (contact SWO)

**Additional waste accepted at the Area 6 Hydrocarbon Landfill:**

- Septic sludge
- Rags
- Drained fuel filters (gas & diesel)
- Plants
- Sludge from sand/oil/water separators
- Crushed non-terne plated oil filters

**Required: Waste Generator Signature**

The above mentioned waste was generated outside of a Controlled Waste Management knowledge, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials that are prohibited and allowable waste items.

Print Name: Michael Kruzic
Signature: Michael Kruzic Date: 6/11/07

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): 44,000 Signature of Certifier: Keith Kavez
NTS Landfill Load Verification

Waste definitions are available on page 2.

For waste characterization, approval, and/or assistance, contact Solid Waste Operations (SWO) at 5-7898.

Required: Waste Generator Information

This form is for roll-offs, dump trucks, and other onsite disposal of materials.

Area: 23

Phone Number: 5-7396

Waste Generator: Mike Krusic

Waste Category: (check one) □ Commercial □ Industrial

Waste Type: □ NTS □ Putrescible
□ Non-Putrescible □ FFCO-on-site □ WAC Exception
□ Asbestos Containing Material □ FFCO-offsite □ Historic DOE/ENV

Pollution Prevention Category: (check one) □ Environmental management □ Defense Projects

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
- Medical wastes (needles, sharps, bloody clothing)

Additional Prohibited Waste at the Area 9 U10c Landfill:

- Sewage sludge
- Animal carcasses
- Wet garbage (food waste)
- Friable asbestos

Waste Contents Allowable Wastes

Check all allowable wastes that are contained within this load:

- Asbestos: □ Friable □ Non-Friable (contact SWO if regulated load)

Additional waste accepted at the Area 23 Mercury Landfill:

- Office waste
- Food waste
- Animal carcasses

Additional waste accepted at the Area 6 Hydrocarbon Landfill:

- Drained fuel filters (gas & diesel)
- Sludge from sand/oil/water separators

Additional waste accepted at the Area 9 U10c Landfill:

- Solid fractions from sand/oil/water separators
- Decanted Underground and Above Ground Tanks

Additional waste accepted at the Area 6 Hydrocarbon Landfill:

- Crushed non-terne plated oil filters
- PCs below 50 parts per million

Required: Waste Generator Signature

Initials: [Signature]

(IIf initialed, no radiological clearance is necessary.)

The above mentioned waste was generated outside of a Controlled Waste Management system, does not contain radiological materials.

To the best of my knowledge, the waste described above contains only those materials I have verified this through the waste characterization methods identified above prohibited and allowable waste items.

Print Name: Michael Krusic

Signature: Michael Krusic Date: 6/11/02

Note: Food waste, office trash, and 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): 44,000 Signature of Certifier: J. Knapp
**LANDFILL DAILY ACCESS REGISTER**

<table>
<thead>
<tr>
<th>DATE: 7/2/02</th>
</tr>
</thead>
<tbody>
<tr>
<td>(check one) □ Area 9 - U10c □ Area 6 Hydrocarbon □ Area 23 Landfill</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WASTE GENERATOR</th>
<th>WASTE ORIGIN</th>
<th>WASTE CODE*</th>
<th>TICKET NUMBER</th>
<th>NET WEIGHT (lbs)</th>
<th>TIME IN</th>
<th>TIME OUT</th>
<th>DRIVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bin.</td>
<td>A-4</td>
<td>H.C.</td>
<td>T</td>
<td>4.500</td>
<td>2:30</td>
<td>2:45</td>
<td>HARRIS G</td>
</tr>
</tbody>
</table>

**Site Conditions:**

- Do berms/walls need repair? □ No □ Yes
- Does cover need repair / evidence of settling? □ No □ Yes
- Does fence need repair? □ No □ Yes
- Does road(s) need repair? □ No □ Yes
- Has litter accumulated? □ No □ Yes
- Has water accumulated? □ No □ Yes

Corrective Actions Needed:

Corrective Actions Taken: (description, name, date):

