

Nevada
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DOE/NV--998-ADD



Addendum to the Closure Report for Corrective Action Unit 271: Areas 25, 26, and 27 Septic Systems Nevada Test Site, Nevada

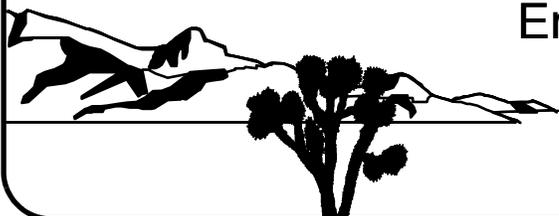
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**ADDENDUM TO THE CLOSURE REPORT
FOR CORRECTIVE ACTION UNIT 271:
AREAS 25, 26, AND 27 SEPTIC SYSTEMS
NEVADA TEST SITE, NEVADA**

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

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Addendum to the Closure Report for Modification of the Use Restriction

This document constitutes an addendum to the August 2004, Closure Report for Corrective Action Unit 271, Areas 25, 26, and 27 Septic Systems as described in the document *Recommendations and Justifications for Modifications for Use Restrictions Established under the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office Federal Facility Agreement and Consent Order* (UR Modification document) dated February 2008. The UR Modification document was approved by NDEP on February 26, 2008. The approval of the UR Modification document constituted approval of each of the recommended UR modifications. In conformance with the UR Modification document, this addendum consists of:

- This cover page that refers the reader to the UR Modification document for additional information
- The cover and signature pages of the UR Modification document
- The NDEP approval letter
- The corresponding section of the UR Modification document

This addendum provides the documentation justifying the modification of the UR for CAS 27-05-02, Leachfield. This UR was established as part of a *Federal Facility Agreement and Consent Order* (FFACO) corrective action and is based on the presence of contaminants at concentrations greater than the action levels established at the time of the initial investigation (FFACO, 1996; as amended August 2006).

Since this UR was established, practices and procedures relating to the implementation of risk-based corrective actions (RBCA) have changed. Therefore, this UR was re-evaluated against the current RBCA criteria as defined in the *Industrial Sites Project Establishment of Final Action Levels* (NNSA/NSO, 2006c). This re-evaluation consisted of comparing the original data (used to define the need for the UR) to risk-based final action levels (FALs) developed using the current Industrial Sites RBCA process.

The re-evaluation resulted in a recommendation to modify the UR to an administrative UR. Administrative URs differ from standard URs in that they do not require onsite postings (i.e., signs) or other physical barriers (e.g., fencing, monuments), and they do not require periodic inspections (see Section 6.2 of the *Industrial Sites Project Establishment of Final Action Levels* [NNSA/NSO, 2006c]). This Administrative UR was based on an "Occasional Use Area" future land use scenario that was used to calculate the FAL. The administrative UR will protect workers from an exposure exceeding that used in the calculation of the FAL (i.e., 400 total work hours). Any proposed activity within this use restricted area that would potentially cause an exposure exceeding this exposure limit would require approval from the Nevada Division of Environmental Protection (NDEP).

Requirements for inspecting and maintaining postings at this UR will be canceled, and the postings and signage at this site will be removed. Fencing and posting may be present at this site that are unrelated to the FFACO UR such as for radiological control purposes as required by the *NV/YMP Radiological Control Manual* (NNSA/NSO, 2004f). This modification will not affect or modify any non-FFACO requirements for fencing, posting, or monitoring at this site.

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Recommendations and Justifications for
Modifications for Use Restrictions Established
under the U.S. Department of Energy,
National Nuclear Security Administration
Nevada Site Office
Federal Facility Agreement and Consent Order

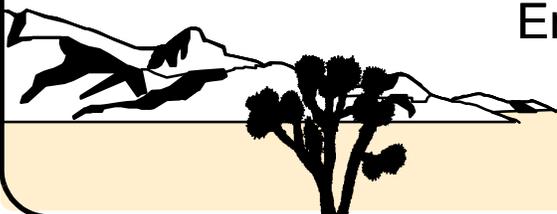
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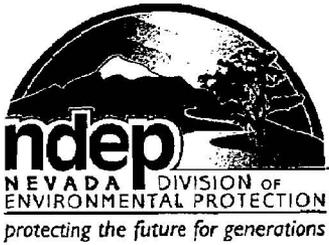
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STATE OF NEVADA

Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor

Allen Biaggi, Director

Leo M. Drozdoff, P.E., Administrator

February 26, 2008

John B. Jones
Acting Federal Project Director
Environmental Restoration Project
National Nuclear Security Administration
Nevada Site Office
P. O. Box 98518
Las Vegas, NV 89193-8518

RE: Approval of Recommendations and Justifications for Modifications for Use Restrictions Established under the U.S. Department of Energy, National Nuclear Security Administration, Nevada Site Office *Federal Facility Agreement and Consent Order*

Dear Mr. Jones:

The Nevada Division of Environmental Protection, Bureau of Federal Facilities (NDEP) staff has received and reviewed the February 2008 final report for Recommendations and Justifications for Modifications for Use Restrictions Established under the U.S. Department of Energy, National Nuclear Security Administration, Nevada Site Office. The NDEP approves the requested changes to the previously agreed upon use restrictions for those Corrective Action Sites (CASs) as described in the report.

