Uranium Watch

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July 31, 2016

via ePlanning electronic submittal

Bureau of Land Management
Monticello Field Office
P.O. Box 7
Monticello, Utah 84535
Attn: Daneros EA Comment

Re: Environmental Assessment. Daneros Mine Plan of Operation Modification.
DOI-BLM-UT-Y020-2016-0001-EA

Dear Sir or Madam:

Enclosed please find comments on the Draft Environmental Assessment (DEA) for the Energy Fuels Resources (USA) Inc. (Energy Fuels) Daneros Mine, San Juan County, Utah, Mine Plan of Operation Modification (MPOM), June 2016. DOI-BLM-UT-Y020-2016-0001-EA.

The comments are submitted to the Monticello Field Office of the Bureau of Land Management on behalf of Uranium Watch, Living Rivers, and Information Network for Responsible Mining (INFORM).

Sincerely,

Sarah Fields
Program Director
sarah@uraniumwatch.org

Enclosure: As stated

COMMENTS

DANEROS MINE
PLAN OF OPERATIONS MODIFICATION UTU-74631
ENERGY FUELS RESOURCES (USA) INC.
DOI-BLM-UT-Y020-2016-0001-EA
Bureau of Land Management — Monticello Field Office

July 31, 2016
Submitted by
Uranium Watch, INFORM, and Living Rivers

Comments on the Draft Environmental Assessment (DEA) for the Energy Fuels Resources (USA) Inc. (Energy Fuels) Daneros Mine, San Juan County, Utah, Mine Plan of Operation Modification (MPOM), June 2016. The following comments are submitted to the Monticello Field Office of the Bureau of Land Management (BLM) on behalf of Uranium Watch, Living Rivers, and Information Network for Responsible Mining (INFORM).

The following comments support a finding of Significant Impact that must be analyzed in the content of an Environmental Impact Statement.

DRAFT ENVIRONMENTAL ASSESSMENT

1. General Comments

1.1. Commenters request that the BLM develop a full Environmental Impact Statement (EIS) because the BLM does not satisfy NEPA's "hard look" or public participation requirements in their Draft EA The DEA fails to fully consider the significant impacts from the expansion of the Daneros Mine and past, current and future operations of the Daneros Mine and nearby uranium mines. The DEA also has numerous inadequacies as outlined below. An assessment of compliance with the National Environmental Policy Act (NEPA) is found below at Comment 30, below.

1.2. Various sections of the DEA refer to Energy Fuel's MPOM but fail to cite a specific section or sections or specific page or pages, so that it is difficult to know exactly what information in the MPOM the DEA is referring to. Therefore, it is often not possible to evaluate the completeness or accuracy of the information. The BLM should cite the section and page of the MPOM that is being referenced in the DEA.

1.3. The other references in the DEA are inadequate. The text refers to a number of documents listed in the references at the end of the DEA. The DEA does not state where

the referenced documents are available, except for a few that they have located online. The EA does not cite the pertinent section or page of referenced material.

1.4. The DEA goes out of its way to minimize the environmental and public health and safety risks and impacts associated with the operation and expansion of the Daneros Mine. Rather than taking a hard, independent look at the environmental effects, the EA in many instances relies on incomplete and misleading data and information and minimizes the level and extent of the impacts.

1.5. Commenters urge the BLM to draft an EIS that fully evaluates the environmental impacts of the Daneros Mine expansion and its past, present, and future operations. Alternatively, we support the DEA's Alternative C, as commented on below.

1.6. It is confusing when the BLM and the uranium industry changes the designation of similar documents. For example, the plan to expand the Pandora Mine and La Sal Mine Complex in San Juan County, Utah, was called the Plan of Operations Amendment (POA) by the BLM. The similar plan for the expansion of the Daneros Mine, by the same mine owner, is now called the Mine Plan of Operations Modification (MPOM). The purpose of using a new term for a similar amendment to a Plan of Operation escapes me.

1.7. If Commenters did not comment on a statement in the DEA, it does not mean Commenters agree with that statement and analysis in the DEA.

1.8. The DEA did not consider the fact that the BLM has not developed regulations or guidelines that are specific to uranium mining operations, which have their own unique environmental impacts and issues. The BLM has not developed guidance documents, after public input, related to the regulation of uranium mines on BLM land. The lack of a specific uranium mining regulatory program means that the BLM lacks the background, information, data, and expertise to assure minimal site and environmental degradation from the operation of the Daneros Uranium Mine or any other uranium mine on BLM administered lands.

The lack of a specific regulatory program means that the BLM relies on unsubstantiated data, assumptions, and analyses.

It means that BLM has failed to explain exactly what is meant by "unnecessary or undue degradation" at a uranium mine during all phases of a uranium mine operation. Clear and unambiguous regulatory language is missing when it comes to the degradation of land, air, and water from radioactivity and other environmental contaminants and other impacts associated with uranium mining. This lack of expertise and an adequate regulatory program is reflected by the BLM's minimal oversight of uranium mining operations in southeast Utah over the past 30-plus years.

1.9. The BLM must provide information regarding the costs of developing the Daneros Mine NEPA documents and the amount of money received by Energy Fuels to cover the

costs of the development of the NEPA documents, through fees and other payments to the federal government.

2. Section 1.4.2 - Applicant Purpose and Need (page 5). This section states:

> There is a growing regional and national demand for a continuous, reliable energy supply and a need to reduce U.S. dependence on foreign energy supplies. Total electricity consumption in the United States is projected to grow from 3,826 billion kilowatt-hours in 2012 to 4,954 billion kilowatt-hours in 2040, increasing at an average annual rate of 0.9 percent. Foreign energy supplies accounted for 28 percent of U.S. energy consumption in 2012 and are projected to decrease to 22 percent in 2040 (Energy Information Administration [EIA], 2014a).
>
> Uranium ore is needed for the continued operation of existing nuclear reactors in the United States as well as the future operation of new nuclear reactors proposed for construction. As of December 31, 2013, there were 100 commercial nuclear reactors licensed by the U.S. Nuclear Regulatory Commission (NRC, 2013a). As of April 2013, an additional 18 new reactors had been proposed for construction (NRC, 2013b). In 2013, existing U.S. nuclear reactors required 47 million pounds of uranium fuel to operate (EIA, 2014b); at that time, uranium-mining production in the United States was only 4.6 million pounds per year (EIA, 2014c). Owners and operators of U.S. civilian nuclear power reactors purchased the equivalent of 57 million pounds of uranium during 2013; 17 percent came from the United States and 83 percent was of foreign- origin (EIA, 2014b).

2.1. The information in this section is out of date. Regarding the number of reactors in the United States, there are currently still 100 reactors. Only 4 reactors (at 2 sites) are under construction.[1] There are 6 proposed reactors under review. The expected nuclear revival has showed down.

2.2. The DEA provides no information regarding whether the uranium produced at the Daneros Mine will actually supply uranium for the domestic market, thereby reducing reliance on foreign uranium. In the past, Energy Fuels, a Canadian company, has supplied uranium to South Korea and South America. The market for uranium produced by the Daneros Mine is global, not domestic.

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[1] http://www.nrc.gov/reactors/new-reactors/new-licensing-files/new-rx-licensing-app-legend

2.3. The price of uranium has continued to drop. The current spot price is $25.00 to $25.25, an 11-year low price for uranium.[2] If there was a global or U.S. demand for uranium that was not being met, the price would rise, not continue to drop. The U.S. produces a small fraction of the global uranium supply.[3] Not only is the price dropping, but production is dropping in the U.S. The amount of U_3O_8 produced by the U.S. in the first quarter of 2016 is about half of what it was in the first quarter of 2015.[4]

Imported uranium provides the fuel for the U.S. reactors. According to the U.S. Energy Information Agency, "U.S. production in 2015 represents 7% of the 2015 anticipated uranium market requirements of 46.5 million pounds for U.S. civilian nuclear power reactors."[5] Almost half the U.S. purchases come from Canada and Kazakhstan. This is not going to change with the expansion of the Daneros Mine. According to Energy Fuels, after they complete the ore stockpiled at the Mill (expected to be completed in 2016) , the White Mesa Mill will be on standby for an unknown period of time. The other permitted Energy Fuels uranium mines are on standby, with one mine (Canyon Mine, Arizona) under development.

3. Section 1.5 - Conformance with the BLM Land Use Plan (page 7).
This section states:

> The Proposed Action is in conformance with the RMP, which was approved by the Record of Decision on November 17, 2008. The RMP provides for a variety of mineral exploration and development activities within the planning area. Page 79 of the RMP reads as follows: "Continue to meet local and national energy and other public mineral needs to the extent possible."

3.1. With respect meeting local and national energy needs, Utah does not produce energy from nuclear power. Therefore, the operation of the Daneros Mine and the White Mesa Mill will consume local energy—without providing any energy locally or for Utah. Little, if any, energy would be provided nationally through the uranium produced by the Daneros Mine. If the BLM believes that the Daneros Mine is contributing to the local, state, and national energy needs, rather than just consuming energy, it should back up that statement with facts.

4. Section 1.6. - Relationship to Statutes, Regulations, or Other Plans (pages 7 - 8).
This section lists the purposes and requirements of the major federal, state, and local

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[2] http://www.uranium.info/in_the_market.php
https://www.cameco.com/invest/markets/uranium-price

[3] http://www.world-nuclear.org/information-library/nuclear-fuel-cycle/mining-of-uranium/world-uranium-mining-production.aspx

[4] http://www.eia.gov/nuclear/

[5] http://www.eia.gov/uranium/production/quarterly/

statutes that may be applicable to the Daneros Mine. Section 1.6 lists the permits and approvals, and requirements in Table 1. Copies of the formal permit approvals are included in the MPOM as Attachment J.

4.1. The EA (or EIS) should identify which statutes, regulations, and other plans that are actually applicable the expansion and operation of the Daneros Mine. A list that includes statutes, regulations, and other plans that are not relevant to the Daneros Mine expansion is not very helpful.

4.2. The DEA states:

> Operations at the Daneros Mine would be conducted in a manner that complies with pertinent federal, state, and local laws and regulations, including permit requirements.

This is an unsubstantiated statement—making assumptions about compliance with un-identified specific federal, state, and local laws and regulations and permit requirements. Since Energy Fuels and other uranium mine and mill owners in southeast Utah have a long history of noncompliance with federal and state regulations, including BLM regulations, it is disingenuous for the BLM to make this claim.

4.3. This section mentions the possible necessity of a National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit. The EA (or EIS) should state clearly that such a permit is required and why it is required.

4.4. The DEA fails to mention the provisions associated with Environmental Justice and how the mining of uranium in the 4-Corners region and the milling of the uranium at the White Mesa Mill adversely, and uniquely, impacts Native American communities and low-income communities. The EA (or EIS) must address the past, current and future cumulative impacts of uranium mining and milling in the region, including exploration and transportation, to the Native American and low-income communities in San Juan County, Utah, which are directly impacted by the White Mesa Mill.

4.5. The EA (or EIS) must discuss the requirements for State of Utah Division of Water Rights (DWR) Stream Alteration permits. Such permits have been required for the Daneros Mine, and the mine is currently under a Stream Alternation Order. Table 1 lists such a permit, but does not provide current information, nor explain why such a permit was necessary.

4.6. Table 1 (page 8) lists the Daneros Mine permits and includes "Approval for Construction under 40 CFR Part 61 Subparts A and B (DAQE- AN144920002-14, Site ID 14509) (Radon NESHAPs)," from the Division of Air Quality (DAQ). It references a DAQ May 23, 2012, "Approval for Construction covers mine expansion – no update or revision required at this time." The May 23 approval letter is provided in Attachment J to the MPOM.

The May 23 letter does not clearly state which vents and portals were approved for construction in 2012. Attachment J does not include the April 30 Application, so what, exactly was approved by the DAQ is not on the record of the MPOM. The Table did not mention that Energy Fuels will be required to prepare and submit Quality Assurance Project Plans for DAQ approval prior to commencement of operation.

Additionally, the Approval letter states that Energy Fuels must use Method A-6 of Appendix B, Method 115 (40 C.F.R. Part 61) to measure the radon emissions, unless another method, such as Method A-7 Alpha Track Detectors, are approved by the Environmental Protection Agency (EPA).

4.7. Energy Fuels and the previous owner of the Daneros Mine and other Energy Fuels' uranium mines in Utah used Method A-7—without EPA approval—for many years. Utah Energy Corporation made a request to the DAQ to use Method A-7 and informed the DAQ of the construction of 2 vents and use of 2 portals for ventilation at the Daneros Mine. The November 19, 2009, submittal was submitted after construction began on the 2 vents. The December 8, 2009, DAQ response approved the use of Method A-7. However, the applicable regulation requires the approval of the EPA.[6] Therefore, from 2009 to 2012, the Daneros Mine owner used a monitoring method that had not been approved by the EPA, and has yet to be approved. This calls into question the validity of the monitoring data and the calculation of the dose to the nearest receptors at the Daneros Mine. Since that data is not valid, the BLM cannot reference that data in the EA.

4.8. The April 2012 Application for the approval of the installation of new radon sources for the expansion of the Daneros Mine did not identify the location of the 12 additional radon emission sources. A general location was given. Energy Fuels also indicated that they might make use of the Bullseye Portal and South Portals. However, whether or not the Bullseye and South Portals are used for ventilation, if the portals are open, they must be monitored for radon emissions.

Energy Fuels should be required to submit an application to the DAQ for approval of construction prior to the expansion of the mine, construction of new ventilation shafts, and prior to the opening of the Bullseye and South portals. Data regarding the site location, altitude, and height of the riser are used in the computer model to determine the dose to the nearest human receptors. Applications are required when there is an increase in emissions. When the mine is reopened, the mine will go from about zero emissions to emissions from 2 or more radon sources, with a maximum of 16 radon sources.