**INSPECTION INFORMATION**

**Random Load Inspection:**

- Ticket Number: __________
- No prohibited waste was found
- Yes, the prohibited waste(s) identified below were found:
  - Putrescible waste (prohibited in U10c and Area 6 Landfills)
  - Hazardous waste per NAC 444.580
  - PCB waste regulated by TSCA
  - Waste containing free liquids
  - TSCA-regulated
  - Waste failing the "no added radioactivity" per the POC requirement.
  - Friable asbestos (prohibited in U10c and Area 6 Landfills)
  - Hydrocarbon soil at >100 ppm TPH (prohibited in 23, allowed in U10c provided less than 50 cubic yards/week are disposed)

Corrective Actions Taken: (description, name, date, who notified):

**INSPECTED BY**

(date/time): __________
NTS Landfill Load Verification

(Waste definitions are available on page 2)

For waste characterization, approval, and/or assistance, contact Solid Waste Operations (SWO) at 5-7898.

**REQUIRED: WASTE GENERATOR INFORMATION**

(This form is for rolloff, dump trucks, and other on-site disposal of materials.)

Waste Generator: Mike Kruzic/Kevin Campbell  Phone Number: 5-6087

Location / Origin: Area 6 CP bus parking lot (6 drums of soil)

**Waste Category:** (check one)
- Commercial
- Non-Putrescible
- Asbestos Containing Material
- FFACO-on-site
- FFACO-off-site
- WAC Exception

**Waste Type:** (check one)
- Putrescible
- Non-Putrescible
- Asbestos Containing Material
- FFACO-on-site
- FFACO-off-site
- Historic DOE/NV

**Pollution Prevention Category:** (check one)
- Environmental management
- Defense Projects

**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 UlOc Landfill:**
- Non-Friable (contact SWO if regulated load)

**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 hydraulic fluids; kerosene; asphaltic petroleum hydrocarbon; and ethylene glycol.

**Acceptable Wastes 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 Wastes accepted at the Area 23 Mercury Landfill:**
- Office waste
- Food Waste
- Animal Carcasses
- Asbestos:
  - Friable
  - Non-Friable (contact SWO if regulated load)
  - Quantity:

**Additional Wastes accepted at the Area 9 UlOc 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)

**Additional Wastes accepted at the Area 6 Hydrocarbon Landfill:**
- Septic sludge
- Drained fuel filters (gas & diesel)
- Crushed non-terne plated oil filters
- Plants
- Sludge from sand/oil/water separators
- PCBs below 50 parts per million

**Required: Waste Generator Signature**

Initials: KBC (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 the prohibited and allowable waste items.

Print Name: Eugene Harris  Fred Wilson

Signature:  Date: 7/6/00

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): 4500  Signature of Certifier: Eugene D.
**Waste Codes:** ASB - Asbestos; C - Construction; H - Hydrocarbon; P - Putrescible; NP - Non-Putrescible; S - Sewage Sludge; F - FFACO

**Site Conditions:**

- Do berms/walls need repair? [ ] No [ ] Yes
- Does cover need repair? [ ] No [ ] Yes
- Evidence of settling? [ ] No [ ] Yes
- Does fence need repair? [ ] No [ ] Yes
- Does road(s) need repair? [ ] No [ ] Yes
- Has litter accumulated? [ ] No [ ] Yes
- Has water accumulated? [ ] No [ ] Yes

**Corrective Actions Needed:**

**Corrective Actions Taken:** (description, name, date, who notified):

**Random Load Inspection:**

- No prohibited waste was found
- Yes, the prohibited waste(s) identified below were found.
  - Putrescible waste (prohibited in U10c and Area 6 Landfills).
  - Hazardous waste per NAC 444.580
  - PCB waste regulated by TSCA
  - Waste containing free liquids
  - TSCA-regulated
  - Waste failing the "no added radioactivity" per the POC requirement.
  - Friable asbestos (prohibited in U10c and Area 6 Landfills)
  - Hydrocarbon soil at >100 ppm TPH (prohibited in 23, allowed in U10c provided less than 50 cubic yards/week are disposed)

**Corrective Actions Taken:** (description, name, date, who notified):

**INSPECTED BY** (date/time):
Waste definitions are available on page 2.

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: Don Cox, Solid Waste Operations
Location / Origin: Area 6, CAU 326 / Parking lot behind Fire Station
Phone Number: 5-4780

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, Plastic, Wire, Cable, Cloth, Insulation (non-Asbestos form), Cement & concrete, Manufacturing 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

Additional waste accepted at the Area 9 U10c Landfill: 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, Hydrocarbons (contact SWO), Drained fuel filters (gas & diesel), Deconned Underground and Above Ground, Tanks.

