

# Piñon Ridge Mill Decommissioning Funding Plan



Submitted to: Colorado Department of Public Health and Environment
Radiation Management Program
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#### 1.0 Introduction

On January 5, 2011, the Radiation Management Program of the Colorado Department of Public Health and Environment (CDPHE or Department) issued its License Decision, approving a conditional radioactive materials license for a 500 ton-per-day uranium mill to Energy Fuels Resources Corporation (Energy Fuels) for the Piñon Ridge Mill project. Radioactive Material License No. Colo. 1170-01, Amendment Number: 00 was subsequently issued on March 7, 2011. Condition 23.A of the license establishes the time frames and amounts for financial warranty and long-term care funding. This Decommissioning Funding Plan (DFP) contains the decommissioning cost estimate (previously provided to CDPHE in Volume 13 of the Piñon Ridge Mill Radioactive Material License Application [license application]), a description of the method for assuring funds for decommissioning, including means of adjusting cost estimates and associated funding levels periodically over the life of the facility, and a certification by Energy Fuels that funding for decommissioning activities has been provided for in the amount of the cost estimate for decommissioning, payable on the schedule set forth in the license, which requires that the entire amount will be paid prior to the start of mill operations. By means of the original signature below (see Signature Page), it functions as the signed, executed, original copy of the decommissioning warranty required by 6 CCR 1007-1, Part 3.9.5.1.

This DFP also provides a cost estimate for the long-term care fund and attaches a copy of the signed check submitted by Energy Fuels to CDPHE for the long-term care warranty, a copy of the transmittal letter accompanying the check, the letter from CDPHE to Energy Fuels evidencing receipt of the funds. The long-term care fund provides the necessary resources for long-term site surveillance and maintenance after the closed and reclaimed site is transferred to either the State of Colorado or the U.S. Department of Energy (DOE).

The DFP is a dynamic plan that will be updated, as necessary, including during the annual reviews of the decommissioning financial warranty and long-term care fund (see Section 4.0).

#### 2.0 Long-Term Care Fund

After a uranium mill facility is decommissioned and reclaimed and CDPHE and NRC agree that all decommissioning requirements have been met, title to that portion of the site that contains the encapsulated radioactive material (i.e., 11(e)2 byproduct material as defined by the Atomic Energy Act and the Colorado Radiation Control Act), is transferred to the State of Colorado or to the DOE for long-term monitoring and maintenance. It is the state's decision as to whether it will take title to the property or whether the DOE will take title under its Office of Legacy Management.

Funding for long-term care of the property is provided by the licensee. Section 2.1 presents a historical summary of how long-term care funds have been established for reclaimed uranium mills while Section 2.2 provides a site-specific analysis of the long-term care funds needed for the Piñon Ridge Mill. As described in Section 2.3, Energy Fuels deposited \$844,400 in cash to the long-term care fund on March 4, 2011.

#### 2.1 Fund History

The NRC and Agreement States, such as Colorado, require that facility closure practices must reasonably assure that tailings will remain isolated under natural forces without active care and maintenance. As a prudent added measure, the agencies require that monitoring and control of land uses continue after closure to confirm that there is no disruption by either natural erosion or by human or animal activities (NRC 1980). After facility closure, site control and monitoring is managed by the licensee until all conditions are met for transfer to the State or DOE. At that time, the license is terminated and the land is transferred to the government agency. The long-term care fund is designed to fund the management and care of the property from that point forward.

As discussed in the Final Generic Environmental Impact Statement of Uranium Milling, NUREG-0706 (NRC 1980), long-term funding was established based on the following assumptions.

- "1. Disposal methods will be those that do not depend on active care and maintenance, after license termination. As a result, ongoing costs will be relatively small. The equivalent of two thousand five hundred 1978 dollars per mill site per year will be required for long-term monitoring.
- 2. The average real rate of return on invested money will be one percent."

#### The NRC stated that:

"monitoring at tailings disposal sites will involve annual visits to confirm that isolation provided by the tailings disposal program is performing as anticipated and to ensure that the tailings are not being disturbed by human activity. Such visits might involve taking photographs of the site to permit the following of trends in site conditions from year to year. No active care or remedial actions such as irrigation of vegetation, hauling of fill to the site, regrading, seeding or the like are expected to be required. There will be no replacement of fencing which may be left at the site or maintenance of any onsite facilities or equipment. There will also be no sampling or airborne environmental measurements at the sites. Some groundwater monitoring might be performed by inspectors using portable groundwater sampling equipment."

