State of Oregon Department of Environmental Quality

WATER POLLUTION CONTROL FACILITIES PERMIT

Oregon Department of Environmental Quality
Eastern Region – Pendleton Office
800 SE Emigrant, #330
Pendleton, OR 97801
Telephone: 541-276-4063

Issued pursuant to ORS 468B.050 and 459. Oregon Administrative Rules 340, Divisions 41, 43, 45, 90, 93, 95, 96 and 97; and subject to the Land Use Compatibility Statement referenced below.

ISSUED TO:	SOURCES COVERED BY THIS PERMIT:	
Rachel Goldman and Calico Resources USA Corp. Grassy Mountain Mine 665 Anderson St Winnemucca, NV 89445	**Type of Waste**	**Compliance Point**
	Mine Tailings	Tailings Storage Facility
	Cemented rock fill containing waste rock	Underground workings
	Leachate	Reclaim Pond
	Mill area run off	Catchment Pond
	Underground workings run off	Underground Station Sumps

FACILITY NAME, TYPE AND LOCATION: RIVER BASIN INFORMATION:

Grassy Mountain Mine
Mining and solid waste disposal site
17 Miles south of Vale OR off Russel Rd.
Vale, OR 97918
County: Malheur
Lat: 43.670464 Long: -117.361132
Township 22E Range 44E Sections 5,7,8 Tax lots 100 & 101

WRD Basin: Malheur

USGS Sub-Basin: 17050117
Nearest surface water body name: Owyhee River, 4 miles to the east

Issued in response to Application No. 948323 received 10/9/2023. DEQ issues this permit based on and only applies to the land areas specifically identified in the land use findings in the permit record issued on insert date

Ron Doughten, Materials Management Manager, Eastern Region

Mike Hiatt, Water Quality Manager, Eastern Region

Issuance Date

Effective Date

PERMITTED ACTIVITIES

Until this permit expires or is modified or revoked, the permit authorizes the permittee to construct, operate an underground mine, ore processing plant, and a tailings storage facility as well as construct, install, modify or operate a wastewater collection, treatment, control and disposal system conforming with the requirements, limits, and conditions set forth in this permit.

Unless specifically authorized by this permit, by another NPDES or WPCF permit, or by Oregon statute or administrative rule, any direct or indirect discharge of pollutants to waters of the state is prohibited.

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Key Features

Reclaim Pond – Collects and holds supernatant, leachate and stormwater from the Tailings Storage Facility
Tailings Storage Facility– Collects and holds mine tailings and Mill waste material and is the permitted disposal site.
Temporary Waste Rock Storage Facility– Temporarily holds waste rock during mine excavation
Mill – ore processing area
Catchment Pond – Collects and holds process water and rainwater from Mill
Supernatant Pond – Collects supernatant in the Tailings Storage Facility
Weather Station – Designated weather data collection site
Borrow Pit – rock quarry for backfill material
Underground Workings – Refers to adits, tunnels, and underground excavation that is a part of the underground mining operation.
Underground Station Sumps– Water collection point at each drift level of the underground mine

SCHEDULE A: PERMIT DISCHARGE LIMITATIONS

1. Assumption of Liability

Before permit issuance, the permittee must provide the names and contact information of those persons or entities who control the permit and assume liability for environmental injuries, remediation expenses, and penalties. DEQ must receive annual confirmation of these person(s) or entities. DEQ must receive notification within 30 days of any change in these persons or entities.

2. Permitted Site

This permit authorizes the permittee to construct, operate, maintain, and close a precious metals mine (Project). This includes a subsurface mine, an ore mill, an industrial solid waste landfill disposal site (Tailings Storage Facility) for disposal of mine tailings, use of cemented rock fill containing waste rock, and an industrial water reuse system consisting of collection and reclaim ponds for a mineral extraction process. This permit only authorizes the utilization of these features for the collection and processing of ore as well as the treatment and disposal of mine tailings and waste rock derived from the Grassy Mountain Mine (site) in Malheur County, Oregon (T 22E, R 44E, Sec 5,7,8 Tax lots 100 & 101). Processing, treatment or disposal of other material or ore from other locations at this site is prohibited.

3. Required Practices

The permittee must conduct all activities in a manner that minimizes environmental damage through the use of best available, practicable and necessary technology. Any changes to incorporate future advancements in technologies must be approved by DEQ in writing.

4. Surface Water Protection

Direct discharge to waters of the state as defined in OAR 340-045-0010 (21) is prohibited.

5. Groundwater Protection

Any activity that has an adverse effect on existing or potential beneficial uses of groundwater is prohibited. All wastewater, wastewater solids, ore, waste rock, mine tailings or other materials must be managed and disposed in a manner that will prevent violating the Groundwater Quality Protection Rules (OAR 340-040). If warranted, at any time, DEQ may evaluate the need for or require a full assessment of the site's effect on groundwater quality.

a. The permittee must update the Groundwater Monitoring Plan with all the conditions identified as required in this permit as detailed below and in Schedule D and submit for DEQ approval before commencing any mining activity.

b. The permittee must install and develop any additional groundwater monitoring wells according to the DEQ approved Groundwater Monitoring Plan. The permittee must obtain a minimum of nine quarters of representative samples from all identified monitoring wells before commencing any mining activities. DEQ will use these data and applicable risk values to establish groundwater concentration limits. The Groundwater Monitoring Plan will be updated with a list of the permitted groundwater concentration limits and become part of this permit with DEQ's written approval.

c. A list of the groundwater parameters and their associated limits will be maintained in the DEQ approved Groundwater Monitoring Plan.

d. The permittee can request a reduction of required groundwater monitoring analytes after a minimum of nine quarters of representative sample results collected after full mining operations have commenced that indicate consistent values below identified background concentrations.

The Permittee must continue monitoring for the identified analytes until receipt of written authorization from DEQ allowing any proposed monitoring reduction.

e. The permittee must manage contaminants leaching in the underground workings. Should Station Sump water exceed the benchmarks shown in Table A1 the permittee must notify DEQ in the monthly report, identify the root cause and implement corrective measures to ensure no future exceedances.

Table A1: Underground Station Sump Water Benchmarks

Parameter	Units	Weekly Average unless otherwise noted
Benzene	ug/L	0.46
Ethylbenzene	ug/L	0.7
Petroleum Hydrocarbons (gasoline)	mg/L	0.11
Petroleum Hydrocarbons (diesel)	mg/L	0.10
Xylenes, total	mg/L	0.01
pH	SU	Instantaneous limit between a daily minimum of 5 and a daily maximum of 10

6. Wildlife Protection

The permittee must enact protective measures to maintain an objective of zero wildlife mortality. All chemical processing solutions and associated waste solids and water shall be covered or contained to preclude access by wildlife or maintained in a condition that is not harmful to wildlife. ORS 517.956(2)(a).

7. Industrial Solids (Cemented Rock Fill Containing Waste Rock)

The permit authorizes the permittee to use cemented rock fill with waste rock for backfilling the underground workings, subject to OAR 340; Divisions 40, 43, 90, 93, 95 and 97, and the following conditions:

f. The permittee must manage waste rock according to its DEQ-approved Operation Monitoring and Management Plan.

g. The permittee must manage the waste rock and all other material used during the operation of the mine and for closure of the mine to ensure no groundwater degradation.

h. The permittee must not place any waste rock that did not originate from the mining operations conducted at this site, except materials used for treatment or stabilization of the waste rock, into the underground workings or the mine tailings storage facility (disposal site).

i. Before placing any waste rock into the underground mine workings, the permittee must follow the DEQ-approved Operation Monitoring and Management Plan to ensure waste rock has been properly treated to protect groundwater from the leaching of inorganic materials.

8. Ore Mill Discharge (Tailings)

During the term of this permit, the permittee is allowed to place ore Mill discharge into the Tailings Storage Facility provided the ore Mill discharge meets the limits identified in Table A2. The permittee must monitor the ore Mill discharge slurry as it leaves the Mill's detox tank prior to reaching the Tailing Storage Facility.