Additional waste accepted at the Area 6 Hydrocarbon Landfill: Drained fuel filters (gas & diesel), Crushed non-friable plated oil filters, PCs below 50 parts per million.

REQUIRED: WASTE GENERATOR SIGNATURE
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: Don Cox
Signature: [Signature]
Date: 12 AUG 02

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): 26,000 Signature of Certifier: [Signature]
APPENDIX E

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION CORRESPONDENCE
Frank Di Sanza  
Waste Management Division  
U.S. Department of Energy  
Nevada Operations Office  
P.O. Box 98518  
Las Vegas, NV 89193-8518

RE: Status of Recently Removed Underground Storage Tanks

Dear Mr. Di Sanza:

The Department of Energy (DOE) has recently requested confirmation that the Nevada Division of Environmental Protection (NDEP) has received closure documentation concerning underground storage tanks (USTs) removed during 1998. A list of thirteen tanks in question (given below) was conveyed to NDEP during a telephone conversation. This letter serves to confirm what documentation has been received and to inform DOE of the closure status of each of these tanks.

A search of the State’s underground storage tank database was initiated. The following table reflects the closure information submitted on the Underground Storage Tank Notification Forms (USEPA Form 7530).

<table>
<thead>
<tr>
<th>Tank #</th>
<th>Tank Status</th>
<th>Closure Date</th>
<th>Disposition of Tank</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-162-3</td>
<td>Permanently out of use</td>
<td>3/10/98</td>
<td>Removed from ground</td>
</tr>
<tr>
<td>6-619-1</td>
<td>Permanently out of use</td>
<td>8/25/98</td>
<td>Removed from ground</td>
</tr>
<tr>
<td>6-619-2</td>
<td>Permanently out of use</td>
<td>9/8/98</td>
<td>Removed from ground</td>
</tr>
<tr>
<td>6-619-4</td>
<td>Permanently out of use</td>
<td>3/4/98</td>
<td>Removed from ground</td>
</tr>
<tr>
<td>6-619-5</td>
<td>Permanently out of use</td>
<td>3/4/98</td>
<td>Removed from ground</td>
</tr>
<tr>
<td>6-619-6</td>
<td>Permanently out of use</td>
<td>3/4/98</td>
<td>Removed from ground</td>
</tr>
<tr>
<td>6-CP-1B</td>
<td>Permanently out of use</td>
<td>11/12/98</td>
<td>Closed in place</td>
</tr>
</tbody>
</table>
With respect to tank status, these tanks are considered “closed” and NDEP requires no further information.

As you may know, upon tank removal state regulations require that soil samples be collected to test for the presence of Total Petroleum Hydrocarbons. Results of the sampling are normally submitted in a closure report, which also documents details of the removal process. If contamination at a level above the state action level of 100 milligrams per kilogram is detected at a former UST site, a site investigation is initiated and related documentation is submitted by the responsible party to NDEP. A review of files containing former UST site information and closure reports was undertaken to determine the status of each.

<table>
<thead>
<tr>
<th>Tank #</th>
<th>Sampling Results and Site Status</th>
<th>Date of Sampling</th>
<th>Date of Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-162-3</td>
<td>No contamination above action level detected</td>
<td>03/10/98</td>
<td>05/07/98</td>
</tr>
<tr>
<td>6-619-1</td>
<td>No contamination above action level detected</td>
<td>08/25/98</td>
<td>11/10/98</td>
</tr>
<tr>
<td>6-619-2</td>
<td>No contamination above action level detected</td>
<td>09/09/98</td>
<td>11/10/98</td>
</tr>
<tr>
<td>6-619-4</td>
<td>No contamination above action level detected</td>
<td>03/04/98</td>
<td>06/09/98</td>
</tr>
<tr>
<td>6-619-5</td>
<td>No contamination above action level detected</td>
<td>03/04/98</td>
<td>06/09/98</td>
</tr>
<tr>
<td>6-619-6</td>
<td>No contamination above action level detected</td>
<td>03/04/98</td>
<td>06/09/98</td>
</tr>
</tbody>
</table>
Closure reports for all thirteen former UST sites indicate that no contamination above the state action level was detected during the required sampling. The closure report for 6-CP-1B, which was closed in place, indicates that two soil samples were collected using a hollow stem auger from below the ends of the tank. However, the map shows borehole locations to the side of the tank. Please confirm that the boreholes were angle-drilled and samples collected from beneath the tank. Additionally, confirmation that a land use restriction has been instituted, which makes note of the fact that a closed-in-place UST exists at this site, is required by NDEP prior to final concurrence of site closure.

