UTAH GROUND WATER DISCHARGE PERMIT NO. UGW370004

STATEMENT OF BASIS
Permit Modification

Energy Fuels Resources (USA) Inc.
225 Union Blvd., Suite 600
Lakewood, CO 80228

November 2018

STATEMENT OF BASIS OUTLINE

Attachments:

Attachment A – Proposed Permit Modification Changes – Redline Strike-out
Groundwater Discharge Permit UGW370004 ("Permit")

I. PURPOSE

This Statement of Basis describes the technical and regulatory basis for modification to Utah Ground Water Discharge Permit, No. UGW370004, ("Permit") issued for the Energy Fuels Resources (USA) Inc. ("Permittee"), White Mesa Uranium Milling Facility in San Juan County, Utah ("Facility"). The Facility is located in sections 28, 29, 32, 33, Township 37, Range 22 East, Salt Lake Baseline and Meridian, San Juan County, Utah.

The Permit is issued and modified pursuant to the Utah Water Quality Rules, Utah Administrative Code (UAC) R317-6, which requires that any person who operates any new facility or modifies an existing or new facility, not permitted by rule under UAC R317-6-6.2, must obtain a Utah Ground Water Discharge Permit. UAC R317-6 provides that a groundwater permit may be reopened for modification on an as-needed basis.

The Director of the Utah Division of Waste Management and Radiation Control ("DWMRC")[1] has concluded that the Permit modifications discussed in this Statement of Basis are reasonable and are supported by the administrative record.

II. FACILITY BACKGROUND

The Facility was constructed during the years 1979 and 1980 and was originally licensed by the United States Nuclear Regulatory Commission ("NRC") under Source Material License No. SUA-1358.

On August 16, 2004, the NRC relinquished the Utah uranium mill regulatory program to the State of Utah by approving Agreement State status. The DWMRC became the primary regulatory authority for the Facility and subsequently issued State Radioactive Material License No. UT1900479 ("RML") and the separate Permit to the past operator, International Uranium (USA) Corporation on March 8, 2005; then to another past operator, Denison Mines (USA) Corp. on March 29, 2007. The Director of DWMRC ("Director") approved the transfer of control of the Facility to the Permittee on June 27, 2012 when the Permit and License was again transferred.

The Permit was renewed effective on January 19, 2018; this is the first modification since the renewal.

III. MAJOR PERMIT MODIFICATIONS

A. GWCL MODIFICATIONS (Part I.C. Table 2)

The Permittee has submitted two Source Assessment Reports (SAR's) since the last Permit renewal. The SAR's were required by the Permit and were reviewed and approved by the Director. The table below lists the GWCL modifications that were approved and are included in the proposed Permit modification. Note that a list of Director review memorandums and correspondence letters is found in the reference section of this Statement of Basis. A copy of the memorandums and letters can be found on the DWMRC website.

Wells/parameters subject to GWCL modifications

Monitoring Well No.	Parameter	Current GWCL	Modified GWCL
MW-31	Selenium	86.81 µg/L	119.4 µg/L [(a)]
MW-31	Sulfate	697.6 mg/L	993 mg/L [(a)]
MW-31	TDS	1,700 mg/L	2,132 mg/L [(a)]

[1] Pursuant to UTAH CODE ANN. §§ 19-1-105(1)(d) and 19-5-102(6), on July 1, 2015, the authority granted to the Director of the Division of Radiation Control ("DRC") was transferred to the director of the newly created Division of Waste Management and Radiation Control ("DWMRC"). These terms are interchangeable for the purposes of this Statement of Basis.

Monitoring Well No.	Parameter	Current GWCL	Modified GWCL
MW-31	Uranium	9.1 µg/L	15 µg/L [(a)]
MW-14	Fluoride	0.2 mg/L	0.22 mg/L [(b)]

[(a)] Director Approval Letter Dated March 20, 2018
[(b)] Director Approval Letter Dated July 25, 2018

IV. MINOR PERMIT MODIFICATIONS

A. ADDITION OF DISSOLVED OXYGEN TO FIELD SAMPLING PARAMETERS (Part I.E.1.d and Groundwater Monitoring Quality Assurance Plan Part 6.2.2 and Attachment 2-3, Purging Procedures)

Per public comments and DWMRC responses during the January 19, 2018 Permit renewal process [2018 Public Participation Summary ("PPS"), Comment 105, p. 373], it was determined that measurement of dissolved oxygen would be a useful field parameter to collect during groundwater sampling. Per the PPS, DWMRC proposed that the inclusion of dissolved oxygen appeared to be appropriate and that the addition would be included in a future permit modification rather than in the Permit renewal.

Per DWMRC findings, dissolved oxygen would be a useful field parameter for the following reasons:

1. Dissolved oxygen regulates the valence state of trace metals in groundwater.
2. Dissolved oxygen constrains the bacterial metabolism of dissolved organic species in groundwater.
3. Groundwater at the White Mesa Mill Site is highly variable and it is not appropriate to assume anoxic conditions exist at monitoring well locations (oxygen distribution may vary due to local porosity of the vadose zone, depth to groundwater, and impacts of oxygenated surface recharge). Additionally, dissolved oxygen may be introduced into groundwater due to monitoring well maintenance and monitoring well pumping/sampling procedures.
4. Redox potential (Eh) is currently included as a field monitoring parameter, however, measurements of redox potential does not predict dissolved oxygen concentrations (Thorstenson 1984, p. 34).

The Permit Part I.E.1.d will be updated to include dissolved oxygen as a compliance monitoring parameter. A new compliance schedule will be included in the modified Permit Part I.H.3, requiring the Permittee to update the Groundwater Monitoring Quality Assurance Plan (QAP) and submit the update to the Director within 60 calendar days of Permit issuance for review and approval. The Permittee shall commence dissolved oxygen monitoring upon approval of the updated QAP.

B. SEEPS AND SPRINGS MONITORING FREQUENCY (Part I.F.7)

The Permittee submitted a written request to alter the due date for the Seeps and Springs Monitoring Reports from December 1 of each calendar year with the 3rd Quarter Routine Groundwater Monitoring Report to March 1 of each calendar year with the 4th Quarter Routine Groundwater Monitoring Report. Per the Permittee request, this modification will allow for potential seeps and springs sampling during November and December, allowing a full calendar year of results to be included on the Seeps and Springs Monitoring Report. The requested change is also needed to comply with the recently revised and approved Seeps and Springs Sampling Plan which incorporates additional quarterly checks of the Corral Canyon Seep, Westwater Seep and Corral Springs.

Based on review, the Permit modification appears to be appropriate. The Permit Part I.F.7 has been updated to incorporate the change.

C. SLIMES DRAIN COMPLIANCE PLAN (Part I.H.1)

Wording was changed in the Compliance Schedule item to reference the date of the Permit Renewal. This change is to clarify that the due date for the slimes drain compliance plan is based on the permit renewal (January 18, 2018) and not based on the date of the permit modification.

V. REFERENCES

[1]Energy Fuels Resources (USA) Inc., November 7, 2012, *Second Revision Hydrogeology of the Perched Groundwater Zone in the Area Southwest of the Tailings Cells White Mesa Uranium Mill Site*. Prepared by HYDRO GEO CHEM, INC.

[2]Energy Fuels Resources (USA) Inc., August 20, 2017, *Source Assessment Report for MW-31, White Mesa Uranium Mill*, Prepared by Intera

[3]Energy Fuels Resources (USA) Inc., July 25, 2018, *Source Assessment Report for MW-14*, Prepared by Intera

[4] Energy Fuels Resources (USA) Inc., October 29, 2018, *Letter to Scott Anderson, Director DWMRC, Re: White Mesa Uranium Mill, State of Utah Ground Water Discharge Permit No. UGW370004, Request for Change to Part I.F.7.*

[5] Utah Division of Waste Management and Radiation Control, 2018, *Public Participation Summary, Radiactive Materials License UT1900779 and Groundwater Discharge Permit UGW370004 Renewal for the Energy Fuels Resources (USA) Inc., White Mesa Uranium Mill, San Juan County, Utah*

[6]Utah Division of Waste Management and Radiation Control, March 14, 2018, *DWMRC Staff Review of the Energy Fuels Resources (USA) Inc. August 21, 2017 Source Assessment Report for Monitoring Well MW-31*

[7]Utah Division of Radiation Control, July 17, 2018, *DWMRC Staff Review of the Energy Fuels Resources June 25, 2018 Source Assessment Report for Fluoride in Monitoring Well MW-14*

[8]Utah Division of Waste Management and Radiation Control, March 20, 2018, *DWMRC Directors Letter Regarding Review of the EFR August 21, 2017 Source Assessment Report for Monitoring Well MW-31*

[9] Utah Division of Waste Management and Radiation Control, July 25, 2018, *DWMRC Directors Letter Regarding Review of the EFR June 25, 2018 Source Assessment Report for Monitoring Well MW-14*

[10] Thorstenson, Donald C. 1984, *The Concept of Electron Activity and Its Relation to Redox Potentials in aqueous Geochemical Systems,* U.S. Geological Survey Open-File report 84—072

Attachment A
Proposed Permit Changes -- Redline Strike-out Groundwater Discharge Permit UGW370004

STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
UTAH WATER QUALITY BOARD
SALT LAKE CITY, UTAH 84114-4870

GROUND WATER DISCHARGE PERMIT

In compliance with the provisions of the Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated 1953, as amended, the Act,

Energy Fuels Resources (USA) Inc.
225 Union Boulevard, Suite 600
Lakewood, CO 80228

is granted a ground water discharge permit for the operation of a uranium milling and tailings disposal facility located approximately 6 miles south of Blanding, Utah. The facility is located on a tract of land in Sections 28, 29, 32, and 33, Township 37 South, Range 22 East, Salt Lake Base and Meridian, San Juan County, Utah.

The permit is based on representations made by the Permittee and other information contained in the administrative record. It is the responsibility of the Permittee to read and understand all provisions of this Permit.

The milling and tailings disposal facility shall be operated and revised in accordance with conditions set forth in the Permit and the Utah Ground Water Quality Protection Regulations.

This Ground Water Quality Discharge Permit amends and supersedes all other Ground Water Discharge permits for this facility issued previously.

Permit Modified on _____, _____, 2018

This Permit shall become effective on January~~_____~~, 19~~____~~, 2018.

This Permit shall expire on January~~_____~~, 19~~____~~, 2023.

Signed this ____ day of _____, 2018.

_____
Scott T. Anderson, Director
Division of Waste Management and Radiation Control

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List of Tables

PART I. SPECIFIC PERMIT CONDITIONS

A. GROUND WATER CLASSIFICATION - the groundwater classification of the shallow aquifer under the tailings facility has been determined on a well-by-well basis, as defined in Table 1, below:

Table 1. Ground Water Classification

	Class II Groundwater Average TDS (mg/L) DUSA Data				**Class III Groundwater** Average TDS (mg/L) DUSA Data		
Well ID	N[(1)]	Average Concentration[(2)]	Standard Deviation[(2)]	Well ID	N[(1)]	Average Concentration[(2)]	Standard Deviation[(2)]
MW-1[(3)]	77	1,273	93	MW-2	77	3,050	252
MW-5	82	2,058	170	MW-12	61	3,894	241
MW-11	71	1,844	178	MW-14	51	3,592	176
MW-30	42	1601	100	MW-15	47	3,857	243
				MW-17	22	4,444	321
				MW-18[(3)]	18	2,605	297
				MW-19[(3)]	22	2,457	900
				MW-20[(4)]	23	5,192	475
				MW-22[(4)]	23	7,633	656
				MW-3A	40	5,684	184
				MW-23	33	3,419	408
				MW-24	32	4,080	268
				MW-25[(5)]	46	2,763	97
				MW-26[(6)]	60	3,106	231
				MW-27[(7)]	45	1,067	56
				MW-28	32	3,633	101
				MW-29	40	4,332	118
				MW-31[(7)]	90	1,395	138
				MW-32[(8)]	32	3,703	166
				MW-35	24	3,725	354
				MW-36	21	4,344	154
				MW-37	21	3,881	108

Footnotes:

1) N = Number of Samples
2) Based on historic total dissolved solids (TDS) data provided by the Permittee for period between October, 1979 and September 2016. This data was obtained from the Permittee's background groundwater quality reports..
3) Background concentrations of uranium in well MW-18 (55.1 µg/L) and thallium in MW-19 (2.1 µg/L) exceed the GWQS, 30 µg/L and 2.0 µg/L, respectively. Therefore these wells have been classified as Class III groundwater rather than Class II groundwater.
4) Wells MW-1, MW-18, MW-19, MW-20, MW-22, and TW4-24 are not point of compliance monitoring wells, but instead are general monitoring wells as per Part I.E.2. Average concentrations and standard deviations for wells MW-20 and MW-22 were provided by the Permittee for the period between June, 2008 and February, 2010. This data was obtained from the Permittee's Background Groundwater Quality Report for wells MW-20 and MW-22 dated June, 2010.
5) Background concentration of manganese in well MW-25 (1,806 µg/L) exceeds the GWQS, therefore well MW-25 has been classified as Class III groundwater rather than Class II groundwater.
6) Well MW-26 was originally named TW4-15 and was installed as part of the chloroform contaminant investigation at the facility. Under this Permit, MW-26 is defined as a Point of Compliance (POC) well for the tailings cells (see Part I.E.1).
7) Background concentrations of uranium in well MW-27 (34 µg/L) and selenium in MW-31 (71 µg/L) exceed the GWQS, therefore these wells have been classified as Class III groundwater rather than Class II groundwater.
8) Well MW-32 was originally named TW4-17 and was installed as part of the chloroform contaminant investigation at the facility. Under this Permit it is included as a POC well for the tailings cells in Part I.E.1.

