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June 1, 2009

Mr. Charles Garlow, Attorney-Advisor
OECA, Air Enforcement Division
U.S. Environmental Protection Agency
1200 Pennsylvania Ave. N.W. – MC2242A
Washington, DC 20460

Dear Mr. Garlow:

Re: Request to Provide Information Pursuant to the Clean Air Act
Denison Mines (USA) Corp.-White Mesa Uranium Mill, Blanding Utah

This is Denison Mines (USA) Corp's. ("Denison's") response to the United States Environmental Protection Agency's ("EPA's") Request For Information dated February 24, 2009. Each of EPA's questions is provided below in italics, followed by Denison's response in regular font.

The individuals responsible for responding to this request are David C. Frydenlund, Vice President Regulatory Affairs and Counsel, Steven D. Landau, Manager, Environmental Affairs and Harold R. Roberts, Executive Vice President, US Operations of Denison.

1. Please list each uranium mill and uranium mill tailings impoundment located in the United States of America that has been, or is currently, owned or operated by Denison or affiliated corporations located in the United States of America. Include the exact location of each uranium mill by map and legal property description:

Denison Response:

Denison owns and operates the White Mesa Uranium Mill (the "Mill") and its tailings impoundments (Cells 2, 3 and 4A), which are located in central San Juan County Utah approximately 6 miles south of the city of Blanding (see Figures 1-1 and 1-2 of the enclosed Reclamation Plan for the Mill). Within San Juan County, the Mill site is located on fee land and mill site claims, covering approximately 5,415 acres, encompassing all or part of Sections 21, 22, 27, 28, 29, 32, and 33 of Township 37S, Range 22E, and Sections 4, 5, 6, 8, 9, and 16 of Township 38S, Range 22E, Salt Lake Base and Meridian (See Figure 1-2 of the enclosed Reclamation Plan). A full legal description of the fee lands comprising the Mill site is contained in Section 3.1 of the enclosed Reclamation Plan.

2. *Please list each uranium in-situ leaching facility located in the United States of America that has been, or is currently, owned or operated by Denison or affiliated corporations. Please include the exact location of each uranium mill by map and legal property description:*

Denison Response:

Denison does not own or operate any uranium in-situ leaching facilities in the United States of America. The location and legal description of the Mill are provided in the response to question 1.

3. *Please provide the following information for each uranium mill and uranium in-situ leaching facility identified in questions 1 and 2.*

a. *A complete description of each uranium mill and uranium in-situ leaching facility's operational status (e.g., permanently shut down, temporarily shut down, standby status, in full or partial operation), method of operation (continuous disposal, phased disposal or other method) and methods by which compliance with the NESHAP standards, specified at 40 C.F.R. § 61.252, is ensured (meeting emission limit in Section 61.252(a) and work practices in (b) and (c)). Include a description of the type of facility (conventional, in-situ leach or combination);*

Denison Response:

The Mill is an operating conventional uranium mill. It has operated on a campaign basis over the years, depending on the availability of ores and market conditions. The Mill has been fully operational, processing conventionally mined uranium/vanadium ores, during the period from April 2008 to May 2009. Denison expects to commence another conventional ore processing campaign in 2010, depending on market conditions and available ores. In the meantime, the Mill will process alternate feed materials, which are uranium-bearing materials other than conventionally mined uranium or uranium/vanadium ores. For the three years prior to this last conventional ore run, the Mill also processed alternate feed materials. Mill staffing is typically reduced for alternate feed runs, but the Mill can nevertheless be considered to be running at full operation while processing either conventional ores or alternate feed materials.

The "method of operations" at the Mill is phased disposal of tailings. Compliance with the NESHAP standards at 40 CFR 61.252(a) is determined annually for existing impoundments (i.e., Cells 2 and 3). The annual Radon emissions for existing impoundments are measured using Large Area Activated Charcoal Canisters in conformance with 40 CFR, Part 61, Appendix B, Method 115, Restrictions to Radon Flux Measurements, (EPA, 2008). These canisters are passive gas adsorption sampling devices used to determine the flux rate of Radon-222 gas from the surface of the tailings material. For impoundments licensed for use after December 15, 1989 (i.e., Cell 4A), Denison employs the work practice standard listed at 40 CFR 61.252(b)(1) in that all tailings impoundments constructed or licensed after that date are lined, are no more than 40 acres in area and no more than two impoundments are operated for tailings disposal at any one time.

b. *A history of operation since 1979, including:*
   i. *the original date of construction of each uranium mill and uranium in-situ leaching facility;*
   ii. *the plan of operation and plans to shut-in or close active operations;*
   iii. *ownership changes; and*
   iv. *whether the uranium mill and uranium in-situ leaching facility is existing, new, or has plans for reactivating any operations that have been curtailed.*

Denison Response:

Original Date of Construction

The Mill is an existing facility. A uranium ore buying station operated at the Mill site from 1977 until the Mill was constructed. Construction of the Mill was initiated in 1979, and operations commenced in 1980 upon the issuance by the United States Nuclear Regulatory Commission ("NRC") of a source material license for the Mill in May 1980.

The Mill's original licensing by NRC contemplated the use of six cells, one of which (Cell 1) is an evaporation facility and is not used for the disposal of tailings. Construction of Cell 1 was completed in June of 1981. Construction of Cell 2 was completed in May 1980. Cell 2 is now full and has been provided with an interim cover as the beginning phase of final closure. Construction of Cell 3 was completed in September 1982. Cell 3 is nearly full but remains in service at the time of this writing.

Since Cells 2 and 3 were constructed prior to December 15, 1989, they are "existing impoundments" within the meaning of 40 CFR 61.251(d), 61.252(a) and 61.254. Cell 1, which was also constructed prior to December 15, 1989 is an evaporation pond and does not accept tailings for disposal. It is therefore not an "existing impoundment" within the meaning of those sections. Construction of Cell 4A was substantially completed on November 30, 1989, but was not licensed for operations until March 1990. Cell 4A is therefore not an "existing impoundment" within the meaning of 40 CFR 61.251(d), 61.252(a) and 61.254. Cell 4A was used briefly for the disposal of raffinate solutions in 1990. The cell had not been used after 1990, and, as a result, damage occurred to the seams in the liner due to thermal stress from years of exposure to direct sunlight. Denison removed the solutions and crystals from Cell 4A in 2006, deposited them in Cell 3 and relined Cell 4A in 2007/2008. Cell 4A was approved for use in 2008 by the Executive Secretary (the "Executive Secretary") of the State of Utah Radiation Control Board, Department of Environmental Quality ("UDEQ").

Cell locations 4, 5 and 6 encompass 80 acres each but, for construction and regulatory purposes, these cell locations will be subdivided into two 40 acre cells within each designated Cell location. Thus, the 40 acre cells are numbered 4A, 4B, 5A, 5B, 6A and 6B. Of these Cells only Cell 4A has been constructed.

Cells 3 and 4A are the tailings impoundments in operation at this time. The design plans and an Environmental Report supporting the construction of Cell 4B have been submitted to and are under review by the Executive Secretary. Cell 4B will not be used for the disposal of tailings

until Cell 3 ceases to be in operation (i.e., until Cell 3 is full and has been fully covered with interim cover as the beginning phase of final closure).

Plan of Operation

The plan of operation is to continue to mill uranium and uranium/vanadium ores and alternate feed materials, as market conditions permit, until all Cells have been constructed and operated to their full capacity. This progression will continue in a phased manner such that only two 40 acre tailings impoundments will be in operation for the disposal of tailings at any one time (with the exception of Cell 3, which has an area of approximately 71 acres and which was in existence and licensed for use prior to December 15, 1989). There are no plans to shut in or close active operations.

