STATE OF COLORADO

Bill Ritter, Jr., Governor
Martha E. Rudolph, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
TDD Line (303) 691-7700
Located in Glendale, Colorado

http://www.cdphe.state.co.us

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

September 21, 2010

Mr. Frank Filas
Environmental Manager
Energy Fuels Resources
44 Union Boulevard, Suite 600
Lakewood, Colorado 802278

Subject: Request for Additional Information #4

Mr. Filas,

The Department has completed further review of the Energy Fuels Resources radioactive materials license application and related technical documents and correspondence. As a result of the review, the Department has additional comments and requests additional information. These comments are detailed in Attachment 1 and Attachment 2 to this correspondence. Please contact Clay Trumpolt at (303) 692-3460 if you have questions specific to the comments of Attachment 1, and Larry Bruskin at (303) 692-3384 regarding Attachment 2 comments.

Your response is expected within 45 days of this request, unless you provide justification for an alternate delivery schedule. Additional questions may be referred to Phil Egidi at phil.egidi@state.co.us or (970) 248-7162, or James Jarvis at james.jarvis@state.co.us or (303) 692-3454. You may also contact me at steve.tarlton@state.co.us or (303) 692-3423.

Steve Tarlton, Manager
Radiation Control Program

Enclosures: Attachment 1 (2 pages), Attachment 2 (1 page)

Cc: Phil Egidi

CDPHE Comments RE: Correspondence (3 pages) from Golder Associates to Bob Monok, Energy Fuels Resources, dated August 6, 2010 re: *Tailings and evaporation pond delivery and return piping conceptual plan, Pinon Ridge project, Montrose County Colorado and Figures 1 – 3.*

Comment 1 – Regarding design concept of placing single-wall HDPE pipes in trenches with the trenches serving as secondary containment: The Department proposes that it would be less expensive and as or more environmentally protective to use buried double-wall HDPE piping. Advantages include protection from impacts, exposure to weather and sunlight degradation, and the thermal effects of low (freezing) and high (thermal expansion along length of pipe) temperatures, maintenance of the ditch HDPE liner and culverts, etc. Please provide a supportive narrative detailing why the method chosen is better than buried double-walled HDPE piping including cost. The Department has positive experience at other regulated facilities where use of double-walled HDPE piping has shown a good track record.

Comment 2 – There is insufficient detail in the figures. Please provide a plan view of the two tailings cells showing the relationship of the tailings slurry delivery pipe, the supernatant tailings water return pipeline, and the raffinate water delivery piping systems. Please label the systems. Include information on the location and number of spigots, all valve locations and types, and other pertinent information.

Comment 3 – Please provide information in the form of a plan view of the evaporation ponds showing the location of the two piping lines. Provide the same level of detail as per comment 2 above.

Comment 4 – Please provide normal operating and maximal flow rates in cfm for each pipeline to the tailings cells and evaporation ponds. Please provide data on the anticipated percent solids in the tails?

Comment 5 – Please provide a short narrative of how the spigots would be operated for the first tailings cell under normal operating conditions.

Comment 6 – Is it anticipated that "sanding up" problems will occur in the 3 inch tails distribution line and if not why?

Comment 7 – Will cold temperatures impact flows through these lines and if not why? What about during stoppages or shutdowns?

Comment 8 – When the ambient temperature is hot, the HDPE will expand significantly along its length (especially given the length of the pipelines) due HDPE's expansion coefficient. How will HDPE pipe be prevented from falling into the tailings ponds from the crest of the berms and from "snaking" out of the lined piping trench?

Comment 9 – What method will be employed to connect the HDPE pipe sections?

Comment 10 – What is the wall thickness of each of the proposed pipelines?

Comment 11 – Regarding the HDPE piping in the lined trench, how will vehicles be prevented from sliding off the maintenance road during slick or icy conditions and impacting and potentially cutting/severing the HDPE pipelines and liner resulting in a potential release scenario?

Comment 12 – When lining the trenches with HDPE, the number of seams should be minimized by running the long dimension of the roll down the length of the trench. How will the HDPE liner in the lined trench be fitted to the rectangular trench?

Comment 13 – Will thrust blocks be required at tee junctions for the HDPE pipelines?

Comment 14 – Please provide typical detail of HDPE pipeline 90 degree bends and tee junctions showing HDPE joints.

Liquefaction Analysis

Consistent with Section 2.4 of *NUREG-1620, Revision 2*, the liquefaction potential of the subsurface, tailings pile, and embankment materials must be evaluated. Although Appendix E of the Phase 2 Geotechnical Investigation (Volume 4) evaluates liquefaction with respect to the overburden soils, the subsurface material and actual tailings materials were not discussed. The evaluation should consider operational conditions (e.g., saturated tailings) as well as post-closure conditions. NUREG-1620 suggests that the evaluation be based on results from laboratory and/or field tests, with interpretation of the test data consistent with current practice. If global liquefaction is identified, mitigation measures or redesign of potentially impacted structures should be proposed in order to provide reasonable assurance that the liquefaction potential has been eliminated or mitigated. If minor or local liquefaction is identified, the license applicant should ensure that its effect is accounted for in the analysis of both differential and total settlement, and is shown not to compromise the performance of the final cover components. Please provide an updated evaluation of the items discussed herein.