B. BACKGROUND WATER QUALITY - based on groundwater samples collected through June 2007 for existing wells (MW-1, MW-2, MW-3, MW-5, MW-11, MW-12, MW-14, MW-15, MW-17,

MW-18, MW-19, MW-26, and MW-32) and through December 2007 for new wells (MW-3A, MW-23, MW 24, MW-25, MW-27, MW-28, MW-29, MW-30 and MW-31), the upper boundary of background groundwater quality is determined on a well-by-well basis, pursuant to Environmental Protection Agency (EPA) guidance, and documented in the Permittee's background groundwater quality reports dated October 2007, April 30, 2008, and May 1, 2014.

C. PERMIT LIMITS - the Permittee shall comply with the following permit limits:

1. Ground Water Compliance Limits - contaminant concentrations measured in each monitoring well listed in Table 2 below shall not exceed the Ground Water Compliance Limits (GWCL) defined in Table 2, below. Groundwater quality in the wells listed in Table 2 below must at all times meet all the applicable GWQS and ad hoc GWQS defined in R317-6 even though this permit does not require monitoring for each specific contaminant.

2. Tailings Cell Operations - only 11.e.(2) by-product material authorized by Utah Radioactive Materials License No. UT-2300478 (hereafter License) shall be discharged to or disposed of in the tailings ponds.

3. Prohibited Discharges - discharge of other compounds such as paints, used oil, antifreeze, pesticides, or any other contaminant not defined as 11e.(2) material is prohibited.

Table 2. Groundwater Compliance Limits (GWCL)

		Upgradient Well	Down or Lateral Gradient Wells										
		MW-27 (Class III)	**MW-2** (Class III)	**MW-3A** (Class III)	**MW-5** (Class II)	**MW-11** (Class II)	**MW-12** (Class III)	**MW-14** (Class III)	**MW-15** (Class III)	**MW-17** (Class III)	**MW-23** (Class III)	**MW-24** (Class III)	**MW-25** (Class III)
Contaminant	**GWQS** [1]	GWCL	GWCL [6]	GWCL	GWCL	GWCL [7]	GWCL	GWCL	GWCL	GWCL	GWCL	GWCL	GWCL
Nutrients (mg/L)													
Ammonia (as N)	25 [2]	12.5	12.5	0.6	1.02	6.25	0.6	12.5	0.21	0.26	0.6	7	0.77
Nitrate + Nitrite (as N)	10	5.6	0.12	1.3	2.5	2.5	5	5	0.27	5 [8]	5	5	5
Heavy Metals (µg/L)													
Arsenic	50	25	25	25	17	15	25	25	25	25	25	17	25
Beryllium	4	2	2	2	1	1	2	2	2	2	2	2	2
Cadmium	5	2.5	2.5	3.55	2	1.25	7	2.5	2.5	2.5	2.5	6.43	1.5
Chromium	100	50	50	50	25	25	50	50	50	50	50	50	50
Cobalt	730 [5]	365	365	365	182.5	182.5	365	365	365	365	365	365	365
Copper	1,300	650	650	650	325	325	650	650	650	650	650	650	650
Iron	11,000 [5]	5,500	151.6	5,500	2,750	2,750	5,500	5,500	81.7	5,500	5,500	4,162	5,500
Lead	15	7.5	7.5	7.5	4.1	3.75	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Manganese	800 [4]	400	378.76	383	376.74	164.67	2,088.80	2,230.30	400	915.4	550	7,507	1,806
Mercury	2	1	1	1	1	0.5	1	1	1	1	1	1	1
Molybdenum	40 [2]	20	20	20	10	10	20	25	30	20	20	20	20
Nickel	100 [3]	50	60	105	44.1	46.2	60	50	97	50	50	50	50
Selenium	50	25	26.6	109.58	12.5	12.5	39	25	128.7	25	25	25	25
Silver	100	50	50	50	25	25	50	50	50	50	50	50	50
Thallium	2	1	1	1.4	0.5	0.5	1	1	1	1	1.5	2.01	1.1
Tin	17,000 [4]	8,500	8,500	8,500	4,250	4,250	8,500	8,500	8,500	8,500	8,500	8,500	8,500
Uranium	30 [3]	34	18.45	35	7.5	7.5	23.5	98	65.7	46.66	32	11.9	7.25
Vanadium	60 [4]	30	30	30	15	15	30	30	40	30	30	30	30
Zinc	5,000	2,500	2,500	155	87.38	1,250	2,500	35.04	2,500	2,500	74	2,500	2,500
Radiologics (pCi/L)													
Gross Alpha	15	2	3.2	7.5	3.75	3.75	7.5	7.5	7.5	2.8	2.86	7.5	7.5
Volatile Organic Compounds (µg/L)													
Acetone	700 [4]	350	350	350	175	175	350	350	350	350	350	350	350
Benzene	5	2.5	2.5	2.5	1.25	1.25	2.5	2.5	2.5	2.5	2.5	2.5	2.5
2-Butanone (MEK)	4,000 [2]	2,000	2,000	2,000	1,000	1,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Carbon Tetrachloride	5	2.5	2.5	2.5	1.25	1.25	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Chloroform	70 [4]	35	35	35	17.5	17.5	35	35	35	35	35	35	35
Chloromethane	30 [2]	15	15	9.4	7.5	7.5	15	15	15	15	5.7	15	15
Dichloromethane	5 [3]	2.5	2.5	2.5	1.25	1.25	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Naphthalene	100 [2]	50	50	50	25	25	50	50	50	50	50	50	50
Tetrahydrofuran	46 [4]	23	23	23	11.5	11.5	23	23	23	23	23	23	23
Toluene	1,000	500	500	500	250	250	500	500	500	500	500	500	500
Xylenes (total)	10,000	5,000	5,000	5,000	2,500	2,500	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Others													
Field pH (S.U.)	6.5 - 8.5	6.47 - 8.5	6.72 - 8.5	5.84 - 8.5	7.04 - 8.5	6.25 - 8.5	5.86 - 8.5	5.42 - 8.5	5.88 - 8.5	6.27 - 8.5	5.97 - 8.5	5.03 - 8.5	5.77 - 8.5
Fluoride (mg/L)	4	0.85	0.43	1.6	1.42	1	2	0.22~~0.2~~	2	2	2	0.47	0.42
Chloride (mg/L)		38	20	70	71	39.16	80.5	27	57.1	46.8	10	71	35
Sulfate (mg/L)		462	2,147	3,949.27	1,518	1,309	2,560	2,330	2,549.02	2,860	2,524	2,903	1,933
TDS (mg/L)		1,185.72	3,800	6,028	2,575	2,528	4,323	4,062	4,530	5,085.42	3,670	4,450	2,976

Table 2 Continued. Groundwater Compliance Limits (GWCL)

		Down or Lateral Gradient Wells								
		MW-26 (Class III)	**MW-28** (Class III)	**MW-29** (Class III)	**MW-30** (Class II)	**MW-31** (Class III)	**MW-32** (Class III)	**MW-35** (Class III)	**MW-36** (Class III)	**MW-37** (Class III)
Contaminant	**GWQS** [1]	GWCL	GWCL	GWCL	GWCL	GWCL	GWCL [7]	GWCL	GWCL	GWCL
Nutrients (mg/L)										
Ammonia (as N)	25 [2]	0.92	12.5	1.3	0.14	12.5	1.17	0.14	12.5	12.5
Nitrate + Nitrite (as N)	10	0.62	5	5	2.5	5	5	5	5	2.22
Heavy Metals (µg/L)										
Arsenic	50	25	21	25	12.5	25	25	25	25	25
Beryllium	4	2	2	2	1	2	2	2	2	2
Cadmium	5	2.5	5.2	2.5	1.25	2.5	4.72	2.5	2.5	2.5
Chromium	100	50	50	50	25	50	50	50	50	50
Cobalt	730 [5]	365	47	365	182.5	365	75.21	365	365	365
Copper	1,300	650	650	650	325	650	650	650	650	650
Iron	11,000 [5]	2,675.83	299	1,869	2,750	5,500	14,060	330.08	5,500	5,500
Lead	15	7.5	7.5	7.5	3.75	7.5	7.5	7.5	7.5	7.5
Manganese	800 [4]	1,610	1,837	5,624	61	400	5,594.90	290.68	400	400
Mercury	2	1	1	1	0.5	1	1	1	1	1
Molybdenum	40 [2]	20	20	20	10	20	20	20	20	20
Nickel	100 [3]	50	50	50	25	50	94	50	50	50
Selenium	50	25	11.1	25	47.2	119.4~~86.81~~	25	25	307.42	25
Silver	100	50	50	50	25	50	50	50	50	50
Thallium	2	1	1	1.2	0.5	1	1	1	1.35	1
Tin	17,000 [4]	8,500	8,500	8,500	4,250	8,500	8,500	8,500	8,500	8,500
Uranium	30 [3]	119	4.9	15	8.32	159.1	5.26	26.76	26.42	18.08
Vanadium	60 [4]	30	30	30	15	30	30	30	30	30
Zinc	5,000	2,500	83	30	1,250	2,500	230	2,500	2,500	41.25
Radiologics (pCi/L)										
Gross Alpha	15	4.69	2.42	2	3.75	7.5	7	7.5	7.5	4.2
Volatile Organic Compounds (µg/L)										
Acetone	700 [4]	350	350	350	175	350	350	350	350	350
Benzene	5	2.5	2.5	2.5	1.25	2.5	2.5	2.5	2.5	2.5
2-Butanone (MEK)	4,000 [2]	2,000	2,000	2,000	1,000	2,000	2,000	2,000	2,000	2,000
Carbon Tetrachloride	5	5	2.5	2.5	1.25	2.5	2.5	2.5	2.5	2.5
Chloroform	70 [4]	70	35	35	17.5	35	35	35	35	35
Chloromethane	30 [2]	30	4.6	15	7.5	6.1	15	15	15	15
Dichloromethane	5 [3]	5	2.5	2.5	1.25	2.5	2.5	2.5	2.5	2.5
Naphthalene	100 [2]	50	50	50	25	50	50	50	50	50
Tetrahydrofuran	46 [4]	23	23	23	11.5	23	23	23	23	23
Toluene	1,000	500	500	500	250	500	500	500	500	500
Xylenes (total)	10,000	5,000	5,000	5,000	2,500	5,000	5,000	5,000	5,000	5,000
Others										
Field pH (S.U.)	6.5 - 8.5	5.61 - 8.5	5.58 - 8.5	5.94 - 8.5	6.47 - 8.5	6.23 - 8.5	5.31 - 8.5	6.15 - 8.5	6.49 - 8.5	6.61 - 8.5
Fluoride (mg/l)	4	2	0.73	1.1	0.51	2	2	0.42	0.35	0.31
Chloride (mg/l)		58.31	105	41	128	143	35.39	69.12	73	57.3
Sulfate (mg/l)		2,082.06	2,533	2,946	972	993~~697.60~~	2,556.70	2,400	3,146.21	2,927.65

