WM-110

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
Phone 800-227-8917
http://www.epa.gov/region08

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Ref: 8EPR-N

Joel Berwick, Moab Project Manager
U.S. Department of Energy
Grand Junction Office
2597 B-3/4 Road
Grand Junction, Colorado 81503

RE: EPA scoping comments on DOE's proposed remediation of the Moab Project Site, Grand County, Utah

Dear Mr. Berwick,

Pursuant to Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), EPA offers the following comments for your consideration as DOE prepares the EIS for the Moab Project. The Moab Project Site is a former uranium-ore processing facility operated in the past under Title II of UMTRCA. In October 2000, national legislation gave DOE the responsibility for remediation of the Moab Project Site in accordance with Title I of UMTRCA. In 1999, prior to the transfer of the Moab site to DOE, the Nuclear Regulatory Commission completed its Final EIS related to the reclamation of these uranium mill tailings at Moab, Utah, which principally considered surface remediation and a cap-in-place.

According to the Notice of Intent to prepare this EIS, DOE plans to use information from the prior EIS prepared by the Nuclear Regulatory Commission (NRC). We certainly concur that DOE should use applicable information from the NRC EIS as appropriate in preparing this EIS since NRC's prior effort established an assessment of existing environmental conditions at the site, and to a great extent, many of the issues regarding the alternative of cap-in-place.

As part of the evaluation of alternatives, DOE plans to consider both an on-site and off-site remediation and disposal of tailings and contaminated soils. Off-site disposal alternatives currently include five sites in Utah: 1) Klondike Flats, near Moab; 2) Crescent Junction, near the town of Crescent Junction and about 20 miles east of the town of Green River; 3) the White Mesa Mill near the town of Blanding; 4) the East Carbon Development Corporation (ECDC) site, near East Carbon, Utah, and 5) the Green River site operated by UMETCO. The transportation alternatives are truck-haul on existing roads, rail haul (with the exception of the White Mesa site which does not have an existing rail line) and/or slurry pipeline with return of the contaminated process water to the Moab Project Site.

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The National Academy of Sciences (NAS) provided assistance to DOE in evaluating costs, benefits, and risks associated with remediation of the Moab project site. DOE has completed a preliminary draft Plan for Remediation that evaluated cap-in place and an unspecified, or generic, off-site relocation alternative. We are pleased to learn that DOE does not intend to finalize the Plan for Remediation, but instead will use the EIS process to support its decision making for the remediation of the Moab Site. In that manner, the public and concerned stakeholders can contribute to the EIS process knowing it will later become the basis for DOE's final decision for the site.

EPA as a cooperating agency

EPA has promulgated pursuant to the Clean Air Act the National Emission Standards for Hazardous Air Pollutants (NESHAPS) for radionuclides other than radon from Department of Energy facilities codified at 40 CFR 61 Subpart H. Further, pursuant to UMTRCA Section 108, EPA has promulgated the Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings codified at 40 CFR 192. DOE will need to comply with these requirements for the proposed remediation at the Moab Project Site. EPA maintains special expertise in this matter, and therefore, would be pleased to consider a request to become a cooperating agency for this effort. Should EPA become a cooperating agency, then DOE and EPA would develop a memorandum of understanding specifying EPA's roles and responsibilities for preparation of this EIS.

Evaluation of the off-site disposal alternatives

The proposed off-site location of relocating the Moab tailings to the White Mesa Mill site may be more challenging to adequately characterize because it has a complicated history regarding its use as an NRC-licenced uranium mill. There are potential long-term impacts from continued operation of the mill bringing in alternate feed sources. For example, NRC has amended the facilities license to accept waste from uranium materials reprocessing, originating from sites that have been remediated by the State of California and EPA as prior Superfund sites. Because of the special interests of the nearby community of White Mesa on the Ute Mountain Ute Reservation, additional assistance in understanding the environmental impacts to that community will be warranted. Under Executive Order 12898, federal agencies are to ensure that the environmental or health effects on minority and low-income communities receive special attention. In addition, pursuant to Executive Order 13084, federal agencies are to consult with Tribes on actions that significantly or uniquely effect their communities. EPA has several ongoing communication efforts with the community at White Mesa regarding the operation of the mill and would be able to assist DOE in its efforts to consult with the tribe of the potential impacts of this alternative off-site remediation location.

