

**Piñon Ridge Uranium Tailings Facility and Evaporation Pond  
Construction Approval  
40 C.F.R. Part 61, Subpart W  
Background Information for Intent to Approve  
3/07/11**

EPA Region 8 reviewed the Application for Construction Approval submitted by Energy Fuels Resources Corporation (“Energy Fuels”) to EPA pursuant to 40 C.F.R. section 61.07 “Application for approval of construction or modification,” entitled “Piñon Ridge Mill Application for Approval of Construction of Tailings Facility” and “Piñon Ridge Mill Evaporation Pond Information” (collectively, the “Application”). The Application, submitted on August 30, 2010, and September 1, 2010, is for Phase 1 of a proposed operation for the Piñon Ridge Mill (the “Mill”). The Application states the Mill will process an average of 500 tons of ore per day. (See Application for Approval of Construction of Tailings Facility, p.3). In addition to the Application submitted, a telephone conversation took place on December 22, 2010, between EPA Region 8 and Energy Fuels representative, Frank Filas, regarding the size of the Phase 1 evaporation ponds (further discussion below; see Document EPA-PNR-005 in Administrative Record).

Additional documents relied upon in the review of the Application for construction of the tailings impoundments include the radioactive license application submitted to the Colorado Department of Public Health and Environment (“CDPHE”), State of Colorado, “Energy Fuels Inc. Piñon Ridge Uranium Mill Application,”<sup>1</sup> as well as all relevant revisions made to the original application submitted to the CDPHE.<sup>2</sup>

### **Facility Location**

The proposed Mill is situated in Montrose County, Colorado on an 880-acre private parcel. The Property is located in Paradox Valley, approximately 12 miles west of Naturita and approximately 7 miles east of Bedrock, along the northeastern edge of Davis Mesa. The Mill’s address is 16910 Highway 90, Bedrock, CO 81411.

Energy Fuels Resource Corporation, owner and operator of the Mill, is located at 44 Union Blvd., Suite 600, Lakewood, CO 80228.

### **Company Contact**

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<sup>1</sup> <http://www.cdphe.state.co.us/hm/rad/rml/energyfuels/application/index.htm>

<sup>2</sup> <http://www.cdphe.state.co.us/hm/rad/rml/energyfuels/postap/10docs/index.htm>

## Regulatory Authority

EPA Region 8's authority over the Mill is derived from the Clean Air Act ("CAA"), as amended at 42 U.S.C. section 7401 *et seq.* The tailing cells and evaporation ponds at the Mill are regulated pursuant to 40 C.F.R. Part 61, National Emission Standards for Hazardous Air Pollutants ("NESHAP"), Subpart A – General Provisions ("Subpart A"); and Subpart W – National Emissions Standards for Radon Emissions from Operating Mill Tailings ("Subpart W").

Subpart W applies to "owners or operators of facilities licensed to manage uranium byproduct material during and following the processing of uranium ores, commonly referred to as uranium mills and their associated tailings." (40 C.F.R. § 61.250). Subpart W defines "uranium byproduct material or tailings" as "the waste produced by the extraction or concentration of uranium from any ore processed primarily for its source material content." (40 C.F.R. § 61.251(g)). Thus, any type of uranium recovery facility that is managing uranium byproduct material or tailings is subject to Subpart W. The requirements of Subpart W specifically apply to the structures at the uranium recovery facility that are used to "manage" or contain the uranium byproduct or tailings. At the Mill, these facilities are the tailings cell and evaporation ponds.

Subpart W requires that owners and operators meet either the standard in 40 C.F.R. section 61.252(a)<sup>3</sup> for those facilities in existence prior to 1989, or choose one of two work practice standards in 40 C.F.R. section 61.252(b)<sup>4</sup> for facilities constructed after 1989. In addition to the requirements of Subpart W, the requirements in 40 Subpart A apply to Subpart W regulated structures. Subpart A requires owners or operators to submit to EPA an application for approval for either construction or modification of Subpart W regulated structures (i.e., tailings cells or evaporation ponds) before the construction or modification is planned to commence. (40 C.F.R. §61.07). Energy Fuels submitted the Mill Application for Construction Approval in accordance with Subpart A, 40 C.F.R. section 61.07.