TDS (mg/l)		3,284.19	3,852	4,570	1,918	2,132~~1,700~~	3,960	4,821.88	5,470	4,866.25

Footnotes:

1) Utah Ground Water Quality Standards (GWQS) as defined in UAC R317-6, Table 2. Ad hoc GWQS also provided herein, as noted, and as allowed by UAC R317-6-2.2.
2) Ad hoc GWQS for ammonia (as N), molybdenum, 2-Butanone (MEK), chloromethane, and naphthalene based on EPA drinking water lifetime health advisories.
3) Ad hoc GWQS for nickel, uranium, and dichloromethane (methylene chloride, CAS No. 75-09-2) based on final EPA drinking water maximum concentration limits (MCL).
4) Ad hoc GWQS for manganese, tin, vanadium, acetone, chloroform (CAS No. 67-66-3), and tetrahydrofuran based on drinking water ad hoc lifetime health advisories prepared by or in collaboration with EPA Region 8 staff.
5) Ad hoc GWQS for cobalt and iron based on EPA Region 3 Risk Based Concentration limits for tap water.
6) Ground Water Compliance Limits (GWCL) were set after Director review and approval of two Background Groundwater Quality Reports dated October_2007 and April 30, 2008 from the Permittee.
7) GWCLs listed in the table above are those proposed by the Permittee in the October 2007, April 30, 2008, and May 1, 2014 EFR Background Groundwater Quality Reports, and approved by the Director and also include values modified by the Director after review of GWCLs proposed in the Permittee's October 2007, April 30, 2008, May 1, 2014 Background Groundwater Quality Reports. For wells MW-2, MW-3, MW-5, MW-11, MW-12, MW-14, MW-15, MW-17, MW-26, and MW-32; these modifications are documented in the June 16, 2008 URS Completeness Review for the October, 2007 Revised Background Groundwater Quality Report for Existing Wells. For wells MW-3A, MW-23, MW-24, MW-25, MW-27, MW-28, MW-29, MW-30, and MW-31; these modifications are documented in the June 24, 2008 DRC Findings Memorandum regarding the April 30, 2008 Revised Background Groundwater Quality Report for New Wells. For wells MW-35, MW-36, MW-37; these modifications are documented in the July 14, 2014 DRC Findings Memorandum regarding the May 1, 2014 Background Groundwater Quality Report for Wells MW-35, MW-36, and MW-37

D. DISCHARGE MINIMIZATION AND BEST AVAILABLE TECHNOLOGY STANDARDS - the tailings disposal facility must be built, operated, and maintained according to the following Discharge Minimization Technology (DMT) and Best Available Technology (BAT) standards:

1. DMT Design Standards for Existing Tailings Cells 1, 2, and 3 - shall be based on existing construction as described by design and construction information provided by the Permittee, as summarized in Table 3 below for Tailings Cells 1, 2, and 3:

Table 3. DMT Engineering Design and Specifications

Tailings Cell	Report Type	Engineering Report	Design Figures	Construction Specifications
Cell 1	Design	June, 1979 D'Appolonia Consulting Engineers, Inc (1)	Appendix A, Sheets 2, 4, 8, 9, 12-15	Appendix B
Cell 2	Design	June, 1979 D'Appolonia Consulting Engineers, Inc (1)	Appendix A, Sheets 2, 4, 7-10, 12-15	Appendix B
	As-Built	February, 1982 D'Appolonia Consulting Engineers, Inc (2)	Figures 1, 2, and 11	N/A
Cell 3	Design	May, 1981 D'Appolonia Consulting Engineers, Inc (3)	Sheets 2-5	Appendix B
	As-Built	March, 1983 Energy Fuels Nuclear, Inc. (4)	Figures 1-4	N/A

Footnotes:

1) D'Appolonia Consulting Engineers, Inc., June, 1979, "Engineers Report Tailings Management System White Mesa Uranium Project Blanding, Utah Energy Fuels Nuclear, Inc. Denver, Colorado", unpublished consultants report, approximately 50 pp., 2 figures, 16 sheets, 2 appendices.
2) D'Appolonia Consulting Engineers, Inc., February, 1982, "Construction Report Initial Phase - Tailings Management System White Mesa Uranium Project Blanding, Utah Energy Fuels Nuclear, Inc. Denver, Colorado", unpublished consultants report, approximately 7 pp., 6 tables, 13 figures, 4 appendices.
3) D'Appolonia Consulting Engineers, Inc., May, 1981, "Engineer's Report Second Phase Design - Cell 3 Tailings Management System White Mesa Uranium Project Blanding, Utah Energy Fuels Nuclear, Inc. Denver, Colorado", unpublished consultants report, approximately 20 pp., 1 figure, 5 sheets, and 3 appendices.
4) Energy Fuels Nuclear, Inc., March, 1983, "Construction Report Second Phase Tailings Management System White Mesa Uranium Project Energy Fuels Nuclear, Inc.", unpublished company report, 18 pp., 3 tables, 4 figures, 5 appendices.

a) Tailings Cell 1 - consisting of the following major design elements:

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 PVC flexible membrane liner (FML) constructed of solvent welded seams on a prepared sub-base. Top elevation of the FML liner was 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 a 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.

b) Tailings Cell 2 - which consists of the following major design elements:

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 liner constructed of solvent welded seams on a prepared sub-base, and overlain by a slimes drain collection system. Top elevation of the FML liner in Cell 2 is 5,615.0 ft and 5,613.5 ft amsl on the north and south dikes, respectively. Said Cell 2 FML liner is independent of all other disposal cell FML liners. 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 a 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.

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 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) Tailings Cell 3 - consisting of the following major design elements:

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 liner constructed of solvent welded seams on a prepared sub-base, and overlain by a slimes drain collection system. Top elevation of the FML liner 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 liner is independent of all other disposal cell FML liners.

3) Crushed Sandstone Underlay - immediately below the FML a nominal 6-inch thick layer of crushed sandstone was prepared and rolled smooth as a 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.

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.

2. Existing Tailings Cell Construction Authorized - tailings disposal in existing Tailings Cells 1, 2, and 3 is authorized by this Permit as defined in Table 3 and Part I.D.1, above. Authorized operation and maximum disposal capacity in each of the existing tailings cells shall not exceed the levels authorized by the License. Under no circumstances shall the freeboard be less than three feet, as measured from the top of the FML. Any modification by the Permittee to any approved engineering design parameter at these existing tailings cells shall require prior Director approval, modification of this Permit, and issuance of a construction permit.

3. Existing Facility DMT Performance Standards - the Permittee shall operate and maintain certain mill site facilities and the existing tailings disposal cells to minimize the potential for wastewater release to groundwater and the environment, including, but not limited to the following additional DMT compliance measures:

a) DMT Monitoring Wells at Tailings Cell 1 - at all times the Permittee shall operate and maintain Tailings Cell 1 to prevent groundwater quality conditions in any nearby monitoring well from exceeding any Ground Water Compliance Limit established in Table 2 of this Permit.

b) Tailings Cells 2 and 3 - including the following performance criteria:

1) Slimes Drain Maximum Allowable Head - the Permittee shall at all times maintain the average wastewater recovery head in the slimes drain access pipe to be as low as reasonably achievable (ALARA) in each tailings disposal cell, in accordance with the currently approved DMT Monitoring Plan.

2) Quarterly Slimes Drain Recovery Test - effective July 11, 2011, the Permittee shall conduct a quarterly slimes drain recovery test at each tailings cell slimes drain that meets the following minimum requirements:

i. Includes a duration of at least 90-hours, as measured from the time that pumping ceases, and

ii. Achieves a stable water level at the end of the test, as measured by three consecutive hourly water level depth measurements, with no change in water level, as measured to the nearest 0.01 foot.

3) Annual Slimes Drain Compliance – The Permittee shall submit an annual report on or before March 1 following the reporting year which includes but is not limited to; 1) Monthly volumes of fluid pumped from the slimes drain for each applicable tailings disposal cell; 2) The results of all quarterly slimes drain recovery tests; 3) A calculation of average annual wastewater recovery elevation in the slimes drain access pipe, and; 4) The annual report shall include an assessment and verification that the maximum fluid volume which could practicably be extracted from the slimes drain in accordance with the systems in place was removed.

c) Maximum Tailings Waste Solids Elevation - upon closure of any tailings cell, the Permittee shall ensure that the maximum elevation of the tailings waste solids does not exceed the top of the FML liner.

d) DMT Monitoring Wells - at all times the Permittee shall operate and maintain Tailings Cells 2 and 3 to prevent groundwater quality conditions in any nearby monitoring well from exceeding any Ground Water Compliance Limit established in Table 2 of this Permit.

e) Feedstock Storage Area - open-air or bulk storage of all feedstock materials at the facility awaiting mill processing shall be limited to the eastern portion of the mill site area described in Table 4, below. Storage of feedstock materials at the facility outside this area, shall meet the requirements in Part I.D.11. At the time of mill site closure, the Permittee shall reclaim and decommission the Feedstock Storage Area in compliance with an approved Reclamation Plan. The Permittee shall maintain a minimum 4-foot wide buffer zone on the inside margin of the Feedstock Storage Area between the storage area fence and the Feedstock which shall be absent of feed material in order to assure that materials do not encroach on the boundary of the storage area.

Table 4. Feedstock Storage Area Coordinates [(1)]

Corner	Northing (ft)	Easting (ft)
Northeast	323,595	2,580,925
Southeast	322,140	2,580,920
Southwest	322,140	2,580,420
West 1	322,815	2,580,410
West 2	323,040	2,580,085
West 3	323,120	2,580,085
West 4	323,315	2,580,285
West 5	323,415	2,579,990
Northwest	323,600	2,579,990

Footnote:

1) Approximate State Plane Coordinates beginning from the extreme northeast corner and progressing clockwise around the feedstock area (from 6/22/01 DUSA Response, Attachment K, Site Topographic Map, Revised June, 2001.)

f) Mill Site Chemical Reagent Storage - for all chemical reagents stored at existing storage facilities and held for use in the milling process, the Permittee shall provide secondary containment to capture and contain all volumes of reagent(s) that might be released at any individual storage area. Response to spills, cleanup thereof, and

required reporting shall comply with the provisions of the approved Emergency Response Plan as found in the currently approved Stormwater Best Management Practices Plan. For any new construction of reagent storage facilities, said secondary containment and control shall prevent any contact of the spilled or otherwise released reagent or product with the ground surface.

4. Best Available Technology Requirements for New Construction - any construction, modification, or operation of new waste or wastewater disposal, treatment, or storage facilities shall require submittal of engineering design plans and specifications, and prior Director review and approval. All engineering plans or specifications submitted shall demonstrate compliance with all Best Available Technology (BAT) requirements stipulated by the Utah Ground Water Quality Protection Regulations (UAC R317-6). Upon Director approval this Permit may be re-opened and modified to include any necessary requirements.

5. BAT Design Standards for Tailings Cell 4A - the BAT design standard for Tailings Cell 4A shall be defined by and construction conform to the requirements of the June 25, 2007 Director design approval letter for the relining of former existing Tailings Cell No. 4A, and as summarized by the engineering drawings, specifications, and description in Table 5, below:

Table 5. Approved Tailings Cell 4A Engineering Design and Specifications

Engineering Drawings			
Name	Date	Revision No.	Title
Sheet 1 of 7	June, 2007		Title Sheet
Sheet 2 of 7	June 15, 2007	Rev. 1	Site Plan
Sheet 3 of 7	June 15, 2007	Rev. 1	Base Grading Plan
Sheet 4 of 7	June 15, 2007	Rev. 1	Pipe Layout Plan
Sheet 5 of 7	June 15, 2007	Rev. 1	Lining System Details I
Sheet 6 of 7	June 15, 2007	Rev. 1	Lining System Details II
Sheet 7 of 7	June 15, 2007	Rev. 1	Lining System Details III
Figure 1	August, 2008	-	Spillway Splash Pad Anchor

Engineering Specifications		
Date	Document Title	Prepared by
June, 2007	Revised Technical Specifications for the Construction of Cell 4A Lining System	Geosyntec Consultants
June, 2007	Revised Construction Quality Assurance Plan for the Construction of Cell 4A Lining System	Geosyntec Consultants
March 27, 2007	Revised Geosynthetic Clay Liner Hydration Demonstration Work Plan (1)	Geosyntec Consultants
November 27, 2006	Cell Seismic Study (2)	MFG Consulting Scientists and Engineers
October 6, 2006	Calculation of Action Leakage Rate Through the Leakage Detection System Underlying a Geomembrane Liner	Geosyntec Consultants
June 22, 2006	Slope Stability Analysis Cell 4A - Interim Conditions	Geosyntec Consultants
June 23, 2006	Settlement Evaluation of Berms (2)	Geosyntec Consultants
August 22, 2006	Pipe Strength Calculations	Geosyntec Consultants
September 27, 2007	DMC Cell 4A - GCL Hydration	Geosyntec Consultants

Footnotes:

1) As qualified by conditions found in May 2, 2007 Division of Radiation Control letter.
2) As clarified by February 8, 2007 Division of Radiation Control Round 6 Interrogatory.