Table A2: Tailings Storage Facility Limits

Parameter	Units	Weekly Average unless otherwise noted
Cyanide (WAD)	mg/L	1
Cyanide (total solids)	mg/kg	9.8
Mercury (total)	mg/L	0.78
Mercury	mg/kg	1.3
pH	SU	Instantaneous limit between a daily minimum of 6.0 and a daily maximum of 10.0

If a Tailing Storage Facility Limit is exceeded, the permittee must evaluate the root cause of the exceedance, develop a corrective action plan and implement actions to correct the issue. The permittee must submit an explanation of the exceedance and a description of the action plan to DEQ with the monthly monitoring report.

The permittee must notify DEQ in Your DEQ Online via Ad Hoc submittal of WAD cyanide concentrations exceeding 15 mg/L within 24 hours of discovery. A documented review on the cause of exceedance and corrective actions must be submitted to DEQ within 15 days of the exceedance. The corrective actions must be included within a DEQ approved Operation Monitoring and Management Plan, which describes implementing additional deterrents to reduce wildlife attraction to the Tailings Storage Facility, Reclaim Pond and Catchment Pond.

If WAD cyanide concentrations are 30 mg/L or greater, the permittee must cease all discharge to the Tailings Storage Facility and stop tailings generating operations. The permittee must not resume these activities until receiving DEQ approval and corrective actions have been implemented to ensure this situation does not occur in the future.

9. Reclaim Pond and Catchment Pond

The permit authorizes the permittee to store leachate in the Reclaim Pond provided the leachate meets the limits identified in Table A3. Any leachate exceeding these values must be stored in closed containers or additional wildlife deterrents must be approved by DEQ and implemented.

The permit authorizes the permittee to store process water and surface water runoff from the Mill area in the Catchment Pond provided the water meets the limits identified in Table A3. The permittee must store any water exceeding these values in closed containers or additional wildlife deterrents must be approved by DEQ and implemented.

Table A3: Reclaim and Catchment Pond Limits

Parameter	Units	Weekly Average
Benzene	mg/L	1,100
Cyanide (WAD)	mg/L	1
Mercury (total)	µg/L	0.78
Toluene	mg/L	1,100
Xylenes, Total	mg/L	1,100
pH	SU	Instantaneous limit between a daily minimum of 6.0 and a daily maximum of 10.0

10. Reused industrial wastewater

The permittee may reuse water collected in the Supernatant Pond, Reclaim Pond or the Catchment Pond in the Mill. The Permittee must not reuse these waters for haul road dust suppression or other uses that discharge directly to the environment. Water collected in the Underground Station Sumps may be used for mining activities provided it meets the limits in Table A1. All other water supplied for underground workings must meet the background groundwater quality levels that DEQ will identify before any mining activities commence and will be recorded in the DEQ approved Groundwater Monitoring Plan.

11. Zero- Discharge Requirements

This is a zero-discharge permit. The permittee must not discharge tailings storage facility leachate, process water, mill tailings or other wastes to waters of the state, outside the tailing's storage facility, except as this permit allows. If unauthorized discharges occur or are discovered, the permittee must immediately stop the discharge, including ore mill discharge to the tailing's storage facility, and notify DEQ within 24 hours. The permittee must not resume permitted discharges to the tailings storage facility before written authorization from DEQ following submission and DEQ approval of an investigation of the discharge, DEQ approval of corrective actions or DEQ approval of mitigation measures.

12. Reopener Condition

DEQ may reopen and modify this permit to address:

a. Violation of term, conditions, or requirement of this permit, a rule, or a stature.
b. Correction of technical mistakes made in determining permit conditions
c. New data or information becomes available that warrants a permit modification
d. Determination that the permitted activity endangers human health or the environment

13. Consolidated Permit

Throughout the construction, operation, closure, and reclamation of the Project, the permittee must comply with all applicable state and federal environmental quality statutes, rules, standards, and all applicable permit requirements, including those of other permitting, cooperating, and commenting state agencies. This is a Consolidated Permitting process as required by statute, therefore noncompliance constitutes a violation of all state regulatory permits issued.

SCHEDULE B: MINIMUM MONITORING AND REPORTING REQUIREMENTS

1. Conformance with Operation, Monitoring and Management Plan

The permittee must perform system monitoring in accordance with this permit and the approved OM&M Plan (see Schedule D, Condition 2) and any amendments to the plan per DEQ written approval.

2. Reporting Requirements

a. The permittee must submit to DEQ monitoring results and reports as summarized below.

Table B1: Reporting Requirements and Due Dates

Reporting Requirement	Frequency	Due Date	Report Form (See Note a.)	Submit To: (See Note b)
Solid Waste Disposal Report (see Schedule C)	Annually	February 20th	Electronic copy	YDO - Land Quality Portal
Groundwater Report (See Schedule D)	Annually	February 20th	Electronic copy	YDO - Land Quality Portal
OM&M Compliance Report (See Schedule D)	Annually	April 15th	Electronic copy	YDO - Land Quality Portal
Financial Assurance Recertification (Schedule C.9)	Annually	February 20th	Electronic copy	YDO - Land Quality Portal
Ongoing Monitoring Reporting				
Wildlife monitoring (Schedule B.4.e)	Quarterly	Quarterly Reporting Due: April 15, July 15, Oct 15, and Jan 15.	Electronic copy	YDO - Land Quality Portal
Water supply (Table B2)	Monthly	By the 15th of the following month	Electronic copy	YDO - Land Quality Portal
Cemented Rock Fill Containing Waste Rock (Table B3)	Monthly	By the 15th of the following month	Electronic copy	YDO - Land Quality Portal
Underground Station Sumps (Table B4)	Monthly	By the 15th of the following month	Electronic copy	YDO - Land Quality Portal
Weather (Table B5)	Monthly	By the 15th of the following month	Electronic copy	YDO - Land Quality Portal
Tailings Storage (Table B6)	Monthly	By the 15th of the following month	Electronic copy	YDO - Land Quality Portal
Reclaim and Catchment Ponds (Table B7)	Monthly	By the 15th of the following month	Electronic copy	YDO - Land Quality Portal
Groundwater Monitoring (Table B8)	Quarterly	Quarterly Reporting Due: April 15, July 15, Oct 15, and Jan 15.	Electronic copy	YDO - Land Quality Portal

Reporting Requirement	Frequency	Due Date	Report Form (See Note a.)	Submit To: (See Note b)
Notes: a. All reporting requirements must be submitted in a DEQ approved format. b. YDO – Your DEQ Online.				

b. The permittee must submit to DEQ the following plans as summarized below:
- Financial Assurance Plan (Schedule C.9)
- Operations Monitoring and Management (OM&M) Plan (Schedule D)
- Emergency Response and Public Notification Plan (Schedule D)
- Groundwater Monitoring Plan (Schedule D)
- Site Development Plan (Schedule C.5)
- Construction Documentation which includes Construction Quality Assurance Plans (Schedule C.7 and C.8)

3. Monitoring and Reporting Protocols

a. **Electronic Submissions.**

When submitting electronic copies as required by Table B1, the permittee must submit to DEQ the results of monitoring in an electronic format as specified below.

i. When directed by DEQ, the permittee must submit monitoring results required by this permit via DEQ-approved web-based Electronic Monitoring Report forms.

ii. The reporting period is the calendar month.

iii. The permittee must submit monitoring data and other information required by this permit for all compliance points by the 15th day of the month following the reporting period unless specified otherwise in this permit or as DEQ specifies in writing.

iv. When DEQ directs, the permittee must submit electronic reports for any required reports, and other required information to DEQ via designated web-based reporting process.

b. **Test Methods.**

The permittee must conduct monitoring according to EPA-approved test procedures in 40 CFR §136, SW-846 or other approved procedures as per Schedule F.

c. **Detection and Quantitation Limits**

i. Detection Level (DL) – The DL is defined as the minimum measured concentration of a substance that can be distinguished from method blank results with 99% confidence. The DL is derived using the procedure in 40 CFR §136 Appendix B and evaluated for reasonableness relative to method blank concentrations to ensure results reported above the DL are not a result of routine background contamination. The DL is also known as the Method Detection Limit (MDL) or Limit of Detection (LOD).

