



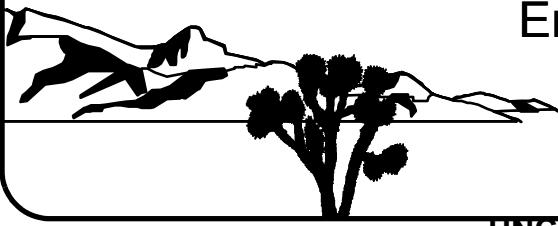
# Addendum to the Closure Report for Corrective Action Unit 262: Area 25 Septic Systems and Underground Discharge Point, Nevada Test Site, Nevada

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October 2008

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**ADDENDUM TO THE CLOSURE REPORT  
FOR CORRECTIVE ACTION UNIT 262:  
AREA 25 SEPTIC SYSTEMS AND  
UNDERGROUND DISCHARGE POINT,  
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 Removal of the Use Restriction**

This document constitutes an addendum to the July 2003, Closure Report for Corrective Action Unit 262: Area 25 Septic Systems and Underground Discharge Point 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 cancellation of the UR for CAS 25-05-06, 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 remove the UR because contamination is not present at the site above the risk-based FALs. Requirements for inspecting and maintaining 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.



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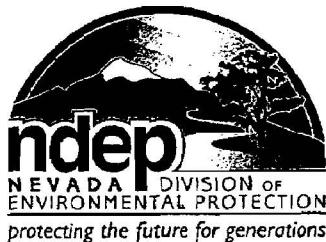
**Recommendations and Justifications for Modifications for  
Use Restrictions Established under the U.S. Department of Energy,  
National Nuclear Security Administration Nevada Site Office  
*Federal Facility Agreement and Consent Order***

Approved by: /s/ Kevin J. Cabble Date: 02/05/2008

Kevin J. Cabble  
Federal Sub-Project Director  
Industrial Sites Sub-Project

Approved by: /s/ John B. Jones Date: 02/04/2008

John B. Jones  
Acting Federal Project Director  
Environmental Restoration Project



# STATE OF NEVADA

Department of Conservation & Natural Resources

DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor

Allen Biaggi, Director

Lea M. Drazdoff, 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 (CASSs) 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  
W.R. Griffin, SNJV/DTRA, M/S 645, Mercury, NV  
T.A. Thiele, NSTec, Las Vegas, NV  
R.F. Boehlecke, SNJV, Las Vegas, NV  
K. J. Cabble, ERP, NNSA/NSO, Las Vegas, NV  
John Wong, Jeff MacDougall, Dennis Nicodemus, NDEP Las Vegas, NV



## **6.0 CAU 262, CAS 25-05-06 – Leachfield**

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### **6.1 CAS Description**

The Engine Maintenance, Assembly, and Disassembly (E-MAD) Facility Posted Leachfield System (CAS 25-05-06) received radioactive and process effluent from Building 3900 (E-MAD Building). The CAS consists of the leachfield, distribution box, and associated piping. The leachfield is located approximately 625 ft southwest of Building 3900. Waste liquids generated by decontamination and chemical analysis of test units, and decontamination of personnel, equipment, and the facility were received by dedicated radioactive wastewater drains. The E-MAD Building, adjoining trailers, and the Train Decontamination Area pad components of the E-MAD Facility were connected to the posted leachfield through pipes or waste holdup tanks in a vault on the east side of the E-MAD Building (NNSA/NV, 2001a).

### **6.2 Current Use Restriction Description**

The future use of any land related to 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 UR is defined by the 2.1-meter (m) (7-ft)-high security fence bounding the leachfield. An inspection will be performed annually and consist of visual observations to verify that the fence is in good condition, proper signs are in place and readable, and the UR is maintained (NNSA/NSO, 2003a).

### **6.3 Basis for Current Use Restriction**

Samples from this CAS were analyzed for PCBs, total VOCs, total SVOCs, TPH Diesel/Oil, total RCRA metals, isotopic Pu, isotopic U, gamma spectroscopy, and Sr-90. Ten of 97 subsurface soil samples were contaminated with Sr-90 at concentrations exceeding the PAL. Of those 10 samples, two had cesium (Cs)-137 and U contamination exceeding PALs. The PALs for the radionuclides were established in the CAIP as any activity distinguishable from undisturbed background activity. No VOC, TPH, SVOC, or PCB analytical results exceeded PALs. All RCRA metals analytical results were below PALs, except arsenic, which was detected above the PAL of 2.7 mg/kg in 59 of the 94 samples. The concentrations of arsenic above the PAL of 2.7 mg/kg were within the range considered representative of ambient conditions at the site. Therefore, arsenic is not considered to be a basis for this UR (NNSA/NV, 2001a).