Impoundment closure will be performed in accordance with the Mill's approved Reclamation Plan, which complies with the requirements of 10 CFR Part 40, Appendix A. A copy of the Mill's Reclamation Plan is enclosed with this letter. Final closure of tailings cells will begin with placement of interim cover over all of the surface area of the tailings cells. The interim cover will limit the Radon-222 emissions to the ambient air from the cell to 20 pCi/(m^2-sec). Final closure will be completed at the time of Mill decommissioning, once the tailings have been dewatered and settled and are suitable for placement of the final cover.

Ownership Changes

The Mill has had ownership changes with time. The Mill was originally constructed by Energy Fuels Nuclear, Inc. ("EFN") and its affiliates. EFN was the original operator of the Mill. In 1984 Umetco Minerals Corporation an affiliate of Union Carbide Corporation, acquired a majority interest in the Mill and became operator of the Mill. Umetco operated the Mill until 1994 when EFN and its affiliates re-acquired Umetco's interest in the Mill and became the 100% owner and operator of the Mill. In 1995, EFN and its affiliates went into bankruptcy, and the Mill was purchased by International Uranium (USA) Corporation ("IUSA") and its affiliates in May 1997, at which time IUSA became operator of the Mill. In 2006, IUSA changed its name to Denison Mines (USA) Corp. ("Denison"), as a result of a merger between IUSA's parent company, International Uranium Corporation, and another company, Denison Mines Inc. Denison is the current operator of the Mill.

Whether the Mill is Existing, New or has Plans for Reactivating any Operations that have been Curtailed

As stated above, the Mill is an existing facility. During all of the ownership periods described above, there were no instances when activities at the Mill were permanently curtailed, and therefore, there are no planned re-activations of curtailed activities. However, the Mill has operated on a campaign basis over the years, depending on market conditions and available ores, with periods of down time between campaigns.

The Mill produces uranium in the form of U_3O_8 and vanadium, principally in the form of V_2O_5, as a co-product from its uranium/vanadium ores. Historical production activity at the Mill is shown in Table 1 below:

Table 1-Historic Mill Production

Year(s)	Received Ore (Tons)	Production	
		lbs. U_3O_8	lbs. V_2O_5
1977-1983	1,511,544	6,005,721	13,008,155
1984	0	0	0
1985-1990	2,037,209	18,759,338	18,943,167
1991-1994	0	0	0
1995	163,046	1,472,614	0
1996	43,553	661,722	0
1997	1,995	619,193	0
1998	63,296	3,000	0
1999	90,308	652,100	1,512,801
2000-2001	0	0	0
2002	135,724	0	0
2003	36,469	0	0
2004	7,594	0	0
2005	2,399	46,092	0
2006	3,185	230,959	0
2007	76,889	254,442	0
2008	265,228	888,574	1,225,017

c. *The number and size (in acres), dimensions, locations within the facility or plant site, capacity in gallons and lining material of each "existing mill impoundment", as that term is used in 40 C.F.R. Subpart W, and any other waste holding areas such as evaporation or settling ponds.*

Denison Response:

Number of "Existing Impoundments" and any Other Waste Holding Areas such as Evaporation or Settling Ponds

At 40 CFR Subpart W an "existing impoundment" is defined as "any uranium mill tailings impoundment which is licensed to accept additional tailings and is in existence as of December 15, 1989."

In Denison's case only Cells 2 and 3 meet that definition. Cell 2 was in existence and licensed to accept tailings as of December 15, 1989. Cell 2 is currently at capacity and is not authorized to receive additional tailings at this time. Cell 2 is therefore not in operation and is in the beginning stage of final closure. Cell 3 was also in existence and licensed to accept tailings as of December 15, 1989. Cell 3 is currently near capacity but is still authorized and continues to receive tailings. Cell 3 is therefore currently in operation.

Cell 4A was constructed in 1989, with substantial completion on November 30, 1989. However, it was not licensed for use by NRC until March 1, 1990. Cell 4A was therefore not licensed to accept tailings as of December 15, 1989 and is therefore not an "existing impoundment" within

the meaning of 40 CFR 61.251(d), 61.252(a) and 61.254. Cell 4A was re-lined in 2007/2008 and was authorized for use on September 17, 2008 by the Executive Secretary. Cell 4A is currently in use for the receipt of tailings. Copies of NRC's March 1, 1990 approval letter and the Executive Secretary's September 17, 2008 approval letter are enclosed with this letter.

Cell 1 does not accept tailings for disposal and only serves as an evaporation pond. It is therefore not a tailings impoundment. Upon Mill final closure, all of the solutions and any residual crystals in Cell 1, as well as the Cell 1 liner and any contaminated underlay will be disposed of in one of the Mill's active tailings impoundments. As a result, any solutions placed in Cell 1 will not be disposed of in that cell, but will ultimately be disposed of in one of the Mill's tailings impoundments. Upon site closure, Cell 1 will no longer exist.[1]

Cell Dimensions and Capacities

The size (in acres), dimensions and approximate capacity in gallons or tons for each of the "existing impoundments" (i.e., Cells 2 and 3), as well as Cell 1 and Cell 4A are as indicated in Table 2 below.

Table 2- Cell Specifications

Cell Designation	Surface Area (Acres)	Approximate Capacity Cubic Yds	Estimated Capacity Dry Tons or Gallons
Cell 1	55	661,500*	133,600,000 gal*
Cell 2	67	2,015,000	2,337,400 dry tons
Cell 3	71	2,345,000	2,720,200 dry tons
Cell 4A	40	1,600,000	1,856,000 dry tons

* Measured to the freeboard limit.

Cell and Pond Locations

The locations of Cells 1, 2, 3 and 4A are indicated on Figure 3.2-1 of the enclosed Reclamation Plan.

Cell Design (Cells 1, 2, and 3)

The tailings cells and Cell 1 are designed and constructed as below grade facilities. Each cell includes an engineered membrane liner, and a leak detection system. In the case of Cells 1, 2 and 3, the leak detection system is designed to provide an early warning of catastrophic liner failure. In the case of Cell 4A, the leak detection system incorporates the requirements of 40 CFR 264.221(c). Cells 1, 2 and 3 were constructed and approved for use in accordance with NRC requirements at 10 CFR Part 40, Appendix A. Cell 4A was originally constructed and

[1] It should be noted that after the solutions and crystals, liner and any contaminated underlay in Cell 1 have been cleaned up and removed to a tailings impoundment upon final closure of the Mill site, a portion of the area that had previously been Cell 1 may, after placement of a clay liner, be used for the disposal of Mill facilities and contaminated soil from the Mill area. See Sections 3.2.1 and 3.2.2.2 of the enclosed Reclamation Plan.

approved for use in accordance with NRC requirements contained in 10 CFR Part 40, Appendix A and later re-lined and re-approved by the Executive Secretary in accordance with the requirements contained in 10 CFR Part 40, Appendix A and the requirements in 40 CFR 264.221.

The major design elements, including a description of the liner material for Cells 1, 2, 3 and 4A are set out below.

a) Cell 1

Cell 1 is not a tailings impoundment, so it is not an "existing impoundment" within the meaning of 40 CFR 61.251(d), 61.252(a) and 61.254. However, a description of its major design elements is included here for completeness.

1) Cross-valley Dike and East Dike – constructed on the south side of the pond of native granular materials with a 3:1 slope, a 20-foot crest width, and a crest elevation of about 5,620 ft above mean sea level (amsl). A dike of similar design was constructed on the east margin of the pond, which forms a continuous earthen structure with the south dike. The remaining interior slopes are cut-slopes at 3:1 grade.