And,

"Virtually the only cost item for long-term monitoring, therefore, is expected to be the time and effort of government inspectors who will visit the sites – their time in travel, making inspections, and preparing for and following up on inspections."

Based on their analysis, the NRC concluded that a long-term care fund of \$250,000 (1978 dollars) would be required to pay for the \$2,500 annual care costs assuming an average real rate of return of one percent. The \$250,000 in 1978 dollars was adopted as a minimum long-term care funding requirement by the NRC and State of Colorado in their respective regulations. Both the state and federal regulations allow for collecting additional funds on a site-specific basis if additional site surveillance or control requirements are anticipated (e.g., extensive groundwater monitoring and analysis, replacement of fencing, periodic erosion repairs and reseeding).

#### 2.2 Project Estimate of Long-Term Care Fund

Part 3.9.5.10(4) of 6 CCR 1007-1 outlines the requirements for establishing the Long-Term Care warranty as follows.

"The amount of funds to be provided by such long-term care warranties shall be based on Department-approved cost estimates and shall be enough that with an assumed six percent annual real interest rate, the annual interest earnings will be sufficient to cover the annual costs of site surveillance by the Department, including reasonable administrative costs incurred by the Department, in perpetuity, subsequent to the termination of the license.

(a) For each source material mill licensee, the long-term care warranty must have a minimum value equivalent to \$250,000 in 1978 dollars. The value of the long-term care warranty shall be adjusted annually

to recognize inflation. The inflation rate to be used for this adjustment is that indicated by the change in the consumer price index published by the U.S. Department of Labor, Bureau of Labor Statistics. The Department may use other indicators of the inflation rate if reasonable; provided, however that the license shall not terminate unless the amount of long-term care warranty is acceptable to the licensing agency and site caretaker.

(b) Cost estimates for facilities and sites requiring long-term care subsequent to license termination are to be based on the final disposition of wastes such that ongoing active maintenance is not necessary to preserve isolation. It is expected that, as a minimum, annual site inspections shall be conducted to confirm the integrity of the stabilized waste systems and to determine the need, if any, for maintenance and/or monitoring. Cost estimates shall be adjusted if more frequent site inspections are required based on an evaluation of a particular site."

The CDPHE in the draft license required that the long-term care fund be established at the minimum value equivalent to \$250,000 in 1978 dollars. However, the required amount of \$827,590 was calculated for inflation through 2009. In consultation with CDPHE, Energy Fuels agreed to provide funding at the amount calculated for inflation through 2011. Using the CPI Inflation Calculator provided by the U.S. Department of Labor, Bureau of Labor Statistics, \$250,000 inflated from 1978 through 2011 results in a present-day value of \$844,400.

Energy Fuels anticipates that \$844,400 far exceeds the actual costs necessary for long-term care. Uranium mill facilities that were constructed prior to the implementation of comprehensive federal and state regulations often have existing conditions that could warrant a higher long-term care fund. However, the Piñon Ridge Mill property is a green field site with no existing conditions that would trigger additional surveillance or maintenance beyond an annual inspection. The mill design and monitoring plans also include the following provisions that are expected to minimize the funds needed for long-term care:

1. The mill facilities, tailings cells, and evaporation ponds have primary and secondary containment systems with leak detection and recovery systems designed to intercept seepage from those areas, if any. In the highly unlikely event any such seepage might escape these engineered features, actual groundwater contamination would also be highly unlikely given that groundwater is not present under much of the site and, where present, it is more than 400 feet below the surface.

- The tailings cells, which will be the final repository for radioactive materials on site, are constructed primarily below grade. Accordingly, the reclaimed cells will only have minimal vertical relief upon closure and be much less susceptible to erosion than historic tailing impoundments that typically had much higher embankments.
- 3. The tailings cell cover design includes a layer of cobbles designed to deter burrowing mammals. The cover also incorporates a thick evapotranspiration soil cover that provides for a stable vegetative cover while limiting the possibility of roots penetrating the underlying radon barrier. Under these circumstances, maintenance of fencing would only be required until the vegetation is fully established.
- 4. The facility during the initial five-year bonding period is relatively small compared to most historic facilities. Only one 30-acre tailings cell and its embankment outslopes would require inspection if the facility were to close during this period.
- 5. The facility's Operational Monitoring Plan requires immediate cleanup of any releases and periodic verification sampling and analyses. These procedures are expected to minimize the potential for creating environmental impacts that would require additional post-closure monitoring.