4.9. The BLM must require the submittal of a separate application to construct any new ventilation shafts. The newest radon vent on BLM land at the Pandora Mine (part of the La Sal Mines Complex) and the last one to be approved by the Moab Field Office,

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[6] 40 C.F.R. Part 61, Appendix B, Method 115-Monitoring for Radon-222 Emissions, Section 1 - Radon-222 Emissions from Underground Uranium Mines, Subsection 1.2.3: *Test Methods A-6 or A-7 of appendix B, Method 114 to part 61 shall be used for the analysis of radon-222. Use of Method A - 7 requires prior approval of EPA based on conditions described in appendix B.*

collapsed in 2015.[7] It is apparent that the BLM must review and approve any plans for ventilation shaft installation to assure that the proper construction methods are used, taking into the consideration the geology, hydrology, and other characteristics of the location.

5. Section 2.2 - Alternative A–ProposedAction, at Section 2.2.1.4 Inert Material Stockpile Areas (page 14 - 15).

5.1. This section discusses the handling of development rock (waste rock) from the Shinarump Member formation. The waste rock from the Shinarump formation is acid-forming material. In order to manage the waste rock, Energy Fuels, "to the extent practicable," would place this development rock back into the mine or cover the acid-forming material (deleterious material) with a zone of inert material prior to reclamation.

It appears that these proposed mitigative measures would take place at the end of the life of the mine or specific waste rock area. Therefore, the acid producing Shinarump materials would be left in the open, maybe for many years.

The history of uranium mines ion the Colorado Plateau is the history of permitted mines alternating between short periods of mine operation with lengthy periods of non-operation. There are permitted mines that have not operated for periods of 10 to 35 years, with the waste rock piles left to the impacts of the elements. There are at least one permitted uranium mines in Utah that has been idle since 1982, one since 1990, others since 2009, and some since 2012. None of the waste rock piles at these sites have been covered with inert material and reclaimed.

Therefore, the expectation is that the Daneros Mine will experience lengthy periods of non-operation, thereby delaying the placement of Shinarump material back in the mines or the placement of a zone of inert material on top of Shinarump material in the waste rock piles.

The EA (or EIS) must provide a full evaluation of how the acid-forming Shinarump material will handled at all stages of the mine operation: including development, operation, and periods of non-operation and the effectiveness of those measures. The BLM must require additional mitigative measures to prevent the dispersal of acid-forming deleterious material from the Shinarump formation waste rock.

6. Section 2.2.1.5 - Topsoil Stockpile Areas (page 15).

This section describes the stockpiling of Topsoil near the Daneros, Bullseye, and South Portal Areas and the Vent Shafts and Access Roads. The topsoil is to be salvaged and stored in various locations at the Mine.

6.1. There is a concern that the stockpiles topsoil, particularly the soil wind-rowed along the sides of access roads and pads will erode over time. It is very likely, given the

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[7] Notification of Ventilation Hole Collapse at La Sal Mines Complex, Energy Fuels Resources (USA) Inc., July 9, 2015. https://fs.ogm.utah.gov/FILES/MINERALS/PERMITS/037/M0370026/2015/INCOMING/07132015.pdf

potential for intense storms, that an intense weather event will wash away the stockpiled topsoil. An April 2016 Minerals Inspection Report[8] refers to erosion caused by "a large storm event that exceeded design criteria" and the necessary repairs. Apparently this was caused by more than one storm. The Inspection Report did not describe in detail the extent of the storms and how they exceeded the design criteria. The Report does not describe the full extent of the impacts or how long is was between the storms and the inspection and commencement of repairs. Repairs required a Utah DWR stream alteration permit. The photographs accompanying the Inspection Report show extensive damage and erosion caused by the storm.

The DEA does not mention the potential impacts to topsoil and other stockpiled materials from beyond design storm events and other storms.

The BLM must address the potential erosion of stockpiled topsoil and how that will be mitigated. Mitigation plans must take into consideration greater than design basis storms.

7. Section 2.2.1.7 - Vent Shafts and Related Access Roads (page 18).

7.1. The discussion of the installation of the vent shafts states: "During each drilling operation, there would typically be a 1,000-gallon portable diesel tank."

However, the July 14 Air Quality Approval Order[9] only authorizes "Four 6,000 gallon above-ground self-contained diesel storage tanks, "to be located at the portals. There is no mention of, or authorization of, any 1,000-gallon portable diesel tanks.

Energy Fuels cannot use diesel tanks that have not been approved as part of the Air Quality Approval Order. This issue must be resolved.

8. Section 2.2.1.9 - Surface Support Facilities (page 18).

This section identifies an existing water well. It also refers to an additional water well that would be developed at the South Portal Area. The existing well is Water Right 09-2315.

8.1. Apparently, neither Energy Fuels nor EFR White Canyon (the holder of Water Right 09-2315) has submitted a water right application for the proposed well at the South Portal area. In the past, there have been issues regarding the proper appropriation of water for use at uranium mines in Utah. Therefore, the BLM must include the appropriate water right numbers and assure that the necessary water rights are approved by the Utah Division of Water Rights prior to commencement of activities at the South Portal.

9. Section 2.2.2.1 - Mine Infrastructure (page 19).

This section states:

> The main surface infrastructure would be located at the Daneros Portal

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[8] https://fs.ogm.utah.gov/FILES/MINERALS/PERMITS/037/S0370121/2016/Internal/04282016.pdf

[9] Attachment J to the MPOM.

> Area. This installation would include two synchronized diesel-powered Caterpillar Prime 455 kilowatt (kW), 568.7 kilovolt-ampere (kVA) generators that would allow for the expansion of the underground power system. An emergency generator (255 kW) would be onsite to provide back-up power when needed. A small portable generator (140 kW) would be stored on site to provide temporary power for vent shaft construction, operation of new ventilation fans, and other uses as needed.

9.1. The Air Quality Approval Order only authorizes the use of four 455 kW diesel generators, to be located at the portals, and one 140 kW generator for emergency purposes. The Approval Order makes no mention of an emergency 255 kW generator to provide backup power. Therefore, a 6th generator has not been approved by the DAQ.

Energy Fuels cannot use a generator that has not been approved in the Air Quality Approval Order. This issue must be resolved.

10. Section 2.2.6 - Material Storage and Disposal (page 22). This section states:

> Any solid wastes that would qualify as low-level wastes for radiation contamination, per NRC guidelines (i.e., not a product or a by-product of ore extraction or production), would be handled in accordance with the Low- Level Radioactive Waste Policy Amendments Act of 1985 at an NRC-approved facility or Utah Division of Radiation Control-approved facility.

10.1. The EA (or EIS) should describe the types of solid waste that might possibly qualify as low level wastes for radiation contamination. Uranium mining has occurred on BLM managed land for decades, so the BLM and the uranium mining industry should have a good idea of the types of wastes that might quality as radioactive low level wastes.

10.2. The EA (or EIS) should describe the methodology that would be used to identify radioactive low level wastes at the mine site and the levels of radioactivity that would identify materials as low level radioactive waste.

11. Section 2.2.6.1 Temporary Cessation of Operations (pages 22 - 24).

11.1. This sub-section describes the actions to be taken to prevent unnecessary and undue degradation of the site and the environment during "temporary cessation of operation."

The sub-section on Temporary Cessation of Operations should have its own separate section, given the importance of the actions that must be taken during Temporary Cessation of Operations and the expected extended periods of non-operation.

11.2. The BLM must define "temporary closure" and the actions or non-actions that define this status. For example, if ore is no longer being removed from the mine, has it ceased operation? If the mine is still being pumped to remove mine water, but is not

operating otherwise, is the mine in temporary closure? If the mine owner decides to do a bit of work or exploration at the mine but does not remove ore, has operation recommenced?

11.3. The DEA claims that "temporary closure" may occur, as it has in the past, due to market conditions. This is a distortion of the recent history of uranium mining in southeast Utah and of the Daneros Mine in particular. The "temporary" periods are of operation, not non-operation, or closure. The history of uranium mines that have operated within the last 10 years in southeast Utah is a history of short periods of operation, alternating with sometimes very lengthy periods of non-operation. So, all told, mine operation is the "temporary" status, not mine closure.

The Daneros Mine operated from 2009 to 2012, or 4 years.[10] The mine has been on standby for the past 3 and a half years, and it is not known when it will reopen. Other uranium mines in Utah closed in 2009 and 2013, with no immediate prospect of recommencement of operations. The Rim Mine operated from 1983 to 1990, 1998, and 2008 to 2nd quarter of 2009. That is 10 out of the past 32 years. The Pandora Mine and La Sal Mine Complex operated for 13 out of the past 32 years.

The same is true of uranium mines that are on Department of Energy (DOE) Leases in southwest Colorado. There were significantly more years of non-operation than operation at these mines.

Therefore, the mine owner and the BLM must anticipate long periods of non-operation, often more than a decade, rather than short periods of "temporary" cessation of operation.

The "interim" measures discussed by the BLM are really the long-term measures, since it is the operation of the mine that is "interim," or temporary.

11.4. The DEA refers to the Interim Management Plan (IMP) at Section 6 of the MPOM. This Plan does not address all of the specific conditions at the Daneros Mine now and in the future. For example, Energy Fuels states that they will inspect the mine site at least twice a year. There is no mention of other inspections responsive to critical events, such as the recent storms that caused extensive erosion and damage at the site.

11.5. The DEA makes no mention of the glaring failure of the BLM to conduct timely inspections of mines on standby, failure to require Interim Management Plans, and the problems at other mines on standby. These problems include unlocked buildings, removal of waste rock by unknown persons, erosion, collapsed mine portals, theft of equipment, materials left in unlocked buildings, lack of stormwater runoff plans and methods, accumulation of trash and old equipment, presence of livestock at mine sites and waste rock piles, failure to conduct radiological assessments, lack of fencing and signage, and dispersal of radiologically contaminated soils from ore pads, waste rock piles, and mine-water treatment operations.

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[10] Mine Safety and Health Administration, Mine Data Retrieval System. http://arlweb.msha.gov/drs/drshome.htm

11.6. The DEA does not discuss the types of storms that are considered to be beyond design basis, the impacts of those storms, and how the waste rock piles, topsoil, inert rock, roads, drainage, and other aspects of the mine site will be protected during those storms. There is no indication that the BLM or Energy Fuels will conduct a full assessment of the damage after storms that recently impacted the Daneros Mine site.

The EA (or EIS) must go into more detail regarding the maintenance of the site during the lengthy periods of non-operation, which should not be termed "temporary cessation."

11.7. The DEA states that the interim management measures are required to prevent unnecessary or undue degradation, but does not define "unnecessary or undue degradation," particularly with respect the accumulation of and dispersal of radioactive materials at the mine site.

The BLM must clarify what is meant by "unnecessary or undue degradation," particularly with respect the accumulation of and dispersal of radioactive materials.

11.8. The DEA states: "Appropriate measures would be taken to control toxic or deleterious materials in the event of short-term temporary closure of mining operations." Again, temporary closure is usually not "short-term;" it is long-term.

11.9. The IMP states that the vent holes will have metal diffusers (if fans are on the surface) and will be welded shut during periods of non-operation. It does not appear that Energy Fuels welded shut the vents at the La Sal Mines Complex. If the vent is welded shut, it would be hard to reopen the vent when necessary and would damage the diffuser.

It is more likely that Energy Fuels would use polyurethane foam (PUF). According to the June 21, 2016, DOGM Minerals Inspection Report,[11] PUF was used to seal the vents. A metal cover and soils were also added. There are gaps at the bottom of the vents, which also must be sealed. According to the Inspection Report, "no venting is occurring, other than minor venting from gaps." The EA makes no mention of these gaps that need to be filled. *See* photos in the Inspection Report.

The BLM needs additional information from Energy Fuels regarding the closure of vents and portals during periods of non-operation.

Energy Fuels should be required to submit specific plans for closure and reopening of the vents.

11.10. The DEA states: "Vent shafts would have metal diffusers (if fans are on the surface) and metal grates (on vents) to prevent access to them. These diffusers and grates would remain in place during periods of non-operation. Energy Fuels may also seal each vent during extended closure periods."

First of all, uranium mine ventilation holes have diffusers of some kind, even if it is a low extension of the metal lining of the ventilation shaft. Here the BLM should define

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[11] https://fs.ogm.utah.gov/FILES/MINERALS/PERMITS/037/M0370012/2016/Internal/06212016.pdf

and describe "diffuser" and their purpose. The higher the diffuser, the better the dispersion of radon from underground. Therefore, the BLM should require diffusers at least 6 feet high for all ventilation shafts.

The diffuser prevents animals and humans from falling into the ventilation shafts, which means certain death, since the shafts are very deep. The radon monitoring device must measure the radon emissions and should be protected from intrusion. People should not be able to walk up to a ventilation shaft and sit on top of a grate and be exposed to radon emissions, as they were able to do at a Pandora Vent on BLM land in the La Sal Mountains. (The shaft later collapsed, because the mine owner and the BLM did not assure that it was properly placed and constructed.)

All ventilation shafts must be fenced and have radiation warning signs during operation.

Ventilation shafts must be closed off during any period of non-operation, because even though the mine is not operating, natural convection can remove radon from the mine, but the mine owner is not required to measure those emissions when the mine is not operating.

11.11. The MPOM, Section 6.2, Measures to Control states:

> The environmental characteristics of mine rock were evaluated and a rock management plan is described in Section 3.6 to address potential acid forming or deleterious materials. Generation of ARD is not expected due to the arid climate and the large excess of evaporation over precipitation in the project area. Stormwater control structures associated with the DRAs will be maintained during periods of temporary closure to mitigate potential erosion of development rock.

According to the MPOM, the acid forming deleterious material will not be placed in the mine or covered with inert materials until reclamation commences, or a section of the mine is mined out. That means that the material will be left to the elements. Clearly, there has already been one or more heavy storms, and this weather pattern can be expected to continue. This could mean that 5, 10, or more years could pass when is is possible for waste rock, acid forming materials, and other contaminated materials to be dispersed.