2) Liner System - including a single 30 mil polyvinyl chloride ("PVC") flexible membrane liner ("FML") constructed of solvent welded seams on a prepared sub-base. Top elevation of the FML liner is 5,618.5 ft amsl on both the south dike and the north cut-slope. A protective soil cover layer was constructed immediately over the FML with a thickness of 12-inches on the cell floor and 18-inches on the interior sideslope.

3) Crushed Sandstone Underlay – immediately below the FML a nominal 6-inch thick layer of crushed sandstone was prepared and rolled smooth as an FML sub-base layer. Beneath this underlay, native sandstone and other foundation materials were graded to drain to a single low point near the upstream toe of the south cross-valley dike. Inside this layer, an east-west oriented pipe was installed to gather fluids at the upstream toe of the cross-valley dike. This pipe serves as the Cell's leak detection system.

b) Cell 2

1) Cross-valley Dike – constructed at the south margin of Cell 2 of native granular materials with a 3:1 slope, a 20-foot crest width, and crest elevation of about 5,615 ft amsl. The east and west interior slopes consist of cut-slopes with a 3:1 grade. The Cell 1 south dike forms the north margin of Cell 2, with a crest elevation of 5,620 ft amsl.

2) Liner System – includes a single 30 mil PVC FML constructed of solvent welded seams on a prepared sub-base, and overlain by a slimes drain collection system. Top elevation of the FML in Cell 2 is 5,615.0 ft and 5,613.5 ft amsl on the north and south dikes, respectively. The Cell 2 FML is independent of all other cell FMLs. Immediately above the FML, a nominal 12-inch (cell floor) to 18-inch (inside sideslope) soil protective blanket was constructed of native sands from on-site excavated soils.

3) Crushed Sandstone Underlay – immediately below the FML a nominal 6-inch thick layer of crushed sandstone was prepared and rolled smooth as an FML sub-base layer. Beneath this underlay, native sandstone and other foundation materials were graded to drain to a single low point near the upstream toe of the south cross-valley dike. Inside this layer, an east-west oriented pipe was installed to gather fluids at the upstream toe of

the cross-valley dike. This pipe serves as the Cell's leak detection system.

4) Slimes Drain Collection System immediately above the FML a nominal 12-inch thick protective blanket layer was constructed of native silty-sandy soil. On top of this protective blanket, a network of 1.5-inch PVC perforated pipe laterals was installed on a grid spacing interval of about 50-feet. These pipe laterals gravity drain to a 3-inch diameter perforated PVC collector pipe which also drains toward the south dike and is accessed from the ground surface via a 24-inch diameter, vertical non-perforated high density polyethylene ("HDPE") access pipe. Each run of lateral drainpipe and collector piping was covered with a 12 to 18-inch thick berm of native granular filter material. At cell closure, leachate head inside the pipe network will be removed via a submersible pump installed inside the 24-inch diameter HDPE access pipe.

c) Cell 3

1) Cross-valley Dike – constructed at the south margin of Cell 3 of native granular materials with a 3:1 slope, a 20-foot crest width, and a crest elevation of 5,610 ft amsl. The east and west interior slopes consist of cut-slopes with a 3:1 grade. The Cell 2 south dike forms the north margin of Cell 3, with a crest elevation of 5,615 ft amsl.

2) Liner System – includes a single 30 mil PVC FML constructed of solvent welded seams on a prepared sub-base, and overlain by a slimes drain collection system. Top elevation of the FML in Cell 3 is 5,613.5 ft and 5,608.5 ft amsl on the north and south dikes, respectively. Said Cell 3 FML is independent of all other cell FMLs.

3) Crushed Sandstone Underlay – immediately below the FML a nominal 6-inch thick layer of crushed sandstone was prepared and rolled smooth as an FML sub-base layer. Beneath this underlay, native sandstone and other foundation materials were graded to drain to a single low point near the upstream toe of the south cross-valley dike. Inside this layer, an east-west oriented pipe was installed to gather fluids at the upstream toe of the cross-valley dike. This pipe serves as the Cell's leak detection system.

4) Slimes Drain Collection Layer and System – immediately above the FML, a nominal 12-inch (cell floor) to 18-inch (inside sideslope) soil protective blanket was constructed of native sands from on-site excavated soils (70%) and dewatered and cyclone separated tailings sands from the mill (30%). On top of this protective blanket, a network of 3-inch PVC perforated pipe laterals was installed on approximately 50-foot centers. This pipe network gravity drains to a 3-inch perforated PVC collector pipe which also drains toward the south dike, where it is accessed from the ground surface by a 12-inch diameter, inclined HDPE access pipe. Each run of the 3-inch lateral drainpipe and collector pipe was covered with a 12 to 18-inch thick berm of native granular filter media. At cell closure, leachate head inside the pipe network will be removed via a submersible pump installed inside the 12-inch diameter inclined access pipe.

d) Cell 4A

Cell 4A was initially designed and constructed in 1989 and placed into operation in March 1990, in accordance with the requirements of 10 CFR Part 40 Appendix A and was approved by NRC. Cell 4A is not an "existing impoundment" within the meaning of 40 CFR 61.251(d), 61.252(a) and 61.254, because it was not licensed for use until March 1990. However, a description of its

major design elements is included here for completeness.

Unlike Cells 1, 2 and 3, Cell 4A was originally designed with a one-foot clay liner beneath the HDPE liner and leak detection system. However, the HDPE liner in Cell 4A experienced seam degradation and damage, as it was only used for a short period of time in 1990 for the disposal of raffinates and had not been used since 1990. In 2001, the calculated flow rate in the leak detection system for Cell 4A exceeded the one gallon per minute maximum permitted flow rate set out in condition 11.3(d) of the Mill's NRC Source Material License No. SUA-1358, and notice was provided to NRC and procedures were followed as required under that license condition. A copy of the Mill's Source Material License No. SUA-1358 (the "Source Material License") is enclosed with this letter.

The raffinates, resulting crystals, and radioactive solids have been removed from Cell 4A, and Denison has re-lined the cell. The design and construction of the Cell 4A re-lining was approved by the Executive Secretary under Part I.H.15 of the Mill's State of Utah Ground Water Discharge Permit No. UGW370004 (the "Ground Water Discharge Permit"). A copy of the Ground Water Discharge Permit is enclosed with this letter.

The major design elements, including a description of the liner material for Cell 4A are set out below.

1) Dikes – consisting of existing earthen embankments of compacted soil, constructed by the Mill operator in 1989, and composed of four dikes, each including a 15-foot wide road at the top (minimum). On the north, east, and south margins these dikes have slopes of 3H to 1V. The west dike has a slope of 2H to 1V. Width of these dikes varies. Each has a minimum crest width of at least 15 feet to support an access road. Base width also varies from 89-feet on the east dike (with no exterior embankment), to 211-feet at the west dike.

2) Foundation – including existing subgrade soils over bedrock materials. Foundation preparation included excavation and removal of contaminated soils, compaction of imported soils to a maximum dry density of 90%. The floor of Cell 4A has an average slope of 1% that grades from the northeast to the southwest corners.

3) Tailings Capacity – the floor and inside slopes of Cell 4A encompass about 40 acres and have a maximum capacity of about 1.6 million cubic yards of tailings material storage (as measured below the required 3-foot freeboard).