It is also worth noting that the proposed Piñon Ridge facility is located in close proximity to existing closed uranium facilities including the Uravan, Durita, and Lisbon Valley sites. Given their close proximity, multiple sites may be inspected efficiently during a single field effort.

Applying the six percent interest rate specified in the Colorado regulations to the fund total of \$844,400 results in \$50,664 of interest earnings per year, which is well above the costs that would be incurred for an annual inspection and status report. Using the NRC assumption of a one percent real rate of return (i.e., six percent interest minus five percent inflation) a net earnings of \$8,444 per year may be calculated. At current CDPHE billing rates of \$152/hour, this would still allow for six personnel days per year plus travel expenses, which should be sufficient to inspect and report on a stable site.

Energy Fuels will be re-evaluating the amount of the long-term care fund on an annual basis (see Section 4.2, below). Should the annual review reveal that the amount of the long-term care fund has become inadequate; Energy Fuels will adjust the fund as provided in Section 4.2.

#### 2.3 Form of Funding

Energy Fuels initially funded the long-term care warranty in the form of prepayment—deposit into the State long-term care fund—as allowed by 6 CCR 1007-1, Part 3.9.5.4(2). Energy Fuels submitted a company check to CDPHE on March 4, 2011 made out to CDPHE in the amount of \$844,400. CDPHE deposited the check into the long-term care fund, and it is available for the purposes allowed by statute (See C.R.S. § 25-11-113(4)).

A copy of the signed, executed, check, the original of which met the requirements of 6 CCR 1007-1, Part 3.9.5.1, is provided in Appendix A. The transmittal correspondence associated with this transfer of funds is also provided in Appendix A. The Department's letter acknowledging receipt of the funds is provided in Appendix B.

In the future, pursuant to 6 CCR 1007-1, Part 3.9.5.6, Energy Fuels may substitute a different type of CDPHE- approved financial warranty in lieu of prepayment. The type of warranty substituted for the prepayment must meet all statutory and regulatory requirements, and is subject to CDPHE review and approval.

#### 3.0 Decommissioning Warranty

Source material milling licensees are required under 6 CCR 1007-1, Part 3.9.5.2 to furnish a decommissioning warranty in a dollar amount determined by the CDPHE as necessary to protect public health and safety, to ensure corrective action during operation, to ensure decontamination and decommissioning of a facility and disposal of radioactive materials in the event of abandonment, default or inability of the licensee to meet the requirements of the Colorado Radiation Control Act, the applicable regulations adopted by the Colorado Board of Health (6 CCR 1007-1), and the license.

This section of the DFP provides (1) a decommissioning cost estimate for the facility, (2) a schedule for funding the decommissioning warranty, and (3) a description of the form of warranty.

#### 3.1 Decommissioning Cost Estimate

CDPHE approved the decommissioning cost estimate (Energy Fuels 2009) included in license application in its License Decision of January 5, 2011. This cost estimate, which is included here in its entirety as Appendix C, was based on the Mill Decommissioning Plan (Kleinfelder 2009b), the Tailings Cell Closure Design Report (Kleinfelder 2009a), and the Specifications for Closure and Reclamation of Mill Facilities (Golder 2009a). All three of these documents may be found in Volume 13 of the license application. The latter two documents were ultimately revised in response to comments from CDPHE. These revised documents (i.e., Kleinfelder 2010 and Golder 2010) were provided to the Radiation Management Program in Response No. 2 to Request for Additional Information No. 2 (Energy Fuels 2010a) and Response to Requests for Additional Information Nos. 1, 2, 3, and 4 (various parts) (Energy Fuels 2010b), respectively.

Although the tailings closure plan and associated specifications were modified during the technical review process, the decommissioning cost estimate has not yet been revised. A preliminary review indicates that the cost estimate would decrease with incorporation of these changes because the durable rock that was removed from the capillary break would cost more than the geosynthetic liner and additional soil that were added to the soil cover design. As discussed below, CDPHE determined that the modifications made during the technical review process and any modifications made during final design are to be incorporated into an updated cost estimate prior to the start of related construction activities.