Table 6-1 contains analytical results of all COCs at CAS 25-05-06 that are the basis for the current UR. The sample matrix for all samples is soil.

**Table 6-1**  
**Sample Results for COCs at CAS 25-05-06**  
**Used To Establish Current Use Restriction**

Sample ID	Depth (ft bgs)	Cs-137	U-234	U-235	Sr-90
		PAL 7 pCi/g	PAL 1.56 pCi/g	PAL 0.07 pCi/g	PAL 1.17 pCi/g
EPR02B06	6.5 - 7.5	--	--	--	1.77 ± 0.40
EPR03B13	13.5 - 14.5	--	--	0.08 ± 0.030	--
EPR04A06	6 - 7	44.5 ± 5.7	8.5 ± 1.1	0.42 ± 0.081	12.6 ± 2.3
EPR04A08	8.5 - 9.5	--	1.69 ± 0.24	0.108 ± 0.034	--
EPR05A14	14 - 15	--	--	0.08 ± 0.03	--
EPR05A24	24 - 25	--	--	0.093 ± 0.035	--
EPR11A10	10 - 11	--	--	0.085 ± 0.031	--
EPR12A07	7.5 - 8.5	--	--	0.102 ± 0.035	--
EPR12A10	10 - 11	--	--	0.109 ± 0.039	3.42 ± 0.69
EPR13A08	8 - 9	--	2.03 ± 0.30	0.112 ± 0.036	8.9 ± 1.6
EPR13A10	10.5 - 11.5	--	--	0.083 ± 0.030	3.62 ± 0.72
EPR13A20	20.5 - 21.5	--	--	0.104 ± 0.034	--
EPR13A99	10.5 - 11.5	--	--	0.101 ± 0.033	3.09 ± 0.62
EPR14A07	7.5 - 8.5	--	1.61 ± 0.30	0.115 ± 0.052 (J)	3.70 ± 0.71
EPR15A07	7.5 - 8.5	--	--	0.084 ± 0.039 (J)	--
EPR16A07	7.5 - 8.5	--	--	0.09 ± 0.039 (J)	2.63 ± 0.53
EPR17A07	7.5 - 8.5	11.9 ± 1.5	--	--	4.82 ± 0.92
EPR17A10	10 - 11	--	--	0.129 ± 0.047	3.03 ± 0.61
EPR18A07	7 - 8	--	--	0.091 ± 0.041	--
EPR18A09	9.5 - 10.5	--	--	0.087 ± 0.037	--
EPR19A07	7 - 8	--	--	0.087 ± 0.041	--
EPR19A09	9.5 - 10.5	--	--	0.073 ± 0.036	--
EPR19A15	15 - 16	--	--	0.071 ± 0.035	--
EPR20A10	10 - 11	--	--	0.073 ± 0.040	--
EPR21A09	9.5 - 10.5	--	--	0.081 ± 0.041	--
EPR22A09	9.5 - 10.5	--	--	0.07 ± 0.035	--
EPR29A20	20 - 21	--	--	0.073 ± 0.026	--

bgs = Below ground surface

Cs = Cesium

ft = Foot

ID = Identification

J = Estimated value

-- = No detects above action levels

PAL = Preliminary action level

pCi/g = Picocuries per gram

Sr = Strontium

U = Uranium

#### **6.4 Basis for Use Restriction Modification**

The revised FALs for radionuclides other than Cs-137 as listed in Table 6-2 were established based on PALs presented in Section 2.2.1. The revised FAL for Cs-137 was established based on a site-specific RESRAD calculation of a 25 mrem/yr dose under an industrial scenario (see Section 2.2.2) as prescribed in *Industrial Sites Project Establishment of Final Action Levels* (NNSA/NSO, 2006c).

Therefore, no contaminants are present at this site in concentrations exceeding the revised FALs. All revised FALs other than Cs-137 were established at the PAL concentrations.

Table 6-2 presents the sample results that are the basis for the current UR and demonstrate that none exceed the revised FALs.