4) Liner and Leak Detection Systems – including the following layers, in descending order:

   a) Primary FML – consisting of an impermeable 60 ml HDPE membrane that extends across both the entire cell floor and the inside side-slopes, and is anchored in a trench at the top of the dikes on all four sides. The primary FML will be in direct physical contact with the tailings material over most of the Cell 4A floor area. In other locations, the primary FML will be in contact with the slimes drain collection system (discussed below).

   b) Leak Detection System – includes a permeable HDPE geonet fabric that extends across the entire area under the primary FML in Cell 4A, and drains to a leak detection sump in the southwest corner. Access to the leak detection sump is via an

18-inch inside diameter (ID) HDPE pipe placed down the inside slope, located between the primary and secondary FML liners. At its base this pipe is surrounded with a gravel filter set in the leak detection sump, having dimensions of 10 feet by 10 feet by 2 feet deep. In turn, the gravel filter layer is enclosed in an envelope of geotextile fabric. The purpose of both the gravel and geotextile fabric is to serve as a filter.

c) Secondary FML – consisting of an impermeable 60-mil HDPE membrane found immediately below the leak detection geonet. This second FML also extends across the entire Cell 4A floor, up the inside side-slopes and is also anchored in a trench at the top of all four dikes.

d) Geosynthetic Clay Liner – consisting of a manufactured geosynthetic clay liner (GCL) composed of 0.2-inch of low permeability bentonite clay centered and stitched between two layers of geotextile. Prior to disposal of any wastewater in Cell 4A, the Permittee demonstrated that the GCL has achieved a moisture content of at least 140% by weight.

5) Slimes Drain Collection System – including a two-part system of strip drains and perforated collection pipes both installed immediately above the primary FML, as follows:

a) Horizontal Strip Drain System – is installed in a herringbone pattern across the floor of Cell 4A that drains to a "backbone" of perforated collection pipes. These strip drains are made of a prefabricated two-part geo-composite drain material (solid polymer drainage strip) core surrounded by an envelope of non-woven geotextile filter fabric. The strip drains are placed immediately over the primary FML on 50-foot centers, where they conduct fluids downgradient in a southwesterly direction to a physical and hydraulic connection to the perforated slimes drain collection pipe. A series of continuous sand bags, filled with filter sand cover the strip drains. The sand bags are composed of a woven polyester fabric filled with well graded filter sand to protect the drainage system from plugging.

b) Horizontal Slimes Drain Collection Pipe System – includes a "backbone" piping system of 4-inch ID Schedule 40 perforated PVC slimes drain collection (SDC) pipe found at the downgradient end of the strip drain lines. This pipe is in turn overlain by a berm of gravel that runs the entire diagonal length of the cell, surrounded by a geotextile fabric cushion in immediate contact with the primary FML. In turn, the gravel is overlain by a layer of non-woven geotextile to serve as an additional filter material. This perforated collection pipe serves as the "backbone" to the slimes drain system and runs from the far northeast corner downhill to the far southwest corner of Cell 4A where it joins the slimes drain access pipe.

c) Slimes Drain Access Pipe – consisting of an 18-inch ID Schedule 40 PVC pipe placed down the inside slope of Cell 4A at the southwest corner, above the primary FML. This pipe then merges with another horizontal pipe of equivalent diameter and material, where it is enveloped by gravel and woven geotextile that serves as a cushion to protect the primary FML. A reducer connects the horizontal 18-inch pipe with the 4-inch SDC pipe. At some future time, a pump will be set in this 18-inch pipe and used to remove tailings wastewaters for purposes of de-watering the tailings

cell.

6) North Dike Splash Pads – three 20-foot wide splash pads have been constructed on the north dike to protect the primary FML from abrasion and scouring by tailings slurry. These pads consist of an extra layer of 60 mil HDPE membrane that was installed in the anchor trench and placed down the inside slope of Cell 4A, from the top of the dike, under the inlet pipe, and down the inside slope to a point 5-feet beyond the toe of the slope.

7) Emergency Spillway – a concrete lined spillway was constructed near the western corner of the north dike to allow emergency runoff from Cell 3 into Cell 4A. This spillway was limited to a 6-inch reinforced concrete slab set directly over the primary FML in a 4-foot deep trapezoidal channel. No other spillway or overflow structure was constructed at Cell 4A. All stormwater runoff and tailings wastewaters not retained in Cells 1, 2, and 3, will be managed and contained in Cell 4A, including the Probable Maximum Precipitation and flood event.

d. For each existing mill impoundment, evaporation pond, and settling pond indentified in response to request 3.c., identify the date(s) each was:

i. Constructed;
ii. Used for the continued placement of new tailings;
iii. Placed on "standby status; and
iv. Closed, and during what periods they were operational.

Denison Response:

The information requested is provided in Table 3 below. For completeness, we have also included information for Cell 1, which is an evaporation pond and is not a tailings impoundment, and for Cell 4A, which is not an "existing impoundment":

Table 3-Cell Construction and Operating Periods

Cell Designation	Date of Final Construction	Tailings Placement Period	Period of Standby Status	Date closed
Cell 1	1981	Used as an evaporative pond from 1981 to the present. Tailings have not been disposed of in Cell 1	None	NA
Cell 2	1980	1980-Mid 1980's	1984	Final Closure Process began in 2008[2]
Cell 3	1982	1982-Present[3]	1984, 1991-1994, 2000-2001	NA

[2] Cell 2 no longer receives tailings but has been provided with an interim cover as the first phase of the final closure process.

[3] Cell 3 was used for evaporative purposes until the solids capacity in Cell 2 had been utilized, at which time tailings solids were discharged into Cell 3.

Cell Designation	Date of Final Construction	Tailings Placement Period	Period of Standby Status	Date closed
Cell 4A	1989	1990	1991 Until re-lining in 2008	NA
Cell 4A Re-lined	2008	2008 to present	None	NA

4. *For each existing mill impoundment, evaporation pond, and settling pond identified in response to 3.d. above*
   a. *identify whether the "continuous disposal method", as defined in 40 C.F.R. Section 61.252(b)(2), is used;*

Denison Response:

The Mill has never used the "continuous disposal method" for tailings disposal.

   b. *describe the mechanical methods used to dewater tailings, the process used to dispose of tailings, the precise location of any and all disposal areas used for dewatered tailings, and the method of covering such tailings;*

Denison Response:

The Mill has never used the "continuous disposal method" for tailings disposal.

   c. *Provide all disposal records maintained by you, including any records that reflect the manner of disposal and method of covering such tailings;*

Denison Response:

Denison does not maintain active disposal records for typical production scenarios. Instead, the tailings resulting from the production periods described in answer 3.b. (Table 1) were disposed of into the tailings impoundments that were operating during those periods, as described in answer 3.d. (Table 3).

The Mill utilizes local soil as interim cover for tailings sands that are exposed above the pond solution level. These soils have natural background levels of activity and are deposited uniformly over the area of concern in order to reduce radon emanation at tailings "beach" areas. When a Cell ceases operations and begins final closure, such interim cover is extendaed over the entire surface area of the Cell. Such interim cover is the "minimum three feet of random fill (platform fill)" required under the Mill's Reclamation Plan. A copy of the Mill's Reclamation Plan is enclosed with this letter.

Annual testing in accordance with 40 CFR 61, Subpart W has demonstrated the success of this effort in maintaining radon emissions below the 20 p/Ci/m^2-s standard.

d. *provide all emissions data collected by you, or anyone working on your behalf, that show that emissions from disposed materials comply with the requirements in 40 C.F.R. § 40 61.252(a);*

Denison Response:

The results of the radon emission tests (i.e., annual NESHAPs Reports) conducted since the implementation of testing in 1992 and filed with EPA annually are enclosed with this letter.

e. *provide information to demonstrate and describe the method of complying with the requirement that there be no more than 10 acres uncovered at any one time, as specified in 40 C.F.R 40, Section 61.252(b)(2);*

Denison Response:

The Mill has never used the "continuous disposal method" for tailings disposal. Therefore, the 10-acre requirement set out in 40 CFR 61.252(b)(2) is inapplicable to the Mill at this time.

f. *provide proof that your activities comport with the requirements of EPA regulations found at 40 C.F.R. § 192.32(a), including the identification of pertinent documents and correspondence from the Nuclear Regulatory Commission;*

Denison Response:

Congress created Title II of the Uranium Mill Tailings Radiation Control Act of 1978 ("UMTRCA") to regulate the management and disposition of uranium mill tailings and related wastes at active mill tailings sites. UMTRCA amended the Atomic Energy Act of 1954 ("AEA") by adding the definition of 11e.(2) byproduct material[4], by adding Section 83 of the AEA[5], which requires that mill tailings sites must be transferred to the United States Department of Energy (or a willing State) for long-term custody and maintenance, and by adding Sections 84[6] and 275[7] of the AEA, which give NRC broad authority to regulate the radiological and non-radiological aspects of mill tailings sites, in accordance with general standards promulgated by EPA and specific regulatory requirements established by NRC.