ii. Quantitation Limits (QLs) – The QL is the minimum level, concentration or quantity of a target analyte that can be reported with a specified degree of confidence. It is the lowest level at which the entire analytical system gives a recognizable signal and acceptable calibration for the analyte. It is normally equivalent to the concentration of the lowest calibration standard adjusted for sample weights, volumes, preparation and cleanup procedures employed. The QL as reported by a laboratory is also sometimes referred to as the Method Reporting Limit (MRL) or Limit of Quantitation (LOQ).

iii. For compliance and characterization purposes, the maximum acceptable QL is stated in this permit.

d. **Implementation**

The Laboratory QLs (adjusted for any dilutions) for analyses performed to demonstrate compliance with permit limits or as part of effluent characterization, must be at or below the QLs specified in the permit unless one of the conditions below is met.

i. The monitoring result shows a detect above the laboratory reported QL.

ii. The monitoring result indicates non-detect at a DL which is less than the QL.

iii. Matrix effects are present that prevent the attainment of QLs and these matrix effects are demonstrated according to procedures described in EPA's "Solutions to Analytical Chemistry Problems with Clean Water Act Methods", March 2007. If using alternative methods and taking appropriate steps to eliminate matrix effects does not eliminate the matrix problems, DEQ may authorize in writing re-sampling or allow a higher QL to be reported.

e. **Quality Assurance and Quality Control**

i. Quality Assurance Plan – The permittee must develop and implement a written Quality Assurance Plan that details the site sampling procedures. This plan should include any equipment calibration and maintenance, analytical methods, quality control activities and laboratory data handling and reporting if the permittee conducts any of their own analytical work. The QA/QC program must conform to the requirements of 40 CFR §136.7.

ii. If QA/QC requirements are not met for any analysis, the permittee must re-analyze the sample. If the sample cannot be re-analyzed, the permittee must re-sample and analyze at the earliest opportunity. If the permittee is unable to collect a sample that meets QA/QC requirements, then the permittee must include the result in the monitoring report along with a notation (data qualifier). In addition, the permittee must explain how the sample does not meet QA/QC requirements. The permittee may not use the result that failed the QA/QC requirements in any calculation required by the permit unless authorized in writing by DEQ.

iii. Flow measurement, field measurement, and continuous monitoring devices - The permittee must:

(A) Establish verification and calibration frequency for each device or instrument in the quality assurance plan that conforms to the frequencies recommended by the manufacturer.

(B) Verify at least once per year that flow-monitoring devices are functioning properly according to manufacturer's recommendation. Calibrate as needed according to manufacturer's recommendations.

(C) Verify at least weekly that the continuous monitoring instruments are functioning properly according to manufacturer's recommendation unless the permittee demonstrates a longer period is sufficient and such longer period is approved by DEQ in writing.

f. **Reporting Sample Results**

i. The permittee must report the same number of significant digits as the permit limit for a given parameter.

4. Monitoring and Reporting Requirements

a. When submitting reports electronically, the permittee must submit all data used to determine summary statistics in a DEQ approved format unless DEQ directs otherwise.

b. In the event of equipment failure or loss, the permittee must notify DEQ and repair or replace affected equipment to minimize interruption of data collection. If the equipment cannot be immediately repaired or replaced, the permittee must perform grab measurements daily.

c. The permittee must conduct annual leak integrity tests of all Mill and process area sumps. Repairs or replacement of any sump that fails will occur within two weeks of discovery.

d. The permittee must conduct regular monitoring and reporting of all underdrain systems including the Tailings Storage Facility, Temporary Waste Rock Storage Facility and any other leak detection system.

e. The permittee must deploy security cameras with day and night capabilities that cover the entirety of the tailings storage facility and ponds to monitor and record wildlife activity in and around the Tailings Storage Facility, Reclaim Pond, and the Catchment Pond during both the day and night to identify wildlife interactions with facility features. When completing daily inspections, review security camera footage to identify wildlife mortalities. Analyze these recordings documenting the type and number of species using the area and report findings to DEQ quarterly as per Table B1.

f. Water extracted from surrounding wells or other surface water supply that is pumped down into the mine for the underground workings must be monitored for the parameters identified in Table B2 below. Monitoring must occur prior to the water entering the mine.

Table B2: Underground Water Supply Monitoring Requirements

Item or Parameter	Units	Time Period	Minimum Frequency	Sample Type / Required Action.	Report Statistic
Flow (50050)	Gallons/day	Year-round	Daily	Metered	Monthly average Daily maximum
pH (00400)	Standard Units SU	Year-round	Daily	Grab or metered	Monthly maximum Monthly minimum
Temperature	Degrees Centigrade	Year-round	Daily	Grab or metered	Monthly maximum Monthly minimum

g. The permittee must monitor cemented waste rock prior to its use for filling underground workings and report results in accordance with Table B3 and the table below:

Table B3: Cemented Rock Fill Containing Waste Rock Monitoring Requirements

Item or Parameter	Units	Time Period	Minimum Frequency	Sample Type/ Required Action	Report Statistic
Volume by component (Waste Rock, borrow rock, fly ash, cement, etc.)	Tons	When filling underground workings	Monthly	Calculated or Measured	Monthly totals

g. The permittee must monitor the underground station sumps in the underground workings and report results according to Table B4 below. After nine months of consistent monitoring results, the permittee may request a reduction in the required parameters. Monitoring for all parameters must continue until written authorization for reduction is received from DEQ. Any approved reduction will apply only to the specific sump location for which it was granted. Any new sumps constructed in a new drift level must be monitored for all parameters listed in Table B4 for a minimum of nine months prior to requesting any reduction of these parameters.

Table B4: Underground Station Sump Monitoring Requirements

Item or Parameter	Units	Time Period	Minimum Frequency	Sample Type/ Required Action	Report Statistic
Presence of water and volume	Dry, moist or Gallons	Active mining	Weekly	Measured	Monthly average Weekly maximum
Arsenic (dissolved)	mg/L	Active mining	Monthly	Grab	Monthly maximum
Antimony (dissolved)	mg/L	Active mining	Monthly	Grab	Monthly maximum
Benzene	ug/L	See note a	See note a	Grab	Daily maximum
Cadmium (dissolved)	mg/L	Active mining	Monthly	Grab	Monthly maximum
Copper (dissolved)	mg/L	Active mining	Monthly	Grab	Monthly maximum
Cobalt (dissolved)	mg/L	Active mining	Monthly	Grab	Monthly maximum
Chromium (dissolved)	mg/L	Active mining	Monthly	Grab	Monthly maximum
Ethylbenzene	ug/L	See note a	See note a	Grab	Daily maximum
Lead (dissolved)	mg/L	Active mining	Monthly	Grab	Monthly maximum
Manganese (dissolved)	mg/L	Active mining	Monthly	Grab	Monthly maximum
Nickel (dissolved)	mg/L	Active mining	Monthly	Grab	Monthly maximum
Total petroleum hydrocarbons	mg/L	Active mining	Monthly	Grab	Monthly maximum
Petroleum hydrocarbons (gasoline)	mg/L	See note a	See note a	Grab	Daily maximum
Petroleum hydrocarbons (diesel)	mg/L	See note a	See note a	Grab	Daily maximum
pH (00400)	Standard Units (SU)	Active mining	Weekly	Continuous/Grab	Weekly maximum Weekly minimum
Sulfate	mg/L	Active mining	Monthly	Grab	Monthly maximum
Sulfur (dissolved)	mg/L	Active mining	Monthly	Grab	Monthly maximum
Toluene	ug/L	See note a	See note a	Grab	Daily maximum
Xylenes, total	ug/L	See note a	See note a	Grab	Daily maximum
Zinc (dissolved)	mg/L	Active mining	Monthly	Grab	Monthly maximum

Notes:
[a] Total Petroleum Hydrocarbons (TPH) analyzed using NWTPH-HCID. If any detection of TPH then benzene, ethylbenzene, toluene, and xylenes is required. If any gasoline-range hydrocarbon is detected NWTPH-Gx is required and if diesel or heavy oil is detected NWTPH-Dx is required.