Condition 20.A of Radioactive Materials License 1170-01, Amendment Number: 00 requires that an update of the reclamation plan be submitted to the Department for review and approval no later than 30 days after CDPHE approval of the Final Detailed Engineering Plans for each construction project or area. Based on discussions with CDPHE, the updated reclamation plan is to include any revisions or additions to the Mill Decommissioning Plan and an update of the Decommissioning and Reclamation Cost Estimate (Energy Fuels 2009). The updated decommissioning plan will include, as a minimum, additional details of the post-closure drainage features while the cost estimate will incorporate any changes made in the three closure-related plans since the 2009 license application and also adjust for inflation (see Section 4.1 for additional details).

The CDPHE-approved cost estimate presented in Appendix C estimates decommissioning and reclamation costs for the facility at \$11,070,890, excluding the amount paid into the long-term care fund. Table 1 presents a summary of the cost estimate. This cost estimate is for the initial five-year licensing period and includes demolition of the mill facility and closure and reclamation of Tailings Cell A and 40 acres of evaporation ponds. The cost estimate is based on a third-party management company managing the project and a third-party contractor performing the decommissioning and reclamation work. The estimate also includes state administrative costs in accordance with 6 CCR 1007-1, Part 3.9.5.5(5).

The cost estimate does not include closure and reclamation costs for facilities that are outside of the restricted area and that will be retained for post-reclamation use including the administration building, primary access road, truck scale, and well field. However, cleaning and verification sampling of these facilities and surrounding areas is included in the estimate. Demolition and removal of monitoring facilities (e.g., monitoring wells, air sampling stations, and meteorological stations) are included in the estimate but will not be removed until authorized by CDPHE.

#### 3.2 Funding Schedule

#### Part 18.5 of 6 CCR 1007-1 requires that the applicant

"(1) establish financial assurance arrangements, as provided by 3.9.5 to ensure decontamination and decommissioning of the facility and (2) provide a fund adequate to cover the payment of the cost for long-term care and monitoring as provided by 3.9.5.10. Such fund shall be sufficient to meet the requirements of 3.9.5.10.4. The Department will consider proposals to combine the two types of financial assurance. Financial

assurance shall be provided prior to commencement of construction or operation."

Energy Fuels has provided a long-term care warranty as described in Section 2.3. The decommissioning warranty will be provided in four prepayments according to a schedule approved by CDPHE. The form of the warranty will be in accordance with the requirements of Part 3.9.5.4 of 6 CCR 1007-1 (see Section 3.3). The full decommissioning warranty will be in place prior to the processing of radioactive material. This financial assurance arrangement is enforceable, and by means of Energy Fuel's original signature on this DFP (see Signature Page), meets the requirements of 6 CCR 1007-1, Part 3.9.5.1.

The decommissioning warranty schedule established by CDPHE in License Condition 23.A is based on a phased approach with the warranty for each phase of demolition and reclamation being in place prior to starting mill construction of those corresponding facilities. The warranty schedule is summarized in Table 2. The schedule calls for some parts of the estimated cost (including state administrative costs) to be covered in the initial warranty installment within 60 days of license issuance (i.e., 60 days after March 7, 2011). The remaining estimated costs are grouped into three warranty installments to be in place prior to the commencement of on-site construction and 6 and 12 months after the commencement of construction. Construction is expected to require 12 months to complete. The amounts and timing of each prepayment of the decommissioning warranty are:

- Prepayment No. 1 for \$1,373,900 60 days after issuance of the radioactive materials license;
- Prepayment No. 2 for \$2,898,260 prior to the commencement of on-site construction of those facilities included in the decommissioning warranty estimate;
- Prepayment No. 3 for \$6,401,920 six months after the commencement of on-site construction; ; and
- Prepayment No. 4 for \$396,810 prior to the start of mill commissioning and the associated generation of byproduct material.

The estimated times to complete each phase of construction are based on the revised Construction Plan (Golder 2011). Correspondingly, Energy Fuels will provide CDPHE written notification of its intent to commence construction 30 days in advance of any such construction. Similarly, Energy Fuels will provide notice of its intent to begin mill

commissioning 30 days in advance. For purposes of the schedule of prepayments of the decommissioning warranty under Condition 23.A.i., commencement of construction will not include construction of access roads to and onto the site and the installation of water production wells, but will include site clearing activity. This prepayment schedule will not result in any risk to the State of Colorado because decommissioning funds will be in place prior to the start of the corresponding construction activities.