Address any questions regarding this matter to either Ted Zaferatos at (702) 486-2850, ext. 234, or me at (702) 486-2850, ext. 231.

Sincerely,

/s/ Tim Murphy

T.H. Murphy
Chief
Bureau of Federal Facilities

TZ

cc: E.F. DiSanza, WMP, NNSA/NSO
FFACO Group, PSG, NNSA/NSO, Las Vegas, NV
David C. Loewer, DTRA/CXT1, M/S 645, Mercury, NV
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K. J. Cabble, ERP, NNSA/NSO, Las Vegas, NV
John Wong, Jeff MacDougall, Dennis Nicodemus, NDEP Las Vegas, NV



7.0 CAU 271, CAS 27-05-02 – Leachfield

7.1 CAS Description

The septic system is located southwest of Building 5210 and west of Building 5200. The west side of the CAS 27-05-02 leachfield is bordered by a natural wash (i.e., arroyo). The septic system received effluent from restroom facilities including toilets, urinals, sinks, and floor drains inside Buildings 5210 and 5200. In addition, Building 5210 had a full kitchen with food preparation, dish washing, and cleanup operations. Building 5200 contained a service sink and an acid dip tank located beside a sink on a “solder bench.” The septic system consisted of the influent lines from Buildings 5210 and 5200, a septic tank, a distribution structure, and a leachfield. The septic tank and distribution structure were removed as part of the corrective action. The remaining leachfield is approximately 80 ft long by 24 ft wide and consists of five 4-inch (in.), parallel orangeburg distribution lines. The lines are approximately 80 ft long and spaced 6 ft apart on center. The distribution lines are placed in 2-ft-wide trenches. A layer of approximately 18 in. of coarse gravel served as leachrock in each trench. The septic tank, manhole, and distribution box were removed (DOE/NV, 2001b).

7.2 Current Use Restriction Description

The future use of any land affected by this UR 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 CR or other CAU documentation unless appropriate concurrence is obtained in advance. The only remaining COCs associated with this CAS are confined to the leachfield. The UR was implemented for the leachfield to control inadvertent intrusion or exposure to the leachfield. Warning signs were installed at the four corners of the leachfield. An inspection will be performed annually and will consist of visual observations to verify that the proper signs are in place and readable, and the UR is maintained (NNSA/NSO, 2004a).

7.3 Basis for Current Use Restriction

Samples from this CAS were analyzed for VOCs, SVOCs, RCRA metals, TPH (DRO and GRO), and PCBs. The PALs were not exceeded in any of the soil samples from remaining materials (following remediation) except arsenic and PCBs.

Arsenic was detected above the PAL of 2.7 mg/kg in 50 percent of the samples analyzed. Arsenic was detected at concentrations up to 4.93 mg/kg. Concentrations of arsenic are

consistent in the leachfield soil and do not appear to represent locations of elevated radioactivity or evidence of a localized spill. Although arsenic concentrations in the soil exceed the PAL of 2.7 mg/kg, these concentrations are believed to be within ambient conditions for CAS 27-05-02 and do not represent contamination. Therefore, arsenic is not considered to be a basis for this UR (NNSA/NSO, 2004d).

Elevated PCB concentrations were identified in the leachfield soil. Aroclor 1254 was detected at 7,600 micrograms per kilogram ($\mu\text{g}/\text{kg}$) in one sample, exceeding the 1,000 $\mu\text{g}/\text{kg}$ PAL. Aroclor 1248 was detected in concentrations exceeding the 1,000 $\mu\text{g}/\text{kg}$ PAL, in 10 samples, at levels up to 22,000 $\mu\text{g}/\text{kg}$. The highest concentrations were detected in surface soil samples (NNSA/NSO, 2004d).

Table 7-1 contains analytical results of all COCs at CAS 27-05-02 that are the basis for the current UR. The sample matrix for all samples is soil.

