

March 4, 2015

Mr. Mark Kautsky, Site Manager
U.S. Department of Energy
Office of Legacy Management
2597 Legacy Way
Grand Junction, CO 81503

SUBJECT: THE U.S. NUCLEAR REGULATORY COMMISSION STAFF REVIEW OF THE
U.S. DEPARTMENT OF ENERGY REPORT ENTITLED "ANNUAL
PERFORMANCE REPORT APRIL 2013 THROUGH MARCH 2014 FOR THE
SHIPROCK, NEW MEXICO, SITE" (DOCKET WM-00058)

Dear Mr. Kautsky:

I am writing to provide the U.S. Nuclear Regulatory Commission (NRC) staff's comments on the U.S. Department of Energy (DOE) report entitled "Annual Performance Report April 2013 Through March 2014 for the Shiprock, New Mexico, Site" dated October 2014 (Agencywide Document Access and Management System Accession Number ML14332A735). Based on our review of the annual performance report, the NRC staff has the following comments:

1. On October 24, 2014 the NRC staff provided comments on the "Annual Performance Report April 2012 Through March 2013 for the Shiprock, New Mexico, Site" dated November 2013 (ML14297A140). Those comments are applicable to this report and, based on the current information available to the NRC staff, are still relevant.
2. The NRC staff notes that the current annual performance report has been reduced in detail in comparison to previous annual performance reports. The following topics or figures that were in the "Annual Performance Report April 2012 Through March 2013, for the Shiprock, New Mexico Site" are no longer provided:
 - Figure with the current and historical Shiprock site surface monitoring locations;
 - Figures with contaminant concentrations in groundwater and surface water samples;
 - Ammonia, manganese, selenium, and strontium are not discussed in detail and their past and current plumes no longer shown in figures;
 - Figure with comparison of relative contaminant distributions for the primary contaminants of concern;
 - Contaminant temporal trends are not discussed in detail in specific areas of the floodplain; and
 - Various figures showing terrace well pumping rates and cumulative groundwater volume extracted.

In addition, the figure showing the locations of well and sampling points at the Shiprock site has changed (Figure 2), additional wells have been added, some have been removed,

and the wells with water level only values no longer have markings indicating the geological unit in which they are screened.

However, the current annual performance report contains new figures showing terrace water elevation contours from the alluvial aquifer, and numerous hydrographs for terrace alluvial wells.

3. The number of recommendations in Section 5 increased in the current annual performance report in comparison to the previous report, although the executive summaries had the same three recommendations in both reports.
4. Comments on the recommendations from Section 5 are:
 - a. Recommendation bullet 2 states that DOE plans on developing a letter to NRC seeking concurrence to cease active remediation of the terrace alluvial aquifer. NRC staff comments on the “Annual Performance Report April 2012 Through March 2013 for the Shiprock, New Mexico, Site” (ML14297A140) restated that contaminated groundwater existed in the alluvium, the weathered Mancos Shale, and the unweathered Mancos Shale units of the terrace. The conceptual model for the terrace groundwater system appears to include vertical movement of contaminated groundwater from the terrace alluvium through the weathered Mancos Shale into fractures and bedding surfaces of the unweathered Mancos Shale and discharging the contaminated ground water into the floodplain alluvium or directly into the San Juan River.

As for horizontal groundwater movement, the contours in Figure 10 in the current report indicates that ground water movement is a northwest direction, i.e., movement of ground water is from the east terrace to the west terrace. One of the purposes of the active remediation is to hydraulically cut off the recharge from the east terrace to the west terrace. Based on the limited data in the report, it would appear that the hydraulic connection between the east terrace and the west terrace has not been cut. However, most monitoring wells in the terrace are above the Mancos Shale and, therefore, cannot provide data about where the interface between the weathered and unweathered Mancos Shale is located and whether the hydraulic connection between the east terrace and the west terrace within the weathered Mancos Shale has been cut.

- b. Recommendation bullet 4 states that that the DOE plans to solicit the NRC's concurrence on annual, rather than semiannual, groundwater monitoring of the Shiprock site. On October 28, 2014, the NRC staff commented on the DOE's request for concurrence on a proposal to reduce groundwater monitoring frequency at the Shiprock, site (ML14288A599). In our comments we stated that the results of the temporal redundancy analysis appear to indicate that semiannual sampling at most of the locations is warranted (see comment number 2 in ML14288A599). To date, DOE has not addressed our comments and, as such, it would appear from the DOE report that semiannual sampling is still optimal.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice" a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions concerning the NRC comments please feel free to contact me at 301-415-6749 or at Dominick.Orlando@nrc.gov.

Sincerely,

/RA/

Dominick Orlando, Senior Project Manager
Materials Decommissioning Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No.: WM-00058
cc: Shiprock dist. List

M. Kautsky

3

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice" a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions concerning the NRC comments please feel free to contact me at 301-415-6749 or at Dominick.Orlando@nrc.gov.

Sincerely,

/RA/

Dominick Orlando, Senior Project Manager
Materials Decommissioning Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No.: WM-00058
cc: Shiprock dist. List

DISTRIBUTION: R. Evans RIV RKellar, RIV

ML15043A741

OFFICE	NMSS	NMSS	NMSS	NMSS	NMSS
NAME	NOrlando	CHolston	HArlt	MNorato	NOrlando
DATE	2/24/15	2/24/15	2/25/15	2/27/15	3/4/15

OFFICIAL RECORD COPY