#### 3.3 Form of Warranty

Part 3.9.5.4 of 6 CCR 1007-1 outlines the "acceptable financial assurance methods" that may be used to provide the decommissioning warranty. For a source material milling license, the following regulatory criteria apply.

- "(1) Financial assurance warranties shall contain provisions which are acceptable to the Department for:
  - (a) Defining the amount and term of the warranty;
  - (b) Providing written notification to the Department by the warrantor at least ninety (90) days prior to cancellation, termination, or revocation of the warranty; and
  - (c) Converting the warranty into cash upon forfeiture of the warranty, and
- (2) Financial assurance warranties shall be in the form of a cash deposit, prepayment of a trust, escrow account, government fund, certificate of deposit, or deposit of government securities. Prepayment is the deposit prior to the start of operation into an account segregated from license assets and outside the licensee's administrative control of cash or liquid assets such that the amount of funds would be sufficient to pay decommissioning costs; or
- (3) Financial assurance warranties which involve a guarantee method to ensure that costs will be paid should the licensee default shall be in a form as described below:
  - (a) A bond issued by a fidelity or surety company consistent with the provisions of Section 25-11-110(6)(b)(I), CRS;
  - (b) An irrevocable "letter of credit" or "line of credit" issued by a recognized financial institution whose financial condition and commitment are established to the satisfaction of the Department;"

Energy Fuels proposed, and CDPHE approved, the provision of the decommissioning warranty, due May 6, 2011, in the form described in Subpart (3) above, specifically, a financial assurance warranty that involves a guarantee method – a bond issued by a surety

company consistent with the provisions of C.R.S. § 25-11-110(6)(b)(I). A copy of the bond and the letter transmitting the bond is attached at Appendix D.

Energy Fuels will submit the remaining decommissioning warranties pursuant to the schedule established by the License, or as subsequently modified and reviewed and approved by CDPHE, and using a financial assurance mechanism approved by CDPHE. Energy Fuels notes that it may propose changes to its methods of warranty prior to June 30 of each year (*see* 6 CCR 1007-1, Part 3.9.5.6).

#### 4.0 Annual Review

As discussed in Section 3.1 of this plan, the Piñon Ridge Mill Decommissioning and Reclamation Cost Estimate (Energy Fuels 2009) will be updated to reflect final facility design and submitted to CDPHE within 30 days of approval of each of the final design submittals. As required by License Condition 23.B, Parts 3.9.5.6 and 3.9.5.7 of the radiation control regulations, and recently passed 2010 amendments to the Radiation Control Act, the adequacy of the decommissioning warranty and the long-term care fund will be verified on an annual basis by a qualified person. The adequacy review and any proposed changes will be submitted in an annual report to CDPHE by June 30<sup>th</sup> of the following year. This report will be posted on CDPHE's website and published by the licensee in the local paper of general circulation. In addition, cost estimates for decommissioning will be adjusted at intervals not to exceed three years per 6 CCR 1007-1, Part 3.9.6.4.

Approved changes in the warranty types or amounts will be implemented in a similar manner to that described above in Sections 2.3 and 3.3. This may require replacing an existing warranty with a new warranty or, in the case of an increase in warranty, an incremental warranty may be submitted. Warranties will be submitted within 90 days of approval and, in the case of warranty replacement, the new warranty will be in place prior to canceling the previous warranty. The DFP will also be updated whenever a decommissioning warranty or long-term care warranty is modified or replaced.

#### 4.1 Decommissioning Warranty

At a minimum, the following items will be taken into consideration when evaluating the adequacy of the decommissioning warranty.

- 1. Proposed facility expansion plans that would increase closure costs.
- 2. Closure and reclamation of existing facilities that would decrease closure costs.

- 3. Identified soil or water contamination that would add corrective action costs to the cost of closure;
- 4. Changes in the approved plans or in the radiation control regulations that would increase or decrease closure costs;
- 5. Inflation or deflation resulting in changes in material and labor rates.

Any changes in the projected closure and reclamation costs will be quantified in cost spreadsheets submitted as part of the facility's annual report.

#### 4.2 Long-Term Care Fund

Given that the long-term care fund was fully funded in 2011, no adjustments for inflation are anticipated at this time (i.e., the state-invested funds are expected to grow with inflation). However, the following items will be addressed in the adequacy review:

- 1. Have any conditions developed at the site that would require additional surveillance and monitoring after facility closure?
- 2. Have any applicable laws or regulations changed that affect how the long-term care fund is calculated?