**Table 6-2**  
**Revised Final Action Levels for CAS 25-05-06**  
(Page 1 of 2)

Sample ID No.	Depth (ft bgs)	Cs-137	U-234	U-235	Sr-90
		Revised FAL 122 pCi/g	Revised FAL 143 pCi/g	Revised FAL 17.6 pCi/g	Revised FAL 838 pCi/g
EPR02B06	6.5 - 7.5	--	--	--	$1.77 \pm 0.40$
EPR03B13	13.5 - 14.5	--	--	$0.08 \pm 0.030$	--
EPR04A06	6 - 7	$44.5 \pm 5.7$	$8.5 \pm 1.1$	$0.42 \pm 0.081$	$12.6 \pm 2.3$
EPR04A08	8.5 - 9.5	--	$1.69 \pm 0.24$	$0.108 \pm 0.034$	--
EPR05A14	14 - 15	--	--	$0.08 \pm 0.03$	--
EPR05A24	24 - 25	--	--	$0.093 \pm 0.035$	--
EPR11A10	10 - 11	--	--	$0.085 \pm 0.031$	--
EPR12A07	7.5 - 8.5	--	--	$0.102 \pm 0.035$	--
EPR12A10	10 - 11	--	--	$0.109 \pm 0.039$	$3.42 \pm 0.69$
EPR13A08	8 - 9	--	$2.03 \pm 0.30$	$0.112 \pm 0.036$	$8.9 \pm 1.6$
EPR13A10	10.5 - 11.5	--	--	$0.083 \pm 0.030$	$3.62 \pm 0.72$
EPR13A20	20.5 - 21.5	--	--	$0.104 \pm 0.034$	--
EPR13A99	10.5 - 11.5	--	--	$0.101 \pm 0.033$	$3.09 \pm 0.62$
EPR14A07	7.5 - 8.5	--	$1.61 \pm 0.30$	$0.115 \pm 0.052$ (J)	$3.70 \pm 0.71$
EPR15A07	7.5 - 8.5	--	--	$0.084 \pm 0.039$ (J)	--
EPR16A07	7.5 - 8.5	--	--	$0.09 \pm 0.039$ (J)	$2.63 \pm 0.53$

**Table 6-2**  
**Revised Final Action Levels for CAS 25-05-06**  
 (Page 2 of 2)

Sample ID	Depth (ft bgs)	Cs-137	U-234	U-235	Sr-90
		Revised FAL 122 pCi/g	Revised FAL 143 pCi/g	Revised FAL 17.6 pCi/g	Revised FAL 838 pCi/g
EPR17A07	7.5 - 8.5	11.9 ± 1.5	--	--	4.82 ± 0.92
EPR17A10	10 - 11	--	--	0.129 ± 0.047	3.03 ± 0.61
EPR18A07	7 - 8	--	--	0.091 ± 0.041	--
EPR18A09	9.5 - 10.5	--	--	0.087 ± 0.037	--
EPR19A07	7 - 8	--	--	0.087 ± 0.041	--
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EPR19A15	15 - 16	--	--	0.071 ± 0.035	--
EPR20A10	10 - 11	--	--	0.073 ± 0.040	--
EPR21A09	9.5 - 10.5	--	--	0.081 ± 0.041	--
EPR22A09	9.5 - 10.5	--	--	0.07 ± 0.035	--
EPR29A20	20 - 21	--	--	0.073 ± 0.026	--

bgs = Below ground surface

Cs = Cesium

FAL = Final action level

ft = Foot

pCi/g = Picocuries per gram

Sr = Strontium

U = Uranium

J = Estimated value

-- = No detects above original action levels

## 6.5 Proposed Modification

Remove the FFACO UR, associated fencing and postings, and inspection and maintenance requirements from this site.

## **References**

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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. 2001a. *Corrective Action Decision Document for Corrective Action Unit 262: Area 25 Septic Systems and Underground Discharge Point, Nevada Test Site, Nevada*, Rev. 1, DOE/NV--744-Rev 1. September. Las Vegas, NV

U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2003a. *Closure Report for Corrective Action Unit 262: Area 25 Septic Systems and Underground Discharge Point, Nevada Test Site, Nevada*, Rev. 1, DOE/NV--897-Rev 1. July. 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.

U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2006c. *Industrial Sites Project Establishment of Final Action Levels*, Rev. 0, DOE/NV--1107. Las Vegas, NV.

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