In 1980, NRC promulgated its 10 CFR Part 40, Appendix A Criteria[8], based upon the findings in its Final Generic Environmental Impact Statement On Uranium Milling set forth in NUREG-0706.[9]

In 1983, EPA issued its general standards for active uranium mill sites at 40 CFR 192.32(a).[10] In 1985, NRC amended its earlier 1980 Criteria to conform them to EPA's generally applicable standards, [11] although many of the Appendix A Criteria remained unchanged.

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[4] *See* 42 U.S.C. 2014.
[5] *See* 42 U.S.C. 2113.
[6] *See* 42 U.S.C. 2114.
[7] *See* 42 U.S.C. 2022.
[8] 45 Fed. Reg. 65,521 (1980).
[9] NUREG-0706, Final Generic Environmental Impact Statement on Uranium Milling, (September, 1980).

NRC determined that the Mill was operating in compliance with the requirements of 10 CFR Part 40, Appendix A, and hence in compliance with the standards established in 40 CFR 192.32(a) (as implemented by NRC), by virtue of renewing the Mill's Source Material License in 1997. A copy of the Mill's Source Material License is enclosed with this letter.

The State of Utah became an Agreement State for the regulation of uranium mills under Section 274 of the AEA in August of 2004. Section 274(d) of the AEA provides that NRC shall only enter into an Agreement with a State under Section 274, if among other things NRC finds that the State program is in accordance with the requirements of subsection 274(o) of the AEA. Subsection 274(o) provides that in licensing uranium mill's the State shall require "compliance with standards which shall be adopted by the State for the protection of the public health, safety, and the environment from hazards associated with such material which are equivalent, to the extent practicable, or more stringent than, standards adopted and enforced by the Commission for the same purpose, *including requirements and standards promulgated by the Commission and the Administrator of the Environmental Protection Agency pursuant to sections 83, 84, and 275,*" [emphasis added].

Accordingly, upon granting the State of Utah Agreement State status for uranium mills in August 2004, NRC determined that the State of Utah's regulatory program contained standards equivalent to or more stringent than the standards established by NRC (implementing standards set by EPA under 40 CFR 192.32).

Upon the State of Utah becoming an Agreement State for uranium mills in 2004, the Mill's Source Material License was replaced by the Mill's Radioactive Materials License and the Mill's Ground Water Discharge Permit, copies of which are enclosed with this letter. The Mill's Radioactive Materials License was up for renewal in February 2007, and is in the process of timely renewal. The Ground Water Discharge Permit is up for renewal in March 2010. The Mill's Radioactive Materials License and Ground Water Discharge Permit authorize all Mill activities, including the disposal of tailings in the operating tailings impoundments and the use of Cell 1 as an evaporation pond.

Ongoing compliance with the standards set by NRC (implementing EPA's standards in 40 CFR 192.32) is therefore determined by UDEQ through its administration of the Mill's Radioactive Materials License and Ground Water Discharge Permit and through the administration of the NESHAPS Program at the Mill. The State's continued authorization of Mill activities in accordance with its Radioactive Materials License and Ground Water Discharge Permit is therefore proof that the Mill's activities comport with the requirements of EPA regulations found at 40 CFR 192.32(a), as implemented by NRC.

However, even though compliance with the standards set out in 40 CFR 192.32(a), as implemented by NRC, are determined by UDEQ, the following discussion will address the various requirements of 40 CFR 192.32(a):

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[10] 48 Fed. Reg. 45,926 (1983) (codified at 40 CFR 192.30-.43).
[11] 50 Fed. Reg. 41,852 (1985).

(a)(1) Surface impoundments (except for an existing portion) subject to this subpart must be designed, constructed, and installed in such manner as to conform to the requirements of §264.221 of this chapter, except that at sites where the annual precipitation falling on the impoundment and any drainage area contributing surface runoff to the impoundment is less than the annual evaporation from the impoundment, the requirements of §264.228(a)(2)(iii)(E) referenced in §264.221 do not apply.

Cells 2 and 3 were constructed prior to January 1, 1983, the date of promulgation of 40 CFR 192.32. Cell 1 is an evaporation pond and is not a tailings impoundment, and in any event was constructed prior to January 1, 1983. Nevertheless, Cells 1, 2 and 3 each comply with the requirements of 40 CFR 264.221(a). The major design elements for Cells 1, 2 and 3 are set out in the responses to question 3.c. above, and demonstrate that:

- each Cell has a liner that was designed, constructed, and installed to prevent any migration of wastes out of the impoundment or pond to the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the impoundment or pond, as required by 40 CFR 264.221(a);
- the PVC liner was constructed of materials that can prevent wastes from migrating into the liner during the active life of the facility, as required by 40 CFR 264.221(a);
- the PVC liner was constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation, as required by 40 CFR 264.221(b), and all as determined by NRC in its review and approval of the construction of the cells;
- each Cell has a liner that was placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift, as required by 40 CFR 264.221(a)(2); and
- each Cell has a liner that was installed to cover all surrounding earth likely to be in contact with the waste or leachate, as required by 40 CFR 264.221(a)(3).

The foregoing standards set out in 40 CFR 264.221(a) were incorporated, almost word for word, by NRC in Criteria 5A(1) and 5A(2) of 10 CFR Part 40, Appendix A.

Cell 4A was constructed after January 1, 1983, and relined in 2007/2008. The original construction complied with the requirements of 10 CFR Part 40, Appendix A, as determined by NRC in approving that cell for use. Because Cell 4A was originally constructed prior to January 29, 1992, the original liner design for Cell 4A did not follow all of the standards set out in 40 CFR 264.221(c). However, as the original liner construction was replaced, the discussion below relates to Cell 4A in its current form, which was approved by the Executive Secretary and which complies with all of the standards set out in 40 CFR 264.221 as well as the standards set out in 10 CFR Part 40, Appendix A. The major design elements for Cell 4A are set out in the responses to question 3.c. above, and demonstrate that:

- Cell 4A has two or more liners and a leachate collection and removal system between such liners, as required by 40 CFR 264.221(c);
- The top liner is 60 ml HDPE and has been designed and constructed of materials to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period, as required by 40 CFR 264.221(c)(1)(i)(A);
- Cell 4A has a composite bottom liner, consisting of at least two components. The upper component is 60 ml HDPE and is designed and constructed of materials to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component is a geoclay liner that is designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur, as required by 40 CFR 264.221(c)(1)(i)(B);
- The liners comply with the criteria discussed above for Cells 1, 2 and 3, as required by 40 CFR 264.221(c)(1)(ii);
- The leachate collection and removal system between the liners and immediately above the bottom composite liner is also a leak detection system. This leak detection system is capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practical time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure period, as required by 40 CFR 264.221(c)(2);
- The Ground Water Discharge Permit requires that the operator shall collect and remove pumpable liquids in the sumps to minimize the head on the bottom liner (see Parts I.D.6(a) and (b) of the Ground Water Discharge Permit, a copy of which is enclosed with this letter), as required by 40 CFR 264.221(c)(3);
- The leak detection system is located completely above the seasonal high water table (which is located at least 40 feet below the bottom of the cells), as required by 40 CFR 264.221(c)(4); and
- The design and construction of the new liner system were approved by the Executive Secretary, as contemplated by 40 CFR 264.221(d).