With the exception of 6-CP-1B, the NDEP requires no further action on these sites at this time. Should any subsequent information suggest that one of these tanks may have leaked and contaminated soil or groundwater, an investigation may be initiated.

If you have any questions regarding tank closure issues, please contact Sigurd Jaunaraj of my staff at (775) 687-4670, extension 3030, or if you want to inquire about site closure, please contact Clem Goewert of my staff at (702) 486-2865.

Sincerely,

Paul I. Liebendorf, P.E.
Chief
Bureau of Federal Facilities

PJL/SRJ/js
cc: Dave Bedsun, DSWA
Jhon Carilli, WMD/DOE (faxed to 295-1153)
Runore Wycoff, ERD/DOE
Mike McKinnon, NDEP/LV
Karen Beckley, NDEP/CC
Clem Goewert, NDEP/LV
APPENDIX F

NEVADA ENVIRONMENTAL RESTORATION PROJECT DOCUMENT REVIEW SHEET
**NEVADA ENVIRONMENTAL RESTORATION PROJECT**

**DOCUMENT REVIEW SHEET**

<table>
<thead>
<tr>
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<td>Closure Report for Corrective Action Unit 326: Area 6 and 27 Release Sites, Nevada Test Site, Nevada</td>
<td>October 2002</td>
<td>0</td>
<td>Bechtel Nevada</td>
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<tr>
<th>5. Responsible NNSA/NV ERP Project Mgr.</th>
<th>6. Date Comments Due</th>
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<tbody>
<tr>
<td>Janet Appenzeller-Wing</td>
<td>November 13, 2002</td>
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<tr>
<td>Federal Facility Agreement and Consent Order</td>
<td>Ted Zaferatos / NDEP / (702) 486-2856</td>
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<tr>
<td>1. pg. ix last bullet item</td>
<td>M</td>
<td>This paragraph calls for clean closure and use restrictions. According to statements made in Sections 1 through 5 of the CR, CAS 27-25-01 was clean closed and did not have use restrictions imposed. Clarification of this item is required. (Also note, the Table of Contents (TOC) reference to this page is incorrect. The TOC refers to page xi instead of to page ix).</td>
<td>CAS 27-25-01 was clean closed by removal of all contaminated soil. No land use restrictions were implemented at this site. The last sentence of the last bullet item on page ix has been corrected to state that the CAS was clean close. The TOC has been changed to give the correct page number for the Executive Summary.</td>
<td>Yes</td>
</tr>
<tr>
<td>2. pg. 7 and 14, Section 2.1.2.2</td>
<td>M</td>
<td>Some words appear to be missing in the last paragraph on page 7 and continuing through the top of page 14. The information being conveyed by the last sentence in the top of paragraph, as well as the third sentence of the second paragraph and the third sentence of the third paragraph on page 14, is unclear. Clarify the meanings of these sentences.</td>
<td>Text describing the location, depth, TPH field screening results, and samples collected from Borehole #2 has been added. Text meaning has been clarified.</td>
<td>Yes</td>
</tr>
<tr>
<td>3. pg. 8 Table 1</td>
<td>M</td>
<td>The TPH Laboratory Result (mg/kg) is shown in the table as 105 for Sample ID 062501-25, whereas the laboratory data in Appendix A shows the result was actually 9,000. Verify closure conclusions once the item is corrected.</td>
<td>The TPH value reported in Table 1 for Sample 062501-25 has been corrected to 9,000 mg/kg. The closure conclusions and actions are still valid.</td>
<td>Yes</td>
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*Comment Types: M = Mandatory, S = Suggested.*
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<th>Comment Number/Location</th>
<th>Type</th>
<th>Comment</th>
<th>Comment Response</th>
</tr>
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<tr>
<td>4. pg. 18 Table 3</td>
<td>M</td>
