

STATE OF ARIZONA
AQUIFER PROTECTION PERMIT NO. P- 102640
PLACE ID 1978, LTF 91539
SIGNIFICANT AMENDMENT

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Articles 1, 2, and 3, Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 1 and 2, A.A.C. Title 18, Chapter 11, Article 4 and amendments thereto, and the conditions set forth in this permit, the Arizona Department of Environmental Quality (ADEQ) hereby authorizes Carlota Copper Company to operate the Carlota Copper Project located near the Town of Miami in Gila and Pinal Counties, Arizona, over the groundwater of the Salt River groundwater basin, in following sections of the Gila and Salt River Base Line and Meridian: Township 1 North, Range 13 East, Sections 25, 26, 35, 36; Township 1 North, Range 14 East, Section 31; Township 1 South, Range 13 East, Sections 1,2,12,21; Township 1 South, Range 14 East, Sections 6, 7.

This permit becomes effective on the date of the Water Quality Division Director's signature and shall be valid for the life of the facility (operational, closure, and post-closure periods) unless suspended or revoked pursuant to A.A.C. R18-9-A213. The permittee shall construct, operate and maintain the permitted facilities:

1. Following all the conditions of this permit including the design and operational information documented or referenced below, and
2. Such that Aquifer Water Quality Standards (AWQS) are not violated at the applicable point(s) of compliance (POC) set forth below or if an AWQS for a pollutant has been exceeded in an aquifer at the time of permit issuance, that no additional degradation of the aquifer relative to that pollutant and as determined at the applicable POC occurs as a result of the discharge from the facility.

1.1. PERMITTEE INFORMATION

Facility Name: Carlota Copper Project – Pinto Valley Road
Facility Address: 2624 Forest Service Road / Pinto Valley Road
County: Gila and Pinal

Annual Registration Fee Flow Rate: 10,000,000,gallons per day (gpd) or more

Permittee: Carlota Copper Company
Permittee Address: PO Box 1009, Miami, Arizona 85539

Facility Contact: Myron Smith, Principal Environmental Advisor
Emergency Phone No.: (928)-473-3518

Latitude/Longitude: 33° 22' 44'' N / 110° 59' 36'' W
Legal Description: Township 1 North, Range 13 East, Sections 25, 26, 35, 36; Township 1 North, Range 14 East, Section 31; Township 1 South, Range 13 East, Sections 1,2,12; Township 1 South, Range 14 East, Sections 6, 7 of the Gila and Salt River Base Line and Meridian

1.2. AUTHORIZING SIGNATURE

Randall Matas, Deputy Director
Water Quality Division
Arizona Department of Environmental Quality
Signed this ___ day of _____, 2022

THIS AMENDED PERMIT SUPERCEDES ALL PREVIOUS PERMITS

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2.0 SPECIFIC CONDITIONS

[A.R.S. §§ 49-203(4), 49-241(A)]

2.1. FACILITY / SITE DESCRIPTION

[A.R.S. § 49-243(K)(8)]

The Carlota Copper Project consists of a heap leach pad, a solvent extraction-electrowinning (SX EW) process plant, two pregnant leach solution (PLS) ponds, one raffinate pond, rock disposal facilities, and associated pipelines, tanks, and maintenance facilities. The facilities associated with the mine are located in portions of the Pinto Creek and Powers Gulch drainages.

Open-pit mining takes place within the open pits. Mining operations include drilling, blasting, loading, and haul truck transport of ore to the heap leach pad. The heap leach pad is located in Powers Gulch and has a capacity of approximately 100 million tons. Copper is extracted from the ore using standard leaching technologies. The copper-bearing leach solutions are piped to a solvent extraction/electrowinning plant. The rock disposal facilities will remain at mine closure.

The site includes the following permitted discharging facilities:

| Table 1: DISCHARGING FACILITIES | | |
|---------------------------------|---------------|----------------|
| Facility | Latitude | Longitude |
| Heap Leaching Facilities | | |
| Heap Leach Pad | 33° 22' 44" N | 110° 59' 36" W |
| Main PLS Pond | 33° 22' 48" N | 110° 59' 53" W |
| Underdrain System Impoundment | 33° 22' 54" N | 111° 00' 00" W |
| Plant Site Impoundments | | |
| Raffinate Pond | 33° 22' 47" N | 110° 59' 21" W |
| Plant PLS-SX Pond | 33° 22' 44" N | 110° 59' 24" W |
| Rock Disposal Facilities | | |
| Main Rock Dump | 33° 23' 36" N | 110° 59' 44" W |
| Cactus SW Rock Dump | 33° 22' 38" N | 110° 59' 12" W |

2.1.1. Annual Registration Fee

[A.R.S. § 49-242 and A.A.C. R18-14-104]

The annual registration fee for this permit is payable to ADEQ each year. The annual registration fee flow rate is established by the permitted flow rate identified in Section 1.1. If the facility is not constructed or is incapable of discharge, the permittee may be eligible for reduced fees pursuant to A.A.C. R18-14-104(A), Table 2. Send all correspondence requesting reduced fees to the Groundwater Protection Value Stream. Please reference the permit number, LTF number, and the reason for requesting reduced fees under this rule.

2.1.2. Financial Capability

[A.R.S. § 49-243(N) and A.A.C. R18-9-A203]

The permittee has demonstrated financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The permittee shall maintain financial capability throughout the life of the facility. The estimated closure and post-closure cost are \$7,416,576 and \$1,921,977, respectively, for a total estimated cost of \$9,367,239. The financial assurance was demonstrated through A.A.C. R18-9-A203(G) and A.A.C. R18-9-A203(C)(5). The United States Forest Service (USFS) holds a reclamation bond for \$18,765,473 and the Arizona State Mine Inspector (ASMI) holds a reclamation bond for \$365,360; these mechanisms cover the majority of the APP closure activity requirements. ADEQ holds an Irrevocable Standby Letter of Credit No. SDCMTN523134 issued by HSBC for \$200,000 to cover the closure/post-closure costs not covered in the USFS and ASMI reclamation bonds.

2.2. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY (BADCT)

[A.R.S. § 49-243(B) and A.A.C. R18-9-A202(A)(5)]

Facilities regulated by this permit shall be designed, constructed, operated, and maintained to meet requirements specified by A.R.S. §49-243(B) and A.A.C. R18-9-A202(A)(5).

2.2.1. Engineering Design

BADCT description for the permitted facilities is presented in Section 4.1, Table 6.

2.2.2. Site-Specific Characteristics

Site specific characteristics have been used in support of a demonstration of the Best Available Demonstrated Control Technology (BADCT) for the rock disposal facilities. The underlying rock types for each rock disposal facility have been described and an analysis of the acid-neutralizing characteristics of the waste rock types shall be conducted according to Section 2.6.2.4 and Table 8.

Stormwater runoff from the rock disposal facilities not permitted under the AZPDES MSGP shall be contained, reclaimed, or recycled into the process water control system.

2.2.3. Pre-Operational Requirements

Not applicable.

2.2.4. Operational Requirements

The discharging facilities shall be operated according to and inspected for compliance with the requirements in Section 4.2, Table 12, and recorded in a log as required by Section 2.7.2. If damage is identified during an inspection that could cause or contribute to a discharge, proper repairs shall be promptly performed in accordance with Section 2.6 of this permit and recorded in a log.