The EA does not make any attempt to evaluate the potential for erosion, dispersal, emission and dispersal of radon and other uranium progeny, and other deleterious material during the long periods of non-operation of the mine.

11.12. The BLM and Energy Fuels should state that they will not permit the carcasses of dead cows to be disposed of at or near the mine site. For many years the BLM and Energy Fuels (or its predecessor) have allowed the bodies of dead cattle to be disposed of and accumulate next to the Beaver Shaft waste rock pile in La Sal, San Juan County, Utah.

11.13. The DEA does not discuss the dispersal of radiologically contaminated sediments in the stormwater retention ponds during extended periods of non-operation by wind or water.

The BLM must require the removal and burial of these sediments at the commencement of any extended period of non-operation, at a minimum one year.

12. Section 2.2.7 Reclamation (pages 25 - 30).

12.1. The Section on the Reclamation Plan should include a statement regarding the purpose of reclamation, the applicable reclamation standards, and how the Reclamation Plan will meet those standards. The EA (or EIS) should refer to an applicable guidance document. The *Joint Guidance for the Cleanup and Reclamation of Existing Uranium Mining Operations in New Mexico*[12] provides some relevant statements that could be used by the BLM:

- Reclamation contemplates returning an area affected by mining activity to pre-mining conditions.

- Reclamation is the employment of measures to mitigate disturbance and stabilize the permit area so as to "minimize future impact" on the environment and to protect air and water quality.

- Reclamation requires the protection of human health and safety, the environment, wildlife and domestic animals.

- Reclamation requires that a new site be reclaimed to a self-sustaining ecosystem and that existing sites be reclaimed so as to re-establish a self-sustaining ecosystem.

12.2. Although Energy Fuels anticipates a 20-year life of the mine, there is no way for anyone to estimate how long it will be before final reclamation takes place. Commenters agree, given the sad situation at mines that have been on standby off and on for over 30 years without reclamation, that incremental reclamation during the life of the mine is a good idea. However, this still leaves the possibility of lengthy periods where the waste rock, inert rock, topsoil, and other materials will be impacted by wind and water from storm events. The BLM must take that into consideration and establish mitigative measures.

12.3. Energy Fuels anticipates incremental reclamation, but the DEA does not mention what happens when a section of the mine site that has already undergone reclamation

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[12] *Joint Guidance for the Cleanup and Reclamation of Existing Uranium Mining Operations in New Mexico*. Energy, Minerals & Natural Resources Department Mining and Minerals Division, 220 South St. Francis Drive, Santa Fe, NM 87505, and New Mexico Environment Department Mining Environmental Compliance Section, 1190 South St. Francis Drive, Santa Fe, NM 87505. March 2016. http://www.emnrd.state.nm.us/MMD/MARP/documents/March2016JointGuidelinesforExistingMinesandRadiationCleanup.pdf

starts to erode or otherwise starts to deteriorate. What, exactly, is the responsibility of the mine owner under those circumstances? This must be discussed in the EA (or EIS). Further, Energy Fuels must be required to take mitigative measures even though a section of the mine site has undergone "reclamation."

12.4. The DEA states with respect Sediment Ponds, that stormwater detention ponds could potentially contain sediment with radiological levels above background concentrations and must be removed. The EA (or EIS) must indicate what "background" is for the mine area.

12.5. The DEA discusses drainages that are designed to handle a 100-year, 24 hour storm event. In 2015 there was at least one storm that exceeded this design basis. Apparently, there was more than one storm, with cumulative impacts.

The BLM and Energy Fuels must provide information on the extent of those storms, damage done to the mine site and drainage systems. The EA (or EIS) must address how those storms impacted the drainage system, building, waste rock piles, top soil and inert material storage sites, ore piles, and other aspects of the Daneros Mine and the repair and mitigative measures taken. The EA (or EIS) must address reclamation of impacts from storms greater than the design basis and impacts of a series of storms whose impact is greater than a 100-year, 24 hour storm.

12.6. Section 2.2.7.3 - Radiological Protection (page 27). This section states:

> Energy Fuels proposes to voluntarily reclaim the DRAs to a standard dose of 100 millirem (mrem) or less above background to a person camping on or near a DRA for 14 days for its mines in Utah. This standard falls within the radiation protection concept of ALARA (As Low As is Reasonably Achievable).

12.6.1. The DEA does not explain why a specific radiological emission standard, not a dose standard, should not be used as a radiological cleanup standard. The DEA does not explain how Energy Fuels will determine whether the dose standard has been met.

The BLM is avoiding its regulatory responsibility by not establishing its own radiological cleanup standard, based on accepted EPA and CERCLA standards and standards previously used by the BLM. The BLM must establish a radiological compliance standard for uranium mines and not rely on "voluntary" dose standards.

The BLM should establish a standard that is no greater than that established by the EPA for the cleanup of similar uranium and radium contaminated surface soils at uranium mills; that is, 5 picocuries per gram (pCi/g) radium-226.[13] The standard for on-site repositories is radon flux equal or less than 20 pico Curies per square meter per second

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[13] 40 C.F.R. Part 192.32(b)(2).

(20 pCi/m^2-s).

This is the standard that has been adopted by the State of New Mexico for reclamation or uranium mines and waste rock piles.[14]

12.6.2. The EA (or EIS) must consider site-specific standards that have been established by the EPA at abandoned uranium mines. The BLM must consider standards that have been established by the BLM and discussed in the New Mexico Energy, Minerals & Natural Resources Department Mining and Minerals Division and Environment Department Mining Environmental Compliance Section have developed a Joint Guidance that addresses these issues.[15] The Joint Guidance (pages 5 - 6) states:

> 1.5 Bureau of Land Management Guidance
>
> The U.S. Bureau of Land Management ("BLM") has been using a radiation guidance since the late 1970s for the reclamation of uranium mines on BLM and Indian Lands in New Mexico. The guidance utilizes the NRC standard of 0.1 rem/yr above background for access to "unrestricted areas [of mill tailings] to individual members of the public" (10 CFR 20.1301), which BLM has calculated to be equivalent to 12 μR/hr above background.
> For radon, in 1993 EPA established an action limit of 4.0 pCi/L above background. BLM uses 3.0 pCi/L above background as its criteria to ensure that the reclamation efforts do not exceed the EPA action limit. For a uranium mine site to be considered remediated using the BLM guidance, the site must emit less than 12 μR/hr gamma radiation above background and less than 3.0 pCi/L of radon above background.
>
> BLM reportedly utilized these criteria for the reclamation of the Jackpile Mine in Cibola County, New Mexico, and the Church Rock Mine in McKinley County, New Mexico. These criteria were also reported to have been used by EPA to reclaim abandoned uranium mines on Navajo Allotted Lands. While potentially useful for comparison purposes, these criteria comprise an internal BLM guidance standard, not a federal regulation.

12.6.3. The Joint Guidance (page 5) also refers to the *Multi-Agency Radiation Survey and Site Investigation Manual*, which the BLM must also take into consideration:

> The Multi-Agency Radiation Survey and Site Investigation Manual ("MARSSIM") provides a multi- agency approach to conducting radiation

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[14] *Joint Guidance for the Cleanup and Reclamation of Existing Uranium Mining Operations in New Mexico*.

[15] Id.

> surveys and investigations at potentially contaminated sites, with a focus on contaminated surface soil and building surfaces. The purpose of MARSSIM is to provide a standardized approach to demonstrating compliance with a dose- or risk-based regulation. MARSSIM does not address existing uranium mining operations, nor does it establish radiation cleanup criteria for reclamation of uranium mines.

This manual states that the EPA, NRC, Department of Homeland Security ("DHS") and Department of Energy ("DOE") regulations and policies support 15 mrem/yr and/or 25 mrem/yr dose based safety standards. This standard is significantly less than the 100 mrm/yr standard proposed by Energy Fuels and the BLM.

12.6.4. The New Mexico Joint Guidance includes a Generalized Mine Site Reclamation Implementation Guidance. This guidance includes a site Characterization Work Plan, Establishing Site Specific Radiation Levels, Characterization Summary Report, Reclamation Work Plan, and Reclamation Summary Report.

These are elements of the site Reclamation Plan that the BLM must require as part of the mitigative measures for the Daneros Mine expansion.

12.6.5. The BLM must give full consideration to the information and recommendations in the New Mexico Joint Guidance.

12.7. Section 2.2.7.4 - Topsoil Place and Revegetation (page 27 - 28).

12.7.1. This section must analyze the potential breakdown of topsoil over a period that could be decades and the ability of that topsoil to serve as a foundation for revegetation.

12.7.2. The DEA makes no mention of the establishment of test plots to determine the appropriateness of the seed mixture in various locations and conditions. The BLM must require test plots for revegetation.

12.7.3. The BLM must require further study and evaluation of restoration of vegetative cover at similar locations in southeastern Utah.

12.7.4. The conditions for the establishment of a vegetative cover after the closure of the Daneros Mine are challenging. With little overall rain fall and intense storm events, it could be decades before native plants become reestablished. The BLM must require a maximum effort and carefully monitor that effort during partial and final reclamation. The failure to eventually establish an acceptable vegetative cover will lead to additional erosion and is one of the primary environmental concerns.

12.7.5. The BLM must require the establishment of vegetative covers during periods of non-operation.

12.8. Section 2.2.7.7 - Post Closure Management (page 30).

12.8.1. This section states that post-closure monitoring would be anticipated to require 3 to 5 years. This is a gross underestimation of the time it would take for revegetation. The DEA does not give a definition of "site stability" and how long that stable condition would be expected to last. There is no discussion of that happens 10, 25, 50, 100, or 1,000 years from now, as the forces of wind and water will erode the waste rock piles and other aspects of the site, which will likely erode faster due to the mining disturbances.

There is no description or analysis of how the site will standup over the years and the long-term environmental impacts.

13. Section 2.3 Alternative B — No Action (pages 30 to 32).

This section presents the alternative whereby "the Daneros Mine could continue to operate in accordance with the terms of the approved MPO but the BLM would not approve the proposed modification to the MPO."

COMMENT

13.1. The No Action Alternative states that this does not mean that no mining would occur. However, one of the reasons that the mine is now on standby is that there is no room to put additional waste rock. Therefore, it is unlikely that the mine would reopen and operate for any extended period of time, given the cost to restart the mine and lack of surface space for additional waste rock.

13.2. This alternative states, "Development rock would be left at a 2H:1V slope. It then refers to "general improvements" to the reclamation plan in the MPOM. An "improvement" under the new reclamation plan would be that disturbed areas would be regraded to a 3H:1V. One can only wonder why that slope should not also apply to the existing disturbed areas and why other reclamation plan improvements should not also apply to the current site.

Where possible, Energy Fuels must be required to establish a 3H:1V slope during operation and for reclamation of all waste rock piles, including the current Daneros Mine pile.

13.3. Attachment A to the June 2011 Finding of No Significant Impact and Decision Record for the Daneros Small Mining Operation (Environmental Assessment UT-090-07-43) lists 43 "Conditions of Approval Daneros Mine Plan of Operations." Attachment B lists 7 Compliance and Monitoring Requirements Daneros Mine Plan of Operations.

Whether or not the BLM approves the MPOM, those requirements are still in effect. They will be in effect for an unknown period of time, because Energy Fuels has given no indication as to when the mine expansion, if approved, would commence. Therefore, under this Alternative, the EA (or EIS) should provide an evaluation of how Energy Fuels has implemented and complied with the Conditions of Approval and

Compliance and Monitoring Requirements.

Further, due to the beyond-design basis storm in the winter of 2015, the current Drainage Plan and Storm Water Pollution Prevention Plan (SWPPP) must be revised **before** the completion of the decision on the MPOM.

These plans must be revised **NOW**.

14. Section 2.4.3 Mitigation Alternative (pages 33 - 34).

The DEA rejects an alternative for BLM-added mitigative measures, relying instead of the design measures that are aimed at avoiding or minimizing environmental impacts. The BLM concludes that there are no mitigative measures identified that[16] were not already included in the Proposed Action.

14.1. Commenters support a Mitigation Alternative. The DEA fails to identify the specific "design" mitigative measures in the Proposed Action that are sufficient to avoid or minimize environmental impacts and how, exactly, those "design" measures will suffice. The DEA only references "design measures," not other types of measures, such as monitoring and maintenance. As mentioned above, the 2011 Record of Decision listed numerous mitigative measures.

14.2. It will be necessary for the BLM to require mitigative measures to address the flooding and erosion at the mine site, because of a failure of the measures designed to mitigate a design-basis storm. The surface water control structure design was not sufficient to avoid or minimize severe environmental impacts from a winter 2015 storm event. This will be discussed further below.

14.3. The BLM must demonstrate that the proposed mitigative measures will be effective.

14.4. The BLM must clearly state the mitigative measures that Energy Fuels must comply with during periods of operation, non-operation, and reclamation.

15. Section 2.5 - Summary Comparison of Environmental Impacts (pages 34 - 35).

15.1. The Summary of Comparison of Environmental Impacts makes some interesting comparisons. Under Air Quality," the EA claims: "Emissions from fossil fuel combustion would contribute a minor incremental increase in greenhouse gases but impacts would be offset by the comparatively low air emissions of the nuclear power generation industry." The DEA provides no factual basis for this statement. There is no information in the MPOM regarding the air emissions from the various components of the nuclear power industry, or the nature of those emissions.

Some aspects of the nuclear fuel chain, such as separation and enrichment of uranium and manufacturing of the nuclear fuel, consume large amounts of energy. The

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[16] Note: In various sections of the EA, the BLM uses the word "which," where the correct word in the sentence should be "that," and "was," where the correct word is "were."

DEA has no information regarding the amount of fuel that will be required to transport spent (irradiated) nuclear fuel from nuclear reactor sites to a permanent long-term disposal site, and possibly additional transportation to a temporary storage site, or the fuel that will be required to develop a permanent geological repository. Nor, does the DEA consider the fuel required for manufacturing and construction of nuclear reactors, spent fuel canisters and cement casks.

