

June 2, 2010

Mr. Richard Bush, UMTRCA Program Manager
U.S. Department of Energy
Office of Legacy Management
2597 B $\frac{3}{4}$ Road
Grand Junction, CO 81503

SUBJECT: REVIEW OF 2009 ANNUAL GROUNDWATER REPORT FOR THE TUBA CITY,
ARIZONA DISPOSAL SITE

Dear Mr. Bush:

This letter is to inform you that U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the 2009 Annual Groundwater Monitoring Report for the Tuba City Disposal Site. NRC staff has comments that should be addressed in the next Annual Groundwater Monitoring Report. These comments are:

- In Section 2.0, *Treatment and Extraction Systems*, the total pumping rates for the extraction system were discussed, but potential problems with well fouling were not discussed until Section 6.0, *Recommendations*. Please provide more information on the potential fouling problem in Section 2.0.
- The U.S. Department of Energy (DOE) commented that a breakthrough of distillate was not observed but would include measurable changes in pH and dissolved silica. Please comment on the anticipated changes in pH and silica associated with the migration of uranium.
- On page 6, DOE stated that the contamination in Horizon D “does not appear widespread or continuous in distribution ..., and the concentration is generally of lesser magnitude than in overlying horizons.” However, wells 1105, 1106 & 1120 are reported screened in the D horizon and have elevated contaminant levels. In fact, it is the C horizon wells that appear to have “lesser” contamination, but the data may be biased due to the distribution of wells. Please provide a more in-depth discussion on the distribution of contaminants.
- The extent of the capture zone, as presented, did not include a discussion on the vertical depth profile. Please discuss the extent of the capture zone within each horizon.
- The corrective actions that have been undertaken are extensive; the degree of success of those actions is measured by no lateral expansion of the plume, cumulative contaminant mass removal and a decrease in the aquifer restoration index. However, the contaminant concentrations at many locations have not significantly improved after seven years of active remediation. The 2009 Report stated an estimated 0.26 pore volumes have been pumped from the aquifer. The 1999 Phase I Groundwater Compliance Action Plan (GCAP) indicates that the anticipated remediation would consist

of two pore volumes after 20 years. In the next Annual Groundwater Report, please discuss the impact to the remediation timeline included in the 1999 GCAP and justifications for the expectation of a 60-year completion deadline.

- In the 1999 Phase I GCAP, the submittal of a final GCAP was discussed. Please discuss the expected date of this submittal.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," a copy of this letter will be available 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 regarding this letter, please contact me, either by telephone at (301) 415-7188, or by e-mail at Richard.Chang@nrc.gov.

Sincerely,

/RA/

Richard Chang, Project Manager
Special Projects Branch
Decommissioning and Uranium Recovery
Licensing Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

cc:

T. Pauling, DOE
M. Roanhorse, Navajo UMTRA
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