If the answer is yes to either of these questions, a site-specific estimate of the long-term care fund will be prepared and submitted as part of the facility's annual report. A CDPHE-approved increase in the long-term care fund would be implemented by a transfer of the required incremental funds to CDPHE.

# 5.0 Certification

By submission of this Decommissioning Funding Plan, Energy Fuels hereby certifies that funding for decommissioning has been provided for in the amount of the cost estimate for decommissioning, payable on the schedule set forth in the license and in the manner described in Section 3.0 *et seq.*, above.

# **6.0** Decommissioning Warranty

This Decommissioning Funding Plan operates as the signed, executed, original, decommissioning warranty required by 6 CCR 1007-1, Part 3.9.5.1 at the time of license issuance.

#### 7.0 References

- Colorado Department of Public Health and Environment (CDPHE), Hazardous Materials and Waste Management Division (HMWMD) 2001. Rules and Regulations Pertaining to Radiation Control, 6 CCR 1007-1, Part 18 Licensing Requirements for Uranium and Thorium Processing. Last Amended October 17.
- CDPHE, HMWMD 2005. Rules and Regulations Pertaining to Radiation Control, 6 CCR 1007-1, Part 3 Licensing of Radioactive Material. Last Amended May 18.
- CDPHE, HMWMD 2011. Decision Analysis and Environmental Impact Analysis, Energy Fuels Piñon Ridge Uranium Mill. January 5.
- CDPHE 2011. Draft Radioactive Materials License Number: Colo. 1170-1, Amendment Number: 00. January 5.
- Colorado Revised Statutes (CRS) 2010. Title 25, Health, Article 11, Radiation Control.
- Energy Fuels Resources Corporation (Energy Fuels) 2009. *Piñon Ridge Mill Decommissioning and Reclamation Cost Estimate*. October.
- Energy Fuels 2010a. Piñon Ridge Mill Radioactive Material License Application, Response No. 2 to Request for Additional Information No. 2. September.
- Energy Fuels 2010b. Piñon Ridge Mill Radioactive Material License Application, Response Requests for Additional Information Nos. 1, 2, 3, and 4 (various parts). November.
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- Golder Associates Inc. 2010. Specifications for Closure and Reclamation of Mill Facilities, Piñon Ridge Project, Montrose County, Colorado, Revision B. October.
- Golder Associates Inc. 2011. Construction Plan, Piñon Ridge Project, Montrose County, Colorado. Revision 1 June.
- Kleinfelder West, Inc. 2009a. Tailings Cell Closure Design Report, Piñon Ridge Project, Montrose County, Colorado. February 13.
- Kleinfelder West, Inc. 2009b. *Mill Decommissioning Plan, Piñon Ridge Mill, Montrose County, Colorado*. October 16.
- Kleinfelder West, Inc. 2010. Tailings Cell Closure Design Report, Piñon Ridge Project, Montrose County, Colorado. September 17.
- U.S. Nuclear Regulatory Commission (NRC) 1980. Final Generic Environmental Impact Statement on Uranium Milling, NUREG-0706. September.