Energy Fuels has opted for the work practice standard found in 40 C.F.R. section 61.252(b)(1), which allows for: "Phased disposal in lined tailings impoundments that are no more than 40 acres in area and meet the requirements of 40 C.F.R. [section] 192.32(a) as determined by the Nuclear Regulatory Commission. The owner or operator shall have no more than two impoundments, including existing impoundments, in operation at any one time." Therefore, in addition to reviewing the Energy Fuels Application materials for compliance with Subparts A and W, EPA also reviewed Application materials to evaluate compliance with 40 C.F.R. section 192.32(a). The provisions in 40 C.F.R. section 192.32(a) are implemented and enforced by either the Nuclear Regulatory Commission ("NRC") or an NRC Agreement State. In the case of

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<sup>3</sup> "(a) Radon-222 emissions to the ambient air from an existing uranium mill tailings pile shall not exceed 20 pCi/(m<sup>2</sup>-sec) (1.9 pCi/(ft<sup>2</sup>-sec)) of radon-222." 40 C.F.R. § 61.252(g).

<sup>4</sup> "(b) After December 15, 1989, no new tailings impoundment can be built unless it is designed, constructed and operated to meet one of the two following work practices:

(1) Phased disposal in lined tailings impoundments that are no more than 40 acres in area and meet the requirements of 40 C.F.R. [section] 192.32(a) as determined by the Nuclear Regulatory Commission. The owner or operator shall have no more than two impoundments, including existing impoundments, in operation at any one time.

(2) Continuous disposal of tailings such that tailings are dewatered and immediately disposed with no more than 10 acres uncovered at any time and operated in accordance with § 192.32(a) as determined by the Nuclear Regulatory Commission." 40 C.F.R. § 61.252(b)(1)-(2).

the Mill, Colorado is an Agreement State, and therefore, is authorized by the NRC to enforce and implement 40 C.F.R. section 192.32(a). Thus, in conducting a review of the Application for Construction Approval, EPA Region 8 conducted a review of compliance with 40 C.F.R. section 192.32(a), evaluating documents Energy Fuels submitted to EPA and CDPHE to determine whether the tailings cell and evaporation ponds at the Mill would be in compliance with all applicable regulations.

### **Mill Operations and Proposed Facilities for Approval**

Uranium milling is the process of extracting uranium from uranium ore and processing it into uranium oxide (i.e., yellowcake) to be further processed into fuel rods for nuclear power. Energy Fuels proposes to construct and operate the Mill to process uranium and vanadium ore into uranium oxide and vanadium oxide with the resulting processing wastes (i.e., uranium byproduct) being disposed of on-site in a tailings cell and evaporation ponds. It is anticipated the Mill will process an average of 500 tons of ore per day in Phase 1 of operation.

The milling operation begins with the receipt of the ore at the ore pad. From there it is mixed with water and ground into a fine slurry, which is treated with sulfuric acid to dissolve the metals from the solid material. Uranium and vanadium are recovered from the leach solution using a solvent extraction process where the slurry containing the barren solids will be pumped into the lined tailings cell. Typically, approximately 30 percent of the wastewater that cannot be recycled will be disposed of in the evaporation pond. The wastewater from evaporation ponds may also be pumped back from the evaporation pond to the tailings cell for use in dust suppression.

It is both the tailings cell (Tailing Cell A, 30.5 acres) and the evaporation ponds (occupying a maximum of 40 acres) of Phase 1 of the milling operation that EPA is proposing to approve for construction with this action. EPA's proposed determination is that both Tailings Cell A, and the evaporation ponds will be in compliance with 40 C.F.R. section 192.32(a), as required by 40 C.F.R. section 61.252(c). EPA's proposed determination is based on information found in the Application as well as information contained in the license application and revisions to the application submitted to CDPHE (see footnotes on page 1, and cite to EPA website for review of application on page 7).