h. The permittee must monitor site weather conditions and report results in accordance with Table B5 below:

Table B5: Weather Monitoring Requirements

Item or Parameter	Units	Time Period	Minimum Frequency	Sample Type/ Required Action	Report Statistic
Ambient temperature	C	Active mining	Daily	Measured	Monthly average Daily minimum and maximum
Barometric pressure	Inches of mercury	Active mining	Daily	Measured	Daily maximum and Daily minimum
Relative humidity	%	Active mining	Daily	Measured	Daily average
Wind Speed	mph	Active mining	Daily	Measured	Daily average and Daily maximum
Wind Direction	Azimuth degree	Active mining	Daily	Measured	Daily average
Total precipitation	inches	Active mining	Daily	Measured	Daily total
Solar irradiance	W/m2	Active mining	Daily	Measured	Daily average
Snow water equivalence	inches	Active mining	Daily	Measured	Daily total

i. The permittee must monitor the effluent from the detox tank in the Mill prior to the slurry reaching the Tailings Storage Facility and report results in accordance with Table B6 below:

Table B6: Tailings Storage Facility Monitoring Requirements

Item or Parameter [a]	Units	Time Period	Minimum Frequency	Sample Type/ Required Action	Report Statistic
Volume	Dry tons	Active mining	Daily	Calculated	Monthly average Daily maximum
Leak detection sumps	Gallons per day	Year round	Weekly	Measured	Monthly average Daily maximum
Piezometers	Feet	Year round	Weekly	Measured	Monthly maximum Monthly minimum
Cyanide (WAD)	mg/L	Active mining	Continuous	Measured	Weekly average Daily maximum
Cyanide (total)	mg/L	Active mining	Weekly	Grab	Weekly average Daily maximum
Cyanide total	mg/kg	Active mining	Weekly	Grab	Weekly average
Mercury	mg/kg & µg/L	Active mining	Weekly	Grab	Weekly average
Sulfate	mg/kg & mg/L	Active mining	Weekly	Grab	Weekly average
pH (00400)	SU	Active mining	Continuous	Measured	Weekly average Daily maximum and minimum
Note: [a] Inorganic analytes must be analyzed for dissolved and solid fractions					

j. The permittee must monitor the Supernatant Pond, the Reclaim Pond, and Catchment Pond and report results according to Table B7 below

Table B7: Reclaim and Catchment Pond Monitoring Requirements

Item or Parameter	Units	Time Period	Minimum Frequency	Sample Type/ Required Action	Report Statistic
Presence of water and volume	Dry, moist or Gallons	Active mining	Daily	Measured	Monthly average Daily minimum and maximum
Leak detection sumps	Gallons per day	Year round	Weekly	Measured	Monthly average Weekly maximum
Cyanide (total, WAD, & free)	mg/L	When water present	Weekly	Grab	Monthly average Daily maximum
Aluminum	mg/L	When water present	Weekly	Grab	Weekly average
Antimony	mg/L	When water present	Weekly	Grab	Weekly average
Arsenic	mg/L	When water present	Weekly	Grab	Weekly average
Benzene	ug/L	See note a	See note a	Grab	Daily maximum
Copper	mg/L	When water present	Weekly	Grab	Weekly average
Chromium	mg/L	When water present	Weekly	Grab	Weekly average
Ethylbenzene	ug/L	See note a	See note a	Grab	Daily maximum
Iron	mg/L	When water present	Weekly	Grab	Weekly average
Lead	mg/L	When water present	Weekly	Grab	Weekly average
Manganese	mg/L	When water present	Weekly	Grab	Weekly average
Mercury	µg/L	When water present	Weekly	Grab	Monthly average Daily maximum
Molybdenum	mg/L	When water present	Weekly	Grab	Weekly average
Nickel	mg/L	When water present	Weekly	Grab	Weekly average
Petroleum Hydrocarbons (gasoline)	mg/L	See note a	See note a	Grab	Daily maximum
Petroleum Hydrocarbons (diesel)	mg/L	See note a	See note a	Grab	Daily maximum
Vanadium	mg/L	When water present	Weekly	Grab	Weekly average
Total Petroleum Hydrocarbons[a]	mg/L	When water present	Weekly	Grab	Weekly average Daily maximum
Toluene	mg/L	See note a	See note a	Grab	Daily maximum
Xylenes, total	mg/L	See note a	See note a	Grab	Daily maximum
pH	SU	When water present	Weekly	Measured	Weekly average Daily maximum
Accumulated solids	Inches	Active mining	Annually	Measured	Yearly total

Item or Parameter	Units	Time Period	Minimum Frequency	Sample Type/ Required Action	Report Statistic
Notes: [a] Total Petroleum Hydrocarbons (TPH) analyzed using NWTPH-HCID. If any detection of TPH then benzene, ethylbenzene, toluene, and xylenes is required. If any gasoline-range hydrocarbon is detected NWTPH-Gx is required and if diesel or heavy oil is detected NWTPH-Dx is required.					

5. Groundwater Monitoring Requirements

The permittee must monitor groundwater as listed in Table B8 below. The samples must be representative of the groundwater flowing through the aquifer at the time of sample collection. The permittee must collect samples from the monitoring well(s) and follow the procedures as identified in the DEQ-approved Groundwater Monitoring Plan. The permittee may request a reduction of required groundwater monitoring analytes after a minimum of nine quarters of representative sample results collected after full mining operations have commenced that indicate consistent values. The permittee must continue monitoring for the identified analytes until receipt of written authorization from DEQ allowing any proposed monitoring reduction.

Table B8: Groundwater Monitoring

Item or Parameter	Minimum Frequency	Sample Type/ Required Action	Report
Dissolved Oxygen	Quarterly	Measurement	Quarterly/Annual Report
Oxidation Reduction Potential	Quarterly	Measurement	Quarterly/Annual Report
pH	Quarterly	Measurement	Quarterly/Annual Report
Temperature	Quarterly	Measurement	Quarterly/Annual Report
Conductivity @ 25C	Quarterly	Measurement	Quarterly/Annual Report
Turbidity	Quarterly	Measurement	Quarterly/Annual Report
Alkalinity	Quarterly	Grab	Quarterly/Annual Report
Bicarbonate as CaCO3	Quarterly	Grab	Quarterly/Annual Report
Carbonate as CaCO3	Quarterly	Grab	Quarterly/Annual Report
Hardness as CaCO3 (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Hydroxide as CaCO3	Quarterly	Grab	Quarterly/Annual Report
Total Dissolved Solids	Quarterly	Grab	Quarterly/Annual Report
Total Petroleum Hydrocarbons	Quarterly	Grab	Quarterly/Annual Report
Aluminum (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Antimony (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Arsenic (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
BTEX (benzene, toluene, ethylbenzene, xylene)	Quarterly	Grab	Quarterly/Annual Report
Barium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Beryllium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Bismuth (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Boron (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Cadmium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Calcium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Chloride	Quarterly	Grab	Quarterly/Annual Report
Chromium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Cobalt (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Copper (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report

Item or Parameter	Minimum Frequency	Sample Type/ Required Action	Report
Cyanide (total, WAD, & Free)	Quarterly	Grab	Quarterly/Annual Report
Fluoride	Quarterly	Grab	Quarterly/Annual Report
Gallium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Iron (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Lead (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Lithium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Magnesium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Mercury (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Molybdenum (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Nickel (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Nitrate as N	Quarterly	Grab	Quarterly/Annual Report
Nitrate + Nitrite as N	Quarterly	Grab	Quarterly/Annual Report
Nitrite as N	Quarterly	Grab	Quarterly/Annual Report
Ammonia as N	Quarterly	Grab	Quarterly/Annual Report
Phosphorus (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Phosphate	Quarterly	Grab	Quarterly/Annual Report
Potassium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Scandium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Selenium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Silver (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Sodium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Strontium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Sulfate	Quarterly	Grab	Quarterly/Annual Report
Thallium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Tin (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Titanium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Uranium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Vanadium (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report
Zinc (total & dissolved)	Quarterly	Grab	Quarterly/Annual Report

SCHEDULE C: SOLID WASTE REQUIREMENTS

1. Wastes authorized for receipt

This permit authorizes the permittee to accept only mine tailing slurry generated from the mining processes at the permittee's facilities within this permit. The permittee must not accept other wastes or waste rock from outside facilities. The permittee must not accept mine tailings wastes generated at facilities not associated with this permit.

