RECORD OF TECHNICAL CHANGE

Technical Change No. **DOE/NV—1000—Rev. 1 ROTC-1** Page 1 of 1

Activity Name Industrial Sites Date 12/11/2013

The following technical changes (including justification) are requested by:

Cathleen Birney (Name) N-I CAU Lead (Title)

Description of Change:
Downgrade the FFACO UR at CAU 529, CAS 25-23-17, Contaminated Wash (Parcel E) to an Administrative UR.

Justification:
Since this FFACO 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 *Soils Risk-Based Corrective Action Evaluation Process*. This re-evaluation consisted of 1) assuming that the future land use for this CAS is Occasional Use (OU), 2) calculating the present-day activities of the original data used to define the need for the UR, and 3) using the current risk-based OU residual radioactive material guidelines (RRMGs) to calculate the total effective dose (TED). The risk-based RRMGs were developed using the current Soils RBCA process and the most current RRMGs for the OU exposure scenario. The TED within Parcel E of this CAS is below the 25-millirem per OU year constraints. Therefore, the FFACO UR for Parcel E is being downgraded to an Administrative UR. See attached "Recommendation to Downgrade Use Restriction" for detailed information.

The task time will be unchanged by approximately 0 days.

Applicable Activity-Specific Document(s):
Corrective Action Decision Document/Closure Report for Corrective Action Unit 529: Area 25 Contaminated Materials, Nevada Test Site, Nevada

---

Approved By: /s/ Tiffany A. Lantow Date 12/11/2013
Activity Lead

/s/ Robert F. Boehlecke Date 12/12/13
EM Operations Manager

/s/ Jeff MacDougall Date 12/17/13
NDEP

Nevada
Environmental
Management
Operations Activity

DOE/NV--1509-Rev.1

National Nuclear Security Administration

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

Controlled Copy No.: _
Revision No.: 1

October 2013

UNCLASSIFIED

/s/ Joseph P. Johnston, N-I CO 10/08/2013

Approved for public release; further dissemination unlimited.

U.S. Department of Energy
National Nuclear Security Administration
Nevada Field Office

UNCONTROLLED When Printed

Available for sale to the public from:

U.S. Department of Commerce
National Technical Information Service
5301 Shawnee Road
Alexandria, VA 22312
Telephone: 800.553.6847
Fax: 703.605.6900
E-mail: *orders@ntis.gov*
Online Ordering: *http://www.ntis.gov/help/ordermethods.aspx*

Available electronically at *http://www.osti.gov/bridge*

Available for a processing fee to U.S. Department of Energy and its contractors, in paper, from:

U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831-0062
Phone: 865.576.8401
Fax: 865.576.5728
Email: *reports@adonis.osti.gov*

DOE/NV--1509-Rev.1

RECOMMENDATIONS AND JUSTIFICATIONS FOR MODIFICATIONS TO DOWNGRADE USE RESTRICTIONS ESTABLISHED UNDER THE U.S. DEPARTMENT OF ENERGY, NATIONAL NUCLEAR SECURITY ADMINISTRATION NEVADA FIELD OFFICE *FEDERAL FACILITY AGREEMENT AND CONSENT ORDER*

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

Controlled Copy No.: _

Revision No.: 1

October 2013

Approved for public release; further dissemination unlimited.

RECOMMENDATIONS AND JUSTIFICATIONS FOR MODIFICATIONS TO DOWNGRADE USE RESTRICTIONS ESTABLISHED UNDER THE U.S. DEPARTMENT OF ENERGY, NATIONAL NUCLEAR SECURITY ADMINISTRATION NEVADA FIELD OFFICE *FEDERAL FACILITY AGREEMENT AND CONSENT ORDER*

Approved by: /s/ Tiffany A. Lantow Date: 10/9/2013

Tiffany A. Lantow
Industrial Sites Activity Lead

Approved by: /s/ Roberty F. Boehlecke Date: 10/9/2013

Robert F. Boehlecke
Environmental Management Operations Manager

10.0 CAU 529, CAS 25-23-17 – Contaminated Wash (Parcel E)

10.1 CAS Description

CAS 25-23-17, Contaminated Wash, is the only CAS in CAU 529 and is located in Area 25 of the NNSS. The CAS was divided into nine parcels because of the large area impacted by past operations and the complexity of the source areas. The CAS was subdivided into separate parcels based on separate and distinct releases as determined and approved in the DQO process and CAIP (NNSA/NSO, 2003b).