Tailings Cell 4A Design and Construction - approved by the Director will consist of the following major elements:

a) Dikes - consisting of existing earthen embankments of compacted soil, constructed by the Permittee between 1989 and1990, 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 an interior 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.

b) 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%. Floor of Cell 4A has an average slope of 1% that grades from the northeast to the southwest corners.

c) 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).

d) Liner and Leak Detection Systems - including the following layers, in descending order:

1) Primary Flexible Membrane Liner (FML) - consisting of impermeable 60 mil high density polyethylene (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).

2) 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) PVC pipe placed down the inside slope, located between the primary and secondary FML liners. At its base this pipe will be 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 will be enclosed in an envelope of geotextile fabric. The purpose of both the gravel and geotextile fabric is to serve as a filter.

3) Secondary FML - consisting of an impermeable 60-mil HDPE membrane found immediately below the leak detection geonet. Said 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.

4) 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 shall demonstrate that the GCL has achieved a moisture

content of at least 50% by weight. This item is a revised requirement per DRC letter to DUSA dated September 28, 2007.

e) 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:

1) Horizontal Strip Drain System - is installed in a herringbone pattern across the floor of Cell 4A that drain 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.

2) 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.

3) 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. Said 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.

f) Cell 4A North Dike Splash Pads - three 20-foot wide splash pads will be constructed on the north dike to protect the primary FML from abrasion and scouring by tailings slurry. These pads will consist of an extra layer of 60 mil HDPE membrane that will be 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.

g) Cell 4A Emergency Spillway - a concrete lined spillway will be constructed near the western corner of the north dike to allow emergency runoff from Cell 3 into Cell 4A. This spillway will be 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 will be constructed at Cell 4A. All stormwater runoff and tailings

wastewaters not retained in Cells 2 and 3, will be managed and contained in Cell 4A, including the Probable Maximum Precipitation and flood event.

6. BAT Performance Standards for Tailings Cell 4A - the Permittee shall operate and maintain Tailings Cell 4A so as to prevent release of wastewater to groundwater and the environment in accordance with the currently approved Cell 4A BAT, Monitoring, Operations and Maintenance Plan. Any failure to achieve or maintain the required BAT performance standards shall constitute a violation of the Permit and shall be reported to the Director in accordance with Part I.G.3. Performance standards for Tailings Cell 4A shall include the following:

   a) Leak Detection System (LDS) Maximum Allowable Daily Head - the fluid head in the LDS shall not exceed 1 foot above the lowest point on the lower flexible membrane liner on the cell floor. For purposes of compliance this elevation will equate to a maximum distance of 2.28 feet above the LDS transducer. At all times the Permittee shall operate the LDS pump and transducer in a horizontal position at the lowest point of the LDS sump floor.

   b) LDS Maximum Allowable Daily Leak Rate - shall not exceed 24,160 gallons/day.

   c) Slimes Drain Annual Average Recovery Head Criteria - after the Permittee initiates pumping conditions in the slimes drain layer in Cell 4A, the Permittee will provide: 1) continuous declining fluid heads in the slimes drain layer, in a manner equivalent to the requirements found in Part I.D.3(b), and 2) a maximum head of 1.0 feet in the tailings (as measured from the lowest point of upper flexible membrane liner) in 6.4 years or less.

   d) Maximum Weekly Wastewater Level - under no circumstance shall the freeboard be less then 3-feet in Cell 4A, as measured from the top of the upper FML.

7. Definition of 11e.(2) Waste - for purposes of this Permit, 11e.(2) waste is defined as: "... tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content", as defined in Section 11e.(2) of the U.S. Atomic Energy Act of 1954, as amended; which includes other process related wastes and waste streams described by a March 7, 2003 NRC letter from Paul H. Lohaus to William J. Sinclair.

8. Closed Cell Performance Requirements - before reclamation and closure of any tailings disposal cell, the Permittee shall ensure that the final design, construction, and operation of the cover system at each tailings cell will comply with all requirements of an approved Reclamation Plan, and will for a period of not less than 200 years meet the following minimum performance requirements:

   a) Minimize infiltration of precipitation or other surface water into the tailings, including, but not limited to the radon barrier,

   b) Prevent the accumulation of leachate head within the tailings waste layer that could rise above or over-top the maximum FML liner elevation internal to any disposal cell, i.e. create a “bathtub” effect, and

c) Ensure that groundwater quality at the compliance monitoring wells does not exceed the Ground Water Quality Standards or Ground Water Compliance Limits specified in Part I.C.1 and Table 2 of this Permit.

9. Facility Reclamation Requirements - upon commencement of decommissioning, the Permittee shall reclaim the mill site and all related facilities, stabilize the tailings cells, and construct a cover system over the tailings cells in compliance with all engineering design and specifications in an approved Reclamation Plan. The Director reserves the right to require modifications of the Reclamation Plan for purposes of compliance with the Utah Ground Water Quality Protection Regulations, including but not limited to containment and control of contaminants, or discharges, or potential discharges to Waters of the State.

10. Stormwater Management and Spill Control Requirements - the Permittee will manage all contact and non-contact stormwater and control contaminant spills at the facility in accordance with the currently approved Stormwater Best Management Practices Plan. Said plan includes the following minimum provisions:

    a) Protect groundwater quality or other waters of the state by design, construction, and/or active operational measures that meet the requirements of the Ground Water Quality Protection Regulations found in UAC R317-6-6.3(G) and R317-6-6.4(C),

    b) Prevent, control and contain spills of stored reagents or other chemicals at the mill site,

    c) Cleanup spills of stored reagents or other chemicals at the mill site immediately upon discovery, and

    d) Report reagent spills or other releases at the mill site to the Director in accordance with UAC 19-5-114.

    Reconstruction of stormwater management and/or chemical reagent storage facilities, existing at the time of original Permit issuance, may be required by the Director after occurrence of a major spill or catastrophic failure, pursuant to Part IV.N.3 of this Permit.

11. BAT Requirements for Feedstock Material Stored Outside the Feedstock Storage Area - the Permittee shall store and manage feedstock materials outside the ore storage pad in accordance with the following minimum performance requirements:

    a) Feedstock materials shall be stored at all times in water-tight containers or water-tight container overpacks, and aisle ways will be provided at all times to allow visual inspection of each and every feedstock container and container overpack, or

    b) Feedstock containers shall be stored on a hardened surface to prevent spillage onto subsurface soils, and that conforms with the following minimum physical requirements:

        1) A storage area composed of a hardened engineered surface of asphalt or concrete, and

        2) A storage area designed, constructed, and operated in accordance with engineering plans and specifications approved in advance by the Director. All such engineering plans or specifications submitted shall demonstrate compliance with Part I.D.4,

3) A storage area that provides containment berms to control stormwater run-on and run-off, and

4) Stormwater drainage works approved in advance by the Director, or

5) Other storage facilities and means approved in advance by the Director.

12. BAT Design Standards for Tailings Cell 4B - the BAT design standard for Tailings Cell 4B shall be defined by and constructed in accordance with the requirements as summarized by the engineering drawings, specifications, and description in Table 6, below:

Table 6. Approved Tailings Cell 4B Engineering Design and Specifications

Engineering Drawings			
Name	Date	Revision No.	Title
Sheet 1 of 8	January 2009	Rev. 1	Cover Sheet
Sheet 2 of 8	January 2009	Rev. 1	Site Plan
Sheet 3 of 8	January 2009	Rev. 1	Base Grading Plan
Sheet 4 of 8	January 2009	Rev. 1	Pipe Layout and Details
Sheet 5 of 8	December 2007	Rev. 0	Lining System Details I
Sheet 6 of 8	January 2009	Rev. 1	Lining System Details II
Sheet 7 of 8	January 2009	Rev. 1	Lining System Details III
Sheet 8 of 8	January 2009	Rev. 1	Lining System Details IV
Figure 1	January 2009	-	Mill Site Drainage Basins (supporting reference)

Engineering Specifications		
Date	Document Title	Prepared by
January 2009	Slope Stability Analysis Calculation Package	Geosyntec Consultants
January 2009	Seismic Deformation Analysis Calculation Package	Geosyntec Consultants
January 2009	Revised Pipe Strength Analysis Calculation Package	Geosyntec Consultants
January 2009	Revised Comparison of Flow Though Compacted Clay Liner and Geosynthetic Clay Liner Calculation Package	Geosyntec Consultants
January 2009	Revised Action Leakage Rate Calculation Package	Geosyntec Consultants
August 2009	Blasting - Locations and Profiles, Attachment: Figures 1 and 2	Geosyntec Consultants
August 2009	(Revised) Technical Specifications, with the exception of Section 02200 (Earthwork)	Geosyntec Consultants
August 2009	Cell 4B Capacity Calculations	Geosyntec Consultants
August 2009	Revised Cushion Fabric Calculations	
August 2009	Construction Quality Assurance Plan for the Construction of Cell 4B Lining System	Geosyntec Consultants
September 2009	(Revised) Technical Specification Section 02200 (Earthwork)	Geosyntec Consultants
August 6, 2009	Blast Plan, KGL and Associates and Blast Plan Review, Geosyntec Consultants letter dated September 10, 2009	KGL and Associates and Geosyntec Consultants
September 2009	Probable Maximum Precipitation (PMP) Event Computation	Geosyntec Consultants
January 2009	Slope Stability Analysis Calculation Package	Geosyntec Consultants

Tailings Cell 4B Design and Construction - approved by the Director will consist of the following major elements:

a) Dikes - consisting of newly constructed dikes on the south and west side of the cell, each including a 20-foot wide road at the top (minimum) to support an access road. The grading plan for the Cell 4B excavation includes interior slopes of 2H to 1V. The exterior slopes of the southern and western dikes will have typical slopes of 3H to 1V. Limited portions of the Cell 4B interior sideslopes in the northwest corner and southeast corner of the cell, (where the slimes drain and leak detection sump will be located will also have a slope of 3H to 1V. The base width of the southern dikes varies from approximately 92 feet at the western end to approximately 190 feet at the eastern end of the dike, with no exterior embankment present on any other side of the cell.

b) 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% at a moisture content between +3% and -3% of optimum moisture content, as determined by ASTM D-1557. The floor of Cell 4B has an average slope of 1% that grades from the northwest corner to the southeast corner.

c) Tailings Capacity - the floor and inside slopes of Cell 4B encompass about 44 acres, and the cell will have a water surface area of 40 acres and a maximum capacity of about 1.9 million cubic yards of tailings material storage (as measured below the required 3-foot freeboard).

d) Liner and Leak Detection Systems - including the following layers, in descending order:

    1) Primary Flexible Membrane Liner (FML) - consisting of 60-mil high density polyethylene (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 4B floor area. In other locations, the primary FML will be in contact with the slimes drain collection system (discussed below).

    2) Leak Detection System - includes a permeable HDPE geonet that extends across the entire area under the primary FML in Cell 4B, and drains to a leak detection sump in the southeast corner. Access to the leak detection sump is via an 18-inch inside diameter (ID) PVC pipe placed down the inside slope, located between the primary and secondary FML liners. At its base this pipe will be surrounded with a gravel filter set in a sump having dimensions of 15 feet by 10 feet by 2 feet deep that contains a leak detection system sump area. In turn, the gravel filter layer will be enclosed in an envelope of geotextile fabric. The purpose of both the gravel and geotextile fabric is to serve as a filter.

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

    4) 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 4B, the Permittee shall demonstrate that the GCL has achieved a moisture content of at least 50% by weight.

e) 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:

1) Horizontal Strip Drain System - is installed in a herringbone pattern across the floor of Cell 4B that drain 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.