This permit authorizes the use and placement of cemented rock fill containing waste rock generated from the mining processes at this site. The cemented rock fill containing waste rock must meet the compositional criteria identified in the Operations, Monitoring, and Management Plan and monitored per the requirements in Schedule B of this permit.

2. Authorization of activities

The permittee must conduct all site solid waste and mine tailing disposal activities and cemented rock fill activities according to this permit's provisions. All permit-required environmental monitoring plans become part of the permit by reference after DEQ approves. Any conditions of plan approval are also incorporated into this permit unless the permittee contests within 30 days of receiving a conditional approval.

3. Prohibitions

The permittee must not accept any regulated hazardous wastes.

In the event discovered wastes are hazardous or suspected to be hazardous, the permittee must, within 24 hours, notify DEQ and initiate procedures to identify and remove the waste. Hazardous wastes must be removed within ninety days, unless DEQ approves otherwise. The permittee's temporary storage and transportation practices must comply with DEQ rules.

The permittee must not conduct any open burning at the site.

The permit does not allow the permittee to temporarily or permanently stockpile solid waste outside the footprint of the active tailing storage facility or appropriate temporary receptacles (temporary waste rock storage facility).

4. Discovery of Prohibited Waste

Any solid wastes discovered at the tailing's storage facility, underground workings, or temporary waste rock storage facility that appear to be prohibited waste must be isolated or removed as soon as practicable. The permittee must, within 48 hours, notify DEQ of the discovery. Non-putrescible, non-hazardous prohibited waste must be transported to a disposal site authorized to accept such waste within 90 days, unless otherwise approved or restricted by DEQ. Putrescible, non-hazardous prohibited wastes must be removed as soon as practicable; any storage of putrescible wastes must be approved by DEQ.

5. Oil and Hazardous Material Spill Response and Reporting

The permittee must immediately clean up any spill of oil or hazardous material as required by OAR 340-142-0060. If the spill is of a reportable quantity the permittee must immediately report the spill to the Oregon Emergency Response System at 1-800-452-0311 and DEQ.

Reportable quantities include:

- *Any* amount of oil spilled to waters of the state;
- Oil spills on land in excess of 42 gallons;
- 200 pounds (25 gallons) of pesticide residue;

- Hazardous materials that are equal to, or greater than, the quantity listed in the 40 CFR Part 302 (List of Hazardous Substances and Reportable Quantities), and amendments adopted before July 1, 2002.

For a complete list of hazardous materials required to be reported, please refer to OAR 340-142-0050.

6. Record Keeping and Reporting - Operations

a. Non-compliance reporting

The permittee must take immediate corrective action for any violations of permit conditions or DEQ rules and notify DEQ at:

(541) 298-7255

b. Permit Display

The permittee must display this permit where operating personnel can easily refer to it.

c. Access to records

The permittee must grant DEQ access, when requested, to all records and reports related to the permitted site.

d. Procedures

The permittee's record keeping and reporting procedures are as follows:

Table C1: Solid Waste Record Keeping

Step	Action
1	Keep the Operating Record at the site or at another DEQ-approved location.
2	Place information required by OAR 340-095-0020 and this permit in the Operating Record
3	During the Site operations, record the monthly amount of each waste type generated in tons. Record zero (0) if the waste is not received/disposed. At a minimum the following waste types must be separately identified: • Tailings materials • Waste Rock (Temporary Waste Rock Storage Facility) • Cemented Rock Fill containing waste rock (underground workings)
4	Submit the information collected in Step 3 above on the Solid Waste Disposal Report/Fee Calculation form available in Your DEQ Online portal. Pay solid waste fees as required by OAR 340-097. **Date Due**: February 20 of each year for the previous calendar year.
5	Retain copies of all records and reports for ten (10) years after their creation.
6	Update all records to reflect current conditions at the site.

e. Submittal

Send required submittals to Your DEQ Online portal

7. Site Construction and Design

Within 180 days of the permit issue date, the permittee must review and submit any necessary updates to the long-term Site Development Plan or site construction plan to DEQ for review and approval. This plan describes conceptual design of tailings facilities, tailings management, surface water management, geotechnical stability of the tailing's storage facility, closure and end use, supporting information. Once approved, the plan becomes an integral part of this permit.

a. Baseline design criteria

The Tailing Storage Facility lining system must include the following engineering controls or alternative controls as DEQ approves in writing:

- A composite liner system, including continuous 80-mil high-density polyethylene liner (HDPE) geomembrane, 300-mil thick enhanced geosynthetic clay liner (GCL) with a maximum hydraulic conductivity of 1 x 10-10 cm/sec, and 6- to 12-in-thick native prepared subgrade.
- A continuous leachate secondary collection and removal system designed to effectively monitor the overlying composite-liner system's performance and (1) detect and collect leachate at locations of maximum leak probability; and (2) prevent groundwater intrusion and related monitoring biases. Perforated piping network and monitoring ports.

An underflow collection system Perforated and solid CPE and HDPE gravity piping network in 18-in-thick drainage layer 6-in-thick filter layer, and gravity flow to reclaim pond

- A leachate collection sump(s) with a double composite liner system and a leak detection and removal system.

The Temporary Waste Rock Storage Facility (TWRSF) engineering controls and liner system must follow the minimum liner requirements as shown for the tailings storage facility.

The leak detection for the tailing's storage facility and the TWRSF must include the following engineering controls or alternative controls as approved by DEQ in writing:

- The leak detection piping must be placed below the primary geomembrane liner of the tailing's storage facility and TWRSF.
- Must consist of perforated 2-inch diameter schedule 80 polyvinyl chloride (PVC) piping immediately below the primary collection pipes and primary geomembrane (above the secondary GCL) to monitor potential leaks where concentrated flows are expected.
- Along the alignment of the leak detection pipes, an additional layer of 80 mil HDPE geomembrane liner will be installed immediately below the GCL.
- Each leak detection pipe must report to an independent leak detection riser to provide access for both monitoring of leakage flows and allow for the installation of small submersible pumps to evacuate any observed flows.

b. Construction requirements

The permittee must construct all improvements in accordance with:

- The approved plans and specifications
- Any DEQ imposed conditions of approval
- Any future DEQ approved amendments to the plans and specifications

Unless otherwise approved, construction work must begin within eighteen (18) months of plan approval.

c. Construction documents

Design plans and construction documents have been submitted as part of the Consolidated Permit Application. Before constructing any waste rock or tailings facility engineering controls (e.g., final cover, new tailings facility stage, or other waste rock or tailings containment facilities or improvements), the permittee must submit construction documentation that verifies the following information:

- Consistency with the applicable DEQ-approved design plan(s), including accurate translation of design specifications into construction documents.
- Identify the construction project team and identify their roles and responsibilities.
- Specify material and workmanship requirements to guide the Constructor in executing work and furnishing products.
- Include a Construction Quality Assurance plan that describes how the project team will monitor the quality of materials and the Constructor's work performance and ensure compliance with project specifications and contract requirements.

