



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 31, 2022

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

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION'S STAFF REVIEW OF "DRAFT REEVALUATION OF AMMONIA, MANGANESE, SELENIUM, AND STRONTIUM AS CONTAMINANTS OF CONCERN (COCs) FOR THE SHIPROCK, NEW MEXICO, DISPOSAL SITE" (DOCKET NO. WM-00058)

Dear Mark Kautsky:

I am writing in response to the U.S. Department of Energy (DOE) report entitled, "Draft Reevaluation of Ammonia, Manganese, Selenium, and Strontium as Contaminants of Concern (COCs) for the Shiprock, New Mexico, Disposal Site," dated April 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. [ML22186A092](#)).

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the report and had the following comments:

1. Executive Summary, page vii: The "Results" section states that manganese still warrants designation as a COC given highly elevated levels in several wells near the evaporation pond (e.g., well 603 is characterized by relatively high manganese and ammonia concentration levels). Well 1057 also has higher manganese concentration levels and also is located near the current evaporation pond. The evaporation pond liner has been functioning as barrier to flow longer than its service life, and it is unknown if the liner is still fully functional as a barrier to flow and contaminates. The NRC staff are of the opinion that there is some urgency to DOE's recommendation that the explanation be found for the elevated ammonia and manganese values in terrace well 603. The DOE should determine if the source of the elevated values is due to active and continuing contamination from the pond into the terrace sediments or if there is another explanation.
2. Executive Summary, page vi: The "Methods" section states that wells 832 (west swale area) and 1049 (Many Devils Wash) were selected as being most representative of background conditions on the terrace. The selection of well 1049 to represent background water quality values seems to be associated with some uncertainty given its proximity to the former mill processing area. The DOE document, "Final Site Observational Work Plan for the Shiprock, New Mexico, UMTRA Project Site," from November 2000, includes Section 4.4.2.2 titled, "Terrace," which discusses the aerial extent of COCs. This section states that, "Samples from wells 1048 and 1049 (installed

in December 1999), and wells 1057 and 1059 (installed in March and April 2000), have uranium concentrations exceeding the MCL and show that the plume extends southeastward, just north of the buried escarpment, to Many Devils Wash (Figure 4-36).” This section also states that, “Selenium concentrations in terrace ground water are highest southwest of the disposal cell in wells 812, 814, 841, and 832 situated in the area of the buried ancestral river channel where a bedrock swale has formed a sump area (Figure 4-42). Selenium concentrations are also high at wells 1048 and 1049 adjacent to Many Devils Wash.” Although uranium-234/uranium-238 isotope activity ratios may indicate that the waters of wells 1049 and 832 were not affected by mill-related activities, uncertainty remains if these are the best representative wells for background water quality values. It is unclear to NRC staff as to why values from wells on an uncontaminated natural analog terrace nearby were not used, similar to data from the wells 782R and 783R, located in the uncontaminated floodplain to the north of the mill site, were used to represent the southern portion of the mill-site floodplain.

3. Section 5.3.1, page 50: Figure 23 shows the selenium concentrations in terrace monitoring wells. It is unclear to NRC staff as to why data from well 1060 is not included in this section. Figure 4-41 on page 4-135 from the DOE document, “Final Site Observational Work Plan for the Shiprock, New Mexico, UMTRA Project Site,” clearly shows elevated selenium values from well 1060.
4. Section 6.3.4, page 68: This section discusses strontium concentration values at the mill site. At the end of the discussion in Section 6.3.4, DOE states that given the findings, continued designation of strontium as a COC is not warranted. However, this finding is not listed in the recommendation section, i.e., Section 6. It is unclear to NRC staff if the statement about possible discontinuation of the strontium as a COC is considered a suggestion or a recommendation of the reevaluation document.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, “[Public inspections, exemptions, requests for withholding](#),” of the NRC’s “Agency Rules of Practice and Procedure,” 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 ADAMS. ADAMS is accessible from the NRC Web site at <https://www.nrc.gov/reading-rm/adams.html>.

If you have any questions concerning the NRC comments, please feel free to contact me at 301-415-3285 or by email at Brittany.Bolz@nrc.gov

Sincerely,

 Signed by Bolz, Brittany
on 08/31/22

Brittany C. Bolz, Project Manager
Uranium Recovery and Materials
Decommissioning Branch
Division of Decommissioning, Uranium Recovery
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket No.: WM-00058

Shiprock Dist. List

U.S. Nuclear Regulatory Commission's Review of the "Draft Reevaluation of Ammonia, Manganese, Selenium, and Strontium as Contaminants of Concern for the Shiprock, New Mexico, Disposal Site" DATE August 31, 2022

DISTRIBUTION:

RVonTill, NMSS/DUWP/URMDB

ADAMS Accession No.: Ltr ML22242A316

OFFICE	NMSS/DUWP /URMDB	NMSS/DUWP /RTAB	NMSS/DUWP /URMDB	NMSS/DUWP /URMDB
NAME	BBolz <i>BB</i>	HArt <i>HA</i>	RVon RLinton for <i>RL</i>	BBolz <i>BB</i>
DATE	Aug 31, 2022	Aug 31, 2022	Aug 31, 2022	Aug 31, 2022

OFFICIAL RECORD COPY