2) 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 northwest corner downhill to the far southeast corner of Cell 4B where it joins the slimes drain access pipe.

3) Slimes Drain Access Pipe - consisting of an 18-inch ID Schedule 40 PVC pipe placed down the inside slope of Cell 4B at the southeast corner, above the primary FML. Said 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.

f) Cell 4B North and East Dike Splash Pads - Nine 20-foot-wide splash pads will be constructed on the north and east dikes to protect the primary FML from abrasion and scouring by tailings slurry. These pads will consist of an extra layer of 60 mil HDPE membrane that will be installed in the anchor trench and placed down the inside slope of Cell 4B, from the top of the dike, under the inlet pipe, and down the inside slope to a point at least 5 feet onto the Cell 4B floor beyond the toe of the slope.

g) Cell 4B Emergency Spillway - a concrete lined spillway will be constructed near the southeastern corner of the east dike to allow emergency runoff from Cell 4A into Cell 4B. This spillway will be limited to a 6-inch reinforced concrete slab, with a welded

wire fabric installed within it at its midsection, set atop a cushion geotextile placed directly over the primary FML in a 4-foot deep trapezoidal channel. A 100-foot wide, 60-mil HDPE membrane splash pad will be installed beneath the emergency spillway. No other spillway or overflow structure will be constructed at Cell 4B. All stormwater runoff and tailings wastewaters not retained in Cells 2 and 3, and 4A will be managed and contained in Cell 4B, including the Probable Maximum Precipitation and flood event.

13. BAT Performance Standards for Tailings Cell 4B - the Permittee shall operate and maintain Tailings Cell 4B so as to prevent release of wastewater to groundwater and the environment in accordance with the currently approved Cell 4B BAT, Monitoring, Operations and Maintenance Plan. Any failure to achieve or maintain the required BAT performance standards shall constitute a violation of the Permit and shall be reported to the Director in accordance with Part I.G.3. Performance standards for Tailings Cell 4B shall include the following:

    a) Leak Detection System (LDS) Maximum Allowable Daily Head - the fluid head in the LDS shall not exceed 1 foot above the lowest point on the lower flexible membrane liner on the cell floor. At all times the Permittee shall operate the LDS pump and transducer in a horizontal position at the lowest point of the LDS sump floor.

    b) LDS Maximum Allowable Daily Leak Rate - shall not exceed 26,145 gallons/day.

    c) Slimes Drain Annual Average Recovery Head Criteria - after the Permittee initiates pumping conditions in the slimes drain layer in Cell 4B, the Permittee will provide: 1) continuous declining fluid heads in the slimes drain layer, in a manner equivalent to the requirements found in Part I.D.3(b), and 2) a maximum head of 1.0 feet in the tailings (as measured from the lowest point of upper flexible membrane liner) in 5.5 years or less.

    d) Maximum Weekly Wastewater Level - under no circumstance shall the freeboard be less than 3-feet in Cell 4B, as measured from the top of the upper FML.

14. BAT Performance Standards for the New Decontamination Pad - the Permittee shall operate and maintain the New Decontamination Pad (NDP) to prevent release of wastewater to groundwater and the environment in accordance with the currently approved DMT Monitoring Plan. Any failure to achieve or maintain the required BAT performance standards shall constitute a violation of the Permit and shall be reported to the Director in accordance with Part I.G.3. Performance standards for the NDP shall include, but are not limited to, the following:

    a) NDP LDS Access Pipes - the water level shall not exceed 0.10 foot above the concrete floor in any LDS access pipe, at any time. Compliance will be defined as a depth to standing water present in any of the LDS access pipes of more than or equal to 6.2 feet as measured from the water measuring point (top of access pipe).

    b) Soil and debris will be removed from the wash pad of the NDP, in accordance with the currently approved DMT Monitoring Plan. Cracks in the wash pad greater than 1/8 inch (width) will be repaired within five working days of discovery.

E. GROUND WATER COMPLIANCE AND TECHNOLOGY PERFORMANCE MONITORING - beginning with the effective date and lasting through the term of this Permit or as stated in an approved closure plan, the Permittee shall sample groundwater monitoring wells, tailing cell wastewaters, seeps and springs, monitor groundwater levels, monitor water levels of process solutions, and monitor and keep records of the operation of the facility, as follows:

1. Routine Groundwater Compliance Monitoring - the Permittee shall monitor upgradient, lateral gradient, and downgradient groundwater monitoring wells completed in the shallow aquifer in the vicinity of all potential discharge sources that could affect local groundwater conditions at the facility, as follows:

   a) Ground Water Monitoring Quality Assurance Plan - all groundwater monitoring and analysis performed under this Permit shall be conducted in accordance with a Quality Assurance Plan (QAP) currently approved by the Director. Any non-conformance with QAP requirements in a given quarterly groundwater monitoring period will be corrected and reported to the Director on or before submittal of the next quarterly groundwater monitoring report pursuant to Part I.F.1.

   b) Quarterly Monitoring - the Permittee shall monitor on a quarterly basis all monitoring wells listed in Table 2 of this Permit where local groundwater average linear velocity has been found by the Director to be equal to or greater than 10 feet/year. For purposes of this Permit, quarterly monitoring is required at the following wells:

      1) Upgradient Wells: none

      2) Lateral or Downgradient Wells: MW-11, MW-14, MW-25, MW-26 (formerly TW4-15), MW-30, MW-31, MW-36.

   c) Semi-annual Monitoring - the Permittee shall monitor on a semi-annual basis all monitoring wells listed in Table 2 of this Permit, where local groundwater average linear velocity has been found by the Director to be less than 10 feet/year, and all general monitoring wells. For purposes of this Permit, semi-annual monitoring is required at the following wells:

      1) Monitoring Wells Listed on Table 2:

         i. Upgradient Well: MW-27.

         ii. Lateral or Downgradient Wells: MW-2, MW-3A, MW-5, MW-12, MW-15, MW-17, MW-23, MW-24, MW-28, MW-29, and MW-32 (formerly TW4-17), MW-35, and MW-37.

      2) General Monitoring Wells:

         i. Upgradient Wells: MW-1, MW-18, and MW-19.

         ii. Lateral or Downgradient Wells: TW4-24, MW-20 and MW-22.

   d) Compliance Monitoring Parameters - all groundwater samples collected shall be analyzed for the following parameters:

      1) Field Parameters - depth to groundwater, pH, temperature, specific conductance, dissolved oxygen, and redox potential (Eh).

      2) Laboratory Parameters

i. GWCL Parameters - all contaminants specified in Table 2.

ii. General Inorganics - chloride, sulfate, carbonate, bicarbonate, sodium, potassium, magnesium, calcium, and total anions and cations.

e) Special Provisions for Groundwater Monitoring - the Permittee shall ensure that all groundwater monitoring conducted and reported complies with the following requirements:

1) Depth to Groundwater Measurements - shall always be made to the nearest 0.01 foot.

2) Minimum Detection Limits - all groundwater quality analyses reported shall have a minimum detection limit or reporting limit that is less than its respective Ground Water Compliance Limit concentration defined in Table 2.

3) Gross Alpha Counting Variance - all gross alpha analysis shall be reported with an error term. All gross alpha analysis reported with an activity equal to or greater than the GWCL, shall have a counting variance that is equal to or less than 20% of the reported activity concentration. An error term may be greater than 20% of the reported activity concentration when the sum of the activity concentration and error term is less than or equal to the GWCL.

4) All equipment used for purging and sampling of groundwater shall be made of inert materials.

2. Groundwater Monitoring: General Monitoring Wells - Upgradient wells MW-1, MW-18, and MW-19; Lateral Monitoring Well TW4-24; and Downgradient wells MW-20 and MW-22. The Permittee shall monitor wells MW-1, MW-18, MW-19, TW4-24, MW-20 and MW-22 on a semi-annual basis. Said sampling shall comply with the following Permit requirements, but shall not be considered compliance monitoring for the purposes of Part G:

a) Routine groundwater compliance monitoring requirements of Part I.E.1.

b) Groundwater head monitoring requirements of Part I.E.3

c) Well monitoring procedure requirements of Part I.E.5.

3. Groundwater Head Monitoring - on a quarterly basis and at the same frequency as groundwater monitoring required by Part I.E.1, the Permittee shall measure depth to groundwater in the following wells and/or piezometers:

a) Point of Compliance Wells - identified in Table 2 and Part I.E.1 of this Permit.

b) Piezometers - P-1, P-2, P-3, P-4, and P-5.

c) Head Monitoring Well - MW-34.

d) General Monitoring Wells - Upgradient wells MW-1, MW-18, and MW-19; Lateral well TW4-24; and Downgradient wells MW-20 and MW-22.

e) Contaminant Investigation Wells - any well required by the Director as a part of a contaminant investigation or groundwater corrective action.

f) Any other wells or piezometers required by the Director.

4. Groundwater Monitoring Well Design and Construction Criteria - all new groundwater monitoring wells installed at the facility shall comply with the following design and construction criteria:

   a) Located as close as practical to the contamination source, tailings cell, or other potential origin of groundwater pollution.

   b) Screened and completed in the shallow aquifer.

   c) Designed and constructed in compliance with UAC R317-6-6.3(I)(6), including the EPA RCRA Ground Water Monitoring Technical Enforcement Guidance Document, 1986, OSWER-9950.1.

   d) Aquifer tested to determine local hydraulic properties, including but not limited to hydraulic conductivity.

5. Monitoring Procedures for Wells - beginning with the date of Permit issuance, all monitoring shall be conducted by the Permittee in conformance with the following procedures:

   a) Sampling - grab samples shall be taken of the groundwater, only after adequate removal or purging of standing water within the well casing has been performed.

   b) Sampling Plan - all sampling shall be conducted to ensure collection of representative samples, and reliability and validity of groundwater monitoring data.

   c) Laboratory Approval - all analyses shall be performed by a laboratory certified by the State of Utah to perform the tests required.

   d) Damage to Monitoring Wells - if any monitor well is damaged or is otherwise rendered inadequate for its intended purpose, the Permittee shall notify the Director in writing within five calendar days of discovery.

   e) Field Monitoring Equipment Calibration and Records - immediately prior to each monitoring event, the Permittee shall calibrate all field monitoring equipment in accordance with the respective manufacturer's procedures and guidelines. The Permittee shall make and preserve on-site written records of such equipment calibration in accordance with Part II.G and H of this Permit. Said records shall identify the manufacturer's and model number of each piece of field equipment used and calibration.

6. White Mesa Seeps and Springs Monitoring - the Permittee shall conduct annual monitoring of all seeps and springs identified in the currently approved Sampling Plan for Seeps and Springs in the Vicinity of the White Mesa Uranium Mill. Said monitoring shall include, but is not limited to:

   a) Field Measurements - including: pH, temperature, and specific conductivity.

   b) Water Quality Sampling and Analysis - the Permittee shall collect grab samples and perform laboratory analysis of all water quality parameters identified in Table 2 of this Permit.

   c) Certified Laboratory Analysis - all laboratory analysis will be conducted by a Utah certified laboratory.

   d) Analytical Methods - all laboratory analysis shall be conducted using analytical methods listed in the currently approved QAP pursuant to Part I.E.1 of this Permit.

e) Minimum Detection Limits - all seeps or springs water quality analyses reported shall have a minimum detection limit or reporting limit that is less than or equal to the respective:

1) Ground Water Quality Standards concentrations defined in Table 2 of this Permit, and

2) For TDS, Sulfate, and Chloride, the Minimum Detection Limit for those constituents for seeps and springs monitoring will be as follows: 10 mg/L, 1 mg/L, and 1 mg/L, respectively.

f) Quality Control Samples - the Permittee will conduct quality control (QC) sampling and analysis as a part of all seeps and springs sampling, in accordance with the requirements of Section 4.3 of the currently approved QAP; pursuant to Part I.E.1 of this Permit. Said QC samples shall include, but are not limited to: trip blanks, duplicate samples, and equipment rinse blanks.

g) Prior Notification - at least 15 calendar days before any fieldwork or water quality sample collection, the Permittee shall provide written notice to allow the Director to observe or split sample any or all seeps or springs.