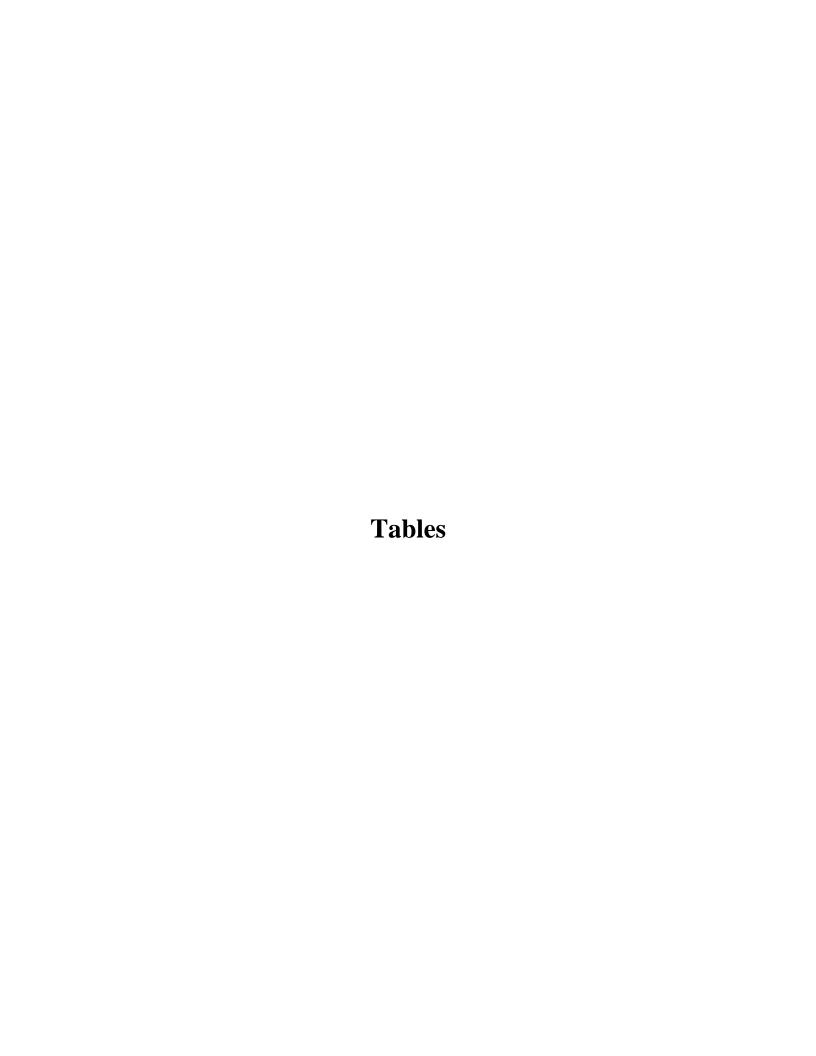
# Signature Page

I hereby submit this Decommissioning Funding Plan on behalf of Energy Fuels Resources.

Dated: June 28, 2011

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Jeffrey L Vigil, Chief Financial Officer Energy Fuels Resources Corporation



# Table 1 Cost Estimate Summary

Item Number	Category	Cost Estimate (\$)				
Project Ma	Project Management (Owner's Representative)					
1)	Project Management, Engineering and Overhead	\$720,410				
2)	Characterize Site Contamination Limits	\$334,260				
3)	Radiation & Industrial Hygiene Programs					
3a)	Personnel	\$315,900				
3b)	Sample Analysis	\$263,950				
	Project Management Subtotal	\$1,634,520				
Construct	ion Contractor					
4)	Contractor Mobilization / Demobilization	\$128,880				
5)	Decontamination of Facility	\$90,000				
6)	Dewater Tailings	\$163,350				
7)	Re-grade Tailings	\$18,450				
8)	Mill Site Demolition					
8a)	Dismantle Facilities for Disposal	\$900,000				
8b)	Facilities Disposal in Impoundment	\$255,130				
8c)	Ore Pad Disposal in Impoundment	\$21,960				
8d)	Strip and Place Mill Facility Soils in Impoundment	\$18,490				
8e)	Strip and Place Other Site Soils in Impoundment	\$17,640				
8f)	Strip and Place Evaporation Pond Materials and Soil in Impoundment	\$649,220				
9)	Construct Interim Fill Cover	\$144,000				
10)	Grout Seal Leak Impoundment Leak Detection and Underdrain Systems	\$14,270				
11)	Construct Tailings Impoundment Cover					
11a)	Radon Barrier	\$548,100				
11b)	Capillary Break Layer	\$1,597,740				
11c)	Capillary Break Filter Layer	\$798,870				
11d)	Bio-Intrusion Layer	\$354,740				
11e)	Erosion Barrier	\$120,510				
11f)	Erosion Barrier Rock Mulch Layer	\$798,870				
11g)	Rock Blanket	\$789,400				
11h)	Embankment Toe Protection	\$394,620				
11i)	Drainage Channel Filter Layer	\$7,820				
11j)	Drainage Channel Rip Rap	\$23,160				
12)	Perform Site Grading					
12a)	Mill and Ore Pad	\$20,250				
12b)	Roads	\$405				
12c)	General	\$90				
13)	Place Topsoil: All Remaining Areas	\$93,510				
14)	Seed and Re-vegetate					
14a)	Impoundment	\$70,380				
14b)	All Remaining Areas	\$146,970				
15)	Construction Contractor Support	\$637,875				
	Construction Contract Subtotal	\$8,824,700				
	Subtotal: Project Management and Construction Contractor	\$10,459,220				
16)	Performance Bond (1%)	\$104,590				
17)	Post Closure Monitoring and Maintenance	\$233,090				
18)	Decommissioning of Monitoring Systems	\$59,130				
19)	State Administration Fee	\$214,860				
	Total	\$11,070,890				