It was unclear in the scoping process why the Envirocare site in Clive, Utah had been deleted from consideration. It does have the advantage of being a co-located site. Furthermore, it is EPA's understanding (based on our experience with the decision regarding the disposition of

the tailings at the Monticello Mill Tailings site) that Envirocare had indicated that the company was considering a repository site in the Crescent Junction area. Has Envirocare come forward with a proposal for disposal either at Clive or at an alternate Crescent Junction site? What steps has DOE undertaken to solicit a proposal from Envirocare?

Ground water analysis suggestions

Ground-water modeling performed in support of the assessment of ground water remedial options needs to consider groundwater-surface water interactions. Ground-water and surface water interactions appear to be poorly understood. For example, discharge to the river as a function of river stage needs to be evaluated. Any potential discharge to the wetlands also needs to be evaluated. Well hydrographs coupled with river flow (and any precipitation events) should be plotted for wells adjacent to the river. Micro-piezometers placed at regular intervals along the banks of the river could be used to determine losing/gaining stretches, and where the river is gaining, water quality of the discharge should be evaluated. Conductivity monitoring in river bottom along transects may provide information about ground-water discharge in the central portions of the river channel. This information, coupled with the onsite piezometers, should be used to generate seasonal equipotential maps.

Geochemical evaluation of the river and ground water quality may also provide useful information about their interaction. Any differences in the major cation and anion chemistry of the river water and ground water may be identified through such tools as ternary diagrams, trilinear plots, or Stiff diagrams.

Contaminant transport modeling used in the analysis of ground-water remedial options needs to consider the vertical distribution of contaminants. For example, ammonia and uranium concentrations are higher in the coarse gravels than in the overlying medium sands in well PZ1M. There appears to be a topographic high in the gravel beds at this location. This location also is adjacent to the river back-water area in which elevated ammonia levels cause a concern for chronic aquatic toxicity. This may or may not be related to the higher concentrations in these coarse gravels. Contaminant transport in the gravel beds is not well characterized and it is not known where the ground water in the coarse gravels discharges. The available array of wells should be evaluated to determine if sufficient information can be obtained regarding contaminant transport in the gravel beds.

The Draft EIS will consider evaluating ground-water remediation options for reducing metals and ammonia for both the on-site remediation option and for inclusion in any removal for the off-site disposal options. Natural mechanisms for attenuation, such as sorption and redox reactions need to be evaluated for both the fine sands and gravel beds through which contaminants are migrating. Bench scale studies that evaluate the potential for leaching from the various materials in the tailings pile should also be conducted in order to evaluate the long term mass influx to ground water in the event the pile is capped in place.

The influence of the tamarisk along the river also needs to be considered in evaluating ground-water remedial options. Ground-water modeling needs to include evapotranspiration through the tamarisk, and the water balance and contaminant transport modeling should include any uptake of metals and ammonia that may occur as the plume moves through the tamarisk area. We are aware of only a single study analyzing uptake of metals by tamarisk, so it may be difficult for DOE to quantify metal removal by the existing vegetation at the site. See "Uptake of Arsenic by Tamarisk and Eucalyptus under saline conditions", pages 485-492, R.W. Tossell, K. Binard, and M.T. Rafferty in Bioremediation and Phytoremediation of chlorinated and recalcitrant compounds; Eds. GB Wickramanayake, A.R. Gavaskar, B.C. Alleman, and V.S. Magar. Monterey, CA. May 22-25, 2000. If removal of the non-native tamarisk is proposed, the uptake of metals and ammonia of any replanted native vegetation would also need to be considered as part of the site restoration as well as the ability of native vegetation to tolerate the metal and ammonia concentrations in the ground water.