Cells 2, 3 and 4A as well as Cell 1 have each been designed, constructed, maintained, and operated to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment and human error, as required by 40 CFR 264.221(g). Part I.D.3(c) of the Ground Water Discharge Permit prohibits placement of tailings into Cells 2, 3 and 4A above the flexible membrane liner in those cells. The Ground Water Discharge Permit and the Radioactive Materials License also set freeboard limits for solutions in all cells that take into account wind and wave action and rainfall storm events (see Parts I.D.2 and I.D.6(d) of the Ground Water Discharge Permit and condition 10.3 of the Mill's Radioactive Materials License).

The dikes of Cells 2, 3 and 4A as well as Cell 1 are designed, constructed, and maintained with sufficient structural integrity to prevent massive failure of the dikes, even without presuming that the liner system will function without leakage during the active life of the unit, as required by 40 CFR 264.221(h). In addition to the initial approval of the dikes by the NRC, the dikes are inspected every five years by the State Engineer.

The Ground Water Discharge Permit and Radioactive Materials License specify all design and operating practices that are necessary to ensure that the foregoing requirements are satisfied, as required by 40 CFR 264.221(i).

(2) Uranium byproduct materials shall be managed so as to conform to the ground water protection standard in §264.92 of this chapter, except that for the purposes of this subpart:

(i) To the list of hazardous constituents referenced in §264.93 of this chapter are added the elements molybdenum and uranium;

(ii) To the concentration limits provided in Table 1 of §264.94 of this chapter are added the radioactivity limits in Table A of this subpart;

(iii) Detection monitoring programs required under §264.98 to establish the standards required under §264.92 shall be completed within one (1) year of promulgation;

(iv) The regulatory agency may establish alternate concentration limits (to be satisfied at the point of compliance specified under §264.95) under the criteria of §264.94(b), provided that, after considering practical corrective actions, these limits are as low as reasonably achievable, and that, in any case, the standards of §264.94(a) are satisfied at all points at a greater distance than 500 meters from the edge of the disposal area and/or outside the site boundary, and

(v) The functions and responsibilities designated in Part 264 of this chapter as those of the "Regional Administrator" with respect to "facility permits" shall be carried out by the regulatory agency, except that exemptions of hazardous constituents under §264.93(b) and (c) of this chapter and alternate concentration limits established under §264.94(b) and (c) of this chapter (except as otherwise provided in §192.32(a)(2)(iv)) shall not be effective until EPA has concurred therein.

NRC determined compliance with the foregoing requirements by issuing the Mill's original Source Material License, as amended from time to time. Upon the State of Utah becoming an Agreement State, NRC determined that the State's groundwater protection regulations are equivalent or stricter than the standards set by 40 CFR 264.92, as implemented by NRC. The State enforces compliance with its groundwater protection regulations through the Mill's Ground Water Discharge Permit, a copy of which is enclosed with this letter. The Mill has not applied for any alternate concentration limits at its points of compliance.

(3)(i) Uranium mill tailings piles or impoundments that are nonoperational and subject to a license by the Nuclear Regulatory Commission or an Agreement State shall limit releases of radon-222 by emplacing a permanent radon barrier. This permanent radon barrier shall be constructed as expeditiously as practicable considering technological feasibility (including factors beyond the control of the licensee) after the pile or impoundment ceases to be operational. Such control shall be carried out in accordance with a written tailings closure plan (radon) to be incorporated by the Nuclear Regulatory Commission or Agreement State into individual site licenses.

(ii) The Nuclear Regulatory Commission or Agreement State may approve a licensee's request to extend the time for performance of milestones if, after providing an opportunity for public participation, the Nuclear Regulatory Commission or Agreement State finds that compliance with the 20 pCi/m^2-s flux standard has been demonstrated using a method approved by the NRC, in the manner required in 192.32(a)(4)(i). Only under these circumstances and during the period of the extension must compliance with the 20 pCi/m^2-s flux standard be demonstrated each year.

(iii) The Nuclear Regulatory Commission or Agreement State may extend the final compliance date for emplacement of the permanent radon barrier, or relevant milestone, based upon cost if the new date is established after a finding by the Nuclear Regulatory Commission or Agreement State, after providing an opportunity for public participation, that the licensee is making good faith efforts to emplace a permanent radon barrier; the delay is consistent with the definition of "available technology" in 192.31(m); and the delay will not result in radon releases that are determined to result in significant incremental risk to the public health.

(iv) The Nuclear Regulatory Commission or Agreement State may, in response to a request from a licensee, authorize by license or license amendment a portion of the site to remain accessible during the closure process to accept uranium byproduct material as defined in section 11(e)(2) of the Atomic Energy Act, 42 U.S.C. 2014(e)(2), or to accept materials similar to the physical, chemical and radiological characteristics of the in situ uranium mill tailings and associated wastes, from other sources. No such authorization may be used as a means for delaying or otherwise impeding emplacement of the permanent radon barrier over the remainder of the pile or impoundment in a manner that will achieve compliance with the 20 pCi/m^2-s flux standard, averaged over the entire pile or impoundment.

(v) the Nuclear Regulatory Commission or Agreement State may, in response to a request from a licensee, authorize by license or license amendment a portion of a pile or impoundment to remain accessible after emplacement of a permanent radon barrier to accept uranium byproduct material as defined in section 11(e)(2) of the Atomic Energy Act, 42 U.S.C. 2014(e)(2), if compliance with the 20 pCi/m^2-s flux standard of 192.32(b)(1)(ii) is demonstrated by the licensee's monitoring conducted in a manner consistent with 192.32(a)(4)(i). Such authorization may be provided only if the Nuclear Regulatory Commission or Agreement State makes a finding, constituting final agency action and after providing an opportunity for public participation, that the site will continue to achieve the 20 pCi/m^2-s flux standard when averaged over the entire impoundment.

Tailings Cell 2 is the only non-operational tailings impoundment at the Mill. It began the first phase of final closure in 2008 with the extension of interim cover over all of its surface area. Tailings had not been deposited into Cell 2 for several years prior to 2008. However, a small area of the Cell remained open to receive Mill site trash and other wastes, as permitted by condition 10.4 of the Mill's Radioactive Materials License. That small area was closed and covered with interim fill in 2008.

Since 1992, however, annual NESHAPs monitoring of Cell 2 has taken place, which has indicated that, with a few exceptions, the Cell has been in compliance with the 20 pCi/m^2-s radon-222 emission standard when averaged over the entire impoundment. The NESHAPs Report for 2008, a copy of which is enclosed with this letter, indicates that the interim cover on Cell 2 is sufficient to maintain radon-222 emissions to below the 20 pCi/m^2-s standard.

Final cover will be placed on Cell 2 in accordance with the Mill's Reclamation Plan, once the tailings have been dewatered and settled. A copy of the Mill's Reclamation Plan is enclosed with this letter. It is expected to take several years before the final cover can be placed on the Cell. In the meantime, the interim cover will ensure that the radon emission standard is satisfied.