15.2. On the other hand, the EA states that radon "does not pose a health risk in this relatively remote area," but makes no mention of the health risks posed by the emission of radon and radon progeny from the uranium mill, and the health risks posed by the radiological emissions and exposures from other operations that are part of the "nuclear power generation industry."

15.3. The discussion of Water Quality states:

> The surface water system is made up of ephemeral drainages, and the mitigation measures include implementing the drainage plan (MPOM - Attachment C) and SWPPP (MPOM - Attachment G). These plans are designed and sited to avoid the 100-year floodplain and to minimize adverse impacts by diverting offsite stormwater and containing surface water runoff from a 24-hour/100-year storm event.

However, the drainage plan designed to minimize impacts from surface water runoff from a 24-hour/100-year storm event did not hold up when there was a storm that exceeded that expectation.

It is hard to understand why such a statement would remain in the EA over 6 months after the winter 2015 storm event that significantly damaged the site. The BLM should have, but did not, include information about this event and its consequences in the EA (or EIS).

16. Chapter 3 - Affected Environment, Section 3.4.3 - Human Health and Safety Concerns (pages 40 - 53).

16.2. There is no discussion in the DEA of the fact that, except for a few quarters, there are no office workers at the Daneros Mine.[17] It is unclear why there are no office workers during mine operation. The BLM must discuss how this may or may not affect emergency response, worker health and safety, and other aspects of the mine operation.

16.3. The BLM must provide a more complete discussion and analysis of worker exposure to noise; inhalation of diesel and other toxic fumes; equipment and electrical hazards; inhalation of dust containing arsenic, silica particles, and other hazardous materials; and other health and safety hazards.

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[17] http://arlweb.msha.gov/drs/drshome.htm

16.4. The BLM must address the health and safety aspects associated with the noise from the operation of the above-ground ventilation fans, which are very loud.

16.5. The BLM must provide information regarding the mitigative measures that will be used to protect public health and safety, particular worker health and safety.

16.6. Another issue at uranium mines is the use of local emergency responders, who are not trained to assist in mine rescues, to provide emergency responses during accidents. The reliance on local and other emergency responders in case of a mine accident must be discussed and analyzed in the EA (or EIS).

17. Section 3.4.3.1 - Radiation (page 50 - 52).

17.1. The DEA makes no mention of the fact that the hazard from radon is due to the highly radioactive progeny of radon, which can lodge in the lungs when radon that has been inhaled decays. The EA (or EIS) should provide a full analysis of how radon progeny enters the body and causes cancer and other adverse health impacts.

17.2. The DEA (page 51) reports that "Areas containing development rock from historic or recent mining activities exhibit higher gamma activity with values of up to 370 μR/hr present in localized areas. Historic development rock present in the South Portal Area, from previous operations, exhibits gamma radiation values of approximately 50 to 100 μR/hr." However, there is no discussion of how workers at the mine site are protected from these areas when working on or adjacent to historic development rock, or even made aware of the excessive radioactive contamination in these areas.

The health and safety concerns from the historic, un-remediated waste rock and other contaminated areas must be fully explored in the EA (or EIS). These areas must be identified on maps of the mine site and maps that show the levels of radiological contamination at the mine site.

17.3. As discussed above at Comment 12.6, the BLM has been using a radiation guidance since the late 1970s for the reclamation of uranium mines on BLM and Indian Lands in New Mexico. The guidance "utilizes the NRC standard of 0.1 rem/yr above background for access to 'unrestricted areas [of mill tailings] to individual members of the public' (10 CFR 20.1301), which BLM has calculated to be equivalent to 12 μR/hr above background."

The Utah BLM must establish a similar emission standard for the site, including all areas with radioactive contamination.

17.4. The BLM must provide more detailed information regarding the mitigative measures that will protect the public and the workers from radiation.

ENVIRONMENTAL CONSEQUENCES

18. Chapter 4 - Environmental Consequences, Section 4.2.1 - Air Quality (pages 54 - 61).

18.1. The discussion in Section 4.2.1.1 of the Underground Air Emissions Sources – Mine Ventilation (pages 55 - 56) does not mention or analyze the radon emissions from an underground uranium mine when a mine that has been shut down for many years reopens. With no underground ventilation during periods of non-operations—sometime for decades—the underground workings will accumulate radon, so that when the mine reopens it is a particular hazard for workers. The operators of the Beaver Shaft Mine (a mine in La Sal, Utah, that is also owned by Energy Fuels) ignored this worker hazard. It was only when MSHA inspected the mine and ordered the workers out of the mine, that the mine owner was forced to protect the workers from the accumulated radon.

There are also hazards from old underground workings that workers are not supposed to enter. These areas should be blocked off, or signs placed to prevent workers from entering those areas. However, at the mines in La Sal that have been several instances of lack of proper signage to keep workers out of unsafe areas. Also, when there are higher levels of radon, workers are supposed to wear protective gear. Again, at the mines in La Sal the mine operator was cited on several occasions for failure to provide protective gear.

The EA (or EIS) must have a full discussion of how Energy Fuels will protect the workers when the mine reopens and how it will protect the workers in areas of old mine workings where radon and radon progeny has accumulated.

18.2. Section 4.2.1.2 - Surface Air Emissions Sources (pages 56 to 57) fails to discuss the emissions from the radon progeny that is deposited at the mine site from the radon vents. These highly radioactive particulates are taken up by soil and can be dispersed by air and water. The BLM must assess the levels of surface radioactivity in the vicinity of the radon vents and analyze the environmental impacts.

18.3. As discussed above at Comments 7.1, and 9.1, there are some discrepancies regarding information provided in the DEA with respect the diesel generators and diesel fuel storage tanks. The DEA references the use of a 1,000-gallon portable diesel tank during installation of the ventilation shafts and the use of an emergency 255 kW generator to provide backup power. However, the Daneros Mine Air Quality Approval Order does not include and authorize the use of that equipment.

18.4. The BLM must acknowledge that there are currently no ongoing studies of exposure to radionuclides, silica, and other pollutants and their health impacts for workers who have worked uranium mines over the past 15 year. The cumulative worker exposure to a variety of contaminants will not be tracked and the workers health will not be assessed during the short-term or the long-term, when health impacts from exposure to radiological and non-radiological contaminants are likely to manifest themselves.

19. Section 4.2.1.5 - Indirect Impacts from Milling Operations (page 62).

19.1. This Section must assess the actual yearly radon emissions from the White Mesa Mill now and in the future that are relevant to the processing of the Daneros Mine ore. The DEA references compliance with 40 C.F.R. Part 61 Subpart W (National Emission Standards for Radon Emissions from Operating Mill Tailings). There is no mention of the fact that the Mill has been out of compliance with Subpart W since the promulgation of Subpart W in 1989.[18] The Mill has been out of compliance because they have had more than the 2 allowed tailings impoundments in operation at any one time. The Mill has also exceeded the radon emission standard, as recently as 2012.

19.2. There are other issues. Currently, Subpart W does not require that Energy Fuels determine the radon emissions from "new" impoundments (those constructed after December 1989). However, that provision and the current proposed rulemaking[19] provisions with respect new impoundments are in violation of the Clean Air Act. [20] There is also the possibility that the radium-laden process water that is stored in large impoundment and placed on top of the tailings in other impoundments generates radon emissions that can be calculated.

The final Subpart W rulemaking and compliance with the new rules will have significance with respect the radon emissions from the White Mesa Mill and the indirect impacts and cumulative impacts from the Daneros Mine expansion.

19.3. Also, the EA (or EIS) must address and assess the fact that the White Mesa Mill tailings must be kept under government control in perpetuity. In other words, the waste from the processing of the ore from the Daneros Mine is so hazardous that it must forever be kept under government control to protect the public health and safety and the environment.

19.4. The discussion of Indirect Impacts from Milling Operations must accurately compare the amount of Daneros Ore with the ore that may be stored and processed at any one time. The EA states, "Future wind-blown dust originating from Daneros ore stockpiles at the mill is expected to be less than four percent of total ore stockpile dust emissions based on maximum mill production of 720,720 tons/year and average mine production of 25,000 tons/year."

The 720,720 tons/year is based on the maximum processing of 2,000 tons per day, 365 days per year. When has the White Mesa Mill processed 2,000 tons per day every

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[18] 54 Fed. Reg. 51654 to 51713 (December 15, 1989).

[19] https://www.epa.gov/radiation/subpart-w-rulemaking-activity

[20] The 2000 Clean Air Act (CAA) Section 112(h) and 1977 CAA (Section 110) adding CAA Section 112(e)(1). These provisions do not permit the establishment of a design or work practice standard, in lieu of an emission standard, unless the EPA Administrator finds that an emission standard is not feasible. Since there is an emission standard for old impoundments, a similar emission standard for new impoundments would be feasible.

day of the year? Never!

The BLM must information regarding how much ore has actually been processed yearly at the Mill since its inception. That information is available and should have been included in the EA or (EIS).

The BLM must acknowledge that the Mill accumulates ore, often from one or two main sources, and then processes the ore. Therefore, it is likely that the ore from the Daneros Mine will be stored at the Mill until the next processing run. It is unlikely that ore from many other sources will be processed at the same time. The emission of dust from the stored Daneros Mine ore is hazardous. The question of how much ore is stored compared to the total amount of ore processed at the mill is irrelevant.

The BLM must provide information regarding how long the Daneros Mine ore will be stored at the Mill. The dust emissions increase as the length of storage time increases and increases in dry weather and when there is a failure to mitigate the emission of dust. The health impacts associated with exposure to dust can depend on that specific exposure, not the exposure compared to past and future possible exposures.

The BLM's assumptions regarding the emissions of dust from the ore piles containing the Daneros Mine must reflect the actual situation, not an unsubstantiated set of assumptions.

19.5. The Utah Division of Waste Management and Radiation Control (DWMRC) anticipates the release of the White Mesa License Renewal[21] package late summer/early fall of 2016. The Mill's license has been in timely renewal since 2007. The documents, which will be made available for public comment, will include an environmental analysis of the operation of the Mill. That analysis and other documents will provide additional relevant information to the BLM and the public regarding the impacts from the processing of the Daneros Mine ore at the Mill. The previous environmental analysis for the operation of the White Mesa Mill was issued by the NRC when the license was last renewed in 1997 (before the State of Utah assumed regulatory authority).

Therefore, BLM does not have complete and updated information regarding the environmental impacts associated with the operation of the Mill.

20. Section 4.2.2.1 - Surface Water Impacts (pages 64 to 66).

20.1. The DEA's discussion of surface water discusses the areas around the Daneros, Bullseye, and South Portals. It is clear from this description that run off from waste rock piles, sediment impoundments, mine yards, historically contaminated areas, vents areas, and contamination from past, current, and future uranium mining activities will contribute significantly to contamination of surface water run off.

The DEA (pages 64 - 65) states with respect compliance with 40 C.F.R. Part 440 - Ore Mining and Dressing Point Source Category, Subpart C - Uranium, Radium, and Vanadium Ores Subcategory:

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[21] http://www.deq.utah.gov/businesses/E/energyfuels/permits/denisonlicensereapp.htm

> The CWA, under the National Pollutant Discharge Elimination System (NPDES) program, requires facilities that may discharge pollutants into waters of the U.S. to be covered either by an individual or general permit, which establishes pollution limits, and specifies monitoring and reporting requirements. EPA has the authority under the CWA (and other environmental laws) to regulate radioactive materials not specifically addressed under the Atomic Energy Act. With regard to the CWA, any regulated pollutant discharged from a point-source from uranium mines is subject to either water quality- or technology-based effluent limits developed by EPA (see 40 C.F.R § 440.30-34), unless a specific Total Maximum Daily Load (TMDL) study has been completed or proposed for a specific waterbody or watershed in the state. In a TMDL scenario, the regulated source would need to meet the limits allocated to them. The State of Utah has not completed or proposed any TMDL study near Red Canyon. No point-source pollutants would be discharged directly into waters of the U.S. by the Proposed Project, thus no individual permit would be required.

However, the DEA misrepresents the Subpart C (Section 440.30 to 440.34) requirements. The DEA explains that since no point-source pollutants would be discharged directly into the waters of the U.S. by the Proposed Project, and, therefore, no UPDES permit is required. However in the applicable Subpart C sections, there is no reference to discharge into waters of the U.S. The relevant sections read:

> Subpart C—Uranium, Radium and Vanadium Ores Subcategory
>
> §440.30 Applicability; description of the uranium, radium and vanadium ores subcategory.
>
> The provisions of this subpart C are applicable to discharges from (a) mines either open-pit or underground, from which uranium, radium and vanadium ores are produced; and (b) mills using the acid leach, alkaline leach, or combined acid and alkaline leach process for the extraction of uranium, radium and vanadium. Only vanadium byproduct production from uranium ores is covered under this subpart.
>
> ***
>
> §440.34 New source performance standards (NSPS).
>
> Except as provided in subpart L of this part any new source subject to this subpart must achieve the following NSPS representing the degree of effluent reduction attainable by the application of the best available demonstrated technology (BADT):
>
> (a) The concentration of pollutants discharged in mine drainage from mines, either open-pit or underground, that produce uranium ore, excluding mines using in situ leach methods, shall not exceed:
>
> Section 440.34 sets 1-day and 30-day limits for COD, Zinc, radium 226 (dissolved),

radium 226 (total), uranium, pH, and TSS. The values of radium are in pico Curies per liter and uranium in milligrams per liter.

There is no mention of the need for a a specific Total Maximum Daily Load (TMDL) study of the nearby water courses.

As discussed above, at certain times there has been significant amounts of surface discharge from the mine site. This occurs during periodic rain storms and, most recently, in a 2015 storm that exceeded the design basis for the site of a 100-year storm in a 24 hour period.

The BLM must address these discrepancies.

20.2. With respect drainage control, the BLM and Energy Fuels must revise the drainage control assumptions and design, based on the winter 2015 storm event that was not contained by the existing drainage control system and requires the replacement and upgrade of that system.