2.3. DISCHARGE LIMITATIONS

[A.R.S. §§ 49-201(14), 49-243 and A.A.C. R18-9-A205(B)]

The permittee shall operate and maintain all permitted facilities to prevent unauthorized discharges pursuant to A.R.S. §§ 49-201(12) resulting from failure or bypassing of BADCT pollutant control technologies including liner failure, uncontrollable leakage, berm breaches that result in an unexpected loss of fluid, accidental spills, or other unauthorized discharges. Liner failure in a single-lined impoundment is any condition that would result in leakage exceeding 550 gallons per day per acre. The discharge limitations in this section are not applicable to any discharge caused by precipitation in excess of a single 100-year/24-hour storm event or process overflow during a power outage exceeding 24 hours in duration.

2.3.1. Discharge Limitations for Leaching Facilities

The Leaching Facilities are designed and authorized for use in leaching of ore. The Leaching Facilities shall be constructed and operated in accordance with the BADCT outlined in Section 4.1, Table 6, and the ultimate heights shall not exceed those set forth in the approved permit application and engineering study.

2.3.2. Pregnant Leach Solution and Raffinate Ponds

The PLS and Raffinate Ponds are designed and authorized to receive pregnant leach solution, raffinate, stormwater, process water and process upset events.

2.4. POINT OF COMPLIANCE (POC)

[A.R.S. § 49-244]

The POCs are established by the following monitoring locations:

| Table 2: POINT(S) OF COMPLIANCE | | | | |
|---------------------------------|--------------|--------------------------|------------------|-------------------|
| POC # | POC Location | ADWR Registration Number | Latitude | Longitude |
| AMW-18R | Alluvial | 55-907282 | 33° 22' 54.75" N | 111° 00' 2.11" W |
| AMW-24 | Alluvial | 55-906838 | 33° 23' 37.09" N | 111° 00' 28.72" W |
| BMW-8R | Bedrock | 55-907282 | 33° 22' 55.37" N | 111° 00' 2.10" W |
| BMW-26 | Bedrock | 55-906840 | 33° 23' 37.59" N | 111° 00' 27.45" W |

Monitoring requirements for each POC are listed in Section 4.2, Table 10 and Table 11.

The Director may amend this permit to designate additional POCs, if information on groundwater gradients or groundwater usage indicates the need.

2.5. MONITORING REQUIREMENTS

[A.R.S. § 49-243(K)(1), A.A.C. R18-9-A206(A)]

Unless otherwise specified in this permit, all monitoring required in this permit shall continue for the duration of the permit, regardless of the status of the facility. Unless otherwise provided, monitoring shall commence the first full monitoring period following permit issuance. All sampling, preservation and holding times shall be in accordance with currently accepted standards of professional practice. Trip blanks, equipment blanks and duplicate samples shall also be obtained, and Chain-of-Custody procedures shall be followed, in accordance with currently accepted standards of professional practice. Copies of laboratory analyses and Chain-of-Custody forms shall be maintained at the permitted facility. Upon request, these documents shall be made immediately available for review by ADEQ personnel.

2.5.1. Discharge Monitoring

All Materials characterization required in this permit shall continue for the duration of the permit, regardless of the discharge or operational status of the facility, unless otherwise designated in this permit or an approved contingency plan.

2.5.1.1. Waste Rock Characterization

Waste rock from mining activities shall be sampled and analyzed at a frequency of one sample per every one million tons of waste rock for the parameters listed in Section 4.2, Table 8 of this permit. The results shall be reported according to terms and frequencies specified in Section 2.7.4.3. Permittee may request cessation of analysis for a specific lithology after the collection of at least 20 samples of that lithology if the results indicate that the lithology will not generate acid or leach metals.

2.5.2. Facility / Operational Monitoring

At a minimum, permitted facilities shall be inspected for performance levels listed in Section 4.2, Table 12. If damage is identified during an inspection that could cause or contribute to an unauthorized discharge pursuant to A.R.S. § 49-201(12), proper repairs shall be promptly performed. Results of these inspections and monitoring activities shall be documented and maintained at the facility location for at least 10 years, and as required by Section 2.7.2 of this permit.

2.5.3. Groundwater Monitoring and Sampling Protocols

Compliance groundwater monitoring is required under the terms of this permit. For all sampling methods, static water levels shall be measured and recorded prior to sampling.

Wells shall be purged of at least three borehole volumes (as calculated using the static water level) or until field parameters (pH, temperature, and conductivity) are stable, whichever represents the greater volume. If evacuation results in the well going dry, the well shall be allowed to recover to 80 percent of the original borehole volume, or for 24 hours, whichever is shorter, prior to sampling. If after 24 hours there is not sufficient water for sampling, the well shall be recorded as “dry” for the monitoring event. An explanation for reduced pumping volumes, a record of the volume pumped, and modified sampling procedures shall be reported and submitted with the Self-Monitoring Report Form (SMRF).

As an alternative method for sampling, the permittee may conduct the sampling using the low-flow purging method as described in the Arizona Water Resources Research Center, March 1995 Field Manual for Water Quality Sampling. The well must be purged until indicator parameters stabilize. Indicator parameters shall include dissolved oxygen, turbidity, pH, temperature, and conductivity.

As a third alternative method for sampling within POC wells with very low recharge rates, the permittee may conduct the sampling using no-purge sampling techniques using HydraSleeve™ or similar type methodology. The use of HydraSleeve™ or similar type samplers shall follow accepted EPA, USGS, and DOD protocols. In addition, the HydraSleeve™ or similar type sampler shall be placed just below the water table.

2.5.3.1. Point of Compliance Well Replacement

In the event that one or more of the designated POC wells should become unusable or inaccessible due to damage or any other event, a replacement POC well shall be constructed and installed upon approval by ADEQ. If the replacement well is 50 feet or less from the original well, the ALs and/or aquifer quality limits (AQLs) calculated for the designated POC well shall apply to the replacement well. Otherwise, the ALs and/or AQLs shall be set following the provisions in Section 2.5.3.3 and Section 2.5.3.4 of this permit.

2.5.3.2. Ambient Groundwater Quality Monitoring for Point of Compliance Wells

Ambient groundwater sampling has been completed. Any ambient sampling required for future POC wells shall be analyzed for the parameters listed in Section 4.2, Table 9. Alert levels and aquifer quality limits shall be established as required in Sections 2.5.3.3 and 2.5.3.4.

2.5.3.3. Alert Levels for Point of Compliance Wells

For any new or replacement POC wells, ALs shall be calculated for all contaminants with an established numeric AWQS, as described below.

Following receipt of the laboratory analyses for the final month of the ambient groundwater monitoring period for each POC well, the permittee shall submit the ambient groundwater data in tabulated form to the Groundwater Protection Value Stream for review. Copies of all laboratory analytical reports, field notes, and the Quality Assurance/Quality Control (QA/QC) procedures used in collection and analyses of the samples for all parameters listed in Section 4.2, Table 9 to be established for each POC well, shall be submitted to the Groundwater Protection Value Stream. The permittee may submit a report with the calculations for each AL and AQL included in the permit for review and approval by ADEQ, or the permittee may defer calculation of the ALs and AQLs by the Groundwater Protection Value Stream. The ALs shall be established and calculated by the following formula, or another valid statistical method submitted to Groundwater Protection Value Stream in writing and approved for this permit by the Groundwater Protection Value Stream:

$$AL = M + KS$$

Where M = mean, S = standard deviation, and K = one-sided normal tolerance interval with a 95% confidence level (Lieberman, G.J. (1958) Tables for One-sided Statistical Tolerance Limits: Industrial Quality Control, Vol XIV, No. 10). Obvious outliers should be excluded from the data used in the AL calculation.