(4)(i) Upon emplacement of the permanent radon barrier pursuant to 40 CFR 192.32(a)(3), the licensee shall conduct appropriate monitoring and analysis of the radon-222 releases to demonstrate that the design of the permanent radon barrier is effective in limiting releases of radon-222 to a level not exceeding 20 pCi/m^2-s as required by 40 CFR 192.32(b)(1)(ii). this monitoring shall be conducted using the procedures described in 40 CFR part 61, Appendix B, Method 115, or any other measurement method proposed by a licensee that the Nuclear Regulatory Commission or Agreement State approves as being at least as effective as EPA Method 115 in demonstrating the effectiveness of the permanent radon barrier in achieving compliance with the 20 pCi/m^2-s flux standard.

The 20 pCi/m^2-s radon-222 standard is being satisfied with the interim cover alone. There is no question that the final cover, which will include the addition of several additional feet of cover, will also comply with that standard. All testing has been and will continue to be performed by the 40 CFR Part 61, Appendix B, Method 115.

(4)(ii)When phased emplacement of the permanent radon barrier is included in the applicable tailings closure plan (radon), then radon flux monitoring required under §192.32(a)(4)(i) shall be conducted, however the licensee shall be allowed to conduct such monitoring for each portion of the pile or impoundment on which the radon barrier has been emplaced by conducting flux monitoring on the closed portion.

Radon flux monitoring is performed on Cells 2 and 3 annually in accordance with 40 CFR Part 61, Appendix B, Method 115 and 192.32(a)(4)(ii).

(5) Uranium byproduct materials shall be managed so as to conform to the provisions of:

(i) Part 190 of this chapter, "Environmental Radiation Protection Standards for Nuclear Power Operations"

40 CFR 190.10(a) provides that operations from facilities such as the Mill shall be conducted in such a manner as to provide reasonable assurance that: "The annual dose equivalent does not exceed 25 millirems to the whole body, 75 millirems to the thyroid, and 25 millirems to any other organ of any member of the public as the result of planned discharges of radioactive materials, radon and its daughters excepted, to the general environment from uranium fuel cycle operations and to radiation from these operations."

The Mill has demonstrated compliance with this requirement originally using NRC's MILDOS code for estimating environmental radiation doses for uranium recovery operations (Strenge and Bender 1981) and later by use of the updated MILDOS AREA code (Argonne 1998). This analysis was most recently performed using the MILDOS AREA code in 2007 and submitted to UDEQ in support of the Mill's 2007 Radioactive Materials License Renewal Application. A copy of that MILDOS AREA analysis is enclosed with this letter.

The analysis under both the MILDOS and MILDOS AREA codes assumed the Mill to be processing high grade Arizona Strip ores at full capacity (which has yet to be achieved in practice over an entire year), and calculated the concentrations of radioactive effluents at individual receptor locations around the Mill, including at the location of the member of the public most likely to receive the highest dose from Mill operations. The modeling indicated that even with these very conservative assumptions the dose to any member of the public did not come close to exceeding the standards set out in 40 CFR 190.10(a).

(ii) Part 440 of this chapter, "Ore Mining and Dressing Point Source Category: Effluent Limitations Guidelines and New Source Performance Standards, Subpart C, Uranium, Radium, and Vanadium Ores Subcategory."

The Mill is designed not to discharge any pollutants to ground water. The Mill's Ground Water Discharge Permit is intended to protect against any potential discharges to ground water. The Mill is also designed not to discharge any process wastewater to navigable waters. There are no navigable waters in the vicinity of the Mill that could be impacted by Mill operations.

(6) The regulatory agency, in conformity with Federal Radiation protection Guidance (FR, May 18, 1960, pgs. 4402-4403), shall make every effort to maintain radiation doses from radon emissions from surface impoundments of uranium byproduct materials as far below the Federal Radiation Protection Guides as is practicable at each licensed site.

The Mill is required by NRC Regulatory Guide 8.31 and Utah Administrative Code R313-15-101(2) to employ the As Low As is Reasonably Achievable ("ALARA") concept to all Mill operations in order to maintain doses from radiation to Mill workers and members of the public as low as reasonably achievable. This includes maintaining radiation doses from radon emissions from surface impoundments of uranium byproduct materials as far below the Federal Radiation Protection Guides as is practicable.

The Mill's success in its efforts to keep radon emissions from its tailings impoundments as low as reasonably achievable is evidenced by its recent NESHAPs results for 2008, which indicate that the average radon-222 flux for Cells 2 and 3 were 3.9 and 3.1 pCi/m^2-s, respectively, well below the 20 pCi/m^2-s standard.

g. *Provide a copy of all construction and modification applications required by 40 C.F.R. §61.07, a copy of all notifications of startup pursuant to §61.09, and a copy of any approvals issued pursuant to §61.08 or any state authority, including the identification of the persons or entities by whom these approvals were issued (state or federal officials).*

Denison Response:

The Approval Order (DAQE-AN0112050008-08) issued by the State of Utah pertaining to air emissions at the Mill is enclosed with this letter. Also, enclosed is a notice pursuant to Condition 9 of that Order which pertains to the requirements of 40 CFR 61.09. Due to changes in operatorship of the Mill over the years and other factors, Denison has not been able to locate all potentially relevant files at this time. Denison will continue to search for files and will provide copies of any other construction and modification applications and notifications under 40 CFR 61.08 or 61.09 that it is able to locate.

h. *provide copies of any permits that have been applied for and/or received under the Clean Air Act;*

Denison Response:

The Approval Order (DAQE-AN0112050008-08) issued by the State of Utah pertaining to air emissions at the Mill is enclosed with this letter.

i. *provide copies of any licenses or license applications for construction or operation issued by or filed with the NRC;*

Denison Response:

A copy of the Mill's Source Material License issued by the NRC is enclosed with this letter. As discussed in the response to question 4.f. above, the Source Material license was replaced by State of Utah Radioactive Materials License UT 1900479 and State of Utah Ground Water Discharge Permit No. UGW370004, copies of which are enclosed with this letter.

j. *provide copies of any licenses issued by states under state authority;*

Denison Response:

State of Utah Radioactive Materials License UT 1900479 and State of Utah Ground Water Discharge Permit No. UGW370004 are enclosed with this letter. Also enclosed with this letter is a copy of the Mill's air Approval Order (DAQE – AN0112050008-08).

k. *provide current license status, including an indication whether and when any license modifications are planned or have been agreed to;*

Denison Response:

<u>Radioactive Materials License</u>

The Mills State of Utah Radioactive Materials License is currently active. A license renewal application (and Environmental Report supporting the license renewal application) was submitted to UDEQ on February 28, 2007. The application is under "timely renewal" and, while the renewed License may include modifications, no agreements have been made nor has a specific time for renewal been specified. Specific modification of the License to accommodate

different activities or modifications to the facility were not requested as an element of the renewal application.

Subsequent to the license renewal application, Denison has made two requests to UDEQ for amendments to the Mill's Radioactive Materials License:

- Radioactive Materials License conditions 10.4 and 10.5 currently authorize the Mill to dispose of site-generated non-tailings waste ("Mill Waste") into a designated area of Cell 2 and 11e.(2) byproduct material from in situ leach uranium recovery facilities ("Byproduct Material") into Cell 3, respectively. The designated area for disposal of Mill Waste in Cell 2 has now reached capacity and Cell 2 is no longer operational. Similarly, the remaining disposal area for Byproduct Material in Cell 3 is limited. By a letter dated October 30, 2008, Denison requested an amendment to its Radioactive Materials License that would authorize disposal of Byproduct Material and Mill Waste into other tailings cells at the site. This request is currently under consideration by UDEQ.
- By a letter dated December 11, 2008, Denison applied for an amendment to the Mill's Radioactive Materials License, and ancillary amendments to the Mill's Ground Water Discharge Permit, relating to the manner of calculating freeboard limits for Cells 3 and 4A. This request is currently under discussion between UDEQ and Denison.