<td>Comparison of data listed in this table with the laboratory data reports in Appendix A, leads to the belief that several numbers were incorrectly inserted in the table. The Total Petroleum Hydrocarbons (mg/kg) for Sample Identification Numbers 272501-04 and 272501-05 appear reversed in the table. Additionally, the Polychlorinated Biphenyls (mg/kg) value for Sample Identification 272501-02 was inserted as 0.07 whereas the Appendix A data sheets show the correct number as 0.71. The Polychlorinated Biphenyls value for CAU326-V25 (Dup of V15) was inserted as 0.50 whereas the Appendix A data sheets show the correct number as 0.05.</td>
<td>All values reported in Table 3 have been checked against analytical results reported in Appendix A, and corrected if necessary. The TPH values for samples 272501-04 and 272501-05 have been corrected. The PCB values for samples 272501-02, 272501-04, 272501-V01, and CAU 326-V25 have been corrected.</td>
</tr>
<tr>
<td>5. Appendix B</td>
<td>M</td>
<td>NDEP is unable to check the survey coordinates listed for the Land Use Restriction sites in the appendix. The coordinates do not appear to correlate to information received in past documents. Additionally, there appears to be a typographical error on CAS 06-25-01 N. Point 2, either on page 1 of 2, or on the accompanying figure. Page 1 shows one coordinate as 584,334.006 m E whereas the figure shows that the coordinate as E 584,334.606.</td>
<td>The survey coordinates and datum have been rechecked. Also, coordinates have been checked and verified by the FFACO Support Staff at International Technology Corporation. The typo has been corrected. Note: The Data Quality Objectives for CAU 326 have been included in this document as Appendix A. The Use Restriction information is now included in Appendix C of this document.</td>
</tr>
<tr>
<td>6. Data Quality Objectives (DQOs)</td>
<td>M</td>
<td>The DQOs were correctly referenced and assessed in the body of the document. Include the DQO document, as developed in the SAFER, as an appendix to the CR as required in the Standardized Outline for Closure Reports (July 17, 2001).</td>
<td>The DQOs as they appeared in the CAU 326 SAFER plan (NNSA/NV document number DOE/NV--751) are now included in the revision 1 of the CAU 326 Closure Report as Appendix A. References to Appendices A through E in Rev. 0 have been changed throughout the document to account for the addition of the DQOs as Appendix A.</td>
</tr>
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Paul Liebendorfer  
Bureau of Federal Facilities  
Division of Environmental Protection  
333 W. Nye Lane, Room 138  
Carson City, NV 89706-0866

Donald Elle  
Bureau of Federal Facilities  
Division of Environmental Protection  
1771 E. Flamingo, Suite 121-A  
Las Vegas, NV 89119-0837

**U.S. Department of Energy**

Janet Appenzeller-Wing  
Environmental Restoration Division  
U.S. Department of Energy  
National Nuclear Security Administration  
Nevada Operations Office  
P.O. Box 98518, M/S 505  
Las Vegas, NV 89193-8518

Sabine Curtis  
Environmental Restoration Division  
U.S. Department of Energy  
National Nuclear Security Administration  
Nevada Operations Office  
P.O. Box 98518, M/S 505  
Las Vegas, NV 89193-8518

Sabrina Lawrence  
Environmental Restoration Division  
U.S. Department of Energy  
National Nuclear Security Administration  
Nevada Operations Office  
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Las Vegas, NV 89193-8521

Steve Nacht
Bechtel Nevada
P.O. Box 98521, M/S NTS306
Las Vegas, NV 89193-8521

Allison Urbon
Bechtel Nevada
P.O. Box 98521, M/S NTS306
Las Vegas, NV 89193-8521

Shaw Environmental & Infrastructure Incorporated

FFACO Coordinator
Shaw Inc.
P.O. Box 93838, M/S 439
Las Vegas, NV 89193-8521

Lynn Kidman
Shaw Inc.
P.O. Box 93838, M/S 439
Las Vegas, NV 89193-8521

State of Nevada

Manager, Northern Nevada
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