August 14, 2003

Ms. Donna Bergman-Tabbert, Manager
U.S. Department of Energy
Grand Junction Office
2597 B3/4 Road
Grand Junction, CO 81503

SUBJECT: REVIEW OF DRAFT GROUND WATER COMPLIANCE ACTION PLAN FOR THE NEW RIFLE, COLORADO, URANIUM MILL TAILINGS REMEDIAL ACTION (UMTRA) PROJECT SITE (TAC L51912)

Dear Ms. Bergman-Tabbert:

By letter dated April 30, 2003, the U.S. Department of Energy submitted the Draft Ground Water Compliance Action Plan (GCAP) for the New Rifle, Colorado, UMTRA Project Site, for review and comment. The U.S. Nuclear Regulatory Commission (NRC) staff has completed its initial review of the draft GCAP and determined that additional information is needed to complete the detailed review of the draft GCAP. The staff's request for additional information (RAI) is provided in the enclosure to this letter.

If you have any questions regarding this letter or the enclosed RAI, please contact me at (301) 415-7287 or by e-mail to RMW2@nrc.gov.

In accordance with 10 CFR 2.790 of the NRC's "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 (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Rick Weller,
Project Manager for New Rifle
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No.: WM-62
Enclosure: Request for Additional Information
on the New Rifle Draft GCAP

cc: D. Metzler, DOE GJO
J. Jacobie, CDPHE Den

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R. Linton R. Nelson FCFB r/f
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NAME	R, Weller		B. Garrett		R. Nelson	
DATE	8/12/03		8/14/03		8/14/03	

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REQUEST FOR ADDITIONAL INFORMATION FOR U.S. DEPARTMENT OF ENERGY'S SUBMISSION OF THE DRAFT GROUND WATER COMPLIANCE ACTION PLAN FOR THE NEW RIFLE, COLORADO, UMTRA PROJECT SITE, APRIL 2003.

Prepared by Ron C. Linton, Hydrogeologist

By letter dated April 30, 2003, the U. S. Department of Energy (DOE) submitted the Draft Ground Water Compliance Action Plan (GCAP) for the New Rifle, Colorado, UMTRA Project Site, to the U. S. Nuclear Regulatory Commission (NRC) staff for review and comment. This request for additional information identifies additional information needed by the NRC staff to complete its detailed review of the report.

1. **Action:** Analyze the contaminant levels in the gravel ponds and determine if they are protective of human health. Determine if institutional controls or physical barriers are necessary to restrict human use of the ponds.

   Basis: The GCAP submitted by DOE proposes to meet the regulatory standards of 40 CFR Part 192 (Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings) by using a natural flushing and alternate concentration limit (ACL) strategy for contaminants of concern (COCs). 40 CFR Part 192, Subpart A, §192.02 (c)(3)(ii)(B)(2), specifies that an evaluation of potential hazards from proposed ACLs must consider several factors, including potential adverse effects on hydraulically-connected surface-water quality.

   The Roaring Fork gravel ponds contain hydraulically-connected contaminants related to the mill site that are above background levels and above the maximum contaminant levels (MCLs) for groundwater protection in 40 CFR Part 192. The Roaring Fork gravel ponds are not subject to the institutional controls that are to be placed on the mill site property. Furthermore, institutional controls placed on groundwater use within the Town of Rifle Institutional Control Boundary and within the Garfield County Drinking Water Constraint Zone will not limit use of surface water. The Roaring Fork ponds are located on private property that is subject to unrestricted use, with the exception of groundwater. The November 1999 Site Observational Work Plan (SOWP) for the New Rifle site reported uranium concentrations as high as 0.159 mg/L, molybdenum concentrations as high as 0.521 mg/L, and nitrate concentrations as high as 462 mg/L in the ponds. These levels are well above MCLs. Potential human activities associated with the ponds, such as swimming, should be analyzed to determine if those activities should be restricted.

2. **Action:** Analyze the contaminant levels in the Roaring Fork ponds and determine if they are protective of ecological and agricultural receptors since the gravel operation is closing in the near future. Reevaluate the need for institutional controls or physical barriers to restrict use of the ponds by ecological and agricultural receptors.

   Basis: The GCAP submitted by DOE proposes to meet regulatory guidelines by using a natural flushing and ACL strategy for COCs. 40 CFR Part 192, Subpart A, §192.02 (c)(3)(ii)(B)(2), specifies that an evaluation of potential hazards from proposed ACLs

must consider several factors, including potential adverse effects on hydraulically-connected surface-water quality.

The Roaring Fork gravel ponds contain hydraulically-connected contaminants related to the mill site that are above background levels and above MCLs. There are several references in the November 1999 SOWP in Section 6 referencing elevated concentrations of contaminants of potential concern in the Roaring Fork ponds. For example, the SOWP indicates in Section 6.2.1, "Nitrate levels in the pond exceeded levels protective of livestock watering; however, the pond was (and still is) protected from livestock access." The gravel operation is closing and the ponds are undergoing reclamation. The ponds may not be protected from livestock access in the near future.

