

**Table OP-1b Summary of Environmental and Operational Monitoring  
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Monitoring Description	Frequency and Reporting	Comments	Section Number		
			NRC		WDEQ
			TR	ER	
<i>Air Quality and Climate</i>					
Meteorological Station	Hourly (electronic). Monitoring records maintained on-site.	Temperature, humidity, incoming radiation, wind speed and direction, and precipitation. To support evaluation of potential radiation exposure.	5.7.7	--	OP 2.10
Dust Control	Daily. No reporting requirement.	Qualitative assessment of dust generated by construction equipment and road traffic to determine if dust suppression measures need to be implemented. Additional requirements may be part of WDEQ AQD permit.	--	--	--
Radiation Radon Gas  Direct Gamma	Continuous monitoring with quarterly analysis reported to the NRC semiannually. Quarterly monitoring reported to the NRC semiannually.	For environmental monitoring; measured at the same, specified locations as for the baseline sampling. For monitoring of plant operations, see <i>Health Monitoring</i> below.	5.7.7	--	--
<i>Equipment Performance - Basic and Radiation Safety</i>					
Mine Units, Plant, and Waste Areas	Daily walk through by qualified personnel per operator SOP. Inspection records maintained on-site.	General inspection by personnel in charge of specific operations within the Permit Area.	5.3.1	--	--

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Monitoring Description	Frequency and Reporting	Comments	Section Number		
			NRC		WDEQ
			TR	ER	
<i>Equipment Performance - Effluent Control</i>					
Storage Ponds	Daily, weekly, quarterly, and annual inspections/assessments. Monitoring records retained on-site; verbal reporting to NRC required w/i 48 hours of leakage, along with leakage control and written reporting.	Evaluation of both overall pond integrity and leak detection system.	4.2.5.4 and 5.3.2	4.5.4.2	OP 2.9.4
UIC Class I Well(s)	Monitoring per requirements of UIC permit. Evaluation of the well performance in Annual Report to NRC and WDEQ. Additional reporting requirements may be part of UIC permit.	Monitored parameters are anticipated to include: injection pressure; composition of the waste stream; and mechanical Integrity.	4.2.5.4	4.5.4.2	OP 5.2.3.2
<i>Equipment Performance - Fluid Transfer and Processing</i>					
Pipelines and Process Tanks	Automated, Continuous Pressure Gauges and Alarms	Includes all fluid processing and transfer areas, such as header houses, plant, and UIC Class I well houses.	3.2.7.1, 3.3.4, 7.4.1, and 7.4.2	1.2.2.3, 4.5.3.2, and 4.13.2.2	OP 2.9.1, OP 2.9.3, OP 3.5, OP 3.6.1, and OP 4.4

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Monitoring Description	Frequency and Reporting	Comments	Section Number		
			NRC		WDEQ
			TR	ER	
<i>Equipment Performance - Mine Unit Balance</i>					
Injection and Production Flow Rates and Pressures	Daily measurement and balancing. Records maintained on-site.	Part of overall mine unit and processing evaluation, along with chemical parameters, plant capacity, and waste disposal capacity, to evaluate mining efficiency and environmental concerns.	3.2.7.1	--	OP 3.6.1 and OP 3.6.2
Mining Progress	Evaluated per operator SOP. Update Operation and Reclamation Schedules in Annual Report to NRC and WDEQ if necessary.	Cumulative assessment of injection and production information, water quality data, and plant performance to evaluate mining efficiency and compliance with operating schedule.	3.2.1, and 6.1	1.2.3	OP 2.1, OP 3.1, and RP 1.0
<i>Equipment Performance - Wells</i>					
Mechanical Integrity Testing of Wells	Once every five years (or per schedule approved by WDEQ/ LQD Administrator) and after well workover or repair.	Data submitted to WDEQ/LQD quarterly and may be submitted earlier if operator requesting permission inject after well workover or repair.	3.2.5	1.2.2.1 and 7.4.4	OP 3.4
Downhole Injection Pressures	Automated, Continuous Pressure Gauges and Alarms	Pressure limits based on casing strength, formation fracture pressure, and mine unit balance.	3.2.6 and 3.2.7	1.2.2.1	OP 3.5 and OP 3.6