Surface Water Quality analysis

DOE should address the impacts of contamination (leachate and tailings) entering the river at the present rates and the impacts of a partial and a total (catastrophic) collapse or failure of the tailings pile resulting in large quantities of leachate and the tailings entering the Colorado river. The failure scenarios need to address the resultant impacts to the Colorado River. The scope of the EIS could include the impacts of contaminants tailings and leachates on downstream water supplies including consideration of whether the supply is for potable or agricultural uses. Have any studies (sampling and analysis) been conducted of the existing water supply intakes? Failure analyses may include the time it will take for water and contaminants to move downstream in the Colorado River, considering both the circulation and retention times in the reservoirs prior to being introduced into a water supply. Impacts to river recreational users regarding potential exposure to the tailings material could also be considered as an element of the failure analysis.

Alternative cover design and its relation to past technical approach documents

Have there been any revisions to the Technical Approach Document (DOE Technical Approach Document - Revision II - December 1989) which DOE feels must be incorporated into a final design? Note that at the time of that Technical Approach Document Revision the final ground-water standards had not been promulgated. Chapter 8.0 Water Resources Protection identifies the general technical approaches for site characterization, how to develop the principal elements of the compliance strategy, and methods to evaluate whether the proposed remedial action will meet the EPA standards for water resource protection. Does DOE intend to use the approach in Chapter 8 or have there been revisions made to this document since the groundwater standards were finalized?

EPA's staff team

EPA has established a team of staff members to assist in this effort. Please contact these staff members, as listed below, directly for the subject matter listed or call the NEPA team leader Wes Wilson if you need additional guidance from EPA.

Name	Function	Phone	Email
Weston Wilson	EIS review lead	303/312-6562	wilson.wes@epa.gov
Richard Graham	Radiation Program	303/312-7080	graham.richardv@epa.gov
Paul Mushovic	Cover design, transportation, tailings disposal and cost analysis	303/312-6662	mushovic.paul@epa.gov
Jean Belille	Environmental Justice	303/312-6556	belille.jean@epa.gov
Donna Jackson	Tribal issues	303/312-6281	jackson donna@epa.gov
Helen Dawson	Ground water modeling	303/312-7841	dawson helen@epa gov
Paul Osborne	Ground water criteria for UMTRCA Title II	303/312-6125	osborne.paul@epa.gov

Thank you for consideration of our comments. We look forward to working with DOE and the other cooperating agencies to meet the intent and purposes directed by Congress for remediation of the Moab Project Site.

Sincerely,

Cynthia G, Cody
Director, NEPA Program
Ecosystem Protection and Remediation

cc: Bill Sinclair, UDEH, Salt Lake City
Dan Kimball, National Park Service, Ft. Collins
Tom Rice, Ute Mountain Ute Tribe, Towaoc
Marvin Flegal, Nuclear Regulatory Commission, Washington, D.C.
Bruce Wadell, Fish and Wildlife Service, Salt Lake City

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EPA U.S. ENVIRONMENTAL PROTECTION AGENCY
999 18TH ST STE 300
DENVER CO 80202-2466

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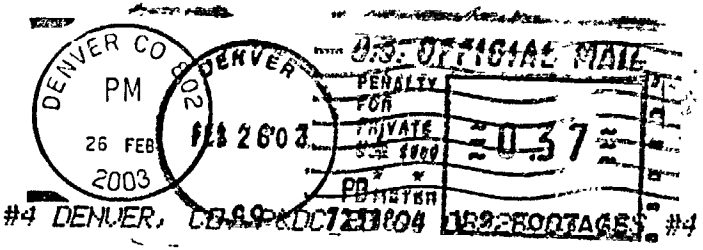

Myron Fliegal
Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852-2738

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