20.3. The DEA (page 65) makes unsubstantiated assumptions regarding the impact of acid-forming or deleterious materials on the surface water:

> Acid-forming or deleterious materials are unlikely to affect surface water, because these facilities would be managed in accordance with the Drainage Report (MPOM – Attachment C) and SWPPP (MPOM – Attachment G). The mitigation measures discussed in the drainage report are designed to contain the surface water runoff from the areas containing acid-forming or deleterious materials in sediment detention ponds for all storm events up to the design storm event (the 24-hour/100-year storm). Although an episodic stormwater discharge from areas of the mine containing acid-forming or deleterious materials would be possible during storm events that exceed the design storm, very large volumes of stormwater from other unaffected areas would be present during these events. This water would dilute any potential discharge from the detention ponds effectively mitigating adverse effects to surface water quality.

First of all, the Drainage Report and SWPP must be revised to address the winter 2015 storm event, its impacts, necessary repairs, and the DWR March 21, 2016, Order of

the State Engineer For Stream Alteration Application Number 15-99-01SA.[22]

The BLM was aware of impacts to the drainage system from intense storm events as early as July 29, 2015, during an inspection of the site by staff of the DOGM and the BLM Monticello Office.[23] BLM was also aware of additional site damage that occurred in late 2015,[24] which was observed during an April 2016 inspection.[25] The BLM was also aware of the Steam Alteration Application, as amended, and the DWR Stream Alteration Order.

In spite of that knowledge, the DEA makes no mention of these storm events, need to repair the drainage system, and the fact that the Drainage Report and SWPP needed to be revised. This is an egregious error.

20.4. The EA (or EIS) must discuss and incorporate the requirements associated with the March 21, 2016, Order of the State Engineer For Stream Alteration Application Number 15-99-01SA In the Name of Energy Fuels Resources (USA) Inc. for Alteration to Bullseye Canyon in San Juan County Utah.

20.5. The BLM must take into consideration the fact that acid-forming or deleterious materials will remain on the surface during unknown periods of mine operation and mine-non-operation. Therefore, it is likely that these materials will be dispersed by large and small storm events.

The BLM must provide substantiation for their assumption that very large volumes of stormwater from other areas would dilute any potential discharge from the detention ponds, effectively mitigating adverse effects to surface water quality.

The BLM must also require the sampling of storm water, if possible, and the sampling of sediments and soils that are impacted by storm events, particularly those that exceed a 100-year storm event.

Given the recent storm event, there must be a plan to analyze the impact of storm events on the ground and surface water and the sediments and soils at the site and down stream.

20.6. The BLM must amend the information regarding the reclamation plans and their ability to mitigate potential long-term surface water impacts. Considering recent storms and the fact that the site will not be under long-term care and management, it is unlikely

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[22] http://waterrights.utah.gov/docSys/v930/j930/j9300015.pdf

[23] https://fs.ogm.utah.gov/FILES/MINERALS/PERMITS/037/S0370121/2015/Internal/08052015.pdf

[24] Note: It does not appear that the BLM inspected the new damage to the Daneros Mine drainage between the November or December 2015 storm event and April 2016 Inspection. Prior to the 2015 Inspection it does not appear that the BLM inspected the Daneros Site between a 2010 Inspection and 2013 Inspection and between the 2013 Inspection and 2015 Inspection.

[25] https://fs.ogm.utah.gov/FILES/MINERALS/PERMITS/037/S0370121/2016/Internal/04282016.pdf

that any reclamation plan and reclamation actions will be able to mitigate the potential long-term surface water impacts. If the 2015 beyond design storms had occurred after the closure of the Daneros Mine and after Energy Fuels was being held responsible for the site, any reclamation of the site and drainage system would be paid for by the taxpayer.

The EA must evaluate the potential long-term surface impacts, not just assume that the current design and reclamation measures will eliminate impacts and the need for additional repair work and Steam Alteration work over the next 50, 100, 1,000, 10,000, to 100,000 years,

20.7. The BLM's conclusion that, "with the implementation of the project design features, no adverse surface water quality impacts are anticipated," has no basis in fact.

21. Section 4.2.2.3 - Indirect Impacts from Milling Operations (pages 68 - 69).

21.1. Here and elsewhere, the EA refers to the Utah Department of Environmental Quality (DEQ), Division of Radiation Control (DRC) as the primary White Mesa Mill regulatory agency. The EA must reflect recent changes in the DEQ. It is now the Division of Waste Management and Radiation Control (DWMRC) that is the primary regulatory agency for the Mill.

22. Section 4.2.2.4 - Summary of Water Quality Impacts (page 69).

22.1. The DEA refers to an outdated Drainage Plan (MPOM – Attachment C) and SWPPP (MPOM – Attachment G). The EA's conclusion that these plans, which are designed to prevent adverse impacts during mine operations by containing surface water runoff from a 100-year storm event, are sufficient to prevent adverse impacts, is irrelevant. It is irrelevant because there have been significant adverse impacts to the site by beyond design basis events. Therefore, the current Drainage Plan and SWPP are not protective of the site—now and in the future.

The BLM must revise this and other sections that rely on the Drainage Plan and SWPP, based on a new Drainage Plan and New SWPP that takes into consideration storms at greatly exceed the current design basis.

23. Section 4.2.3 - Human Health and Safety Concerns.

23.1. Apparently, the purpose of the DEA is to explain away any potential human Health and Safety concerns, rather than take a hard look at the impacts and analyze the long-term impacts to the public and to the workers.

23.2. In Section 4.2.3.1 - Radiation (page 70) the DEA references a dose limit that Energy Fuels has agreed to. However, the BLM failed to establish radiological cleanup action levels that will be used to meet that standard and how, exactly, compliance with be determined. This section references a 1992 BLM documents, but does not provide a link to that document. As discussed above at Comment 12, the BLM, EPA, State of New

Mexico and other agencies have established other radiological cleanup requirements.

The BLM has not demonstrated that radiation will be mitigated over the long-term.

The BLM has not provided information regarding the long-term use of signage, fencing, or other means of warning the public of radiological hazards at the Daneros Mine after mine closure and completion of all reclamation actions.

23.3. Section 4.2.3.2 - Radiation Exposure Data Studies (pages 70 - 71) references various studies of uranium miners and millers. Those studies have not been made available as part of the record. Additionally, there are other studies, which the DEA does not reference or discuss. The DEA does no explain how the referenced studies apply to the workers at the Daneros Mine and how the health impacts from working at the Daneros and other mines will be tracked, studied, and determined over the next 100 years.

Commenters are not aware of any health studies of uranium miners who commenced working after 2000. Commenters are not aware of any study that is tracking the mine and mill workers in southeast Utah, their exposures, and their health.

Many of the referenced health studies do not address health effects other than cancer. This is significant, because there are other adverse health effects associated with working in uranium mines and mills other than cancer and caused by other factors besides exposure to radon. Other health effects are caused by exposure to silica, arsenic, asbestos, noise, chemicals, and diesel and other fumes.

23.4. The BLM must make available all relevant health studies of mine and mill workers and individuals that live in the vicinity of uranium mines and mills over the past 85 years. The BLM cannot just pick and choose the health studies that suit their purpose.

23.5. In Section 4.2.3.3 - Radiation Effects (page 71 - 72), the EA provides bits and pieces of information, mostly based on models and estimations, not on an evaluation of the actual working conditions at the Daneros Mine. It's main health concern is cancer, not the numerous other health effects associated with exposure to uranium and uranium progeny (including radon and radon progeny).

23.5.1. The BLM must address the other health effects, besides cancer, that result from exposure (including long-term exposure) to radiation and radioactive particulates.

23.5.2 Stating that MSHA regulates the exposure of workers to radon in the mines does not serve as an assessment of the radiation effects. Further, MSHA does not regulate the exposure to workers who might work in the vicinity of radon vents (to remove ice, remove or check the radon monitoring devices, monitor or repair the vents) or worker exposure to uranium and other radionucides above ground. MSHA does not protect the workers that move contaminated sediments, soils, and rock, or work in the vicinity of waste rock piles or other contaminated locations. As discussed above, workers can be exposed to high levels of radon and radon progeny when a mine reopens after a

period of standby. MSHA might not be there to pull the workers out of the mine for their protection.

23.5.3. The Discussion of Radiation Effects (page 72) states:

> Underground uranium mines do not require licensing under NRC regulations and, therefore, mine operators are not required to meet the standard dose limit for the public specified at 10 CFR 20.1301(a)(1). However, the NRC standard (100 mrem/yr over background) is considered a guideline for the protection of human health and safety and is incorporated into the MPOM.

Here, the BLM fails to mention that the EPA standard for dose limit to the public from an underground uranium mine is 10 mrem/yr,[26] an order of magnitude less than the NRC standard, which is not applicable to uranium mines.

The BLM must explain why the 100 mrem/yr is the proper standard, rather than 10 mrem/yr.

The BLM should adopt the EPA National Emission Standard for Radon Emissions from Underground Uranium Mines for the dose limit to the public from the mine site, but not in place of a numerical soil cleanup standard.

23.6. Section 4.2.3.4 - Radiation Mitigation Measures (pages 73 - 74) provides a list of measures that will be used to prevent or mitigate effects from radiation.

23.6.1. The BLM must state and cite all of the the specific MSHA regulations that apply to protection of the workers.

23.6.2. The list of measures includes the use of monitors and/or badges, but does not state whether those monitors and badges will be used above ground or just below ground. The list does not state how the information provided by the monitors and badges will be used to protect there workers both above and below ground. MSHA has exposure standards for below ground workers, but not above ground workers. Therefore, more information needs to be provided regarding the protection of above ground workers from radiation.

23.6.3. The BLM does not provide any information regarding the on-site presence of a radiation safety officer to oversee radiation protection of the workers and the public.

23.6.4. The BLM must provide information regarding how the dose of 100 mrem/yr or less above background will be determined.

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[26] 40 C.F.R. Part 61 Subpart B, §.61.22. 54 Fed. Reg. 51654-51713, 51694 (December 15, 1989).

23.6.5. The BLM must provide information regarding how long the mine will continue to achieve a a standard dose of 100 mrem/yr or less above background after reclamation is complete.

26.6.6. The BLM must provide information regarding the expected doses from the mine over the long term.

23.6.7 The BLM must provide additional information regarding how the radiation exposure and radioactive emissions above from above ground site activities will be monitored during periods of mine operation and non-operation.

23.7. Section 4.2.3.5 - Mine Rock – Acid and Other Deleterious Leachate Generation (page 74 - 77).

23.7.1. This section at page 76, states, "The development rock and low grade ore piles would present limited direct contact risk to recreational visitors only during periods of temporary mine suspension." However, as discussed above at Comment 7, the period or temporary mine suspension can last for many years and can be expected to be longer than periods of mine operations. Therefore, exposures to recreational visitors during this time should not be considered to be minimal.

23.7.2. The BLM must provide information regarding how the site will be monitored and restricted over the long-term. The EA references a gate and signage (page 77), but does not state how long the signs and gate will remain and who will maintain the signs and gate over time.

23.8. Section 4.2.5 - Monitoring and/or Compliance (page 80).

23.8.1. This section states that monitoring focuses on the important issues brought forward for detailed analysis and that other resources are also carefully monitored as necessary.

The EA (or EIS) should include a full list of all aspects of the uranium mine site and operation that will be monitored, the applicable state or federal regulation that requires the monitoring who the monitoring data will be submitted to, the frequency of monitoring and reporting, agency inspections, and other relevant information.

23.8.2. This section states that "Monitoring includes inspections for compliance with the terms and conditions of the approved MPOM." The DEA states, "BLM would conduct compliance inspections on a routine basis and would coordinate its monitoring efforts with other agencies as necessary, including the UDOGM for compliance with permit terms and reclamation standards, the Utah Division of Water Quality (UDWQ) for water and UDAQ for air quality and MSHA for human health and safety."

The only BLM uranium mine inspection reports that are readily available are those inspection reports are made publicly available by the DOGM on there Mineral Files

webpage.[27] Most substantive inspections are conducted by the DOGM, sometimes with BLM participation.

Commenters are unaware of DWQ, DAQ, or MSHA inspections that the BLM has participated in at the Daneros Mine.

The BLM, although it regulates uranium and other hard rock mines, has failed to establish a document control system whereby relevant applications, approvals, inspections, and other documentation readily available to the public. In this respect they are way behind the State of Utah, the NRC, and most other regulatory agencies.

According to information on the DOGM files for the Daneros Small Mining Operation (S0370121) and Large Mining Operation (M0370126), the BLM accompanied DOGM staff on an inspections dated December 1, 2010.[28]

That inspection made some observations and recommendations: 1) silt fence was not properly installed and was failing, 2) freshly regraded out slopes needed to be seeded now, 3) a berm needs to be maintained instead of silt fence at the base of the outslopes for sediment control, lube oil barrels behind shop need a containment berm, and boulders on upstream side of new culverts could potentially block culverts in a storm.

On January 14, 2011, the permittee, Utah Energy Corp. followed up with information regarding implemented the December 2010 recommendations.[29]

The next inspection was by the BLM on July 7, 2011.[30] At that time, the mine was running out of space for the placement of development rock. One can only wonder why the Daneros 2009 mining operation was approved when there was not sufficient room for the placement of waste rock. There is no evidence in the report that the BLM inspected for compliance with other terms and conditions of the mine operation.

On November 28, 2012, Energy Fuels notified the BLM of temporary cessation of operation.