Reference: Follow the current Solid Waste Guidance to expedite DEQ review of the construction documents.

d. Construction inspection

During construction of a new tailings facilities, reclamation cover system, or any other environmental controls or engineered features, the permittee must provide to DEQ a summary and schedule of planned construction activities to facilitate DEQ's inspection and oversight.

e. Construction completion report submittal

Within ninety days of completing construction of a new tailings storage facility stage, a final cover system, or other engineering controls, the permittee must submit to DEQ a Construction Certification Report prepared by a qualified independent party. The report must document and certify that the construction of all required components and structures complies with this permit and the DEQ-approved design plans and specifications.

f. Construction completion report content

The construction completion report must include:

- An executive summary describing the construction project and any major problems encountered
- A list of the governing construction documents
- A summary of all construction and Construction Quality Assurance (CQA) activities
- The manufacturer's written certifications that all geosynthetic materials conform with project specifications
- Test data documenting that soil materials conform with project specifications
- A summary of all CQA observations, including daily inspection records and test data sheets documenting that materials deployment and installation conform with project specifications
- A description of the problems encountered, and the corrective measures implemented
- The designer's acceptance reports for errors and inconsistencies
- A list/description of any deviations from the design and material specifications, including justification for the deviations, copies of change orders and recorded field adjustments, and copies of the DEQ's written approvals for deviations and change orders
- Signed certificates for subgrade acceptance prior to deployment of the geomembrane liner

- Photographs and as-constructed drawings, including record surveys of the subgrade, geomembrane liner, granular drainage layer and protective soil/operations layer
- The certification statement(s) and signatures of the CQA consultant, designer, and site owner. One of these representatives must be a Professional Engineer with current Oregon registration

g. Construction Review and Third-Party Oversight

The permit requires a third-party panel engineering review of the tailings storage facility and TWRSF and construction assurance documentation is conducted during active construction and at the conclusion of each stage of construction. Construction oversight and assurance and inspections will be conducted during each stage of the construction. The applicant covers expenditure for the third-party oversight. DEQ and TRT members select the third-party engineering panel. The third-party oversight engineering panel must have experience with tailing storage facility construction and design.

h. DEQ Approval to commence operations

The permittee must not dispose of tailings or waste rock in newly constructed disposal facilities until DEQ has accepted the Construction Certification. If the DEQ does not respond to the Construction Certification Report within thirty days of its receipt, the permittee may place waste in the disposal unit.

8. Reclamation Construction and Continued Maintenance

At least 5 years before anticipated final site closure, the permittee must apply to renew the permit to cover the period of time remaining for site operations, site closure, and all or part of the time that reclamation construction and active post-closure site maintenance is required.

a. Reclamation, post-closure plans

The permittee must maintain up-to-date copies of the conceptual "worst-case" reclamation plan and the conceptual reclamation plan in the site records.

b. Notification of plan updates

The permittee must notify DEQ and receive DEQ approval for any changes or updates to the conceptual “worst-case” closure and conceptual post-closure care plans.

c. Reclamation and Closure plan approval

The permittee must submit an updated closure plan and post-closure monitoring and maintenance plan to DEQ at least 180 days before beginning closure operations or making any substantial changes to the operation. The closure plan must be compatible with DOGAMI’s reclamation plan and may be part of it. The design plans must be prepared and stamped by a qualified Professional Engineer with a current Oregon registration and specify and/or provide the following:

Surface material sampling plan of the tailing’s storage facility surface material

- Monitoring plan describing the controls and methods that will protect wildlife and the environment during the one-year period required for consolidation of the tailing’s storage facility material prior to construction of the cover
- All applicable performance criteria, construction material properties and characteristics, dimensions and slopes

During the one year of planned inactivity, before installing the tailings storage facility cover, the Permittee must manage the exposed tailings and accumulated liquids (e.g. stormwater runoff,

supernatant, leachate) in a manner such that the potential contaminants will not pose a risk to the wildlife or the environment.

- The design basis and all relevant engineering analyses and calculations

d. Closure schedule

The permittee must close each tailing facility and waste rock facility area or unit in accordance with a DEQ-approved schedule.

e. Final cover

Unless DEQ approves otherwise, the final tailing facility and waste rock facility cover must be as described below (from bottom to top):

- Prepared tailings surface,
- 60 mil double-sided textured (DST) linear low-density polyethylene (LLDPE) geomembrane
- Geosynthetic drainage layer or 12" thick drainage layer
- 12 ounce per square yard (oz/yd2) non-woven geotextile, and
- Drainage layer piping if needed to meet design requirements
- Clean vegetative/topsoil layer consisting of a minimum 12-inch soil layer , which is capable of supporting native vegetation planned for the site, and protective of accumulation into dietary items for wildlife (e.g. plants, invertebrates).

Additionally, the slopes must be graded to compensate for estimated differential settlement and maintain positive drainage. Final (post-settlement) slopes must range between two (2) percent and thirty (30) percent.

f. Vegetation

Unless DEQ approves otherwise, the permittee must establish and maintain a healthy growth of native vegetation over the closed areas of the mine tailings and waste rock facilities consistent with the proposed final use for the site.

g. Final cover maintenance

The permittee must maintain the final surface contours of the tailings storage facility reclamation cover such that:

- Erosion is minimized and ponding of water is prevented
- The integrity of the cover system is preserved in perpetuity and protective of wildlife exposure in accordance with the approved plans
- The permittee must reconstruct the cover system with approved materials and grade and seed all areas that have settled or where water ponds, and all areas where the cover soil has been damaged or thinned by cracking or erosion. Areas where vegetation has not been fully established shall be fertilized, re-seeded and maintained. Any damage repair or other reconstruction of a geomembrane barrier component in the final cover system shall be conducted in accordance with a construction quality assurance plan that DEQ approves.

h. Slope stability

The permittee must maintain the stability of the slopes and overall structural integrity of the tailing's storage facility, temporary waste rock storage facility, and reclaim pond.

9. Financial Assurance

The permittee must maintain the approved financial assurance plan and provide financial assurance for the costs of site closure, post-closure care, and corrective action (if applicable). The permittee must keep the current financial assurance plan in the site's files.

Financial assurance accessible by permitting agencies must be adequate to pay all costs including; site closure, post-closure care, and a estimate conceptual "worst-case" closure plan associated with a corrective action, such as the potential release of contaminants described in the Appendix B of the Environmental Evaluation, Analysis of Credible Accidents (Stantec August 16, 2024), OAR 340-043-0025(h).

The permittee must prepare the plan according to OAR 340-095-0090. Acceptable mechanisms are described in OAR 340-095-0095.

The permittee must review and update financial assurance annually according to OAR 340-095-0090(6)(d). All necessary and reasonable adjustments shall be made to annual reclamation costs, financial assurances and bonding. Before February 20 of each year, the permittee must submit to DEQ one (1) copy of the Annual Financial Assurance Recertification Report, signed by:

- A permittee representative who possesses the requisite authority to commit the permittee to the certification
- As OAR 340-095-0090(4)(a) requires, any changes to the cost estimate for closure, post-closure or corrective action used as a basis for meeting the financial assurance requirement must be prepared and signed and stamped by a Professional Engineer, with current Oregon registration.

SCHEDULE D: SPECIAL CONDITIONS

1. Emergency Response and Public Notification Plan

The permittee must develop an Emergency Response and Public Notification Plan or ensure the site's existing plan is current and accurate, per Schedule E, Section B, and Condition 6 at least 12 months before ground disturbance activities. The permittee must update the plan annually to ensure all information contained in the plan, including telephone and email contact information for applicable public agencies, is current and accurate. An updated copy of the plan must be kept on file at the site for DEQ review. The latest plan revision date must be listed on the plan cover along with the reviewer's initials or signature.

2. Operations, Monitoring and Management Plan

The permittee must develop an Operations, Monitoring and Management Plan (OM&M). The permittee must submit this OM&M Plan for DEQ approval at least 12 months before any land disturbance activities. The permittee must receive written approval of this OM&M plan prior to any soil disturbance. The permittee must conduct all activities pertaining to the management, treatment, and disposal of authorized wastes in accordance with DEQ-approved OM&M Plan. If provisions of the OM&M Plan conflict with conditions of this Permit, this Permit shall prevail. Modification of the OM&M plan requires prior written approval from DEQ. The OM&M Plan must incorporate adaptive management strategies to ensure timely adjustments in response to monitoring results, operational changes, or unforeseen environmental conditions. This OM&M Plan must include:

Introduction:
Permit type, file number, legal name of the permittee, common name of the permittee, site address, phone number, and source contact, an overview description of the site and the activities occurring on site including a site map, process flow diagram, details such as volumes, source material, compounds added or removed from the water, all reagents used, how effluent from the wet scrubber will be managed.