Parcel E, buried contaminated soil area 2, is located on the eastern bank of Topopah Wash in the northeastern portion of CAS 25-23-17 and is well outside the boundary of the 100-year floodplain for Topopah Wash. This parcel consists of a former natural drainage located northwest of TCC and is the suspected burial site for contaminated surface soil associated with Phoebus 1A Test decontamination activities. Contaminated soil adjacent to the concrete pad at TCC was reportedly removed with a front-end loader and pushed into a gully northwest of TCC. Available information did not reveal the exact location of the gully, or indicate that the soil was removed at a later date or covered with clean soil; however, it is expected that the area was covered with a clean layer of soil to prevent wind erosion (NNSA/NSO, 2004a).

During closure activities, a wire fence was installed around the entire area of Cs-137 contamination exceeding the PAL at Parcel E, and UR signs were posted to provide additional measures to address site containment (NNSA/NSO, 2004a).

10.2 Current UR Description

The future use of any land related to this CAU is restricted from any DOE or U.S. Department of Defense (DoD) activity that may alter or modify the containment control as approved by the State of Nevada and identified in the CAU CR or other CAU documentation unless appropriate concurrence is obtained in advance.

Four UR signs were placed on each side of the fence bordering the CAS. The post-closure inspections of the Parcel E UR consist of annual visual inspections. Visual inspections of the wire fence, T-posts,

and signage are conducted to verify that they are intact, undisturbed, and in good condition, with maintenance as needed (NNSA/NSO, 2004a).

10.3 Basis for Current UR

Most samples were analyzed for gamma spectroscopy, while six select samples were analyzed for PCBs, beryllium, gamma spectroscopy, isotopic U, and Sr-90. Only the radionuclide Cs-137 exceeded the PAL. The PALs for all radioisotopes, except those covered by DOE Order 5400.5 (DOE, 1993), were derived from the construction, commercial, industrial land-use scenario in Table 2.1 of the NCRP Report No. 129 (NCRP, 1999). The values provided in this source document are based on a 25-mrem/yr dose but were scaled to a 15-mrem/yr dose for this CAI. Table 10-1 contains analytical results for Cs-137 at CAS 25-23-17 (Parcel E) that are the basis for the current UR. The sample matrix for all samples is soil.

Table 10-1
Sample Results for Cs-137 at CAS 25-23-17 (Parcel E)
Used To Establish Current UR

Sample ID	Depth (ft bgs)	Cs-137
		PAL 7.3 pCi/g
529E004	3.0 - 4.0	42.8
529E022	6.0 - 7.0	26.6 (J)[a]
529E016	6.0 - 7.0	306 (J)[a]

[a]Qualifier added to laboratory data; record accepted. Duplicate precision analysis (relative percent difference) outside control limits.

J = Estimated value.

10.4 Basis for UR Modification

The assumption for this CAS is that future land use is OU. The present-day Cs-137 activity was calculated using the standard decay equation; the decay calculations take into account the half-life of the radionuclide and the time since the samples were originally collected. The revised RRMG is based on the 25-mrem/yr TED constraint, which represents the concentrations in soil for a specific radionuclide (e.g., Cs-137) that would result in a 25-mrem/yr TED to a receptor for a specific

exposure time. The present-day Cs-137 activities, OU RRMG, and TED are listed in Table 10-2, which demonstrates that the TED of Cs-137 is below the 25-mrem/yr TED constraint for the OU exposure scenario.

Table 10-2
Present-Day Radiological Activities, OU RRMG, and TED for Cs-137 at CAS 25-23-17 (Parcel E)

Sample ID	Depth (ft bgs)	Cs-137	TED (mrem/OU-yr)
		OU RRMG 1,626 pCi/g	
529E004	3.0 - 4.0	35.6	0.55
529E022	6.0 - 7.0	22.1	0.34
529E016	6.0 - 7.0	254.4	3.91

10.5 Proposed Modification

Remove the FFACO UR and postings, and annual inspection and maintenance requirements from this site; and change to Administrative UR. These modifications will not affect or modify any non-FFACO requirements at this site. Note that after approximately 50 years, the Cs-137 activity will be below the IA PAL.

References

DOE, see U.S. Department of Energy.

NCRP, see National Council on Radiation Protection and Measurements.