The following criteria shall be met in establishing ALs in the permit:

1. The AL shall be calculated for a parameter using the analyses from a minimum of eight sample events.
2. Any data where the laboratory Practical Quantitation Limit (PQL) exceeds 80% of the AWQS shall not be included in the AL calculation.
3. If a parameter is below the detection limit, the permittee must report the value as “less than” the numeric value for the PQL or detection limit for the parameter, not just as “non-detect”. For those parameters, the permittee shall use a value of one-half the reported detection limit for the AL calculation.
4. If the analytical results from more than 50% of the samples for a specific parameter are non-detect, then the AL shall be set at 80% of the AWQS.
5. If the calculated AL for a specific constituent and well is less than 80% of the AWQS, the AL shall be set at 80% of the AWQS for that constituent in that well.

2.5.3.4. Aquifer Quality Limits for POC Wells

For each of the monitored analytes for which a numeric AWQS has been adopted, the AQL shall be established as follows:

1. If the calculated AL is less than the AWQS, then the AQL shall be set equal to the AWQS.
2. If the calculated AL is greater than the AWQS, then the AQL shall be set equal to the calculated AL value, and no AL shall be set for that constituent at that monitoring point

2.5.3.5. Compliance Groundwater Quality Monitoring for POC Wells

For quarterly compliance monitoring, the permittee shall analyze groundwater samples for the parameters listed in Section 4.2, Table 10. In addition to quarterly compliance groundwater monitoring, every two years (biennial) the permittee shall analyze samples from the POC wells for an expanded list of parameters. For the biennial monitoring events in POC wells, the parameters listed in Section 4.2, Table 11 shall be analyzed.

2.5.4. Surface Water Monitoring and Sampling Protocols

Routine surface water monitoring is not required under the terms of this permit.

2.5.5. Analytical Methodology

All samples collected for compliance monitoring shall be analyzed using Arizona state-approved methods. If no state-approved method exists, then any appropriate EPA-approved method shall be used. Regardless of the method used, the detection limits must be sufficient to determine compliance with the regulatory limits of the parameters specified in this permit. If all methods have detection limits higher than the applicable limit, the permittee shall follow the applicable contingency requirements of Section 2.6 and may propose “other actions” including amending the permit to set higher limits. Analyses shall be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification unless exempted under A.R.S. § 36-495.02. For results to be considered valid, all analytical work shall meet

quality control standards specified in the approved methods. A list of Arizona state-certified laboratories can be obtained at the address below:

Arizona Department of Health Services
Office of Laboratory Licensure and Certification
250 North 17th Avenue
Phoenix, AZ 85007
Phone: (602) 364-0720

2.5.6. Installation and Maintenance of Monitoring Equipment

Monitoring equipment required by this permit shall be installed and maintained so that representative samples required by the permit can be collected. If new groundwater wells are determined to be necessary, the construction details shall be submitted to the Groundwater Protection Value Stream for approval prior to installation and the permit shall be amended to include any new monitoring points.

2.6. CONTINGENCY PLAN REQUIREMENTS

[A.R.S. § 49-243(K)(3), (K)(7) and A.A.C. R18-9-A204 and R18-9-A205]

2.6.1. General Contingency Plan Requirements

At least one copy of this permit and the approved contingency and emergency response plan submitted in the application shall be maintained at the location where day-to-day decisions regarding the operation of the facility are made. The permittee shall be aware of and follow the contingency and emergency plans.

Any AL exceedance, or violation of an AQL, DL, or other permit condition shall be reported to ADEQ following the reporting requirements in Section 2.7.3, unless more specific reporting requirements are set forth in Section 2.6.2 through 2.6.5.

Some contingency actions involve verification sampling. Verification sampling shall consist of the first follow-up sample collected from a location that previously indicated a violation or the exceedance of an AL. Collection and analysis of the verification sample shall use the same protocols and test methods to analyze for the pollutant or pollutants that exceeded an AL or violated an AQL or DL. Where verification sampling is specified in this permit, it is the option of the permittee to perform such sampling. If verification sampling is not conducted within the timeframe allotted, ADEQ and the permittee shall presume the initial sampling result to be confirmed as if verification sampling had been conducted. The permittee is responsible for compliance with contingency plans relating to the exceedance of an AL or violation of a DL, AQL or any other permit condition. The permittee is subject to enforcement action for the failure to comply with any contingency actions in this permit.

2.6.2. Exceeding of Alert Levels and Performance Levels

2.6.2.1. Exceeding of Performance Levels Set for Operational Conditions

2.6.2.1.1. Performance Levels Set for Freeboard

In the event that freeboard performance levels required by Section 4.2 Table 12 in a surface impoundment are not maintained, the permittee shall:

1. As soon as practicable, cease or reduce discharging to the impoundment to prevent overtopping. Remove and properly dispose or recycle to other operations the excess fluid in the reservoir until the water level is restored at or below the permitted freeboard limit.
2. Within 5 days of discovery, evaluate the cause of the incident and adjust operational conditions or identify design improvements to the affected system as necessary to avoid future occurrences.

3. Within 30 days of discovery, initiate repairs to the affected system, structure, or other component as necessary to return the system to compliance with this permit, or remove the affected system(s) from service as specified in Section 2.8 (Temporary Cessation) and Section 2.9 (Closure) of this permit. Record any repair procedures, methods, and materials used to restore the facility to operating condition in the facility log/recordkeeping file.
4. If design improvements are necessary, submit an amendment application within 90 days of discovery.
5. The facility is no longer on alert status once the operational indicator no longer indicates that the freeboard performance level is being exceeded. The permittee shall, however, complete all tasks necessary to return the facility to its pre-alert operating condition.

2.6.2.1.2. Performance Levels, other than Freeboard

1. If an operational performance level (PL) listed in Section 4.2, Table 12 has been observed or noted during required inspection and operational monitoring, such that the result could cause or contribute to an unauthorized discharge, the permittee shall immediately investigate to determine the cause of the condition. The investigation shall include the following:
 - a. Inspection, testing, and assessment of the current condition of all treatment or pollutant discharge control systems that may have contributed to the operational performance condition.
 - b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences.
2. The PL exceedance, results of the investigation, and any corrective action taken shall be reported to the Groundwater Protection Value Stream, within 30 days of the discovery of the condition. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, or other actions.
3. The permittee shall initiate actions identified in the approved contingency plan referenced in Section 5 and any necessary contingency measures to resolve problems identified by the investigation which may have led to a PL being exceeded. To implement any other corrective action the permittee may choose to obtain prior approval from ADEQ according to Section 2.6.6.

2.6.2.2. Exceedance of Alert Level #1 for Normal Liner Leakage

If an Alert Level #1 (AL #1) as specified in Section 4.2, Table 13, Table 14, or Table 15, has been exceeded, the permittee shall take the following actions:

1. Within 5 days of discovery, determine if the fluid in the collection sump is operational/process water from the impoundment by measuring the pH and conductivity of fluids in the impoundment and in the sump to allow direct comparison in wastewater quality. Notify the Groundwater Protection Value Stream in accordance with Section 2.7.3(1) (Permit Violation and AL Status Reporting), and include in the notification an assessment of the type of water in the sump. Monitor fluid removal from the LCRS on a daily basis until the daily volume of fluid quantified remains below AL#1 for 30 days in order to minimize the hydraulic head on the lower liner.