Ground Water Discharge Permit

The Mill's Ground Water Discharge Permit is up for renewal on March 8, 2010. In order for the permit to be in timely renewal, a permit renewal application must be submitted by Denison at least 180 days before that date.

Two other Ground Water Discharge Permit modification actions are outstanding or pending at this time:

- As mentioned above, by a letter dated December 11, 2008, Denison applied for an amendment to the Mill's Radioactive Materials License, and ancillary amendments to the Mill's Ground Water Discharge Permit, relating to the manner of calculating freeboard limits for Cells 3 and 4A. This request is currently under discussion between UDEQ and Denison.
- UDEQ is in the process of preparing an amended version of the Ground Water Discharge Permit that will, among other things, amend the Ground Water Compliance Limits ("GWCLs") in the permit. The GWCLs were originally set in the permit as fractions of the State Ground Water Quality Standards ("GWQSs"), but the intention was to amend these interim GWCLs to take into account natural background ground water quality at the site, once Background Ground Water Quality Reports for the site had been prepared by Denison and approved by the Executive Secretary. Background Ground Water Quality Reports have in fact been prepared by Denison and approved by the Executive Secretary, and the interim GWCLs in the permit are now being modified to take the background conditions at the site into account. At the same time, the Executive Secretary is making a number of other modifications to the permit, most of which are of an administrative nature. The draft modified permit is currently under discussion between Denison and

UDEQ. Once the modifications have been set, UDEQ will publish the proposed modified version of the permit for public comment in accordance with applicable Utah rules. Denison expects that the draft modified permit will be published for comment within the next few weeks.

l. indicate whether all facilities and ponds/impoundments were constructed and are being operated in accordance with all permits and federal regulations.

Denison Response:

All facilities and ponds/impoundments have been constructed in accordance with all permits and federal regulations. By virtue of renewing the Mill's Source Material License in 1997, NRC has acknowledged that all Mill facilities have been constructed and are being operated in accordance with all permits and federal regulations.

NRC and, since August 2004, DRC have inspected the Mill regularly to confirm that the Mill is operating in accordance with all permits and applicable regulations. In addition, the State of Utah Division of Air Quality performs periodic inspections to confirm that the Mill is operating in compliance with its air Approval Order.

m. provide a description of any pollution control methods utilized by you;

Denison Response:

Groundwater

The Mill's Ground Water Discharge Permit, a copy of which is enclosed with this letter, details the methods utilized by the Mill to control any potential pollution to ground water. In addition, the manner of construction and operation of the Mill's tailings cells and evaporation pond described in the response to question 4.f. above serve as effective methods of control of potential pollution.

Air Approval Order

The pollution control methods utilized by the Mill for air emissions from facility operations, including pollution control equipment, are detailed in the Mill's Air Approval Order, a copy of which is enclosed with this letter.

Tailings Impoundments

As stated in the response to question 4.c., the Mill utilizes local soil as interim cover for tailings sands that are exposed above the pond solution level. These soils are low in activity (background levels) and are deposited uniformly over the area of concern in order to reduce radon emanation at tailings "beach" areas. In addition, the solutions in the impoundments serve as a cover for the tailings beneath the water's surface, thus virtually eliminating the release of radon to the atmosphere from ponded areas of the cells. Annual testing in accordance with 40

CFR 61, Subpart W has demonstrated the success of these operational pollution control mechanisms in maintaining radon emanations from the existing impoundments below the 20 pCi/m^2-s standard.

Other

The Mill monitors air particulate at several environmental monitoring stations. It also monitors soil and vegetation and surface water in the vicinity of the Mill to ensure that air particulate is not impacting the environment.

n. *State whether each of your uranium mills and uranium in-situ leaching facilities is subject to the requirements of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Radon Emissions from Operating Mill tailings as defined under 40 C.F.R. § § 61.250 et. seq. If not, explain why not.*

Denison Response:

The Mill is subject to the requirements of 40 CFR 61.250 et. seq.

5. *Submit complete results of all air and radon emission tests, emissions characterizations, or emissions studies, conducted or attempted at each facility since January 1, 1980. Indicate whether these tests were conducted as specified in 40 C.F.R. § § 61.253 and 61.255. Include with this information relevant operation parameters measured and all data recorded during these tests or studies, including the water level and moisture content, as well as how it was determined that the 'long term radon flux from the pile' was represented during time of measurement, pursuant to 40 C.F.R. 61, Appendix B, Method 115, 2.2.1.*

Denison Response:

Annual Radon Emission Tests Relating to Tailings Cells

The annual tests conducted in accordance with 40 CFR 61.253 and 61.255, as set out in the enclosed annual NESHAPs Reports, show the annual testing for radon emanations from the Mill's tailings cells. All relevant operating parameters measured and data recorded during these tests are included within the reports. As water level elevation in the pond and moisture content of the tailings at the time of the test were not required parameters, that data was not collected at the time of testing and is therefore unavailable. All measurements were reported to be in compliance with 40 CFR 61, Appendix B, Method 115 parameters and, accordingly are representative of the 'long term radon flux from the pile'.

The relative areas of pond, beach and interim cover within each cell at the time of sampling were used to determine the flux rate at that time. These conditions at the time of sampling were assumed to be representative of the average areas over the year. During periods when the Mill is inactive, there are no significant changes in these areas within each cell. During periods of operation, there can be some changes in these areas over the year, depending on the tonnages processed during the year. However, as tailings are deposited into the Cells, beach areas are covered with interim cover as soon as practicable (which generally means as soon as it is safe to

use heavy equipment to cover them). As a result, the exposed beach areas are typically a fairly constant percentage of the total cell area throughout the year, even in periods of operation. Since the exposed beach areas are the largest contributor to the average radon flux from the cell, the beach area at the time of sampling will generally be representative of the beach area throughout the year, and, as a result, the annual measurements will generally be representative of the long term radon flux from the cell.

Other Emission Tests

The Mill has performed MILDOS and MILDOS AREA modeling relating to the Mill. These models predicted dose rates based on predicted emissions from the Mill facility. That modeling was performed at various times throughout the Mill's history, with the most recent being completed in February 2007 in connection with the Mill's 2007 Radioactive Materials License renewal application. A copy of that modeling report is enclosed with this letter.

6. *Provide copies of all monthly and annual compliance reports prepared and submitted to EPA, as specified in 40 C.F.R. § 61.254, or similar reports submitted to all other regulatory agencies since 1980. To the extent, that you have not submitted any such report(s) provide the reasons for not having done so, and reasons, if any, you claim as a basis for not submitting such reports.*

Denison Response:

All annual compliance reports (i.e., annual NESHAPs Reports) submitted in accordance with 40 CFR 61.254 have been included in the response to Question 4.d.

If you have any questions or require any further information, please contact the undersigned.

Yours truly,

Denison Mines (USA) Corp.

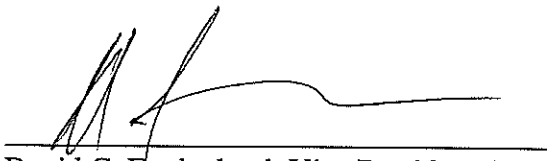
By:

David C. Frydenlund
Vice President, Regulatory Affairs and Counsel

cc: Andrew M. Gaydosh, EPA Region 8
Harold R. Roberts
Steven D. Landau
Ron F. Hochstein

Certification:

I certify under penalty of law that I have examined and am familiar with the information in the enclosed documents, including all attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are, to the best of my knowledge and belief, true and complete. I am aware that there are significant penalties for knowingly submitting false statements and information, including the possibility of fines or imprisonment pursuant to section 113(c)(2) of the Act and 18 U.S.C. §§ 1001 and 1341.



David C. Frydenlund, Vice President, Regulatory Affairs and Counsel