National Council on Radiation Protection and Measurements. 1999. *Recommended Screening Limits for Contaminated Surface Soil and Review of Factors Relevant to Site-Specific Studies,* NCRP Report No. 129. Bethesda, MD.

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

U.S. Department of Energy. 1993. *Radiation Protection of the Public and the Environment,* DOE Order 5400.5, Change 2. Washington, DC.

U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2003b. *Corrective Action Investigation Plan for Corrective Action Unit 529: Area 25 Contaminated Materials, Nevada Test Site, Nevada*, Rev. 0, DOE/NV--870. Las Vegas, NV.

U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office. 2004a. *Corrective Action Decision Document/Closure Report for Corrective Action Unit 529: Area 25 Contaminated Materials, Nevada Test Site, Nevada*, Rev. 1, DOE/NV--1000--REV.1. Las Vegas, NV.

Use Restriction Information

CAU Number/Description: CAU 529/Area 25 Contaminated Materials
Applicable CAS Number/Description: CAS 25-23-17/Contaminated Wash (Parcel E)

Contact (DOE AL/Activity): Tiffany Lantow/Industrial Sites - EM

FFACO Use Restriction Physical Description:

Surveyed Area (UTM, Zone 11, NAD 83, meters):

UR Points	Northing	Easting
N/A		

Depth:

Survey Source (GPS, GIS, etc):

Basis for FFACO UR(s):

Summary Statement:_____

Contaminants Table:

Maximum Concentration of Contaminants for CAU XXX CAS xx-xx-xx, Title			
Constituent	**Maximum Concentration**	**Action Level**	**Units**

Site Controls:

Use Restriction Information

Administrative Use Restriction Physical Description*:

Surveyed Area (UTM, Zone 11, NAD 83, meters):

UR Points	Northing	Easting
Southeast Corner	4,076,467.9	564,363.3
Southwest Corner	4,076,451.3	564,319.1
Northwest Corner	4,076,473.1	564,325.1
Northeast Corner	4,076,486.2	564,361.8

Depth: 7 ft bgs

Survey Source (GPS, GIS, etc): GPS

*Coordinates for the Administrative Use Restriction exclude the area defined by the FFACO Use Restriction coordinates.

Basis for Administrative UR(s):

Summary Statement: This administrative UR is to protect site workers from inadvertent exposure to radioactivity above 25 millirem/Industrial Area year (mrem/IA-yr). As a best management practice, this administrative use restriction will prevent future (more intensive) use of the area. The analytical results and location of all samples collected are presented in the CADD/CR for CAU 529. Additional information is presented in *Recommendations and Justifications for Modifications to Downgrade Use Restrictions Established under the U.S. Department of Energy, National Nuclear Security Administration Nevada Field Office Federal Facility Agreement and Consent Order* document.

Contaminants Table:

Maximum Concentration of Contaminants for CAU 529 CAS 25-23-17, Contaminated Wash (Parcel E)			
Constituent	**Maximum Concentration**	**Action Level**	**Units**
Cs-137	254.4	1,626	pCi/g

Site Controls: This administrative UR area is established at the boundary identified by the coordinates listed above and depicted in the attached figure. No physical site controls are required for this administrative use restriction.

UR Maintenance Requirements (applies to both FFACO and Administrative UR(s) if Administrative UR exists):

Description: This administrative UR is recorded in the FFACO database, NNSA/NFO M&O GIS, and the NNSA/NFO CAU/CAS files. No site controls are required for this administrative UR other than the administrative controls for land use at the NNSS.