2. Within 15 days of discovery, assess the condition of the liner system using visual methods for visible portions of the liner, electrical leak detection, or other methods as applicable to determine the location of leaks in the primary liner. If liner damage is evident, the permittee shall complete liner repairs and submit documentation of the repairs in the initial report discussed in Item No. 3 below.
3. Within 30 days of discovery of exceeding AL#1, the permittee shall submit an initial report to the Groundwater Protection Value Stream to address problems identified from the initial assessment of the liner system, the source of the fluid, and any remedial actions taken to minimize the future occurrences. The report shall include the results of the initial liner evaluation, methods used to locate the leak(s) if applicable, any repair procedures implemented to restore the liner to optimal operational status if required, and other information necessary to ensure the future occurrence of the incidence will be minimized. The permittee shall also submit the report required under Section 2.7.3.
4. For leakage rates that continue to exceed AL #1 and are below AL #2, a Liner Leakage Assessment Report shall be included in the next annual report described in Section 2.7.4 (Operational, Other or miscellaneous Reporting) of this permit. The permittee may also submit the Liner Leakage Assessment Report to the Groundwater Protection Value Stream prior to the annual report due date. This Liner Leakage Assessment Report shall be submitted to the Groundwater Protection Value Stream.
5. The Groundwater Protection Value Stream will review the Liner Leakage Assessment Report and may require that the permittee take additional action to address the problems identified from the assessment of the liner and perform other applicable repair procedures as directed by the Groundwater Protection Value Stream, including repair of the liner or addressing and controlling infiltration of non-operational water detected in the LCRS.

2.6.2.3. Exceedance of Alert Level #2 for Liner Failure or Rips

If the Liner Leakage Discharge Limit (AL #2) specified in Section 4.2, Table 13, Table 14, or Table 15 has been exceeded, the permittee shall:

1. Immediately cease all discharge to the impoundment, and notify the Groundwater Protection Value Stream orally, electronically, or, by facsimile, of the AL #2 exceedance. Within 24 hours, determine if water in the collection sump is operational/process water from the impoundment by measuring the pH and conductivity of fluids contained in the impoundment and in the sump to allow direct comparison in water quality.
2. Within 5 days of discovery, notify the Groundwater Protection Value Stream, in accordance with Section 2.7.3 (Permit Violation and AL Status Reporting) and include an assessment regarding the type of water in the sump based upon the measurements taken according to Item No. 1 listed above.
3. Within 15 days of discovery identify the location of the leak(s) using visual methods, electrical leak detection, or other methods as applicable. If liner damage is evident, the permittee shall complete liner repairs and submit documentation of the repairs in Item No. 4 below. Discharge to the impoundment shall not be re-initiated until the leak(s) have been identified and repaired.
4. Within 30 days of exceeding AL #2, submit a report to the Groundwater Protection Value Stream as specified in Section 2.7.3 (Permit Violation and AL Status Reporting). The report shall include the results of the initial liner evaluation, methods used to locate the leak(s) if applicable, any repair procedures and quality assurance/quality control implemented to restore the liner to optimal operational status if required, and other information necessary to ensure the future occurrence of the incidence will be minimized. Upon review of the report, the Groundwater Protection Value Stream may request additional monitoring or remedial actions.

5. If AL #2 continues to be exceeded following completion of repairs, submit for approval to the Groundwater Protection Value Stream, a corrective action plan including a schedule to complete the corrective actions to address all problems identified from the assessment of the liner system and surface releases, if any, within 60 days of completion of repairs conducted in response to Item No. 3 above. Upon the Groundwater Protection Value Stream's approval, the permittee shall implement the approved plan and schedule of corrective actions.
6. Within 30 days of completion of corrective actions, submit to the Groundwater Protection Value Stream, a written report as specified in Section 2.6.6 (Corrective Actions).

2.6.2.4. Exceeding of Action Levels for Waste Rock Characterization

Waste rock characterization will be required in accordance with Section 4.2, Table 8 of this permit. One sample per one (1) million tons of waste rock material will be collected and submitted for paste pH and Acid Base Accounting (ABA) analysis. If the Net Neutralization Potential (NNP) value of any sample is less than 20 tons of CaCO₃/Kton, additional calculations will be performed in order to determine the acid-generating nature of the sample in question. In these cases, the ratio between the Acid Neutralization Potential (ANP) and Acid Generating Potential (AGP) will be calculated. If the ratio is less than 3:1, the AGP may be recalculated using the pyritic sulfur content only. If both the NNP and the AGP demonstrate a potential to be acid generating (i.e. the NNP is < 20 tons/Kton AND the ANP:AGP is less than 3:1, the following contingency actions shall apply:

1. the location of the waste rock material in the dump shall be noted, and
2. the material will not be placed on the outside of the dump or in the same dump drainages.

The reporting of waste rock characterization results shall be submitted to the Groundwater Protection Value Stream on an annual basis in accordance with Section 2.7.4.3. Upon review of the submitted report, the Department may determine that additional monitoring, amendments to permit conditions, or other actions may be required.

2.6.2.5. Operational Monitoring at the Underdrain System Impoundment

The permittee shall monitor fluids discharging to the underdrain system impoundment according to the terms and frequencies set in Section 4.2, Table 7. If an action level is exceeded the permittee shall immediately investigate to determine the cause of the action level exceedance. The investigation shall include the following:

1. If an action level is exceeded the permittee shall immediately investigate to determine the cause of the action level exceedance. The investigation shall include the following
 - a. Inspection, testing, and assessment of the current condition of all treatment or pollutant discharge control systems that may have contributed to the action level exceedance.
 - b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences.
2. The permittee shall initiate actions identified in the approved contingency plan referenced in Section 5.0 and specific contingency measures identified in Section 2.6 to resolve any problems identified by the investigation, which may have led to an action level exceedance. To implement any other corrective action the permittee shall obtain prior approval from the Groundwater Protection Value Stream according to Section 2.6.6.
3. Within 30 days of an action level exceedance, the permittee shall submit the laboratory results to the Groundwater Protection Value Stream, along with a summary of the findings of the investigation, the cause of the action level exceedance, and actions taken to resolve the problem.

4. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions

2.6.2.6. Exceeding of Alert Levels in Groundwater Monitoring

2.6.2.6.1. Alert Levels for Indicator Parameters

Monitoring for Indicator Parameters is not required under the terms of this permit.

2.6.2.6.2. Alert Levels for Pollutants with Numeric Aquifer Water Quality Standards

1. If an AL for a pollutant set in Section 4.2, Table 10 or Table 11 has been exceeded, the permittee may conduct verification sampling of the pollutant(s) that exceed their respective AL(s) within 5 days of becoming aware of an AL exceedance. The permittee may use the results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.
2. If verification sampling confirms the AL exceedance or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring for the pollutant(s) exceeding their respective AL(s) to monthly. In addition, the permittee shall immediately initiate an investigation of the cause of the AL exceedance, including inspection of all discharging units and all related pollution control devices, review of any operational and maintenance practices that might have resulted in an unexpected discharge, and hydrologic review of groundwater conditions including upgradient water quality.
3. The permittee shall initiate actions identified in the approved contingency plan referenced in Section 5.0 and specific contingency measures identified in Section 2.6 to resolve any problems identified by the investigation which may have led to an AL exceedance. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6. Alternatively, the permittee may submit a technical demonstration, subject to written approval by the Groundwater Protection Value Stream, that although an AL is exceeded, the pollutant(s) that exceed their respective AL(s) are not reasonably expected to cause a violation of an AQL. The demonstration may propose a revised AL or monitoring frequency, for those pollutant(s) that exceed their respective AL(s), for approval in writing by the Groundwater Protection Value Stream.
4. Within 30 days after confirmation of an AL exceedance for those pollutant(s), the permittee shall submit the laboratory results to the Groundwater Protection Value Stream along with a summary of the findings of the investigation, the cause of the AL exceedance, and actions taken to resolve the problem.
5. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, or other actions.
6. The increased monitoring for those pollutant(s) required as a result of an AL exceedance may be reduced to regularly scheduled frequency, if the results of three (3) sequential sampling events demonstrate that the parameter(s) does/do not exceed their respective AL(s).
7. If the increased monitoring required as a result of an AL exceedance for those pollutant(s) continues for more than six sequential sampling events, the permittee shall submit a second report documenting an investigation of the continued AL exceedance within 30 days of the receipt of laboratory results of the sixth sampling event.