The next Inspection was June 13, 2013.[31] The following Inspection was 2 years later, on July 29, 2015.[32] That Inspection documented impacts from a large storm event. Sometime in late November or early December there was an other intense storm event that washed out the culverts and damaged the site and drainage system. It does not

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[27] http://linux3.ogm.utah.gov/WebStuff/wwwroot/minerals/mineralsfilesbypermitinfo.php

[28] https://fs.ogm.utah.gov/FILES/MINERALS/PERMITS/037/S0370121/2010/Internal/12012010.pdf

[29] https://fs.ogm.utah.gov/FILES/MINERALS/PERMITS/037/S0370121/2011/Incoming/08172011.pdf

[30] https://fs.ogm.utah.gov/FILES/MINERALS/PERMITS/037/S0370121/2011/Incoming/07172011.pdf

[31] https://fs.ogm.utah.gov/FILES/MINERALS/PERMITS/037/M0370126/2013/Internal/07132013.pdf

[32] https://fs.ogm.utah.gov/FILES/MINERALS/PERMITS/037/S0370121/2015/Internal/08052015.pdf

appear that the BLM inspected the site after that storm until April 6, 2016.[33]

In sum, it does not appear that the BLM has conducted regular and timely inspections of the Daneros Mine. The BLM inspection reports are not readily available to the public. The BLM has not made available a Daneros Mine Inspection Report Form, or checklist, that shows the aspects of the site that will be inspected and the permit terms, operational standards, and other compliance requirements that the BLM is reviewing as part of the inspection. There is no evidence of timely followup inspections.

23.8.3. The BLM must provide a list all of the Daneros Mine inspections and make those inspection reports conveniently available to the public.

23.8.4. The BLM must develop a site-specific inspection report form that shows the aspects of the site that will be inspected and the permit terms, operational standards, and other compliance requirements that the BLM is reviewing as part of the inspection. The BLM must make available any inspection violations and recommendations and followup inspection information.

23.8.5. Specific monitoring requirements must be prescribed by the BLM as conditions of approval and identified in the EA (or EIS) and Record of Decision.

23.8.6. The 2011 BLM FONSI/DR included a lists of Conditions of Approval and Compliance and Monitoring Requirements (Attachment A) and Compliance and Monitoring Requirements Daneros Mine Plan of Operations (Attachment B). The BLM should review those measures and provide information regarding how those measures were or were not implemented. The BLM must identify which measures have been carried out, which have not, and which will be incorporated into the new BLM approval document.

24. Section 4.4 - Cumulative Impacts Analysis (pages 81 - 97).

24.1. The Cumulative Impacts Analysis must include the fact, known to the BLM at the time of the release of the DEA, that the Daneros Mine area is located in the proposed Bear's Ears National Monument.[34] The BLM must analyze the impacts that the designation of that National Monument will have on the Proposed Action.

Given the importance of the designation of the National Monument, the BLM must develop an EIS to fully examine the impacts from the Daneros Mine.

24.2. There is no basis for the statement in the DEA (page 82): "Air impacts from historic mines are limited because these historic mining disturbances are stabilized by volunteer vegetation or were reclaimed." There are no maps showing these sites. There is no data and information about, or analysis of, the extent and nature of vegetation, the

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34 http://www.bearsearscoalition.org/project/interactive-map/

extent of reclamation, the current conditions of the sites, the emission of radon and other radioactive particulates from the sites, and other characteristics that affect air quality.

24.3. The BLM appears to minimize the serious impacts of historic uranium mining in the vicinity of the Daneros Mine and in southeast Utah. The BLM appears to want to minimize federal responsibility for the historic uranium mining impacts and, therefore, any BLM and other federal agencies' responsibilities for remediation of the impacts from exploration, road building, mining, and radiological and non-radiological contamination.

24.4. The EA should provide more information regarding the Fry Canyon Uranium Mill and possible reclamation work.

24.5. The discussion of Regional CIAA (page 84) states that it is conceivable that the Shootaring Mill near Ticaboo, Utah could be rehabilitated and relicensed, but that possibility is far too speculative at this time for meaningful analysis.

However, recently Anfield Resources Holding Corp. submitted a license renewal package to the DWMRC that included plans to rehabilitate and operate the Shootaring Canyon Mill.[35] Therefore, this possibility can no longer be considered "speculative," and the impacts from the operation of the mill must be included in the EA (or EIS).

24.6. The discussion of Regional CIAA (page 85) needs to be updated. This section mentions that the Four Corners Power Plant located near Shiprock, New Mexico "will commence installation of new pollution control technology on two existing units in 2014."

The EA should reflect current information about this power plant and any other regional sources of pollution. The data and information in Section 4.4.1 regarding Air Quality should reflect data and information from about the time the EA (or EIS) is issued.

24.7. The discussion in Section 4.4.2 - Water Quality (page 88) does not provide sufficient information on the flow of water from the mine during flood events, such as occurred in the winter of 2015. Data and information regarding the amount of flow, duration of flow, the downstream reach of the flow in addition to the flow from nearby drainages, and the impacts from the flow of this water from the Daneros Mine over the long-term must be provided by the BLM.

24.8. The discussion of wells (page 88) references a Bullseye Well and Daneros Well. According to DWR data, the only water right (Water Right 09-2315) is owned by EFR White Canyon Corp. The EA (or EIS) must provide the Water Right numbers of the wells that are being used to provide water from the Daneros Mine. If Energy Fuels submits an application for a new water right, that information should be included in the EA (or EIS).

The BLM must evaluate the impact of the withdrawal of water from the new well on nearby wells and springs and other impacts from the well installation and operation.

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[35] http://www.deq.utah.gov/businesses/U/uraniumone/index.htm

24.9. The DEA (page 90) states: "Any future mines would be subject to design standards that require protection from a 100-year storm event."

The BLM is aware that there have been and will continue to be storms greater than a 100-year storm event and that the design standards for a 100-year storm even are not protective of the environment at the Daneros Mine and at any future mine in the area. Therefore, the BLM must revise require design standards for storms that protect from storms equivalent to or greater than the storms that impacted the Daneros Mine in 2015.

DEA APPENDICES

25. Appendix A - 2011 BLM FONSI/DR, Attachments A and B, Conditions of Approval and Compliance and Monitoring Requirements and Compliance and Monitoring Requirements Daneros Mine Plan of Operations. *See* Comment 23.8, above.

26. Appendix B - Figures.

26.1. Appendix B includes various maps of the area. The EA (or EIS) must also include a map of the proposed Bear's Ears National Monument, which includes the Daneros Mine site.

26.2. Appendix B, Figures 7 and 8, show the 100-year flood plain. There should be a map that shows the extent of the floods in BullSeye Canyon that occurred in 2015. The EA (or EIS) design-basis flood must be at least as large as the winter 2015 flood. The BLM must provide a complete assessment of that flood and assume that floods as large or larger will occur over the next 30 years (possible life of the mine) and beyond. The BLM must provide the basis for the assumptions regarding the extent of a 100-year flood.

26.3. The EA (or EIS) must provide a map that shows the drainage from the Daneros Mine to the Colorado River. The map or other information and data should provide information regarding the flows of water in these drainages during storm events. A person reading the EA (or EIS) must be able to determine the extend of the flow of water from a 100-year storm event, storm event such as occurred in the winter of 2015, and a 500- or 10000-year storm event.

27. Appendix C - Interdisciplinary Team Analysis Record Checklist.

27.1. The Rational for Comment - Critical Elements (pages C-3 - C-4) includes the BLM responses to Critical Elements. With respect Cultural Resources, the states:

> The mill operates under current Radioactive Materials License (No. UT1900479) issued by the Division of Radiation Control (DRC). The Mill license incorporates the August 20, 1979, Memorandum of Agreement (MOA) between the Utah State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP), the Nuclear Regulatory Commission (NRC) and Energy Fuels Nuclear Inc. The MOA,

> as amended on May 3, 1983, contains adequate conditions to prevent potential indirect impacts to cultural resources from the milling of Daneros ore at the White Mesa Mill.

This information is very misleading. It gives the impression that the unique and significant cultural resources on White Mesa will, indeed, be protected. Of course, that all depends on the definition of protection. If protection means that any cultural resources that may be impacted by the construction of new tailings impoundments as the mill expands will be identified, studies, excavated, and then the pit houses, kivas, food storage and other structures will be **destroyed**, then, yes, the cultural resources with be protected. If protection means that the ancient dwellings and associated structures will remain undisturbed, then many of the culturural resources will not be protected. Only the cultural resources in areas that the mill owner does not need to disturb will be protected by the MOA and the conditions in the License. This is because that are no controls that will protect any resources that stand in the way of the expansion of the Mill. Cultural resources were destroyed when the mill was constructed and, most recently, when tailings Cell 4B was constructed.

The MOA does nothing to protect the resources from destruction in areas that need to be disturbed for further Mill expansion. The operation of the Daneros Mine over the next 20 or more years will lead to the necessity of constructing a new tailings impoundment, just as one was constructed recently to accommodate the tailings from the Daneros, Tony M, La Sal Mines Complex, Rim, Arizona 1, and Pinenut Mines. When the MOA was being arranged, the state and federal agencies did not consult with the nearby impacted tribes, the Navajo Tribe and Ute Mountain Ute Tribe, nor other tribes in Utah and the Four-Corners region.

The EA (or EIS) must include a full analysis of the MOA, the White Mesa Mill License Condition 9.7 of the Mill License, the applicable federal and state statutes and regulations, the past destruction of unique and significant archeological resources for the development of the Mill to process uranium ore from the Colorado Plateau—primarily from mines on lands administered by the BLM, and the impacts to those resources (identifying the specific pit house or kiva that will be destroyed).

27.2. Additionally, with respect Cultural Resources, the EA should give a full accounting of how the BLM is supposed to protect the cultural resources on the land that was transferred to Energy Fuels Nuclear by the BLM when the Mill was being constructed in order to serve as a buffer zone. The deed required the BLM Monticello Field Office to inspect the numerous cultural resource sites that had been identified in that area, not more than every 3 years. However, over 30 years later, the BLM has yet to fulfill that responsibility.

The EA (or EIS) must contain a full analysis of the responsibilities of the BLM and how the BLM has fulfilled those responsibilities to protect the cultural resources on White Mesa, including identifying the resources that are supposed to protect on the lands transferred to the Mill owner.

27.3. With respect the impact associated with Environmental Justice (page C-4), the BLM concludes that the impacts associated with the White Mesa Mill (direct, indirect, and cumulative impacts) "would be no disproportionately high and adverse human health or environmental effects on minority or low-income populations." The DEA provides little data and information for this analysis and conclusion. First, the DEA provides no analysis of the impacts to the White Mesa Community. There is no analysis of the economic, psychological, cultural, spiritual, health and safety, and other impacts to the White Mesa and other low-income and minority populations that reside in Westwater, Blanding, and other affected communities.

There is no mention of the bad smell that the White Mesa community is subjected to during Mill operation or the types of radiological and non-radiological emissions that are routinely emitted from the Mill. There is no analysis of the impacts to the local fauna that members of the White Mesa community have observed since the Mill commenced operation.

The DEA states: "Employment at the proposed mine and at the White Mesa Mill would provide equal opportunities to low income and minority populations." However, the DEA provides no analysis of the numbers of members of the White Mesa Band who have worked at the Mill over the years, the attitudes of members of the White Mesa Band to employment at the Mill, the impacts from the erratic nature of Mill employment, as workers are hired or laid off at will due to the requirements of mill operation or non-operation. There is no analysis of the pay scales at the Mill as compared to other, more secure, jobs in the area.

Nor is there an analysis of the fluctuations in the work force for uranium mine workers over the past 35 years in southeast Utah.

The DEA is the result of foregone conclusions on the part of the BLM, not an attempt to discover and analyze the real impacts that the presence and operation of the White Mesa Mill have had over the decades and will continue to have in the years to come on the Native American and low-income communities in southeast Utah.

27.4. The Rational for Determination regarding Floodplains (pages C-4 - C-5) states: "Stormwater runoff would be managed in conformance with the UDOGM and the UDEQ stormwater requirements; and controlled with ditches, berms, or other flood control structures, as outlined in the MPOM Storm Water Pollution Prevention Plan (Attachment G) and Drainage Report (Attachment C)."

However, SWPPP and the Drainage Report make no mention of, or take into account, the impacts from beyond design-basis storms. The Drainage Report and SWPPP are supposed to be designed to divert all off site runoff water from entering onto mine portal areas; and to prevent all on site runoff water from flowing off-site. The BLM must determine whether or not they fulfill this purpose.

The DEA fails to take into account the effects of Climate Change and the potential for an increase in intense storm events in southeast Utah. The DEA does not include the data that was used to determine the 100-year 24-hour storm and the extent of a 100-year

base flood elevation at the Daneros Mine. Since the drainage structures did not hold up during 2 storms in 2015, then the BLM and Energy Fuels must rethink the anticipated storm events that must guide the protective measures.

27.5. The discussion of Floodplains explains that "the proposed 100-year base flood elevation design criteria for the project meets the minimum federal standards for floodplain management and is consistent with the guidelines for implementing EO 11988 and EO 13690 (FEMA, 2015)." Whether or not the proposed 100-year base flood design criteria is "consistent with" FEMA expectations, that design criteria is not protective of the flood control structures, floodplain, mine structures, Bullseye Canyon, riparian habitat, stockpiled topsoil and inert rock, and waste rock.

27.6. The Rational that addresses Native American Religious Concerns (page C-6) does not include the recent proposal to designate the Bear's Ears National Monument, which was initiated by Native American tribes in the Southwest, particularly in Utah.[36] One reason for the designation is to protect areas of Utah of deep religious and cultural significance to these tribes and their members. The EA must address these concerns and commitments.

27.7. The Rational's discussion of Fish and Wildlife (page C-12) states: "Once operations are established, sound levels generated from the proposed action would be the same as the existing mine when operation," This statement does not take into account the increase in noise from the operation of fans ventilation shafts and possible increase in diesel generators at the surface. The operation of just one additional fan increases the noise level. The ventilation shaft fans at the surface are extremely loud for any person or animal close by and can be heard for over a mile, depending on the topography. It is a steady, intense, unnatural, industrial noise that can help but disturb wildlife. It would certainly disturb bighorn sheep that were feeding, lambing, or rutting in the area.