7. DMT Performance Standards Monitoring - the Permittee shall perform technology performance monitoring in accordance with the currently approved DMT Monitoring Plan to determine if DMT is effective in minimizing and controlling the release of contaminants pursuant to the provisions of Parts I.D.1 and I.D.3 of this Permit, including, but not limited to the following activities:

a) Weekly Tailings Wastewater Pool Elevation Monitoring: Cells 1 and 3 - the Permittee shall monitor and record weekly the elevation of wastewater in Tailings Cells 1 and 3 to ensure compliance with the maximum wastewater elevation criteria mandated by Condition 10.3 of the License. Said measurements shall be made from a wastewater level gauge or elevation survey to the nearest 0.01 foot.

b) Quarterly Slimes Drain Water Level Monitoring: Cells 2 and 3 - the Permittee shall monitor and record quarterly the depth to wastewater in the slimes drain access pipes as described in Part I.D.3 of this Permit and the currently approved DMT Monitoring Plan at Tailings Cells 2 and 3 to determine the recovery head. For purposes of said monitoring, the Permittee shall at each tailings cell:

1) Perform at least 1 separate slimes drain recovery test at each disposal cell in each quarterly period of each calendar year that meets the requirements of Part I.D.3,

2) Designate, operate, maintain, and preserve one water level measuring point at the centerline of the slimes drain access pipe that has been surveyed and certified by a Utah licensed engineer or land surveyor,

3) Make all slimes drain recovery head test (depth to fluid) measurements from the same designated water level measuring point, and

4) Record and report all fluid depth measurements to the nearest 0.01 foot.

5) For Cell 3 these requirements shall apply upon initiation of tailings de-watering operations.

c) Weekly Feedstock Storage Area Inspection - the Permittee shall conduct weekly inspections of all feedstock storage to: 1)Confirm the bulk feedstock materials are maintained within the approved Feedstock Storage Area defined by Table 4, and 2) Verify that all alternate feedstock materials located outside the Feedstock Area defined in Table 4, are stored in accordance with the requirements found in Part I.D.11.

d) Feedstock Material Stored Outside the Feedstock Storage Area Inspections

a) Weekly Inspection - the Permittee will conduct weekly inspections to verify that each feed material container complies with the requirements of Part I.D.11.

b) Hardened Surface Storage Area - in the event the Permittee constructs a hardened surface storage area for feed materials, pursuant to Part I.D.11, prior Director approval will be secured for the following:

i. Engineering Design and Specifications - in accordance with the requirements of Part I.D.4, and

ii. Operation and Maintenance Plan.

e) Inspections of Tailing Cell and Pond Liner Systems - the Permittee shall inspect the liner system at Tailing Cells 1, 2, and 3 on a daily basis pursuant to the requirements of Sections 2.1 and 2.2 of the currently approved DMT Monitoring Plan. In the event that any liner defect or damage is identified during a liner system inspection, the Permittee shall: 1) report and repair said defect or damage pursuant to Part I.G.3 by implementation of the currently approved Liner Maintenance Provisions, and 2) report all repairs made pursuant to Part I.F.2.

f) Weekly New Decontamination Pad Inspection - the Permittee shall conduct weekly inspections of the New Decontamination Pad as described in Part I.D.14 of this Permit and the currently approved DMT Monitoring Plan.

8. Cell 4A BAT Performance Standards Monitoring and Maintenance - in accordance with the currently approved Cell 4A BAT, Monitoring, Operations and Maintenance Plan, the Permittee shall immediately implement all monitoring and recordkeeping requirements therein. The Cell 4A BAT monitoring includes the following:

a) Weekly Leak Detection System (LDS) Monitoring - including:

1) Leak Detection System Pumping and Monitoring Equipment - the Permittee shall provide continuous operation of the leak detection system pumping and monitoring equipment, including, but not limited to, the submersible pump, pump controller, head monitoring, and flow meter equipment approved by the Director. Failure of any LDS pumping or monitoring equipment not repaired and made fully operational within 24-hours of discovery shall constitute failure of BAT, and a violation of this Permit.

2) Maximum Allowable Head - the Permittee shall measure the fluid head above the lowest point on the secondary flexible membrane by the use of procedures and equipment approved by the Director. Under no circumstance shall fluid head in the leak detection system sump exceed a 1-foot level above the lowest point in the lower flexible membrane liner on the cell floor. For purposes of compliance

monitoring this 1-foot distance shall equate to 2.28 feet above the leak detection system transducer.

3) Maximum Allowable Daily LDS Flow Rates - the Permittee shall measure the volume of all fluids pumped from the LDS. Under no circumstances shall the average daily LDS flow volume exceed 24,160 gallons/day.

4) 3-foot Minimum Vertical Freeboard Criteria - the Permittee shall operate and maintain wastewater levels to provide a 3-foot Minimum of vertical freeboard in Tailings Cell 4A. Said measurements shall be made to the nearest 0.1 foot.

b) Quarterly Slimes Drain Recovery Head Monitoring - immediately after the Permittee initiates pumping conditions in the Tailings Cell 4A slimes drain system, quarterly recovery head tests and fluid level measurements will be made in accordance with the requirements of Parts I.D.3 and I.E.7(b) of this Permit and the currently approved Cell 4A BAT, Monitoring, Operations and Maintenance Plan.

c) Liner Maintenance and Repair - all repairs to the liner shall be completed in accordance with Section 9.4 of the approved June 2007 Geosyntec Consultants Cell 4A Construction Quality Assurance Plan (CQA/QC Plan) as found in Table 5 of this Permit. Repairs shall be performed by qualified liner repair personnel and shall be reported in a Liner Repair Report, certified by a Utah licensed Professional Engineer. The Liner Repair Report shall be submitted to for Director approval in accordance with Part I.F.3 of the Permit. Any leak, hole, or other damage to the liner will be reported to the Director pursuant to the requirements found in Part I.G.3.

9. On-site Chemicals Inventory - the Permittee shall monitor and maintain a current inventory of all chemicals used at the facility at rates equal to or greater than 100 kg/yr. Said inventory shall be maintained on-site, and shall include, but is not limited to:

   a) Identification of chemicals used in the milling process and the on-site laboratory, and

   b) Determination of volume and mass of each raw chemical currently held in storage at the facility.

10. Tailings Cell Wastewater Quality Monitoring - on an annual basis, the Permittee shall collect wastewater quality samples from each wastewater source at each tailings cell at the facility, including, but not limited to:

    a) One surface impounded wastewater location at each of Tailings Cells 1, 3, 4A, and 4B.

    b) One slimes drain wastewater access pipe at each of Tailings Cells 2, 3, 4A, and 4B. For Cells 3, 4A, and 4B, this requirement shall apply immediately after initiation of de-watering operations at these cells, and

    c) One leak detection wastewater access pipe at Tailings Cells 4A and 4B.

    d) All such sampling shall be conducted in August of each calendar year in compliance with the currently approved White Mesa Uranium Mill Tailing and Slimes Drain Sampling Program. Said annual monitoring shall include, but is not limited to:

       1) Water Quality Sampling and Analysis - the Permittee shall collect grab samples and perform laboratory analysis of all:

          i. Water quality parameters identified in Table 2 of this Permit, and

ii. Semi-volatile compounds identified in EPA Method 8270D.

2) Certified Laboratory Analysis - all laboratory analysis will be conducted by a Utah certified laboratory.

3) Analytical Methods - all laboratory analysis shall be conducted using analytical methods listed in the currently approved QAP pursuant to Part I.E.1 of this Permit.

4) Minimum Detection Limits - all water quality analyses reported shall have a minimum detection limit or reporting limit that is less than or equal to the respective:

   i. Ground Water Quality Standards concentrations defined in Table 2 of this Permit,

   ii. For TDS, Sulfate, and Chloride, the Minimum Detection Limit for those constituents for Tailing Cell wastewater monitoring will be as follows: 1,000 mg/L, 1,000 mg/L, and 1 mg/L, respectively, and

   iii. Lower limits of quantitation for groundwater for semi-volatile organic compounds listed in Table 2 of EPA Method 8270D, Revision 4, dated February, 2007.

5) Quality Control Samples - the Permittee will conduct quality control (QC) sampling and analysis as a part of all tailings wastewater sampling, in accordance with the requirements of Section 4.3 of the currently approved QAP; pursuant to Part I.E.1 of this Permit. Said QC samples shall include, but are not limited to: trip blanks, duplicate samples, and equipment rinse blanks.

6) Prior Notification - at least 30 calendar days before any water quality sample collection, the Permittee shall provide written notice to allow the Director to observe or split sample any tailings cell, slimes drain, or leak detection wastewaters.

7) Sample Omission - in the course of each annual sampling event, the Permittee shall sample and analyze all tailings cell, slimes drain, and leak detection wastewater sources identified in the currently approved Tailings and Slimes Drain Sampling Program (pp. 1-3), or as required by this Permit, whichever is greater. The Permittee shall not omit sampling of any of tailings cell wastewater source during said annual event, without prior written approval from the Director.

11. Groundwater Monitoring Modifications - before any modification of groundwater monitoring or analysis procedures, methods, or equipment, the Permittee must obtain prior written approval from the Director.

12. Cell 4B BAT Performance Standards Monitoring and Maintenance - immediately following Director approval of the Cell 4B BAT, Monitoring, Operations and Maintenance Plan, the Permittee shall immediately implement all monitoring and recordkeeping requirements therein. The Cell 4B BAT monitoring shall include the following: Weekly Leak Detection System (LDS) Monitoring - including:

    1) Leak Detection System Pumping and Monitoring Equipment - the Permittee shall provide continuous operation of the leak detection system pumping and

monitoring equipment, including, but not limited to, the submersible pump, pump controller, head monitoring, and flow meter equipment approved by the Director. Failure of any LDS pumping or related monitoring equipment not repaired and made fully operational within 24-hours of discovery shall constitute failure of BAT, and a violation of this Permit.

2) Maximum Allowable Head - the Permittee shall measure the fluid head above the lowest point on the secondary flexible membrane by the use of procedures and equipment approved by the Director. Under no circumstance shall fluid head in the leak detection system (LDS) sump exceed a 1-foot level above the lowest point in the lower flexible membrane liner on the cell floor. Any occurrence of leak detection system fluids above this 1-foot limit shall constitute failure of BAT, and a violation of this Permit.

3) Maximum Allowable Daily LDS Flow Rates - the Permittee shall measure the volume of all fluids pumped from the LDS. Under no circumstances shall the average daily LDS flow volume exceed 26,145 gallons/day.

4) 3-foot Minimum Vertical Freeboard Criteria - the Permittee shall operate and maintain wastewater levels to provide a 3-foot Minimum of vertical freeboard in Tailings Cell 4B. Said measurements shall be made to the nearest 0.1 foot.

b) Quarterly Slimes Drain Recovery Head Monitoring - immediately after the Permittee initiates pumping conditions in the Tailings Cell 4B slimes drain system, quarterly recovery head tests and fluid level measurements will be made in accordance with the requirements of Parts I.D.3 and I.E.7(b) of this Permit and the currently approved Cell 4B BAT, Monitoring, Operations and Maintenance Plan.

c) Liner Maintenance and Repairs - all repairs to the liner shall be completed in accordance with Section 10.4 of the approved August 2009 Geosyntec Consultants Cell 4B Construction Quality Assurance Plan (CQA/QC Plan) as found in Table 6 of this Permit. Repairs shall be performed by qualified liner repair personnel and shall be reported in a Liner Repair Report, certified by a Utah licensed Professional Engineer. The Liner Repair Report shall be submitted for Director approval in accordance with Part I.F.3 of the Permit. Any leak, hole, or other damage to the liner will be reported pursuant to the requirements found in Part I.G.3.