2.6.2.6.3. Alert Levels to Protect Downgradient Users from Pollutants Without Numeric Aquifer Water Quality Standards

Not applicable.

2.6.2.6.4. Alert Level for Groundwater Level

Not applicable.

2.6.3. Discharge Limit Violation

2.6.3.1. Liner Failure, Containment Structure Failure, or Unexpected Loss of Fluid

In the event of overtopping, liner failure, containment structure failure, or unexpected loss of fluid as described in Section 2.3, the permittee shall take the following actions:

1. As soon as practicable, cease all discharges as necessary to prevent any further releases to the environment, including removal of any fluid remaining in the impoundment as necessary, and capture and containment of all escaped fluids.
2. Within 24 hours of discovery, notify Groundwater Protection Value Stream.
3. Within 24 hours of discovery of a failure estimate the quantity released, collect representative samples of the fluid remaining in affected impoundments and drainage structures, analyze sample(s) according to Section 4.2, Table 7 and report in accordance with Section 2.7.3 (Permit Violation and AL Status Reporting). In the 30-day report required under Section 2.7.3, include a copy of the analytical results and forward the report to Groundwater Protection Value Stream.
4. Within 15 days of discovery, initiate an evaluation to determine the cause for the incident. Identify the circumstances that resulted in the failure and assess the condition of the discharging facility and liner system. Implement corrective actions as necessary to resolve the problems identified in the evaluation. Initiate repairs to any failed liner, system, structure, or other component as needed to restore proper functioning of the discharging facility. The permittee shall not resume discharge to the facility until repairs of any failed liner or structure are performed.

Repair procedures, methods, and materials used to restore the system(s) to proper operating condition shall be described in the facility log/recordkeeping file and available for ADEQ review. Record in the facility log/recordkeeping file the amount of fluid released, a description of any removal method and volume of any fluid removed from the impoundment and/or captured from the release area. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 (Operation Inspection / Log/Recordkeeping File).

5. Within 30 days of discovery of the incident, submit a report to Groundwater Protection Value Stream as specified in Section 2.7.3. Include a description of the actions performed in Subsections 1 through 4 listed above. Upon review of the report, ADEQ may request additional monitoring or remedial actions.
6. Within 60 days of discovery, conduct an assessment of the impacts to soil and/or groundwater resulting from the incident. If soil or groundwater is impacted such that it could or did cause or contribute to an exceedance of an AQL at the applicable point of compliance, submit to ADEQ, for approval, a corrective action plan to address such impacts, including identification of remedial actions and a schedule for completion of activities. At the approval of ADEQ, the permittee shall implement the approved plan.
7. Within 30 days of completion of corrective actions, submit to Groundwater Protection Value Stream, a written report as specified in Section 2.6.6 (Corrective Actions).

8. Upon review of the report, ADEQ may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions, or other actions.

2.6.3.2. Overtopping of a Surface Impoundment

If overtopping of fluid from a permitted surface impoundment occurs, and results in a discharge pursuant to A.R.S. § 49-201(12), the permittee shall:

1. As soon as practicable, cease all discharges to the surface impoundment to prevent any further releases to the environment.
2. Within 24 hours of discovery, notify Groundwater Protection Value Stream.
3. Within 24 hours, collect representative samples of the fluid contained in the surface impoundment. Samples shall be analyzed for the parameters specified Table 10. Within 30 days of the incident, submit a copy of the analytical results to Groundwater Protection Value Stream.
4. As soon as practicable, remove and properly dispose of excess water in the impoundment until the water level is restored at or below the appropriate freeboard as described in Table 12. Record in the facility log/recordkeeping file the amount of fluid released, a description of the removal method and volume of any fluid removed from the impoundment and/or captured from the release area. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 (Operation Inspection/LogBook/Recordkeeping File).
5. Within 30 days of discovery, evaluate the cause of the overtopping and identify the circumstances that resulted in the incident. Implement corrective actions and adjust operational conditions as necessary to resolve the problems identified in the evaluation. Repair any systems as necessary to prevent future occurrences of overtopping.
6. Within 30 days of discovery of overtopping, submit a report to ADEQ as specified in Section 2.7.3(2) (Permit Violation and Alert Level Status Reporting). Include a description of the actions performed in Subsections 1 through 5 listed above. Upon review of the report, ADEQ may request additional monitoring or remedial actions.
7. Within 60 days of discovery, and based on sampling in Item No. 3 above, conduct an assessment of the impacts to the subsoil and/or groundwater resulting from the incident.
8. If soil or groundwater is impacted such that it could cause or contribute to an exceedance of an AQL at the applicable point of compliance, submit to ADEQ for approval, a corrective action plan to address such impacts, including identification of remedial actions and/or monitoring, and a schedule for completion of activities. At the direction of ADEQ, the permittee shall implement the approved plan.
9. Within 30 days of completion of corrective actions, submit to ADEQ, a written report as specified in Section 2.6.6 (Corrective Actions). Upon review of the report, ADEQ may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions, or other actions.

2.6.3.3. Inflows of Unexpected Materials to a Surface Impoundment

The types of materials that are expected to be placed in the permitted surface impoundments are specified in Section 2.3 (Discharge Limitations). If any unexpected materials flow to a permitted surface impoundment, the permittee shall:

1. As soon as practicable, cease all unexpected inflows to the surface impoundment(s).
2. Within 24-hours of discovery, notify Groundwater Protection Value Stream.
3. Within five (5) days of the incident, identify the source of the material and determine the cause for the inflow. Characterize the unexpected material and contents of the affected impoundment, and evaluate the volume and concentration of the material to determine if it is compatible with the surface impoundment liner. Based on the evaluation of the incident, repair any systems or equipment and/or adjust operations, as necessary to prevent future occurrences of inflows of unexpected materials.
4. Within 30 days of an inflow of unexpected materials, submit a report to ADEQ as specified in Section 2.7.3 (Permit Violation and Alert Level Status Reporting). Include a description of the actions performed in Subsections 1 through 3 listed above.
5. Upon review of the report, ADEQ may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions, or other actions including remediation.

2.6.3.4. Slope and Berm Failures

If a slope or berm failure involving heap or dump leach facilities, waste rock dumps, tailings facilities, or retention structures (dams) occurs which affects the ability of the facility to operate in accordance with this permit or results in an unauthorized discharge, the permittee shall promptly close the active area in the vicinity of the failure, and conduct a field investigation of the failure to analyze its origin and extent, its impact on the facility operations, temporary and permanent repairs and changes in operational plans considered necessary. Within 30 days of a slope or berm failure, the permittee shall submit a written report, which includes the documentation specified in Section 2.7.3 of this permit. The permittee shall initiate the actions necessary to mitigate the impacts of the failure, consistent with Department approval.