### **Approval Provisions**

The provisions of the proposed Approval to Construct are outlined below. This approval does not prevent the Administrator from implementing or enforcing applicable provisions in 40 C.F.R. Part 61 Subparts A and W. This Approval to Construct grants no relief to the owner or operator from the legal responsibility for compliance with any applicable provisions of 40 C.F.R. Part 61 Subparts A and W, or any other applicable Federal, State or local requirement. (40 C.F.R. § 61.08(e)).

#### **I. Operations/Maintenance/Reporting**

- a. The facility is approved to construct two lined uranium byproduct impoundments, no more than 40 acres in area, each: Tailings Cell A at 30.5 and **no more** than 40

- acres of Phase 1 evaporation ponds. (40 C.F.R. § 61.08; 40 C.F.R. § 61.252(b)(1)).
- b. The owner or operator shall have no more than two impoundments of no more than 40 acres in area, each, in operation at any one time. (40 C.F.R. § 61.252(b)(1)).
  - c. The owner or operator shall comply with the provisions in 40 C.F.R. section 192.32(a) and shall submit a statement certifying that they are in compliance with 192.32(a) within 30 days of completion of construction. (40 C.F.R. § 61.252(c)).
  - d. The owner or operator of the Mill must maintain a record of certifications (I.c. and III.c.) documenting compliance with 40 C.F.R. section 61.252(b)(1) and 40 C.F.R. section 192.32(a). Such records shall be kept at the Mill for at least five years and upon request be made available for inspection by the Administrator, or his/her authorized representative. (40 C.F.R. § 61.255).

## **II. Approval Limitations**

- a. This Approval will remain in effect as long as the Piñon Ridge Uranium Mill impoundments approved herein are being used for the continued placement of new tailings/uranium byproduct or are in standby status for such placement. An impoundment is in operation from the day that tailings/uranium byproduct are first placed in the impoundment until the day that final closure begins. This Approval is based on the Application for Construction Approval submitted by Energy Fuels and is not transferrable to any other owner or operator. (40 C.F.R. § 61.252(b)(1)).
- b. Energy Fuels may submit to the EPA Regional Administrator a written application for determination of whether an action intended to be taken by Energy Fuels constitutes a modification or construction of a source subject to 40 C.F.R. Part 61 Subpart W, pursuant to 40 C.F.R. section 61.06. The Regional Administrator will notify the owner/operator of his/her determination of whether the intended action constitutes modification or construction—requiring a supplemental Application for Construction or Modification to gather sufficient information to evaluate the application—within 30 days after receiving sufficient information to evaluate the application. (40 C.F.R. § 61.06).
- c. If an intended action to be taken by Energy Fuels is determined by the Regional Administrator to constitute construction or modification which affects an existing source, the approval and conditions shall supersede and/or amend the existing Approval.
- d. This Approval is contingent upon Energy Fuels submitting to the EPA Regional Administrator an acceptable surface and groundwater monitoring plan, as required by the Mill's Radioactive License, Rule 20, Part E (which is also required to be submitted to the Colorado Department of Public Health and the Environment).
- e. Updates in notification and phone contacts will not affect the conditions of this Approval.

### **III. Notification of Commencement of Construction and Startup**

- a. Energy Fuels shall furnish the Administrator with written notification as follows:
  1. A notification of the anticipated date of initial startup of the source not more than 60 days nor less than 30 days before that date. (*See* 40 C.F.R. § 61.09(a)(1)).
  2. A notification of the actual date of initial startup of the source within 15 days after that date. (*See* 40 C.F.R. § 61.09(a)(2)).
- b. If any State or local agency requires a notice which contains all the information required in the notifications in paragraph II (a), sending the Administrator a copy of that notification will satisfy paragraph II (a).
- c. A certification by Energy Fuels of the surface area (acreage) of the Evaporations Ponds and Tailings Cell A must be sent to the EPA Administrator 30 days prior to startup.

### **IV. Severability**

The provisions of this Approval to Construct are severable and, if any provision of this approval to construct is held invalid, the remainder of this Approval to Construct shall not be affected thereby.