Monitoring:
Describe all site monitoring and sampling practices. Including specific sample location description, sampling procedures and frequency, sample type (grab vs composite) methods (autosampler vs bailer), sample handling, onsite and offsite laboratories identified, and analytical methods utilized. A detailed description of the measurement techniques, field instruments used, including field Quality Assurance / Quality Control (QA/QC) procedures (such as., field equipment calibration, field equipment decontamination, sample duplicates, field blanks, rinse water blanks, trip blanks), and record keeping.

Contingency plan:
Detailed description for prevention and handling spills and unplanned discharges, start up and shut down procedures and actions for water management in the underground workings, Mill, Tailings Storage Facility, Catchment Pond and Reclaim Pond, waste management, and wildlife management during standard operations as well as short and prolonged shutdowns.

Water Balance:
Water balance calculations will include a description of the total water input, storage and output of the systems including dewatering (water loss to entrainment, void loss, seepage), input volume of solids, precipitation and catchment runoff, evaporation from beach (dry and wet),, embankment, and pond areas, groundwater pumping, storage capacity, reclaim pond area evaporation, losses to reclaim pond seepage, underground workings, and other losses. Identification of any water quality standards necessary for water returning to the mill, as well as contingency plans for water management should the dewatering of the underground workings produce more water than projected.

As part of the water balance calculations, the permit requires the permittee to develop a comprehensive predictive water balance model representing the water and solid phases to ensure effective water

management, modeling, and environmental protection. The predictive model must account for all significant water inputs and losses. It must incorporate on-site metrological data and environmental conditions. The permittee must update the model regularly to reflect current onsite conditions.

Water utilized for dust suppression on all surfaces must originate from the dewatering wells. This does not include water originating from the sumps in the underground workings or reclaimed water unless written approval from DEQ.

Best Management Practices:
Describe best management practices. to the achievement of meeting permit requirements including runoff prevention measures, sump monitoring and pumping, underdrain monitoring and pumping, land stabilization, dust management, and maintenance of other site infrastructures. Describe cross connection prevention practices for all water conveyance. Describe staff training requirements to ensure compliance with this permit.

Tailings And Waste Rock Management:
The Tailings and Waste Rock Management section must include a description of the methodology of the ongoing sampling of the tailings for characterization and volumetric/tonnage reporting of cemented rock fill containing waste rock. The permittee must submit a plan documenting the tailings and waste rock management. This section must consider current conditions, changes to site operations and physical conditions. DEQ must approve in writing any revised OM&M Plan before the permittee initiates mining or backfilling activities not previously approved.

Leak Integrity Test:
The permittee must conduct and report annual leak integrity tests concerning sumps around the mill processing area, tailing storage facility, temporary waste rock storage facility, reclaim pond, and catchment pond.

Flow Meter Calibration:
The permittee must calibrate all flow meters required for documenting volumes in this permit annually. Calibration must be conducted as identified by the meter's manufacture's specifications.

No later than 90 days after the effective date of a renewed permit the permittee must submit to DEQ, a revised OM&M plan conforming to the terms and conditions of the permit. On or before April 15 of each year during the term of this permit, the permittee must submit to DEQ an OM&M plan update with any proposed modifications along with the annual compliance report.

i. The annual OM&M plan submittal must include a numbered list of proposed modifications.
The annual compliance report must include a document summarizing compliance with all aspects identified in the OM&M plan for the reporting year.

The permittee must implement any revisions to the OM&M Plan in accordance with DEQ approval of the plan.

3. Groundwater

Groundwater Monitoring Plan

a. The permittee must prepare and submit a groundwater monitoring plan to DEQ that is specific to the permittee's site at least 12 months before ground disturbance activities. An updated plan must be submitted and approved by DEQ before any modifications are incorporated. The permittee must implement all conditions of the final DEQ approved groundwater monitoring plan.

b. This plan must include but not be limited to: Sampling and reporting frequency, Sampling method, Criteria for determining sample is representative of target aquifer, Target analytes and analytical method, Field parameters and instrument calibration, Sample collection quality assurance and quality control, Purge water management, Well construction, Well development, Well placement.

Groundwater Well Management

a. The permittee must protect and maintain each groundwater monitoring well such that representative samples of the targeted aquifer can be collected.

b. The permittee must conduct all monitoring well abandonment, replacement, and installation complying with the Oregon Water Resources Department Rules OAR 690-240 and with DEQ's Guidelines for Groundwater Monitoring Well Drilling, Construction, and Decommissioning. The permittee must document all monitoring well repair, abandonment, replacement, and installation in a report prepared by a State of Oregon registered geologist.

c. If a monitoring well becomes damaged or inoperable, the permittee must notify DEQ in writing within 14 days of discovery. The written report must describe what has occurred, the remedial measures that have been or will be taken to correct the problem, and the measures taken to prevent its recurrence. DEQ may require replacing inoperable monitoring wells.

d. DEQ must approve all new or replacement monitoring well placement or design before installation. The permittee must submit well logs and well completion reports to DEQ within 30 days of well installation. The report must include a survey drawing showing the location of all monitoring wells, adjacent structures and water bodies.

e. The permittee must submit an abandonment and modification plan and receive written approval from DEQ before modifying or abandoning of any existing well deemed unsuitable for groundwater monitoring.

SCHEDULE E: WPCF GENERAL CONDITIONS

WPCF GENERAL CONDITIONS – INDUSTRIAL FACILITIES

SECTION A. STANDARD CONDITIONS

1. Duty to Comply with Permit
The permittee must comply with all conditions of this permit. Failure to comply with any permit condition is a violation of Oregon Revised Statutes (ORS) 468B.025 and grounds for an enforcement action. Failure to comply is also grounds for DEQ to modify, revoke, or deny renewal of a permit.

2. Property Rights and Other Legal Requirements
Issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, or authorize any injury to persons or property or invasion of any other rights, or any infringement of federal, tribal, state, or local laws or regulations.

3. Liability
DEQ or its officers, agents, representatives, or employees may not sustain any liability on account of the issuance of this permit or on account of the construction or maintenance of facilities or systems because of this permit.

4. Permit Actions
After notice by DEQ, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including but not limited to the following:
   a. Violation of any term or condition of this permit, any applicable rule or statute, or any order of the Environmental Quality Commission.
   b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.
   c. After reviewing annual reporting to ensure adequate protection of public waters, including groundwater.

5. Transfer of Permit
This permit may not be transferred to a third party without prior written approval from DEQ. DEQ may approve transfers where the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of this permit and the rules of the Environmental Quality Commission. A transfer application and filing fee must be submitted to DEQ.

6. Permit Fees
The permittee must pay the fees required by Oregon Administrative Rules.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance
At all times the permittee must maintain in good working order and properly operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to comply with the terms and conditions of this permit.

2. Standard Operation and Maintenance
All waste collection, control, treatment, and disposal facilities or systems must be operated in a manner consistent with the following:
   a. At all times, all facilities or systems must be operated as efficiently as possible in a manner that will prevent discharges, health hazards, and nuisance conditions.

b. All screenings, grit, and sludge must be disposed of in a manner approved by DEQ to prevent any pollutant from the materials from reaching waters of the state, creating a public health hazard, or causing a nuisance condition.
c. Bypassing untreated waste is generally prohibited. Bypassing may not occur without prior written permission from DEQ except where unavoidable to prevent loss of life, personal injury, or severe property damage.

3. Noncompliance and Notification Procedures

If the permittee is unable to comply with conditions of this permit because of a breakdown of equipment, facilities or systems; an accident caused by human error or negligence; or any other cause such as an act of nature, the permittee must:

a. Immediately take action to stop, contain, and clean up the unauthorized discharges and correct the problem.
b. Immediately notify the appropriate DEQ regional office so that an investigation can be made to evaluate the impact and the corrective actions taken, and to determine any additional action that must be taken.
c. Within 5 days of the time the permittee becomes aware of the circumstances, the permittee must submit to DEQ a detailed written report describing the breakdown, the actual quantity and quality of waste discharged, corrective action taken, steps taken to prevent a recurrence, and any other pertinent information.