28. Appendix D - Public Scoping Comment Summary for the Daneros Mine Plan Modification Environmental Assessment.

28.1. The DEA provides a Public Scoping Summary, which give the Comment Text and the BLM response. In sum, the BLM did not, in a meaningful way, respond to many of the public comments.

28.2. The BLM did not adequately respond to the EPA Region 8 comments (# 7 and #8) on the April 30, 2012 Application to the Utah DAQ for approval of radon vents, pursuant to 40 C.F.R. § 61.07. The EA does not state, and the DAQ May 23, 2012, approval do not state exactly what was approved by the DAQ. The BLM response is that the Application is available from the DAQ. However, Energy Fuels and the BLM have made assertions regarding the approval of the radon emission sources at the Daneros Mine, which should

[36] http://www.bearsearscoalition.org/proposal-overview/

be supported by a document that supports those conclusions. The BLM should have requested that the 2012 application be made part of the MOPM, as requested by the EPA. Instead, the EA asserts: "BLM documents regulatory compliance with a copy of the approval letter." However, if the BLM does not know what the approval letter actually approves, how can the BLM know what must be complied with and how can they document such regulatory compliance? Further, how can the public know what Energy Fuels must comply with?

Therefore, the EA (or EIS) must include the 2012 application to the DAQ regarding radon ventilation associated with the mine expansion.

28.3. The DEA must analyze the impacts associated with the possible designation of the Bear's Ears National Monument. The Daneros Mine is within the proposed area of this National Monument, which is under consideration by the Department of Interior and President of the United States.

28.4. The DEA failed to sufficiently identify and analyze the impacts from noise (#3).

28.5. The DEA failed to sufficiently identify and analyze the cumulative impacts associated wth the mining of uranium in Utah and on other federal lands and the milling of the ore at the White Mesa Mill (#17).

28.6. The BLM failed to conduct the required baseline studies (#18 , #19, #51) of conditions at the mine site. These baseline studies include analysis and mapping of the radiological contamination at the existing and proposed sites, including historic contamination. This includes an analysis of the historic flooding at the expanded mine site.

28.7. The DEA failed to sufficiently identify and analyze the impacts from storm events, including those that exceed the design-basis storm 100-year storm. This would include short-term and long-term impacts.

28.8. The DEA failed to sufficiently identify and analyze the mitigative measures that would be included in the final decision record (#20).

28.9. The DEA failed to adequately analyze the data provided by Energy Fuels in the MPOM.

28.10. The BLM failed to include a comprehensive plan to mitigate the radiological hazards during periods of cessation of operation, during and after reclamation, and during the long-term.

28.11. The BLM has failed to define "unnecessary and undue degradation" with respect radiological contamination (#24 and #58).

28.12. The DEA failed to analyze the degradation to the affected water courses over time from the operation of the expanded Daneros Mine and the presence of contaminated soils

and waste rock at the Daneros Mine site over the next 100 to 100,000 years. The BLM states that "the EA will analyze potential impacts to surface and ground water, " but failed to make that analysis in light of beyond design basis storms and in light of the expected long-term impacts to the mine site (#27).

28.13. The DEA failed to identify the location of the additional well that will be needed for the expansion of the mine and the impacts of the drilling and operation of that well.

28.14. The DEA failed to sufficiently characterize and analyze the impacts to the overall conservation and recreation based values of the area (#29).

28.15. The DEA failed to sufficiently characterize and analyze the health and safety impacts are relevant to mine workers and to members of the public who are engaging in recreational activities at Natural Bridges, Fry Canyon, public lands in the vicinity of the Daneros Mine, and the proposed Bear's Ears National Monument (#33 and #34).

28.16. The DEA failed to adequately address the emission of radon from old portals and emission of radon and the accumulation of radon in the mines during periods of non-operation and the potential impact on underground workers. The BLM cannot assume that Energy Fuels and MSHA will protect the health and safety of the workers in all circumstances.

28.17. The DEA failed to adequately analyze the ability of the site to support long-term soil stability, hydrologic functions, and biotic integrity that allows for proper functioning ecological conditions of the mine site. The BLM has no basis for the assumption that 3-5 years is a reasonable timeframe for meeting these objectives (#35),

28.18. The DEA failed to adequately characterize and analyze the disproportionately high and adverse human health and environmental effects to low-income and tribal communities in Utah from the mining and processing of uranium ore in San Juan County, pursuant to applicable requirements for Environmental Justice in Minority Populations and Low- Income Populations (# 43 and #68).

28.19. The DEA failed to adequately address the mitigative measures during extended periods of non-operation and the adequacy of monitoring, mitigative measures, and reclamation over the long-term (#57).

28.20. The DEA failed to characterize and analyze the health impacts to the workers from The radiological emissions from waste rock piles, historic contamination, radon emitted from ventilation shafts, stockpiled ore, ore pads, and other surface sources of radiological emissions and radioactive particulates (#63 and #85). MSHA does not protect workers from surface radiological contamination. The EPA does not consider workers and buildings the mine itself to be a nearby receptor, so the dose to surface workers at the mine is not calculated.

28.21. The DEA failed to address the need for test vegetation plots and an analysis of the success of the proposed seed mixture in past re-vegetation efforts on soils similar to those that will be placed on the reclaimed areas of the mine (#80).

28.22. The BLM and DOGM regulatory programs are a significant aspect of the operation of the Daneros Mine and the extent of the environmental impacts. Therefore, how the BLM and DOGM do, or do not, inspect the mines and enforce the applicable regulations is relevant and not outside the scope of a through environmental analysis (#86).

28.23. The EA failed to provide an informed socioeconomic analysis of the operation of the Daneros Mine, the White Mesa Mill, and the other uranium mines in the region that supply ore to the White Mesa Mill (#87).

28.24. The BLM has neglected to require a new application for the construction of vent holes once the location of the vent holes are known (#98). It is important that the BLM review the geology of the proposed vent hole site and the type of shaft that will be constructed to determine whether the appropriate type of shaft is going to be constructed and so the BLM will have the appropriate maps and design and construction information. In the past, the BLM (Moab Field Office) approved the construction of a ventilation shaft that later collapsed. There is no evidence that the BLM will conduct an adequate review of the site geology and the type of shaft to be constructed.

28.25. The DEA failed to analyze the potential for acid leachate formation at all the historic waste rock piles in the vicinity of the Daneros Mine expansion area as part of the analysis of cumulative impacts (#99 and #100). The DEA failed to address the creation of leachate during the extended periods of non-operation of the Daneros Mine, which can last a decade or more.

28.26. The DEA failed to consider the use of and require synthetic liners to the runoff catchment basins, which will accumulate sediments containing radiological contaminants and other non-radiological contaminants, such as arsenic (#102).

28.27. The BLM does not require any short or long-term monitoring of the radiological emissions from the mine site (#106 and #107). The only emissions that will be monitored will be the radon emissions from the radon vents and portals during mine operation. However, Energy Fuels does not use that data to determine the dose to an on-site worker. Therefore, the BLM will have no data regarding the actual exposure of workers and others at the mine site over the short- and long term. Therefore, there is no plan to reduce those emissions should they exceed a certain level.

29. Appendix E - Evaluation of the Radiological Characteristics of Uranium Mine Waste Rock.

29.1. For some reason the BLM incorporated Energy Fuels' Evaluation of the Radiological Characteristics of Uranium Mine Waste Rock (Evaluation) in the EA, giving it a legitimacy it does not deserve. The Evaluation is part of the MPOM, it is a applicant document, not a BLM document. It should not be incorporated into the EA. The Evaluation is biased, out of date, contains false and misleading information, and fails to discuss violations associated with compliance with state and federal regulations associated with radiological emissions by Energy Fuels and its predecessor (as owners of the White Mesa Mill and uranium mines in Utah, Colorado, and Arizona).

29.2 The BLM did not provide an analysis of the Evaluation. The BLM must analyze this document, its data and information, and explain its relevancy to the expansion of the Daneros Mine and long-term environmental impacts.

29.3. The BLM should have developed their own evaluation and made it available prior to the release of the draft EA.

29.4. The Evaluation (page 1) states:

> Starting in 2003, a number of uranium mines were restarted in the northern part of the Colorado Plateau in response to higher uranium and vanadium prices. These mines are located in southwestern Colorado and southeastern Utah. In most instances, additional reclamation planning and permitting was necessary prior to starting or expanding these mines.

The assertion by Energy Fuels that, in most instances, when uranium mines were restarted on the Colorado Plateau after 2003 "additional reclamation planning and permitting was necessary," is a false and misleading statement. The BML did not require any updated reclamation planning or permitting for the restart of the La Sal Mine Complex (Beaver Shaft, La Sal, and Snowball Mines), and the Pandora Mine in La Sal Utah. The BLM and mine owner relied on a minimal Plan of Operations and EA developed in 1981. In fact, the BLM allowed the La Sal Mine to reopen without any Plan of Operations. The BLM allowed the Rim Mine to reopen, based on 1981 documentation, and did not provide an opportunity for public input when the plan was updated. The Sunday Mine Complex (Colorado) and the Arizona #1 Mine (Arizona) commenced operation based on early plans of operation and reclamation plans. Further, the mines that were on standby in Utah did not have approved Interim Management Plans during periods of non-operation until about 2014 in Utah, despite a requirement to have such plans during periods of non-operation. For decades uranium mines in Utah when on standby with no Interim Management Plans.

29.5. The Evaluation (page 4) states: "Energy Fuels has voluntarily agreed to reclaim the piles at its Utah mines to a standard dose of 100 mrem or less above background to a

person camping on or near a reclaimed mine site for 14 days." As discussed above, Commenters do not accept the 100 mrem dose standard. The BLM must define "deleterious material" in terms of the radiological content of the material and the radiological emissions from that material. The common practice by state and federal agencies that are engaged in the cleanup and long-term care of radiological materials is to establish an emissions and/or radiological content standard. Further, the BLM cannot assume that, just because there is a 14-day limit on camping on BLM lands that, in a very isolated area, that limit will not be exceeded.

The BLM should not rely on models to calculate the dose.

Additionally, any cleanup action standard or emission standard must take into consideration the long-term hazards associated with uranium and uranium progeny and the inevitable dispersal of those materials over the next 100, 1000, 10,000, etc., years.

29.6. The Evaluation (page 7) discusses compliance with the EPA radon emission standard and refers to the monitoring of the radon to determine the dose to the nearest receptor. However, the Energy Fuels' Evaluation fails to mention that, since 2003, the Energy Fuels mines failed to comply with the EPA monitoring requirements. Energy Fuels, or its predecessor, did not monitor the radon with the approved type of monitoring device (Method A-6) and failed to request the required authorization for the monitoring device they did use (Method A-7). Additionally, the dose model used meteorological data that was not local, and no determination was made that the data used reflected actual meteorological conditions at the mine sites. All of the data associated with the emission of radon and dose to the nearest receptors at, particularly, the La Sal Mine Complex and Pandora Mine (with a number of nearby receptors, including an elementary school) are suspect.

29.7. The Evaluation discusses the EPA regulation of the radon-222 emissions from the White Mesa Mill, pursuant to 40 C.F.R. Part 61 Subpart W. However, Energy Fuels fails to mention its continual violation of the requirement to only have 2 operating tailings impoundments and violation of the emission standards. Further, the Evaluation fails to mention the current Subpart W Rulemaking and the fact that the current Subpart W and proposed changes to Subpart W violate the CAA. (*See* discussion above at Comment 19.2.)

29.8. The Evaluation states that the "EPA expects to issue revised draft Subpart W regulations for comment this year." The draft Subpart Rulemaking has been issued, comments received, the final rules sent to Office of Management and Budget for review, and are expected to be published in the *Federal Register* later this year.

The information in the final Subpart W rule must be included in the final EA (or EIS).

29.9. The information regarding Mining History (page 9) is extremely brief and does not reflect the whole picture. Energy Fuels states that they expect the short-term price of uranium ($35/pound) to increase in the future. However, the short-term and long-term price of uranium continues to drop. The short-term price of uranium has now dropped to

$25.00 to $25.25;[37] and a turn around is not expected in the near future. At this time, there is no anticipated date that Energy Fuels would re-commence operation at any of its mines in Utah or Arizona.

29.10. The Evaluation states regarding Mine Reclamation Practices (page 12) states that "most of the pre-law mines in the area remain un-reclaimed because they are generally small, located in remote areas, and have been determined to present little risk to the general public and the environment." This is a misleading statement. Most of the pre-law mines remain un-reclaimed because there are no funds to reclaim then. State and federal agencies are slowing addressing some of these mines, as funding becomes available. Even post-law mines, such as the Dunn Mine in Utah, have not been reclaimed due to the failure of state and federal agencies to require reclamation bonds.

There are abandoned mines that present hazards to the public and contribute to the contamination of public lands. There are areas when water collects in basins with radioactive sediments. Both native and domestic animals drink water from those basins. However, there is no study of the extent of contamination in these basins where sediments from uranium mines have collected and the impacts to native and domestic animals that graze in the area.

29.11. The discussion of Mine Reclamation Practices (Page 12) states that "no state or federal regulations are in place to provide guidance on what is an acceptable radiation level for reclaimed waste rock piles." This statement is false and misleading. As discussed above at Comment 12.6, there are state and federal regulations that provide guidance on what is an acceptable radiation level for reclaimed waste rock piles and contaminated rock and soils.

29.12. The Reclamation Practice discussion goes on to describe more recent common reclamation practices. However, there is no information regarding actual mine-specific uranium mine reclamation over the past 20 years. The History states (page 12): "Accordingly, post-law waste rock piles have generally been reclaimed using standard mine reclamation practices (regrading, covering with soil, and seeding)." The post-law uranium mine sites that are being referred to are not identified. Therefore, the information is essentially meaningless.

There is no way to independently verify the uranium mines the Evaluation is referring to, the reclamation plan included in the Plan of Operations or Notice of Intent, the reclamation practices used, and the short-term and long-term success of the reclamation.