# Table 2 Decommissioning Warranty Schedule

Item Number	Category	Cost Estimate (\$)
Prepaym	ent No. 1	
1)	Project Management, Engineering and Overhead - 50%	\$360,205
3b)	Radiation & Industrial Hygiene Programs: Sample Analysis - 50%	\$131,975
8e)	Mill Site Demolition: Strip and Place Other Site Soils in Impoundment	\$17,640
8f)	Mill Site Demolition: Strip and Place Evaporation Pond Materials and Soil in Impoundment	\$649,220
20)	State Administration Fee	\$214,860
	Prepayment No. 1 Subtotal	\$1,373,900
Prepaym	ent No. 2	
1)	Project Management, Engineering and Overhead - 50%	\$360,205
2)	Characterize Site Contamination Limits - 50%	\$167,130
3a)	Radiation & Industrial Hygiene Programs: Personnel - 50%	\$157,950
3b)	Radiation & Industrial Hygiene Programs: Sample Analysis - 50%	\$131,975
4)	Contractor Mobilization / Demobilization	\$128,880
5)	Decontamination of Facility	\$90,000
6)	Dewater Tailings	\$163,350
7)	Re-grade Tailings	\$18,450
8a)	Mill Site Demolition: Dismantle Facilities for Disposal	\$900,000
8b)	Mill Site Demolition: Facilities Disposal in Impoundment	\$255,130
8c)	Mill Site Demolition: Ore Pad Disposal in Impoundment	\$21,960
8d)	Mill Site Demolition: Strip and Place Mill Facility Soils in Impoundment	\$18,490
12a)	Perform Site Grading: Mill and Ore Pad - 50%	\$10,125
12b)	Perform Site Grading: Roads - 50%	\$202.50
12c)	Perform Site Grading: Redata 50%	\$45
13)	Place Topsoil: All Remaining Areas - 50%	\$46,755
14a)	Seed and Re-vegetate: Impoundment - 50%	\$35,190
14a) 14b)	- '	\$73,485
15)	Seed and Re-vegetate: All Remaining Areas - 50%	
13)	Construction Contractor Support - 50%  Prepayment No. 2 Subtotal	\$318,937.50 \$2,898,260
D		Ψ2,000,200
	ent No. 3	¢167 120
2)	Characterize Site Contamination Limits - 50%	\$167,130
3a)	Radiation & Industrial Hygiene Programs: Personnel - 50%	\$157,950
9)	Construct Interim Fill Cover	\$144,000
10)	Grout Seal Leak Impoundment Leak Detection and Underdrain Systems	\$14,270
11a)	Radon Barrier	\$548,100
11b)	Capillary Break Layer	\$1,597,740
11c)	Capillary Break Filter Layer	\$798,870
11d)	Bio-Intrusion Layer	\$354,740
11e)	Erosion Barrier	\$120,510
11f)	Erosion Barrier Rock Mulch Layer	\$798,870
11g)	Rock Blanket	\$789,400
11h)	Embankment Toe Protection	\$394,620
11i)	Drainage Channel Filter Layer	\$7,820
11j)	Drainage Channel Rip Rap	\$23,160
12a)	Perform Site Grading: Mill and Ore Pad - 50%	\$10,12
12b)	Perform Site Grading: Roads - 50%	\$202.50
12c)	Perform Site Grading: General - 50%	\$4
13)	Place Topsoil: All Remaining Areas - 50%	\$46,755
14a)	Seed and Re-vegetate: Impoundment - 50%	\$35,190
	Seed and Re-vegetate: All Remaining Areas - 50%	\$73,485
14b)	Construction Contractor Support - 50%	\$318,937.50
14b) 15)		
	Prepayment No. 3 Subtotal	<u>\$6,4</u> 01,920
15)	Prepayment No. 3 Subtotal	\$6,401,920
15)		\$6,401,920 \$104,590
15) <b>Prepaym</b> 16)	ent No. 4 Performance Bond (1%)	\$104,590
15) <b>Prepaym</b> 16) 17)	Performance Bond (1%) Post Closure Monitoring and Maintenance	\$104,590 \$233,090
15) <b>Prepaym</b> 16)	ent No. 4 Performance Bond (1%)	\$104,590