2.6.4. Aquifer Quality Limit Exceedances

1. If an AQL set in Section 4.2, Table 10 or Table 11 has been exceeded, the permittee may conduct verification sampling for those pollutant(s) that were above their respective AQL(s) within five (5) days of becoming aware of the exceedance. The permittee may use results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.
2. If verification sampling does not confirm an AQL exceedance, no further action is needed under this Section.
3. If verification sampling confirms that an AQL was exceeded for any parameter or if the permittee opts not to perform verification sampling, then, the permittee shall increase the frequency of monitoring to monthly for those parameters.

In addition, the permittee shall immediately initiate an evaluation for the cause of the violation, including inspection of all discharging units and all related pollution control devices, and review of any operational and maintenance practices that might have resulted in unexpected discharge.

The permittee also shall submit a report according to Section 2.7.3, which includes a summary of the findings of the investigation, the cause of the violation, and actions taken to resolve the problem. A verified exceedance of an AQL will be considered a violation unless the permittee demonstrates within 90 days that the exceedance was not caused or contributed to by pollutants discharged from the facility. Unless the permittee has demonstrated that the exceedance was not caused or contributed to by pollutants discharged from the facility, the permittee shall consider and ADEQ may require corrective action that may include control of the source of discharge, cleanup of affected soil, surface water, or groundwater, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in an ADEQ approved contingency plan, or separately approved according to Section 2.6.6.

Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions.

The permittee shall notify any downstream or downgradient users who may be directly affected by the discharge.

2.6.5. Emergency Response and Contingency Requirements for Unauthorized Discharges

[A.R.S. § 49-201(12) AND PURSUANT TO A.R.S. § 49-241]

2.6.5.1. Duty to Respond

The permittee shall act immediately to correct any condition resulting from a discharge pursuant to A.R.S. § 49-201(12) if that condition could pose an imminent and substantial endangerment to public health or the environment.

2.6.5.2. Discharge of Hazardous Substances or Toxic Pollutants

In the event of any unauthorized discharge pursuant to A.R.S. § 49-201(12) of suspected hazardous substances (A.R.S. § 49-201(19)) or toxic pollutants (A.R.S. § 49-243(I)) on the facility site, the permittee shall promptly isolate the area and attempt to identify the discharged material. The permittee shall record information, including name, nature of exposure and follow-up medical treatment, if necessary, on persons who may have been exposed during the incident. The permittee shall notify the Groundwater Protection Value Stream within 24 hours of discovering the discharge of hazardous material which (a) has the potential to cause an AWQS or AQL exceedance, or (b) could pose an endangerment to public health or the environment.

2.6.5.3. Discharge of Non-Hazardous Materials

In the event of any unauthorized discharge pursuant to A.R.S. § 49-201(12) of non-hazardous materials from the facility, the permittee shall promptly attempt to cease the discharge and isolate the discharged material. Discharged material shall be removed and the site cleaned up as soon as possible. The permittee shall notify the Groundwater Protection Value Stream within 24 hours of discovering the discharge of non-hazardous material which has the potential to cause an AQL exceedance, or could pose an endangerment to public health or the environment.

2.6.5.4. Reporting Requirements

The permittee shall submit a written report for any unauthorized discharges reported under Sections 2.6.5.2 and 2.6.5.3 to the Groundwater Protection Value Stream within 30 days of the discharge or as required by subsequent ADEQ action. The report shall summarize the event, including any human exposure, and facility response activities and include all information specified in Section 2.7.3. If a notice is issued by ADEQ subsequent to the discharge notification, any additional information requested in the notice shall also be submitted within the time frame specified in the notice. Upon review of the submitted report, ADEQ may require additional monitoring or corrective actions.

2.6.6. Corrective Actions

Specific contingency measures identified in Section 2.6 have already been approved by ADEQ and do not require written approval to implement.

With the exception of emergency response actions taken under Section 2.6.5, the permittee shall obtain written approval from the Groundwater Protection Value Stream prior to implementing a corrective action to accomplish any of the following goals in response to exceedance of an AL, AQL, DL, or other permit condition:

1. Control of the source of an unauthorized discharge;
2. Soil cleanup;
3. Cleanup of affected surface waters;
4. Cleanup of affected parts of the aquifer;
5. Mitigation to limit the impact of pollutants on existing uses of the aquifer.

Within 30 days of completion of any corrective action, the operator shall submit to the Groundwater Protection Value Stream, a written report describing the causes, impacts, and actions taken to resolve the problem.

2.7. REPORTING AND RECORDKEEPING REQUIREMENTS

[A.R.S. § 49-243(K)(2) and A.A.C. R18-9-A206(B) and R18-9-A207]

2.7.1. Self-Monitoring Report Form

1. The permittee shall complete the Self-Monitoring Reporting Forms (SMRFs) provided by ADEQ, and submit the completed report through the myDEQ online reporting system. The permittee shall use the format devised by ADEQ.
2. The permittee shall complete the SMRF to the extent that the information reported may be entered on the form. If no information is required during a reporting period, the permittee shall enter “not required” on the form, include an explanation, and submit the form to the Groundwater Protection Value Stream.
3. The tables contained in Section 4.0 list the monitoring parameters and the frequencies for reporting results on the SMRF:
 - a. Table 7: UNDERDRAIN MONITORING
 - b. Table 10: QUARTERLY COMPLIANCE GROUNDWATER MONITORING FOR POCS
 - c. Table 11: BIENNIAL COMPLIANCE GROUNDWATER MONITORING REQUIREMENTS FOR POC WELLS
 - d. Table 13: PROCESS POND AND LCRS MONITORING - MAIN PLS POND
 - e. Table 14: PROCESS POND AND LCRS MONITORING - PLANT-SX PLS POND
 - f. Table 15: PROCESS POND AND LCRS MONITORING - RAFFINATE POND

The parameters listed in the above-identified tables from Section 4.0 are the only parameters for which SMRF reporting is required.

2.7.2. Operation Inspection / Log Book Recordkeeping

A signed copy of this permit shall be maintained at all times at the location where day-to-day decisions regarding the operation of the facility are made. A log book (paper copies, forms, or electronic data) of the inspections and measurements required by this permit shall be maintained at the location where day-to-day decisions are made regarding the operation of the facility. The log book shall be retained for ten years from the date of each inspection, and upon request, the permit and the log book shall be made immediately available for review by ADEQ personnel. The information in the log book shall include, but not be limited to, the following information as applicable:

1. Name of inspector;
2. Date and time inspection was conducted;
3. Condition of applicable facility components;
4. Any damage or malfunction, and the date and time any repairs were performed;
5. Documentation of sampling date and time;
6. Any other information required by this permit to be entered in the log book; and
7. Monitoring records for each measurement shall comply with A.A.C. R18-9-A206(B)(2).