The SOWP indicates in Section 6.3.1.7, "Nitrate concentrations in surface water at the Roaring Fork pond are high enough to result in elevated risks to ecological receptors via the surface water ingestion pathway (receptors evaluated for the pathway include muskrat, mule deer, and great blue heron). This pathway is complete, but because of the operational nature of the Roaring Fork facility, potential receptors are probably discouraged from use of the Roaring Fork pond as a regular source of drinking water." Potential receptors may not be discouraged in the near future from using the pond since the gravel operation is closing.

3. **Action:** The proposed ACL for ammonia (as NH_4) is 200 mg/L. Provide a justification for this level.

   Basis: 40 CFR Part 192, Subpart A, §192.02 (c)(3)(ii)(A), specifies that an ACL may be applied if the constituent will not pose a substantial present or potential hazard to human health and the environment as long as the ACL is not exceeded. There are nine COCs listed for the New Rifle site. For eight of the COCs, the DOE has proposed using either natural flushing or ACLs to meet concentration levels that are based on published standards, such as 40 CFR Part 192 and 40 CFR Part 141 (National Primary Drinking Water Regulations), or historical background levels. The 200 mg/L level for ammonia is the only contaminant level not related to concentration levels based on published standards.

4. **Action:** The MCL for uranium in 40 CFR Part 141 will change from 0.044 mg/L to 0.030 mg/L on December 8, 2003. Analyze the impact of the new 40 CFR Part 141 standard on the time required to reach 0.030 mg/L for uranium using the natural flushing strategy.

   Basis: The MCL for uranium in 40 CFR Part 141 will change on December 8, 2003, to 0.030 mg/L and DOE should use this standard when modeling for groundwater compliance using the natural flushing strategy. As an alternative, the background level for uranium may be substituted for the 40 CFR Part 141 standard if the background level can be shown to be higher than the new MCL.

5. **Action:** The MCL for arsenic in 40 CFR Part 141 will change from 0.05 mg/L to 0.01 mg/L on January 23, 2006. Analyze the impact of the new 40 CFR Part 141 standard on the time required to reach 0.01 mg/L for arsenic using the natural flushing strategy.

Basis: The MCL for arsenic in 40 CFR Part 141 will change on January 23, 2006, to 0.01 mg/L and DOE should use this standard when modeling for groundwater compliance using the natural flushing strategy. As an alternative, the background level for arsenic may be substituted for the 40 CFR Part 141 standard if the background level can be shown to be higher than the MCL.

6. **Action:** Add at least one additional floodplain alluvium monitoring well at the southwestern terminus of the institutional control (IC) boundary between the Colorado River and the extent of alluvium boundary.

   Basis: All wells in the proposed groundwater monitoring network are considered to be point-of-compliance wells as discussed in Section 2.7 of the GCAP. 40 CFR Part 192, Subpart A, §192.02(c)(4), defines the point of compliance as the intersection of a vertical plane with the uppermost aquifer underlying the site, located at the hydraulically downgradient limit of the disposal area. The western terminus of the IC boundary appears to fit the definition of a point of compliance and, as such, would be one of the required locations to monitor compliance for the COCs.

7. **Action:** Expand the long term surface water sampling plan to insure known potential surface water points of exposure are sampled.

   Basis: There are several sampling locations of surface water bodies that have been defined as points of exposure by DOE in Section 2.7 of the GCAP. Only one of the Roaring Fork ponds is proposed for long term sampling. Add the second Roaring Fork pond to the sampling plan for long term surveillance. The Colorado River is the largest and most significant surface water body at the site. Include a second surface water sampling point along the Colorado River in the sampling plan.

8. **Action:** Clarify the proposed sampling locations and frequencies for the long term sampling plan (GCAP Table 2, page 17, versus GCAP Appendix D, page 13).

   Basis: Both sections of the GCAP refer to the long term sampling plan but list slightly different well locations and sampling frequencies. Revise the sampling locations and frequencies so that both sections of the GCAP are consistent.

9. **Action:** Revise the figure for NO2 - Well 0219 (GCAP Appendix B, Attachment A) to read NO3 - Well 0219.

   Basis: The concentration versus time figure for NO2 - Well 0219 (x-axis 1998 through 2098) appears that it should read N03 - Well 0219.

10. **Action:** Revise or correct the selenium figures (GCAP Appendix B, Attachment B).

    Basis: The two figures for concentrations of selenium are dated 1998 and 1999, respectively. However, both sets of concentration data presented appear to be identical on the plume maps. On the 1999 map, the highest concentration for selenium of 0.78 mg/L should be referenced with reddish color, if the data is correct. For both figures,

confirm that the data is correct and insure the plume map(s) are colored to accurately reflect site conditions.

11. **Action:** Revise EPA Region III 2001 reference to 2003 (GCAP Appendix C, Alternate Concentration Limits Application, page 4, second paragraph, 5th line).

    Basis: The 2001 EPA Region III risk-based concentration table has been updated to 2003. Insure that the reference is updated in the text as well as in the Appendix C references.

12. **Action:** Revise the last DOE reference to an EPA reference (GCAP Appendix D, page 15).

    Basis: In the References section of Appendix D, the last DOE reference is "_____[DOE], 2001, Supplemental Guidance for Developing Soil Screening, etc." The reference in Appendix D, page 15, should not be listed as a DOE reference, but as an EPA reference.