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Monitoring Description	Frequency and Reporting	Comments	Section Number		
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			TR	ER	
<i>Health (radiation-related)</i>					
Radon	<p>Monthly, increasing to weekly under specific conditions. Monitoring records maintained on-site.</p> <p>Quarterly. Monitoring records maintained on-site.</p>	<p>Specific locations where concentrations may be higher, including near center of: reverse osmosis equipment; ion exchange columns; elution circuit tanks; and yellowcake storage area.</p> <p>Specific locations where concentrations may be lower, including: office area; shop area; lab area; and raw water storage tanks.</p>	5.7.3.2	--	--
Bioassay	<p>Initial and exit samples for all on-site workers plus monthly or quarterly for workers in specific areas of site. Monitoring records maintained on-site.</p>	Urinalysis program.	5.7.5	--	--
Security	<p>Monitoring of Fenced Areas, visitors, and shipments per operator SOP. Monitoring records retained on-site.</p>	To ensure only authorized personnel enter areas or work with materials with potential increased health risks.	5.7.6	--	--

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Monitoring Description	Frequency and Reporting	Comments	Section Number		
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			TR	ER	
<i>Groundwater</i>					
Excursion Detection Monitoring	Twice/month $\geq$ 10 days apart. Add'l verification sampling if excursion detected. Monitoring records retained on-site; verbal reporting required w/i 48 hours of excursion verification, along w/ excursion control and written reporting.	Includes water quality and water level monitoring, in monitor ring wells and wells in overlying and underlying aquifers. Water quality parameters will be those selected to determine Upper Control Limits.	5.7.8.2 and 7.1.5.2	4.5.3.2 and 4.5.4.2	OP 3.6.4.3
On-Site Baseline Wells	Quarterly. Data compilation over time and evaluation to be included in Annual Report to NRC and WDEQ-LQD.	Includes water level monitoring in 17 wells to evaluate overall mining impacts.	5.7.8.2	--	OP 2.11.1
Off-Site BLM Wells	Quarterly. Data compilation over time and evaluation to be included in Annual Report to NRC and WDEQ/LQD.	Includes water quality monitoring (and water level monitoring if accessible) in the 4 existing wells to ensure on-site groundwater pumping does not adversely affect off-site water uses.	5.7.8.2 and 7.1.5.2	4.5.4.2	OP 2.11.2
<i>Soils</i>					
Topsoil Protection	Per operator SOP, minimum quarterly. No reporting requirements.	Effectiveness of topsoil stockpiling techniques, traffic minimization in mine units, and condition of any erosion control measures.	7.1.3	4.3.3	OP 2.5.2

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<i>Surface Water</i>					
Surface Water	--	All drainage ephemeral so monitoring not planned except in case of unanticipated occurrence (e.g., spill).	7.1.5.1	4.5.4.1	--
Storm Water Runoff Controls  Water Quality	Per operator SOP, minimum quarterly. No reporting requirements. Sampling and reporting per WYPDES requirements.	Condition of detention basins and any erosion control measures. Water quality prior to basin discharge.	7.1.5.1	4.5.3.1	OP 2.6
<i>Transportation</i>					
Transportation Risk	Per: - shipment; - training session; - truck inspection; and - maintenance work. No reporting requirements.	Records of: - shipping; - driver training; - truck safety certifications; and - on-site road maintenance will be kept on-site.	7.1.2	4.2.4	--
Road Conditions	Per operator SOP, minimum quarterly. No reporting requirements.	Road surface and culvert conditions, effectiveness of dust control, and condition of any erosion control measures.	7.1.3	4.5.3.1	OP 2.6
Fuel Storage	Per operator SOP, minimum weekly. No reporting requirements.	Check for leakage and spills.	7.1.3	4.5.3.1	OP 2.9.5

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<i>Vegetation</i>					
Weed Control	Per operator SOP, minimum annually. No reporting requirements.	Checking for weed invasion. Checking effectiveness of weed control measures, if necessary. Conduct per BLM guidance.	--	4.6.4.1	OP 2.7
<i>Wildlife</i>					
Raptor Nests Survey Known Nests Survey for New Nests Sage Grouse Survey Known Leks Survey for New Leks All Species	Annual survey results in Annual Report. Every 5 years, results in Annual Report.  Annual survey results in Annual Report. Every 5 years, results in Annual Report. Summary of accidents in prior year to be included in Annual Report.	Species to be monitored, and type and frequency of monitoring may be updated based on BLM, USFWS, and WGandF guidelines.	--	4.6.4.2	OP 2.8