F. REPORTING REQUIREMENTS - The following reporting procedures for routine and compliance reports must be met.

1. Routine Groundwater Monitoring Reports - the Permittee shall submit quarterly monitoring reports of field and laboratory analyses of all well monitoring and samples described in Parts I.E.1, I.E.2, I.E.3, and I.E.5 of this Permit for Director review and approval. Reports shall be submitted according to the following schedule:

Table 7. Groundwater Monitoring Reporting Schedule

Quarter	Period	Due Date
First	January - March	June 1
Second	April - June	September 1
Third	July - September	December 1
Fourth	October - December	March 1

Failure to submit the reports by the due date shall be deemed as noncompliance with this Permit. Said monitoring reports shall include, but are not limited to, the following minimum information:

a) Field Data Sheets - or copies thereof that provide the following: well name, date and time of well purging, date and time of well sampling, type and condition of well pump, depth to groundwater before purging and sampling, calculated well casing volume, volume of water purged before sampling, volume of water collected for analysis, types of sample containers and preservatives.

b) Laboratory Results - or copies thereof that provide the following: date and time sampled, date received by laboratory, and for each parameter analyzed, the following information: laboratory result or concentration, units of measurement, minimum detection limit or reporting limit, analytical method, date of analysis, counting error for radiological analyses, total cations and anions for inorganic analysis.

c) Water Table Contour Map - which provides the location and identity of all wells sampled that quarter, the measured groundwater elevation at each well measured in feet above mean sea level, and isocontour lines to delineate groundwater flow directions observed during the quarterly sampling event.

d) Quality Assurance Evaluation and Data Validation - including a written description and findings of all quality assurance and data validation efforts conducted by the Permittee in compliance with the currently approved Groundwater Monitoring Quality Assurance Plan. Said report shall verify the accuracy and reliability of the groundwater quality compliance data, after evaluation of sample collection techniques and equipment, sample handling and preservation, analytical methods used, etc

e) Non-conformance disclosure - with each quarterly groundwater monitoring report the Permittee shall fully and completely disclose all non-conformance with requirements of the currently approved QAP, mandated by Part I.E.1(a).

f) Electronic Data Files and Format - in addition to written results required for every sampling report, the Permittee shall provide an electronic copy of all laboratory results for groundwater quality monitoring conducted. Said electronic files shall

consist of Comma Separated Values (CSV) format, or as otherwise approved by the Director.

g) Time Concentration Plots - with each quarterly groundwater monitoring report the Permittee shall submit time concentration plots for each monitoring well for the following constituents: chloride, fluoride, sulfate, and uranium.

2. Routine DMT Performance Standards Monitoring Report - the Permittee shall provide quarterly monitoring reports of all DMT performance standards monitoring required by Parts I.D.3 and I.E.7 of this Permit. DMT monitoring shall be conducted in compliance with this Permit and the currently approved DMT Monitoring Plan. When a liner repair is performed at any DMT impoundment, a Repair Report is required by the Liner Maintenance Provisions. This Repair Report shall be included with the next quarterly DMT Report. Said monitoring reports and results shall be submitted for Director approval on the schedule provided in Table 7, above.

3. Routine Cell 4A and 4B BAT Performance Standards Monitoring Reports - the Permittee shall provide quarterly monitoring reports of all BAT performance standards monitoring required by Parts I E.8 and I.E.12 of this Permit. BAT Monitoring at Cells 4A and 4B shall be conducted in compliance with the currently approved BAT Monitoring, Operations and Maintenance Plan. When a liner repair is performed at Tailings Cell 4A or 4B, a Repair Report is required by Parts I.E.8(c) and I.E.12(c) of the Permit. This Repair Report shall be included with the next quarterly BAT Report. Said monitoring report and results shall be submitted for Director approval on the schedule provided in Table 7 above. At a minimum, reporting of BAT monitoring for Cells 4A and 4B will include:

   a) LDS Monitoring - including:

      1) Report on the operational status of the LDS pumping and monitoring equipment during the quarter, including identification of any intervals of non-operational status and repairs.

      2) Measurement of the weekly fluid head at the lowest point of the secondary membrane.

      3) Measurement of the volume of all fluids pumped from the LDS.

   b) Measurement of the weekly wastewater fluids elevation in the Cells 4A and 4B to determine freeboard.

   c) Slimes Drain Recovery Head Monitoring as per the requirements of Parts I.D.6 and I.E.8(b).

4. DMT and BAT Performance Upset Reports - the Permittee shall report any non-compliance with the DMT or BAT performance criteria of Part I.D in accordance with the requirements of Part I.G.3 of this Permit.

5. Other Information - when the Permittee becomes aware of a failure to submit any relevant facts in the permit application or submittal of incorrect information in a permit

application or in any report to the Director, the Permittee shall submit such facts or information within 10 calendar days of discovery.

6. Groundwater Monitoring Well As-Built Reports - as-built reports for new groundwater monitoring wells shall be submitted for Director approval within 60 calendar days of well completion, and at a minimum will include the following information:

   a) Geologic Logs - that detail all soil and rock lithologies and physical properties of all subsurface materials encountered during drilling. Said logs shall be prepared by a Professional Geologist licensed by the State of Utah, or otherwise approved beforehand by the Director.

   b) Well Completion Diagram - that detail all physical attributes of the well construction, including:

      1) Total depth and diameters of boring,

      2) Depth, type, diameter, and physical properties of well casing and screen, including well screen slot size,

      3) Depth intervals, type and physical properties of annular filterpack and seal materials used,

      4) Design, type, diameter, and construction of protective surface casing, and

      5) Survey coordinates prepared by a State of Utah licensed engineer or land surveyor, including horizontal coordinates and elevation of water level measuring point, as measured to the nearest 0.01 foot.

   c) Aquifer Permeability Data - including field data, data analysis, and interpretation of slug test, aquifer pump test or other hydraulic analysis to determine local aquifer hydraulic conductivity in each well.

7. White Mesa Seeps and Springs Monitoring Reports - a seeps and springs monitoring report shall be submitted for Director review and approval with the 4th ~~3rd~~ Quarter Routine Groundwater Monitoring Report due on March ~~December~~ 1, of each calendar year. Said report shall include, but is not limited to:

   a) Field Measurement Results and Worksheets - for each sample collected that comply with the requirements of Part I.F.1(a) of this Permit,

   b) Laboratory Results - for each sample collected that comply with the requirements of Part I.F.1(b) of this Permit,

   c) Water Table Contour Map - that includes groundwater elevations for each well at the facility and the elevations of the phreatic surfaces observed at each of the seeps and springs sampled. The contour map will include all water level data measurements from seeps, springs, and monitoring wells at the site from the 3rd Quarter Routine Groundwater Monitoring event of each year. The contour map shall be at a map scale, such that, all seeps and springs listed in the approved Sampling Plan for Seeps and Springs in the Vicinity of the White Mesa Uranium Mill and the monitoring wells on site may be seen on one map,

   d) Data Evaluation - and interpretation of all groundwater quality data collected,

e) Quality Assurance Evaluation and Data Validation - for the seeps and springs water quality data that meets the requirements of Part I.F.1(d),

f) Electronic Data Files and Format - that meet the requirements of Part I.F.1(e) of this Permit, and

g) Survey data for the seeps and springs shall be based on an elevation survey, conducted under the direction of and certified by a Utah licensed professional engineer or land surveyor. The survey will include State Plan Coordinates (northings and eastings) and vertical elevations. The surveyed coordinates and elevations of the seeps and springs shall be within 1 foot of the highest point of the saturated seepage face on the day of the survey. This survey data must be obtained before any samples are collected.

8. Chemicals Inventory Report - at the time of submittal of an application for Permit renewal the Permittee shall submit a report to update the facilities chemical inventory report. Said report shall include:

   a) Identification of all chemicals used in the milling and milling related processes at the White Mesa Mill, and

   b) Provide all inventory information gathered pursuant to Part I.E.9,

   c) Determination of the total volumes currently in use and historically used, as data is available.

9. Tailings Cell Wastewater Quality Reports - all annual wastewater quality sampling and analysis required by Part I.E.10 shall be reported to the Director with the 3rd Quarter groundwater quality report due on December 1, of each calendar year. Said report shall include:

   a) Data evaluation and interpretation of all wastewater quality samples collected,

   b) All information required by Part I.F.1(a), (b), (d), and (e) of this Permit, and

   c) For slimes drain samples, the Permittee shall report depth to wastewater measurements from the water level measurement point. Said wastewater level shall be measured immediately before sample collection.

10. Revised Hydrogeologic Report - pursuant to Part IV.D of this Permit, and at least 180 calendar days prior to Permit expiration, the Permittee shall submit for Director approval a revised hydrogeologic report for the facility and surrounding area. Said report shall provide a comprehensive update and evaluation of:

    a) Local hydrogeologic conditions in the shallow aquifer, including, but not limited to: local geologic conditions; time relationships and distribution of shallow aquifer head measurements from facility wells and piezometers; local groundwater flow directions; and distribution of aquifer permeability and average linear groundwater velocity across the site, and

    b) Well specific groundwater quality conditions measured at facility monitoring wells for all groundwater monitoring parameters required by this Permit, including, but not limited to: temporal contaminant concentrations and trends from each monitoring well; statistical tests for normality of each contaminant and well, including univariate

or equivalent tests; calculation of the mean concentration and standard deviation for each well and contaminant.

11. Annual Slimes Drain Recovery Head Report - on or before March 1 of each year the Permittee shall submit for Director approval an annual slimes drain recovery head report for Tailings Cells 2 and 3. Said report shall conform to the requirements of Part I.D.3(b), I.E.7(b), and II.G of this Permit, and:

    a) Provide the individual slimes drain recovery head monitoring data for the previous calendar year, including, but not limited to: date and time for the start and end of recovery test, initial water level, final depth to stable water level and equivalent recovery water level elevation.

    b) Calculate the average slimes drain recovery head for the previous calendar year.

    c) Include a time series chart to show trends of the recovery water level elevations at each slimes drain.

    d) Include the results of a quality assurance evaluation and data validation. Said examination shall provide written descriptions and findings that:

        1) Evaluate all data collected, data collection methods, and all related calculations required by this Permit, and

        2) Verify the accuracy and reliability of both the data and calculations reported.

    e) Demonstrate compliance status with the requirements of Part I.D.3(b) and I.E.7(b) of this Permit.

12. Decontamination Pads Annual Inspection Report - the New Decontamination Pad and Existing Decontamination Pad will be taken out of service and inspected annually during the second quarter of each year, to ensure integrity of the concrete wash pad surfaces. If physical defects in the wash pad as defined by Part I.D.14 of the Permit are identified during the inspection, repairs shall be made prior to resuming the use of the facility. Said defects include, but are not limited to concrete deterioration, cracking, subsidence, etc. The results of the annual inspection and all repairs will be documented on inspection forms in accordance with the currently approved DMT Monitoring Plan. The inspection forms and documentation of all repairs completed shall be included in the 2nd Quarter DMT Monitoring Report due September 1, of each calendar year.

G. OUT OF COMPLIANCE STATUS

1. Accelerated Monitoring Status - is required if the concentration of a pollutant in any compliance monitoring sample exceeds a GWCL in Table 2 of the Permit; the facility shall then:

   a) Notify the Director in writing (the Exceedance Notice) within 30 calendar days of receipt of the last analytical data report for samples collected within a quarter, including quarterly and monthly samples, but no later than 60 days after the end of the quarter, and

   b) Initiate accelerated sampling of the pollutant as follows:

      1) Quarterly Baseline Monitoring Wells - for wells defined by Part I.E.1(b) the Permittee shall initiate monthly monitoring. Monthly monitoring shall begin the month following the month in which the Exceedance Notice is provided to the Director.

      2) Semi-annual Baseline Monitoring Wells - for wells defined by Part I.E.1(c) the Permittee shall initiate quarterly monitoring. Quarterly monitoring shall begin the quarter following the quarter in which the Exceedance Notice is provided to the Director.

      3) Said accelerated monitoring shall continue at the frequencies defined above until the compliance status of the facility can be determined by the Director.

2. Violation of Permit Limits - out-of-compliance status exists when the concentration of a pollutant in two consecutive samples from a compliance monitoring point exceeds a GWCL in Table 2 of this Permit.

3. Failure to Maintain DMT or BAT Required by Permit

   a) Permittee to Provide Information - in the event that the Permittee fails to maintain DMT or BAT or otherwise fails to meet DMT or BAT standards as required by the Permit, the Permittee shall submit to the Director a notification and description of the failure according to R317-6-6.16(C)(1). Notification shall be given orally within 24-hours of the Permittee's discovery of the failure of DMT or BAT, and shall be followed up by written notification, including the information necessary to make a determination under R317-6-6.16(C)(2), within five calendar days of the Permittee's discovery of the failure of best available technology.

   b) The Director shall use the information provided under R317-6-6.16.C(1) and any additional information provided by the Permittee to determine whether to initiate a compliance action against the Permittee for violation of Permit conditions. A compliance action shall not be initiated, if the Director determines that the Permittee has met the standards for an affirmative defense, as specified in R317-6-6.16(C)(3)(c).

   c) Affirmative Defense - in the event a compliance action is initiated against the Permittee for violation of Permit conditions relating to best available technology or DMT, the Permittee may affirmatively defend against that action by demonstrating the following:

      1) The Permittee submitted notification according to R317-6-6.13,

2) The failure was not intentional or caused by the Permittee's negligence, either in action or in failure to act,

3) The Permittee has taken adequate measures to meet Permit conditions in a timely manner or has submitted to the Director, for the Director's approval, an adequate plan and schedule for meeting Permit conditions, and

4) The provisions of UCA 19-5-107 have not been violated.