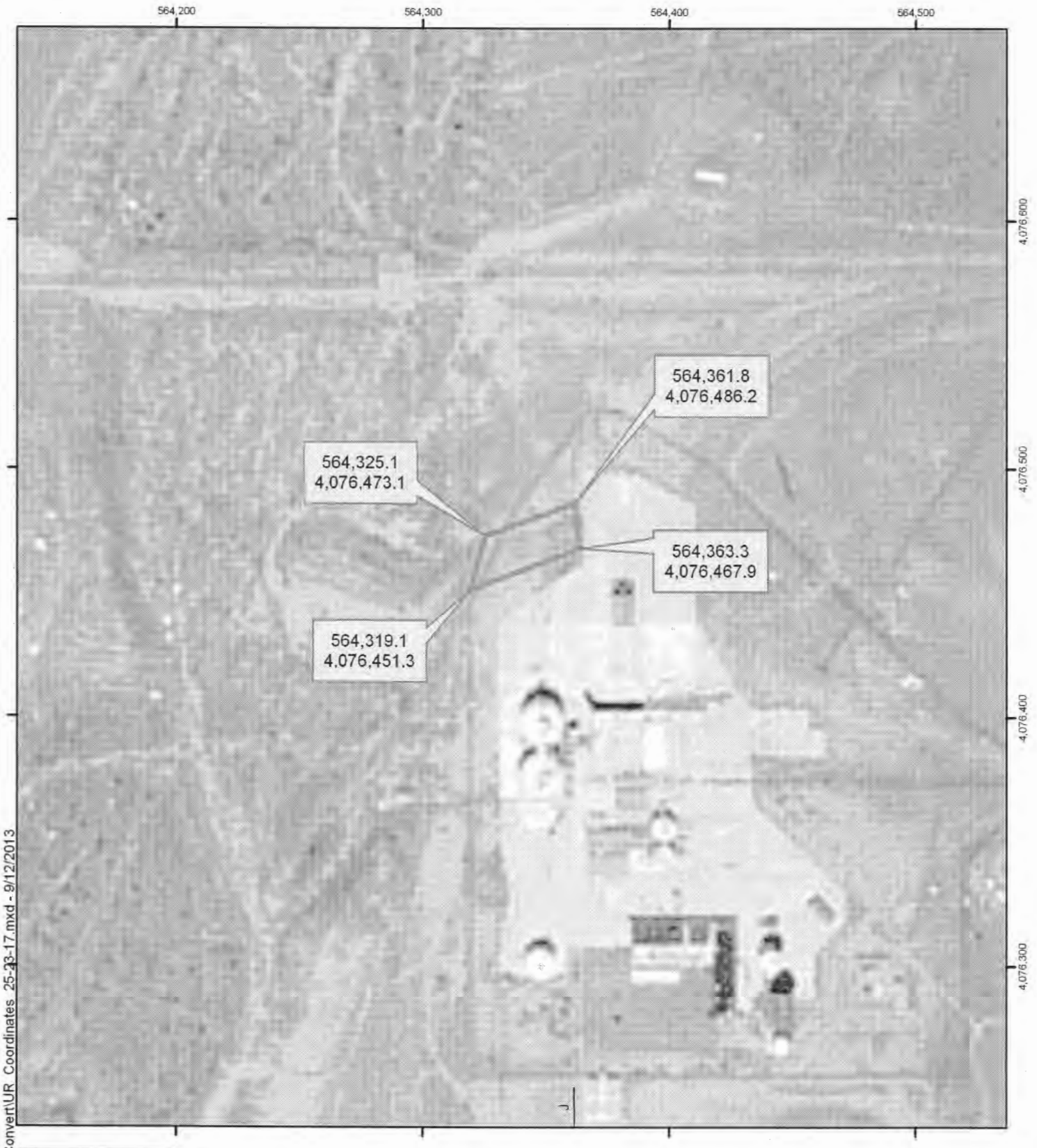
Inspection/Maintenance Frequency: N/A

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 CR or other CAU documentation unless appropriate concurrence is obtained in advance.

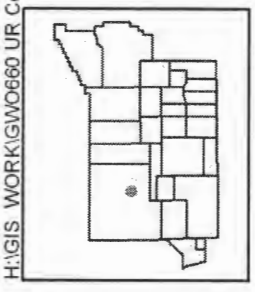
Use Restriction Information

Comments: Personnel are restricted from performing work in this location that would require any use of the area within the UR for activities that would result in a more intensive use of the site than the current land use (i.e., activities consistent with the occasional use exposure scenario). Activities included in the current land use would include short duration activities such as site visits, maintenance of the fence, radiological surveys, short duration radiological training, and retrieval of objects within the use-restricted area. Any activities to be conducted within this area that are not consistent with this defined current land use require the prior notification and approval of the NDEP.

Submitted By: /s/ Tiffany A. Lantow **Date:** 12/11/2013



H:\GIS_WORK\GWO660 UR Convert\UR_Coordinates_25-23-17.mxd - 9/12/2013



Administrative Use Restriction
CAU 529 CAS 25-23-17
Contaminated Wash
(Parcel E, Buried
Contaminated Soil Area 2)

0 25 50 100
Meters
0 50 100 200 300
Feet

N

Explanation

Administrative Use Restriction Boundary

Coordinate System: NAD 1983 UTM Zone 11N, Meter

UNCONTROLLED When Printed