2.7.3. Permit Violation and Alert Level Status Reporting

1. The permittee shall notify the Groundwater Protection Value Stream within five (5) days (except as provided in Section 2.6.5) of becoming aware of an AL exceedance, or violation of any permit condition, AQL, or DL for which notification requirements are not specified in Sections 2.6.2 through 2.6.5.
2. The permittee shall submit a written report to the Groundwater Protection Value Stream within 30 days of becoming aware of the violation of any permit condition, AQL, or DL. The report shall document all of the following:
 - a. Identification and description of the permit condition for which there has been a violation and a description of the cause;
 - b. The period of violation including exact date(s) and time(s), if known, and the anticipated time period during which the violation is expected to continue;
 - c. Any corrective action taken or planned to mitigate the effects of the violation, or to eliminate or prevent a recurrence of the violation;
 - d. Any monitoring activity or other information which indicates that any pollutants would be reasonably expected to cause a violation of an AWQS;
 - e. Proposed changes to the monitoring which include changes in constituents or increased frequency of monitoring; and
 - f. Description of any malfunction or failure of pollution control devices or other equipment or processes.

2.7.4. Operational, Other or Miscellaneous Reporting

The permittee shall record the information as required in Section 4.2, Table 12: FACILITY INSPECTION AND OPERATIONAL MONITORING in the facility log book as per Section 2.7.2, and report to the Groundwater Protection Value Stream any violations or exceedances as per Section 2.7.3.

2.7.4.1. Discharge/Groundwater Monitoring Records

The following information associated with each sample, inspection, or measurement should be included in the monitoring records:

1. Date, time, exact location of, and name(s) of person(s) who conducted sampling, inspection, or measurement;
2. Procedures used to collect the sample or make the measurement;
3. Date on which sample analysis was completed;
4. Name of each individual and laboratory that performed the analysis;
5. Analytical techniques or methods used to perform the sampling and analysis; laboratory detection limit for each test method performed; analytical variance for each parameter analyzed;
6. Chain of custody records, and
7. Any field notes relating to the information described in subparagraphs 1 through 6 above.

2.7.4.2. Operational Monitoring/Facility Inspection Records

For weekly facility inspections, the following information shall be recorded: the name(s) of the inspector(s), date, and approximate time of inspection, condition of facility components listed in Section 4.2, Table 12, and any damage or malfunction and repairs performed.

2.7.4.3. Annual Report

As required by this permit, the permittee shall submit Annual Reports for various forms of monitoring performed under this permit. Each year the permittee shall submit an Annual Report to the Groundwater Protection Value Stream summarizing the results of the Facility's performance monitoring for the calendar year in accordance with the table in Section 2.7.6.

Reports for waste rock characterization/monitoring shall be included in this report along with an assessment of whether waste rock monitoring results suggest that waste rock is acid generating and assessing the potential impact to groundwater quality with respect to compliance with AWQS at designated POCs for the rock disposal facilities.

The report shall be divided into Groundwater, Discharge and BADCT monitoring and Compliance Status (a summary of all permit exceedances and violations if any and response actions taken). The report shall also include identification and discussion of any laboratory results that fell outside of the laboratory QA/QC criteria and AQLs and ALs required by this permit. Response actions for BADCT performance monitoring shall be summarized in this report for any exceeded performance monitoring as described in (2) below.

Appropriate components of the report required by this Section shall be sealed by an Arizona registered professional geologist or registered professional engineer, in accordance with Arizona Board of Technical Registration (BTR) requirements.

1. Groundwater Monitoring. This section of the Annual Monitoring and Compliance Report shall contain the following information:
 - a. Quarterly groundwater monitoring summary tables of results for each POC well in separate tables;
 - b. All exceedances verified during the one year reporting period; and,
 - c. Annual groundwater contour map for each aquifer at the facility intersected by POC wells.

2. Results of BADCT Monitoring required by Section 4.2, Table 12 shall be summarized in the annual report along with response actions taken under Section 2.7.3 (Permit Violation and Alert Level Status Reporting). BADCT monitoring shall follow the inspection and monitoring schedule in Section 4.2, Table 12.

2.7.4.4. Well Installation Reports

A well installation report shall be submitted to the Groundwater Protection Value Stream within 90 days of the completion of any new well installations in accordance with Section 2.4 of this permit. Well installation reports shall be sealed in accordance with Arizona BTR requirements and shall include the following:

1. Arizona Department of Water Resources (ADWR) Notice of Intent and Well Drilling Report;
2. Boring log and well as-built diagram;
3. Total depth of well measured after installation;
4. Top of well casing or sounding tube (whichever is used as the fixed reference measuring point) and ground surface elevation;
5. Geophysical logging reports and subsurface sampling results;
6. Description of well drilling method;
7. Description of well development method;
8. Summary of analytical results for initial groundwater sample collected after installation; and
9. GPS coordinates for each new well.

2.7.4.5. Well Abandonment Reports

If monitor wells associated with this permit are abandoned due to poor performance, casing collapse, or other reasons, or are abandoned at the end of the post-closure period, then within ninety (90) days of completing abandonment, the permittee shall submit a well abandonment report to the Groundwater Protection Value Stream WPS. Appropriate contents of the report shall be sealed by an Arizona professional geologist or professional engineer, in accordance with BTR requirements. Well abandonment records shall be provided to the Groundwater Protection Value Stream within ninety (90) days of monitor well abandonment and shall include:

1. Copies of ADWR Notice of Intent to Abandon
2. Copies of ADWR Abandonment Reports
3. A description of the methods used to seal the well casing and the perforated or screened interval of the well
4. GPS coordinates of the former well location

2.7.5. Reporting Location

All Self-Monitoring Report Forms (SMRFs) shall be submitted through the myDEQ portal accessible on the ADEQ website at: <http://www.azdeq.gov/welcome-mydeq>

5-day and 30-day contingency notification and reports, laboratory reports, and verification sampling results required by this permit should be submitted through the myDEQ portal accessible on the ADEQ website at: <http://www.azdeq.gov/welcome-mydeq>.

If the required reports cannot be submitted, or require further documentation that cannot be submitted on the myDEQ portal, then submit items to groundwaterpermits@azdeq.gov or the address listed below:

The Arizona Department of Environmental Quality
 Groundwater Protection Value Stream
 Mail Code 5415B-3
 1110 West Washington Street
 Phoenix, Arizona 85007
 Phone (602) 771-4999

2.7.6. Reporting Deadline

The following table lists the quarterly report due dates:

| Table 3: QUARTERLY REPORTING DEADLINES | |
|--|--------------------------|
| Monitoring Conducted During Quarter: | Quarterly Report Due By: |
| January-March | April 30 |
| April-June | July 30 |
| July-September | October 30 |
| October-December | January 30 |

The following table lists the annual and biennial report due dates:

| Table 4: ANNUAL AND BIENNIAL REPORTING DEADLINES | |
|--|----------------|
| Monitoring Conducted: | Report Due By: |
| Annual: January-December | March 30 |
| Biennial SMRF Submittal | January 30 |

2.7.7. Changes to Facility Information in Section 1.0

The Groundwater Protection Value Stream shall be notified within ten days of any change of facility information including Facility Name, Permittee Name, Mailing or Street Address, Facility Contact Person, or Emergency Telephone Number.

2.8. Temporary Cessation

[A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A209(A)]

The permittee shall give written notice to the Groundwater Protection Value Stream before ceasing operation of the facility for a period of 60 days or greater. The permittee shall take the following measures upon temporary cessation:

1. Submittal of Self-Monitoring Report Forms (SMRFs) is still required; report “temporary cessation” in the comment section.

At the time of notification the permittee shall submit for ADEQ approval a plan for maintenance of discharge control systems and for monitoring during the period of temporary cessation. Immediately following ADEQ approval, the permittee shall implement the approved plan. If necessary, ADEQ shall amend permit conditions to incorporate conditions to address temporary cessation. During the period of temporary cessation, the permittee shall provide written notice to the Groundwater Protection Value Stream of the operational status of the facility every three years. If the permittee intends to permanently cease operation of any facility, the permittee shall submit closure notification, as set forth in Section 2.9 below.