Compliance with these requirements does not relieve the permittee from responsibility to maintain continuous compliance with the conditions of this permit or liability for failure to comply.

4. System Personnel

The permittee must provide an adequate operating staff that is duly qualified to carry out the safe operation, maintenance, and monitoring requirements to assure continuous compliance with the conditions of this permit.

5. Public Notification of Effluent Violation or Overflow

If conditions specified in this permit are exceeded or a release occurs that threatens public health, the permittee must take such steps as are necessary to alert the public, health agencies and other affected entitles (e.g., public and private water systems) about the extent and nature of the discharge in accordance with the notification procedures developed in accordance with General Condition B.6. Such steps may include, but are not limited to, posting of the water source at access points and other places, news releases, and paid announcements on radio, television, or other media outlets.

6. Emergency Response and Public Notification Plan

The permittee must develop and implement an emergency response and public notification plan that identifies measures to protect public health from releases or upsets that may endanger others. At a minimum the plan must include mechanisms to:

a. Ensure that the onsite personnel are aware (to the greatest extent possible) of such events;
b. Ensure notification of appropriate personnel and ensure that they are immediately dispatched for investigation and response;
c. Ensure immediate notification to the public, health agencies, and other affected entities (including public and private water systems). The response plan must identify the public health and other officials who will receive immediate notification;
d. Ensure that appropriate personnel are aware of and follow the plan and are appropriately trained;
e. Provide emergency operations: and
f. Ensure that DEQ is notified of the public notification steps taken.

SECTION C. MONITORING AND RECORDS

1. Inspection and Entry

The permittee must at all reasonable times allow authorized representatives of DEQ to:

a. Enter upon the permittee's premises where a waste source or disposal system is located or where any records are required to be kept under the terms and conditions of this permit;
b. Have access to and copy any records required by this permit;
c. Inspect any treatment or disposal system, practices, operations, monitoring equipment, or monitoring method regulated or required by this permit; or
d. Sample or monitor any substances or permit parameters at any location at reasonable times for the purpose of assuring permit compliance or as otherwise authorized by state law.

2. Averaging of Measurements

Calculations of averages of measurements required for all parameters must use an arithmetic mean.

3. Monitoring Procedures

Monitoring must be conducted according to test procedures specified in 40 CFR 136, unless other test procedures have been approved in writing by DEQ and specified in this permit.

4. Retention of Records

The permittee must retain records of all monitoring and maintenance information, including all calibrations, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These records are to be retained permanently and transfer to State Archives after 30 years.

5. Confidentiality of Information

Any information relating to this permit that is submitted to or obtained by DEQ is available to the public unless classified as confidential by the Director of DEQ under ORS 468.095. The permittee may request that information be classified as confidential if it is a trade secret as defined by that statute. The name and address of the permittee, permit applications, permits, effluent data, and information required by NPDES application forms under 40 CFR § 122.21 are not classified as confidential [40 CFR § 122.7(b)].

SECTION D. REPORTING REQUIREMENTS

1. Plan Submittal

Pursuant to Oregon Revised Statute 468B.055, unless specifically exempted by rule, construction, installation, or modification of disposal systems, treatment works, or other systems may not commence until plans and specifications are submitted to and approved in writing by DEQ. All construction, installation, or modification shall be in strict conformance with DEQ's written approval of the plans.

2. Representative Sampling

Sampling and measurements taken as required herein must be representative of the volume and nature of the material being sampled. All samples must be taken at the monitoring points specified in this permit, and must be taken, unless otherwise specified, before the material joins or is diluted by any other waste stream, body of water, or substance. Monitoring points must not be changed without notification to and the approval from DEQ. Samples must be collected in accordance with requirements in 40 CFR part 122.21 and 40 CFR part 403 Appendix E

3. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices must be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored flows. The devices must be installed, calibrated and maintained to ensure that the accuracy of the

measurements is consistent with the accepted capability of that type of device. Devices selected must be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.

2. Change in Discharge
Whenever a site expansion, production increase, or process modification is expected to result in a change in the character of pollutants to be discharged or in a new or increased discharge that will exceed the conditions of this permit, a new application must be submitted together with the necessary reports, plans, and specifications for the proposed changes. A change may not be made until plans have been approved and a new permit or permit modification has been issued.

3. Signatory Requirements
All applications, reports, or information submitted to DEQ must be signed and certified by the official applicant of record (owner) or authorized designee.

4. Twenty-Four Hour Reporting
The permittee must report any noncompliance that may endanger health or the environment. Any information must be provided orally (by telephone) within 24 hours from the time the permittee becomes aware of the circumstances, unless a shorter time is specified in the permit. During normal business hours, DEQ's regional office must be called. Outside of normal business hours, DEQ must be contacted at 1-800-452-0311 (Oregon Emergency Response System).

a. The following must be included as information that must be reported within 24 hours under this paragraph:
   (1) Any unanticipated release that exceeds any effluent limitation in this permit;
   (2) Any upset that exceeds any effluent limitation in this permit;
   (3) Violation of maximum daily discharge limitation for any of the pollutants listed by DEQ in this permit; and
   (4) Any noncompliance that may endanger human health or the environment.

b. A written submission must also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission must contain:
   (1) A description of noncompliance and its cause;
   (2) The period of noncompliance, including exact dates and times;
   (3) The estimated time noncompliance is expected to continue if it has not been corrected;
   (4) Steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and
   (5) Public notification steps taken, pursuant to General Condition B.6.

   DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

SECTION E. DEFINITIONS

1. *Average* means the arithmetic mean calculated by summing all the analytical results for a given analyte collected within an identified time period and then dividing by the total number of values.
2. *Commission or Environmental Quality Commission* means the governor appointed panel which serves as the Oregon Department of Environmental Quality's policy and rulemaking board.
3. *Composite sample or 24-hour composite sample* means a combination of at least six discrete sample aliquots of at least 100 milliliters, collected at periodic intervals from the same location, during the operating hours of the site over a 24-hour period. Four (rather than six) aliquots should be collected for volatile organics analyses. The composite must be flow or time proportional, whichever is more appropriate. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of *Standard Methods for the Examination of Water and Wastewater*.

4. *CQA* means construction quality assurance
5. *Daily discharge* means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge must be calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge must be calculated as the average measurement of the pollutant over the day.
6. *DEQ* means Oregon Department of Environmental Quality.
7. *DL* means detection level
8. *DOGAMI* means Oregon Department of Geology and Mineral Industries
9. *GCL* means geosynthetic clay liner.
10. *GPD* means gallons per day
11. *Grab sample* means an individual discrete sample collected over a period not to exceed 15 minutes.
12. *HDPE* means high density polypropylene.
13. *kg* means kilograms
14. *LOQ* means limit of quantitation
15. *mg/l* means milligrams per liter.
16. *MGD* means million gallons per day.
17. *MRL* means method reporting limit
18. *Month* means calendar month.
19. *ng/L* means nanogram per liter
20. *NPDES* means national pollutant discharge elimination system
21. *OM&M Plan* means operation, monitoring and management plan.
22. *OAR* mean Oregon Administrative Rules
23. *ORS* means Oregon Revised Statute
24. *QA/QC* means quality assurance and quality control
25. *QL* means quantitation limit
26. *Quarter* means January through March, April through June, July through September, or October through December.
27. *Ton* means a unit of weight equal to 2,000 pounds
28. *TRT* means Oregon's technical review team
29. *TWRSF* means temporary waste rock storage facility.
30. *µg/l* means microgram per liter.
31. *WAD* means weak acid dissociable.
32. *W/m²* means watts per square meter
33. *WPCF* means water pollution control facility.
34. *Week* means a calendar week of Sunday through Saturday.
35. *Weekly average* means the weekly mathematical mean calculated by summing all the analytical results for a given analyte collected within a week and then dividing by the total number of values.