The discussion of reclamation practice fails to acknowledge that the BLM and the State of Utah do not have specific regulations applicable to uranium mines. The BLM regulations applicable to hard rock mines, which include uranium mines, have not been significantly amended to assure reclamation and long-term stability of uranium mines.

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[37] https://www.cameco.com/invest/markets/uranium-price

29.13. The Mine Reclamation Practice Discussion does not assess the impacts to vegetation, wild and domestic animals, ground and surface water, or other aspects of the environment. There is no evaluation of the mine waste rock and low grade ore that currently is dumped over the side of washes (e.g., Rim and Sage Mines in San Juan County). Further, there is no mention of waste rock piles that are in the vicinity of homes, schools, post offices, community centers, livestock feed lots, surface water (such as irrigation ditches) (e.g., the Beaver Shaft Mine, La Sal, Utah).

29.14. Energy Fuels, and not the BLM or state agency, analyzed ore and waste rock piles in Colorado and Utah. The mines that were ore was sampled and analyzed are listed in Figure 5-1. Most of these mines have not operated for many years. The Energy Queen Mine last operated in 1982 and the Sage Mine operated in 1981 and for a short time in 1990. The J-Bird Mine has not operated recently, nor has the Sunday Mine. There is no data on the ore that was most recently mined by Energy Fuels from the Tony M Mine, Rim Mine, La Sal Mines Complex, Arizona 1, and Pinenut.

The information regarding the Energy Queen sampling states: "The 1.43% high grade sample from the Energy Queen was collected by hand selecting some of the higher grade material from residual materials left on the ore pad." This means that materials with high concentrations of uranium have remained on the surface of the Energy Queen (a mine on private land), subject to dispersal of wind and water, for about 35 years, without any reclamation.

In general, the evaluation of the ore and waste rock piles provides no information regarding the methodologies used to sample and evaluate the ore and waste rock. Energy Fuels failed to evaluate the other mines that were most recently operational: Tony M Mine, Rim Mine, La Sal Mines Complex, Arizona 1, and Pinenut.

29.15. Regarding the Ventilation Shaft Study (page 15), the study only evaluated 3 of the La Sal Mines Complex ventilation shafts (Pandora #2 and #10 and Snowball # 2). There is no information regarding the number of years the vents operated, the height of the vents, average flow, the amount of radon emitted from the vents since 1989, and how they are or are not representative of the 14 vents that were operational in 2012 (out of a total of 31 vents). For example, in 2012, no radon was emitted from the Pandora #2 vent, 442.37 Curies were emitted from Pandora # 10, and 285.23 Curies from Snowball #2.[38] The maximum was 1432.37 Curies from Pandora #5. Four vents emitted more radon than Pandora #10 and seven vents emitted more than Snowball #2. The average emissions in 2012 for the 14 vents was 393.78 Curies. The average in 2012 for the 3 studied vents was 242.53 Curies. One can only conclude that the Pandora #2 and #10 and Snowball # 2 are not representative of the average radon emissions from the La Sal

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[38] "Predicted Doses due to 2012 Radon Emissions from Energy Fuels Resources (USA) Inc.'s La Sal Mine; Senes Consultants Limited, March 28, 2013; Page 7. Enclosure to *Annual Report for the L a Sal Mine Complex Under Code of Federal Regulations (CFR) 40 Part 61, Subpart B - National Emissions Standards for Hazardous Air Pollutants*. Energy Fuels Resources (USA) Inc. March 28, 2013.

Mines Complex radon vents. For a full picture, one would have to evaluate the total emissions for all of the vents over time. It would be expected that higher amounts of radionuclides would be found in the vicinity of the radon vents that had emitted greater amounts of radon and radon progeny over time.

29.16. Energy Fuels did not test the soil in the vicinity of the ventilation shafts at the Daneros Mine. Energy Fuels states that, during reclamation, which might occur decades after the operation of any one ventilation shaft, they have "agreed to remove the top one inch of soil around the shafts during reclamation and dispose of the material in the shafts."

The BLM must require a periodic radiological assessment of the soils in the vicinity of the radon shafts and require removal of soil prior to extended periods of non-operation. The reclamation plan must require that soil be removed within a certain distance from the vent. It is unlikely that Energy Fuels will be able to remove just one inch of material, given the type of soil removal equipment. Therefore, there must be a more detailed plan for the cleanup of contaminated soils in the vicinity of radon ventilation shafts.

29.17. Energy Fuels did not provide sufficient data and information supportive of their assertion (page 19): "The radiation levels at the remaining surface facilities including the waste rock piles are typically relatively low and do not represent a large risk to the general public."

29.18. The Evaluation states: "Finally, the data and modeling demonstrate that Ra-226 is the primary radionuclide of concern when reclaiming surface disturbance at uranium mines. Sampling and analysis for Ra-226 in combination with a gamma survey prior to and after reclamation can provide the mine operator and regulatory agencies with a level of assurance that the reclaimed site does not present a risk to nearby residents and the general public."

Commenters do not disagree with these statements. However, Energy Fuels and the BLM do not provide a radiological emission standard or soil cleanup standard that will be adhered to. Further, there is no information regarding how long any cover to the waste rock piles will be expected to remain and function as a measure to attenuate the radon emissions from the waste rock (which may contain ore) over the long-term (that is, forever), when there will be no one responsible for monitoring, inspections, flood control, repair, and maintenance of the reclaimed site.

NEED FOR AN ENVIRONMENTAL IMPACT STATEMENT

30. The MPOM for the expansion of the Daneros Mine warrants a full EIS review and assessment, based on the following:

30.1. The DEA was much longer than would be expected for a brief analysis of the impacts from the proposed mine expansion in order to determine the significance of those impacts. The DEA attempted to address some, but not all, of the relevant impacts,

including cumulative impacts, and addresses one alternative.

30.2. The Proposed Action meets the requirements for an EIS as set out in the BLM National Environmental Policy Act Handbook (H-1790-1, January 2008). The Handbook includes a discussion on determining whether an EA of EIS is appropriate (Chapter 7). Section 7.2 (Actions Requiring and EIS) states, in part:

> Actions whose effects are expected to be significant and are not fully covered in an existing EIS must be analyzed in a new or supplemental EIS (516 DM 11.8(A)). You must also prepare an EIS if, after preparation of an EA, you determine that the effects of the proposed action would be significant and cannot be mitigated to a level of nonsignificance (see section 7.1, *Actions Requiring an EA*). If you determine during preparation of an EA that the proposed action would have significant effects and cannot be mitigated to a level of nonsignificance, you do not need to complete preparation of the EA before beginning preparation of an EIS (516 DM 11.7(E)) (See section 8.4.1, *Significant Impacts – Transitioning from an EA to an EIS*).

As discussed above, the DEA did no provide a full and accurate characterization and analysis of the significance of the relevant impacts. The DEA relied on information and data that was outdated, inaccurate, misleading, biased, unsubstantiated, and/or woefully incomplete. Therefore, the DEA did not provide an accurate and substantive basis for findings of insignificance and an overall Finding of No Significant Impact.

30.3. There are already controversies regarding the nature and extent of the effects associated with the expansion of the Daneros Mine. These controversies can only be resolved in the context of an EIS, which will provide full and accurate information and data, the kind of information and analysis that was missing in the DEA. These controversies include:

A. The advisability of greatly expanding a uranium mine within the proposed Bear's Ears National Monument.

B. The impacts of the Daneros Mine expansion and operation to the nearby Natural Bridges National Monument,

C. The effects of the emission of radon and other radionuclides from the mining operation on workers,

D. Inadequate Interim Management Plan for extended periods of non-operation,

E. The handling of waste rock from the Shinarump formation,

F. Timing of reclamation,

G. Mitigation measures and their effectiveness,

H. Revegetation standards and reduced ability of the land to heal after mine operation,

I. Use of the 100-year flood as the design basis for storm-water protection,

J. Reclamation standards associated with the long-term presence of uranium and uranium progeny at mine,

K. Whether new exploration drilling and ventilation hole installation will require a new application, NEPA review, and public comment,

L. Extent and nature of impacts to surface water from beyond design-basis floods.

M. Appropriate Terms and Conditions of the MPOM approval,

N. The scope of the environmental analysis, including cumulative impacts,

O. Environmental Justice considerations regarding the cumulative impacts associated with the operation of the White Mesa Mill and other uranium mines in southeast Utah,

P. Significant impacts caused by the destruction of significant cultural resources in the White Mesa Archeological District resulting from the expansion of the White Mesa Mill tailings impoundments, which are needed to accommodate tailings from the processing of the Daneros Mine ore and ore from other federal lands,

Q. The decades-old failure of the BLM Monticello Field Office to inspect the cultural resource sites on land transferred from the BLM to the Mill owner, as required by the deed transferring the land from federal control to private ownership,

R. The radiological dose standard to be used as the basis for reclamation of the Daneros Mine,

S. Other controversies as presented in the Comments herein.

30.4. There are significant effects that are highly uncertain and/or involve unique or unknown risks, which were not adequately addressed (in an unbiased manner) in the DEA. These uncertainties and risks can only be resolved in the context of an EIS when

full and accurate information and analyzes are available. These uncertainties and risks include:

A. The effects and risks associated with the emission of radon and other radionuclides from the current and future mining operation involve unique and unknown risks to workers and the residents of Fry Canyon, and recreational visitors to the area. These effects and risks are both short- and long-term.

B. Uncertain and unknown risks to the workers and the public associated with the exposure to arsenic and silica in the ore.

C. The effects of the long-term storage of the waste rock piles are unknown, particularly because reclamation standards for the emission of radionuclides from the piles, ore pads, and contaminated soils have not been established.

D. Uncertainty regarding the impacts from intense rainfall (flash flood), which can mobilize and transport mine waste with associated radioactive material and trace elements long distances during relatively short periods of time.

E. Uncertainty regarding the impacts to the Natural Bridges National Monument and the possibility of the designation of Bear's Ears National Monument, which would include the Daneros Mine site.

F. Uncertainty regarding the impacts to connected cultural resources at the White Mesa Mill.

G. Uncertainty regarding the impacts to the health and safety of the workers.

H. Uncertainty regarding the economic viability of the uranium industry in southeast Utah.

I. Uncertainty regarding the individual and community economic impacts due to the boom and bust nature of the uranium industry in Utah.

30.5. The BLM review of the expansion of the Daneros Mine may establish precedents for future actions with significant impacts, including:

A. The consideration and environmental review of other Plans of Operations and amendments for all uranium mines on federal public lands. This includes uranium mining activities in Utah, Arizona, Colorado, and New Mexico that supply or would supply ore to the White Mesa Mill.

B. Establishment of radiological standards for reclamation of the waste rock areas, ore pads, and other areas contaminated by radionuclides at uranium mining operations.

30.6. The expansion and continued operation of the Daneros Mine is related to other actions with cumulatively significant impacts:

A. The operation of the White Mesa Uranium Mill, south of Blanding, Utah. Without the White Mesa Mill, there would be no facility to process the ore from the Daneros Mine and the Mine would not operate. Thus, the Daneros Mine is considered a connected action with the White Mesa Mill. The Mill must expand to accommodate ore from the Daneros and other mines that supply ore to the Mill.

B. The destruction of significant cultural resources at the White Mesa Mill.

C. The cumulative significant effects of those related uranium mining facilities and activities (past, current, and reasonably foreseeable) in San Juan County, other areas of Utah, Colorado, Arizona, and New Mexico. the Colorado Plateau.

D. The disproportionately high and adverse human health and environmental effects to low-income and tribal communities in Utah from the mining and processing of uranium ore in San Juan County, pursuant to applicable requirements for Environmental Justice in Minority Populations and Low-Income Populations.

E. For all of these past, present, and reasonably foreseeable actions/operations, the BLM must fully analyze the quantitative as well as qualitative impacts to human health and safety and the environment. Simply listing these actions/operations, or briefly discussing generalized impacts, fails the BLMs' duty to conduct the "hard look" required by NEPA. Because of the potential for significant environmental impacts from the proposed action, as well as in conjunction with these other actions/operations, an EIS is required.

30.7. Additional NEPA Concerns:

A. The EA's analysis of the Mine, Mill, other mines (and other activities in the region), and related transportation, must also fully review mitigation of the impacts from these activities, including a full analysis of the effectiveness of each mitigation measure. NEPA also requires the BLM to: (1) "include appropriate mitigation measures not already included in the proposed action or alternatives," 40 CFR § 1502.14(f); and (2) "include discussions of: . . . Means to mitigate adverse environmental impacts (if not already covered under 1502.14(f))." 40 CFR § 1502.16(h). NEPA regulations define "mitigation" as a function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects." Robertson, 490 U.S. at 353.

B. The need for a detailed analysis of mitigation and its effectiveness is required under NEPA. Brief discussions of mitigation measures is not acceptable—therefore an EIS is required to fully analyze the effectiveness of each proposed mitigation measure.

MITIGATIVE MEASURES

31. Mitigative Measures.

31.1. The BLM failed to include an Alternative that includes mitigative measures. The BLM did not develop and include mitigative measures other than those proposed by Energy Fuels. The BLM did not list the various Energy Fuels mitigative measures and provide an evaluation of the effectiveness of those measures, as required under NEPA. These failures discouraged public input on mitigative measures proposed by Energy Fuels. It discouraged proposed mitigative measures by the public.

Further, this was contrary to the NEPA directive to include appropriate mitigation measures not already included in the proposed action or alternatives and the means to mitigate adverse environmental impacts.

31.2. Above, Commenters provided a number of proposed mitigative measures that should be addressed by the BLM. Commenters request that those measures be included in an EIS that provides an Alternative that identifies and incorporates mitigative measures.

31.3. The proposed measures should be addressed in the context of a full EIS, which will fully and accurately characterize and analyze the environmental impacts of the Proposed Action. Without such an analysis, the BLM and the public cannot fully and accurately propose mitigative measures and analyze the effectiveness of those measures, as required under NEPA.

Commenters reserve the right to supplement these comments upon the receipt of new information.

Thank you for providing the opportunity to comment.

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