**Table 7-1
 Sample Results for COCs at CAS 27-05-02
 Used To Establish Current Use Restriction**

Sample ID	Depth (ft bgs)	Aroclor 1248	Aroclor 1254
		PAL 1,000 $\mu\text{g}/\text{kg}$	PAL 1,000 $\mu\text{g}/\text{kg}$
271Q003	5.2 - 6.2	1,000	--
271Q203	5.5 - 6	5,300	7,600 (J)
271Q208	0 - 0.5	19,000	--
271Q224	0 - 1	22,000	--
271Q225	2.5 - 3	4,700	--
271Q228	0 - 0.5	8,400	--
271Q229	2.5 - 3	9,400	--
271Q230	2.5 - 3	1,500	--
271Q231	5.5 - 6	2,800	--
271Q232	8.5 - 9	5,800	--

bgs = Below ground surface
 ft = Foot
 ID = Identification
 PAL = Preliminary action level
 $\mu\text{g}/\text{kg}$ = Micrograms per kilogram

J = Estimated value
 -- = No detects above action levels

7.4 Basis for Use Restriction Modification

The revised FALs for PCBs listed in Table 7-2 were established using the Tier 2-based FAL process presented in Section 2.2.2. These FALs were calculated using the Occasional Use Area site-specific exposure scenario. This scenario assumes that a worker will be exposed to the site contaminants for up to 400 total hours. This exposure scenario is for undeveloped sites, where there are no facilities, where an industrial worker would normally be assigned (NNSA/NSO, 2006c). Because CAS 27-05-02 is located in a remote area of the NTS (Area 27), no current or foreseeable future activities would cause any worker to be exposed to this site for a period of time exceeding that assumed in the Occasional Use Area site-specific scenario (i.e., 400 total hours). However, these undeveloped areas may be used for military type exercises where it is assumed that a worker could be exposed for a period of up to 80 hours per year for five years.

The UR modification would be to implement an administrative UR as described in Section 2.0. This administrative UR would restrict any activity that would result in any worker being within the UR boundary for a lifetime-duration of more than 400 total hours.

Table 7-2 presents the sample results that are the basis for the current UR and demonstrate that none exceed the revised FALs (based on an Occasional Use Area land-use scenario).

Table 7-2
Revised Final Action Levels for CAS 27-05-02
 (Page 1 of 2)

Sample ID	Depth (ft bgs)	Aroclor 1248	Aroclor 1254
		Revised FAL 59,100 µg/kg	Revised FAL 49,100 µg/kg
271Q003	5.2 - 6.2	1,000	--
271Q203	5.5 - 6	5,300	7,600 (J)
271Q208	0 - 0.5	19,000	--
271Q224	0 - 1	22,000	--
271Q225	2.5 - 3	4,700	--
271Q228	0 - 0.5	8,400	--
271Q229	2.5 - 3	9,400	--
271Q230	2.5 - 3	1,500	--
271Q231	5.5 - 6	2,800	--

Table 7-2
Revised Final Action Levels for CAS 27-05-02
 (Page 2 of 2)

Sample ID	Depth (ft bgs)	Aroclor 1248	Aroclor 1254
		Revised FAL 59,100 µg/kg	Revised FAL 49,100 µg/kg
271Q232	8.5 - 9	5,800	--

bgs = Below ground surface
 FAL = Final action level
 ft = Foot

ID = Identification
 µg/kg = Micrograms per kilogram

J = Estimated value
 -- = No detects above original action levels

7.5 Proposed Modification

Implement an administrative UR as described in Section 2.0 restricting any activity that would result in any worker being within the UR boundary for a lifetime-duration of more than 400 total hours. Remove all associated fencing and postings and discontinue inspection and maintenance at this site.

References

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

FFACO, see *Federal Facility Agreement and Consent Order*.

Federal Facility Agreement and Consent Order. 1996 (as amended). Agreed to by the State of Nevada; U.S. Department of Energy, Environmental Management; U.S. Department of Defense; and U.S. Department of Energy, Legacy Management.

NNSA/NSO, see U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office.

NNSA/NV, see U.S. Department of Energy, National Nuclear Security Administration Nevada Operations Office.

U.S. Department of Energy, National Nuclear Security Administration Nevada Operations Office. 2001b. *Corrective Action Decision Document/Closure Report for Corrective Action Unit 321: Area 22 Weather Station Fuel Storage, Nevada Test Site, Nevada*, Rev. 1, DOE/NV--726. August. Las Vegas, NV.

U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2004f. *NV/YMP Radiological Control Manual*, DOE/NV--11718-079, Rev. 5. Prepared by Bechtel Nevada. Las Vegas, NV.

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U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2004d. *Corrective Action Decision Document for Corrective Action Unit 271: Areas 25, 26, and 27 Septic Systems, Nevada Test Site, Nevada*, Rev. 1, DOE/NV--838-REV.1. September. Las Vegas, NV.

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