### **V. Agency Notification**

All correspondence as required by this Approval to Construct shall be sent to:

Regional Administrator  
U.S. Environmental Protection Agency, Region 8  
1595 Wynkoop St.  
Denver, CO 80202  
Attn: Air Program, Indoor Air, Toxics and Transportation Unit, 8P-AR

### **Public Review Period**

An informal public review period is not required for this approval, but due to specific requests from interested and affected communities, the Agency provided a 30-day public review period. The Agency is providing access to all relevant documents on our website, and will prepare a response to significant adverse comments that are relevant to our final decision on the uranium byproduct impoundments.

### **Effective Date of Approval**

EPA's approval of the construction of 30.5 acres in Uranium tailing Cell A, and up to 40 acres of Phase I evaporation ponds, shall be effective immediately upon receipt of the signed Approval to Construct by the applicant.

### **Paperwork Reduction Act**

Any requirements established by this Approval for the gathering and reporting of information are not subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, because this Approval is not an “information collection request” within the meaning of 44 U.S.C. § 3502(4), 3502(11), 3507, 3512 and 3518. Furthermore, this Approval and any information-gathering and reporting requirements established by this Approval are exempt from OMB review under the Paperwork Reduction Act because it is directed to fewer than ten persons, 44 U.S.C. § 3502(4) and 3502(11); 5 CFR § 1320.5(a).

### **Environmental Justice Considerations**

On February 11, 1994, the President issued Executive Order 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The Executive Order calls on each federal agency to make environmental justice (EJ) a part of its mission by “identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations.”

This Subpart W Approval applies only to air quality impacts resulting directly from construction of Tailings Cell A and the Phase I evaporation ponds. As these impacts will be minimized by compliance with the requirements of Subpart W, the proposed approval will have minimal environmental impacts and, therefore, EPA believes will not have any disproportionately high and adverse human health or environmental effects on EJ communities. EPA welcomes input, however, from potentially affected individuals and communities during the informal public review period which will allow all interested community members to provide input on our proposed decision.

### **Tribal Interests**

Based on our research and on previous communications by the state of Colorado, we believe that the facility will not affect properties of religious or cultural significance to any Indian tribe. In 2009, CDPHE solicited input from three tribes with historic ties to the project area—the Ute Mountain Ute Tribe, the Southern Ute Tribe, and the Ute Tribe of the Uintah and Ouray Reservation. CDPHE also consulted with the SHPO as to potential properties of religious or cultural significance. CDPHE received no responses from the three Indian tribes. In 2010, CDPHE solicited input a second time from Indian tribes, and again received no input. We will be notifying the three Indian tribes of their opportunity to provide input into EPA’s decision.

### **Adjustment to Facility’s Application for Approval of Construction**

The Application for Construction Approval requests approval for Tailings Cell A, which will be 30.5 acres (see Application for Approval of Construction, Piñon Ridge Tailings Facilities, page 3), and approval for an area of 41.3 acres of evaporation ponds (Evaporation Pond Design Report, Piñon Ridge Project, Montrose County, Colorado, page ES-1). EPA had to adjust the request since the regulations allow only two impoundments of no more than 40 acres each. EPA’s proposed approval, as stated above, is for 30.5 acres for Tailings Cell A, and up to 40 acres of evaporation ponds in Phase 1 of the evaporation ponds, as that is what the regulations allow. (See 40 C.F.R. § 61.252).

In a telephone conversation on December 22, 2010, between EPA Region 8 (Dr. Angelique Diaz) and an Energy Fuels representative (Frank Filas), regarding the size of the Phase 1 evaporation ponds, Dr. Diaz informed Mr. Filas that any approval would only be for up to 40 acres of evaporation ponds, not the 41.3 acres outlined in the “Piñon Ridge Mill Evaporation Pond Information.” Mr. Filas indicated that this would not be an issue.

### **Administrative Record**

EPA has prepared an index to the Administrative Record. All documents in the Administrative Record are available at <http://www.epa.gov/region8/air/pinonridge.html>. The record will be amended after the informal public review period with significantly adverse comments and responses.