4. Facility Out of Compliance Status - if the facility is out of compliance, the following is required:

a) The Permittee shall notify the Director of the out of compliance status within 24-hours after detection of that status, followed by a written notice within 5 calendar days of the detection.

b) The Permittee shall continue accelerated sampling pursuant to Part I.G.1, unless the Director determines that other periodic sampling is appropriate, until the facility is brought into compliance.

c) The Permittee shall prepare and submit to the Director within 30 calendar days following the date the Exceedance Notice is submitted to the Director, a plan and a time schedule for assessment of the sources, extent and potential dispersion of the contamination, and an evaluation of potential remedial action to restore and maintain groundwater quality to insure that Permit limits will not be exceeded at the compliance monitoring point and that DMT or BAT will be reestablished.

d) The Director may require immediate implementation of the currently approved contingency plan in order to regain and maintain compliance with the Permit limit standards at the compliance monitoring point or to reestablish DMT or BAT as defined in the Permit.

e) Where it is infeasible to reestablish DMT or BAT as defined in the Permit, the Permittee may propose an alternative DMT or BAT for approval by the Director.

H. COMPLIANCE SCHEDULE REQUIREMENTS. The Permittee will comply with the schedules as described and summarized below:

1. Slimes Drain Compliance Plan - Within two (2) years after the effective date of th~~is~~e Permit Renewal (January 19, 2018), the Permittee shall submit a Slimes Drain Compliance Plan for Director Review and Approval. The Plan shall include measures to ensure that wastewater removal from the tailings cell slimes drain is effectively dewatering the tailings to the extent practicable in order to allow placement of final cover within specified time frames. The Plan may incorporate multiple methods to evaluate the effectiveness of tailings cell dewatering and projected timelines for placement of final tailings cell cover, including, but not limited to; 1. Demonstration of decreasing fluid elevation trends as measured by slimes drain recovery tests; 2. Evaluations of head data from piezometers installed in the affected tailings cell demonstrating net dewatering, and 3. Demonstration of decreasing trends in cell settlement monitoring. The Plan shall include specific measures for Tailings Cell 2 and will incorporate Tailings Cell 3 after initiation of dewatering operations.

2. Installation of New Groundwater Monitoring Wells – the Permittee shall install three new groundwater monitoring wells within 90 calendar days of issuance of the Permit, designated MW-38, MW-39 and MW-40, located southeast of the tailings cells between monitoring wells MW-17 and MW-22. Specifically, the monitoring well locations shall include the three locations identified by the Permittee in Figure 1 attached to the January 2018 License/Permit Statement of Basis. These monitoring wells shall be drilled and installed in accordance with the following requirements:

    a) All new monitoring wells must be properly designed, installed, screened/completed, and developed in accordance with Part I.E.4 of the Permit.

    b) All new monitoring well screens will fully encompass the Burro Canyon Formation saturated zone.

    c) All new monitoring wells will be designed to be monitored for the full suite of monitoring parameters listed in the Permit Table 2.

    d) On or before August 31, 2018 or as otherwise approved by the Director, the Permittee shall submit a monitoring well As- built report for the monitoring wells installed to document the well construction. The As-built report shall comply with the requirements of Part I.F.6.

    e) The Permittee shall provide at least a 14 calendar day written notice prior to field drilling and construction of the monitoring wells to allow the Director to observe all drilling and well installation activities.

3. Background Groundwater Quality Report for Wells MW-38, MW-39, MW-40 - within 30 calendar days of Director approval of the new monitoring well As-built Report, required by Part I.H.2, above, the Permittee shall commence a quarterly groundwater sampling program that will comply with the following Permit requirements:

a) Routine groundwater compliance monitoring requirements of Part I.E.1.

b) Well monitoring procedure requirements of Part I.E.5.

c) After completion of eight consecutive quarters of groundwater sampling and analysis of wells MW-38, MW-39, MW-40 required by Part I.H.2, the Permittee shall submit a Background Report for Director approval, that will include:

1) Data preparation and statistical analysis of groundwater quality data, including, but not limited to, evaluation of data characteristics and internal data consistency, treatment of non-detectable values, and statistical methods used. These statistics shall be calculated using the Decision Tree/Flowchart used for the previous Background Reports that was conditionally approved by the DRC on August 24, 2007.

2) Shallow aquifer average linear groundwater velocity calculated for the new wells, based on well specific hydraulic conductivity, hydraulic gradient, and effective aquifer porosity.

~~d)~~ If after review of the report, and the Director determines that additional information is required, the Permittee shall provide all requested information, resolve all issues identified, and re-submit the report for Director review and approval within a timeframe approved by the Director. After approval of this report, the Director will re-open this Permit and establish an appropriate monitoring frequency with the criteria found in Part I.E.1(b). Designation of these wells as "compliance" or "general" monitoring wells will be determined after analysis of the Background Quality Groundwater Report. If the new wells are determined to be compliance wells, the Director will establish Groundwater Compliance Limits in Table 2 for wells MW-38, MW-39, MW-40.

~~e)~~d)

4. Revised Groundwater Quality Assurance Plan to Include Dissolved Oxygen – The Permittee shall update the White Mesa Mill Groundwater Quality Assurance Plan (QAP) to include the collection of dissolved oxygen during field sampling (QAP Parts6.2.2 and Attachment 2-3 (Purging Procedures) and field sampling form) and submit a draft copy of the updated QAP including the updated field sampling form to The Director for review and approval within 60 calendar days of issuance of the modified Permit. The Permittee shall commence field sampling of dissolved oxygen within 30 days of the Director approval of the revised QAP in conformance with Part I.E.1d of the Permit.

PART II. REPORTING REQUIREMENTS

A. REPRESENTATIVE SAMPLING. Samples taken in compliance with the monitoring requirements established under Part I shall be representative of the monitored activity.

B. ANALYTICAL PROCEDURES. Water sample analysis must be conducted according to test procedures specified under UAC R317-6-6.3.12 unless other test procedures have been specified in this Permit.

C. PENALTIES FOR TAMPERING. The Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this Permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

D. REPORTING OF MONITORING RESULTS. Monitoring results obtained during reporting periods specified in the Permit, shall be submitted to the Director at the following address, no later than the date specified following the completed reporting period:

Division of Waste Management and Radiation Control
Utah Department of Environmental Quality
195 North 1950 West
P.O. Box 144880
Salt Lake City, Utah 84114-4880

The quarterly due dates for reporting are: June 1, September 1, December 1, and March 1.

E. COMPLIANCE SCHEDULES. Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any Compliance Schedule of this Permit shall be submitted no later than 14 calendar days following each schedule date.

F. ADDITIONAL MONITORING BY THE PERMITTEE. If the Permittee monitors any pollutant more frequently than required by this Permit, using approved test procedures as specified in this Permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted. Such increased frequency shall also be indicated.

G. RECORDS CONTENTS.

1. Records of monitoring information shall include:
   a) The date, exact place, and time of sampling, observations, or measurements:
   b) The individual(s) who performed the sampling, observations, or measurements;
   c) The date(s) and time(s) analyses were performed;
   d) The name of the certified laboratory which performed the analyses;
   e) The analytical techniques or methods used; and,
   f) The results of such analyses.

H. RETENTION OF RECORDS. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and copies of all reports required by this Permit, and records of all data used to complete the application for this Permit, for a period of at least five years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

I. NOTICE OF NONCOMPLIANCE REPORTING.

1. The Permittee shall verbally report any noncompliance which may endanger public health or the environment as soon as possible, but no later than 24-hours from the time the Permittee first became aware of the circumstances. The report shall be made to the Utah Department of Environmental Quality 24-hour number, (801) 538-6333, or to the Division of Water Quality, Ground Water Protection Section at (801) 538-6146, during normal business hours (8:00 am - 5:00 pm Mountain Time).

2. A written submission shall also be provided to the Director within five calendar days of the time that the Permittee becomes aware of the circumstances. The written submission shall contain:

   a) A description of the noncompliance and its cause;

   b) The period of noncompliance, including exact dates and times;

   c) The estimated time noncompliance is expected to continue if it has not been corrected; and,

   d) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

3. Reports shall be submitted to the addresses in Part II.D, Reporting of Monitoring Results.

J. OTHER NONCOMPLIANCE REPORTING. Instances of noncompliance not required to be reported within 5 calendar days, shall be reported at the time that monitoring reports for Part II.D are submitted.

K. INSPECTION AND ENTRY. The Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the Permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and,

4. Sample or monitor at reasonable times, for the purpose of assuring Permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

PART III. COMPLIANCE RESPONSIBILITIES

A. DUTY TO COMPLY. The Permittee must comply with all conditions of this Permit. Any Permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application. The Permittee shall give advance notice to the Director of the Division of Water Quality of any planned changes in the permitted facility or activity which may result in noncompliance with Permit requirements.

B. PENALTIES FOR VIOLATIONS OF PERMIT CONDITIONS. The Act provides that any person who violates a Permit condition implementing provisions of the Act is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates Permit conditions is subject to a fine not exceeding $25,000 per day of violation. Any person convicted under Section 19-5-115 of the Act a second time shall be punished by a fine not exceeding $50,000 per day. Nothing in this Permit shall be construed to relieve the Permittee of the civil or criminal penalties for noncompliance.

C. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit.

D. DUTY TO MITIGATE. The Permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this Permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. PROPER OPERATION AND MAINTENANCE. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the Permit.

PART IV. GENERAL REQUIREMENTS

A. PLANNED CHANGES. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required when the alteration or addition could significantly change the nature of the facility or increase the quantity of pollutants discharged.

B. ANTICIPATED NONCOMPLIANCE. The Permittee shall give advance notice of any planned changes in the permitted facility or activity which may result in noncompliance with Permit requirements.

C. PERMIT ACTIONS. This Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and re-issuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. DUTY TO REAPPLY. If the Permittee wishes to continue an activity regulated by this Permit after the expiration date of this Permit, the Permittee must apply for and obtain a new permit. The application should be submitted at least 180 calendar days before the expiration date of this Permit.

E. DUTY TO PROVIDE INFORMATION. The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this Permit.

F. OTHER INFORMATION. When the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.

G. SIGNATORY REQUIREMENTS. All applications, reports or information submitted to the Director shall be signed and certified.

1. All permit applications shall be signed as follows:

   a) For a corporation: by a responsible corporate officer;

   b) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.

   c) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official.

2. All reports required by the Permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a) The authorization is made in writing by a person described above and submitted to the Director, and,

b) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).

3. Changes to Authorization. If an authorization under Part IV.G.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part IV.G.2 must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. PENALTIES FOR FALSIFICATION OF REPORTS. The Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

I. AVAILABILITY OF REPORTS. Except for data determined to be confidential by the Permittee, all reports prepared in accordance with the terms of this Permit shall be available for public inspection at the offices of the Director. As required by the Act, permit applications, permits, effluent data, and groundwater quality data shall not be considered confidential.

J. PROPERTY RIGHTS. The issuance of this Permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

K. SEVERABILITY. The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Permit, shall not be affected thereby.

L. TRANSFERS. This Permit may be automatically transferred to a new Permittee if:

1. The current Permittee notifies the Director at least 30 calendar days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new Permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,

3. The Director does not notify the existing Permittee and the proposed new Permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.

M. STATE LAWS. Nothing in this Permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, penalties established pursuant to any applicable state law or regulation under authority preserved by Section 19-5-115 of the Act.

N. REOPENER PROVISIONS. This Permit may be reopened and modified (following proper administrative procedures) to include the appropriate limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. If new ground water standards are adopted by the Board, the Permit may be reopened and modified to extend the terms of the Permit or to include pollutants covered by new standards. The Permittee may apply for a variance under the conditions outlined in R317-6-6.4(D).

2. Changes have been determined in background groundwater quality.

3. The Director determines permit modification is necessary to protect human health or the environment.