2.9. Closure

[A.R.S. §§ 49-243(K)(6), 49-252 and A.A.C. R18-9-A209(B)]

For a facility addressed under this permit, the permittee shall give written notice of closure to the Groundwater Protection Value Stream of the intent to cease operation without resuming activity for which the facility was designed or operated. Submittal of SMRFs is still required; report “closure in process” in the comment section.

2.9.1. Closure Plan

Within 90 days following notification of closure, the permittee shall submit for approval to the Groundwater Protection Value Stream, a closure plan which meets the requirements of A.R.S. § 49-252 and A.A.C. R18-9-A209(B)(3).

If the closure plan achieves clean-closure immediately, ADEQ shall issue a letter of approval to the permittee. If the closure plan contains a schedule for bringing the facility to a clean-closure configuration at a future date, ADEQ may incorporate any part of the schedule as an amendment to this permit.

2.9.2. Closure Completion

Upon completion of closure activities, the permittee shall give written notice to the Groundwater Protection Value Stream indicating that the approved closure plan has been implemented fully and providing supporting documentation to demonstrate that clean-closure has been achieved (soil sample results, verification sampling results, groundwater data, as applicable). If clean-closure has been achieved, ADEQ shall issue a letter of approval to the permittee at that time. If any of the following conditions apply, the permittee shall follow the terms of post-closure stated in this permit:

1. Clean-closure cannot be achieved at the time of closure notification or within one year thereafter under a diligent schedule of closure actions;
2. Further action is necessary to keep the facility in compliance with the AWQS at the applicable POC or, for any pollutant for which the AWQS was exceeded at the time this permit was issued, further action is necessary to prevent the facility from further degrading the aquifer at the applicable POC with respect to that pollutant;
3. Remedial, mitigative or corrective actions or controls are necessary to comply with A.R.S. § 49-201(30) and Title 49, Chapter 2, Article 3;
4. Further action is necessary to meet property use restrictions.
5. SMRF submittals are still required until Clean Closure is issued.

2.10. Post-Closure

[A.R.S. §§ 49-243(K)(6), 49-252 and A.A.C. R18-9 A209(C)]

Post-closure requirements shall be established based on a review of facility closure actions and will be subject to review and approval by the Groundwater Protection Value Stream.

In the event clean-closure cannot be achieved pursuant to A.R.S. § 49-252, the permittee shall submit for approval to the Groundwater Protection Value Stream a post-closure plan that addresses post-closure maintenance and monitoring actions at the facility. The post-closure plan shall meet all requirements of A.R.S. §§ 49-201(30) and 49-252 and A.A.C. R18-9-A209(C). Upon approval of the post-closure plan, this permit shall be amended or a new permit shall be issued to incorporate all post-closure controls and monitoring activities of the post-closure plan.

2.10.1. Post-Closure Plan

A specific post-closure plan may be required upon the review of the closure plan.

2.10.2. Post-Closure Completion

Not required at the time of permit issuance.

3.0 COMPLIANCE SCHEDULE

[A.R.S. § 49-243(K)(5) and A.A.C. R18-9-A208]

Unless otherwise indicated, for each compliance schedule item listed below, the permittee shall submit the required information to the Groundwater Protection Value Stream.

| Table 5: COMPLIANCE SCHEDULE ITEMS | | | |
|------------------------------------|---|--|----------------------------|
| No. | Description | Due By: | Permit Amendment Required? |
| 1 | <p>The permittee shall submit a demonstration that the financial assurance mechanism listed in Section 2.1, Financial Capability, is being maintained as per A.R.S. 49-243.N.4 and A.A.C. R18-9-A203(H) for all estimated closure and post-closure costs including updated costs submitted under Section 3.0, No. 2 below. The demonstration shall include a statement that the closure and post-closure strategy has not changed, the discharging facilities listed in the permit have not been altered in a manner that would affect the closure and post-closure costs, and discharging facilities have not been added. The demonstration shall also include information in support of a letter of credit as required in A.A.C. R18-9-A203(C)(5).</p> <p>NOTE: The financial assurance mechanism may be provided following ADEQ’s approval of the closure and post-closure costs due on that same date. When submitting the closure and post-closure costs required by CSI 2 below, the permittee may provide a statement for the type of mechanism intended to be provided.</p> | June 30, 2027, and every six (6) years thereafter for the duration of the permit | No |
| 2 | The permittee shall submit updated cost estimates for facility closure and post-closure, as per A.A.C. R18-9-A201(B)(5) and A.R.S. 49-243.N.2.a. | June 30, 2027, and every six (6) years thereafter for the duration of the permit | Yes |
| 3 | Submit the Annual Report in accordance with Section 2.7.4.3 of this permit. | March 30 th and annually thereafter for the duration of the permit | No |

4.0 TABLES OF MONITORING REQUIREMENTS

4.1. PERMITTED FACILITIES AND BADCT

Table 6: PERMITTED FACILITIES AND BADCT

| Facility Name | Latitude/Longitude | Facility BADCT |
|----------------|---------------------------------|--|
| Heap Leach Pad | 33° 22' 44" N 110° 59' 36" W | <p>The Heap Leach Pad is constructed and operated according to plans and specifications provided in documents entitled Final Design of Heap Leach Pad and Ancillary Facilities with Addendum 1 and Addendum 2, dated June 30, 1995 and the QA/QC program, 1996 Heap Leach Pad Construction, dated February 27, 1996, construction drawings: Leach Pad and Ancillary Facilities Construction, with latest revision May 8, 2008, and Technical Specifications for Heap Leach Pad and Ancillary Facilities, with latest Revision dated April 7, 2008. Specific construction and operational activities consist of the following:</p> <ol style="list-style-type: none"> 1. The Heap Leach Pad has a maximum capacity of approximately 100 million tons of copper ore; 2. Maximum permitted elevation of the Heap Leach Pad shall be approximately 4,270 feet above mean sea level; 3. Maximum aerial extent of the Heap Leach Pad shall not exceed the footprint shown in Drawings 1198C.205 and 1198C.207 of the approved design plans provided in the Final Design of Heap Leach Pad and Ancillary Facilities document. 4. The Heap Leach Pad shall be loaded with the loading plans presented in the following documents: Final Design of Heap Leach Pad and Ancillary Facilities with Addendum 1 and Addendum 2, dated June 30, 1995 (section 5.1) and the QA/QC program, 1996 Heap Leach Pad Construction, dated February 27, 1996, construction drawings: "Leach Pad and Ancillary Facilities Construction, with latest revision May 8, 2008, Technical Specifications for Heap Leach Pad and Ancillary Facilities, with latest Revision dated April 7, 2008. Loading of the heap leach pad shall proceed in an uphill direction on contour using lift heights between 20 and 40 feet. 5. Stormwater control diversions are constructed to assure that the peak flow from ½ 6-hour Probable Maximum Flood is diverted around the heap leach facility. These include the surface water diversion channels (Powers Gulch, Pinto Creek and East diversion channels) and the Inlet Control Structure (ICS) 6. The basic liner system that encompasses the entire Heap Leach Pad consists of prepared subgrade, overlain by a composite liner consisting of a GCL (Geosynthetic Clay Liner) overlain with an 80-mil LLDPE (linear low density polyethylene) liner. A minimum of 24-inches of "overliner", or cushion material, consisting of 1" minus crushed ore shall be placed over the 80-mil LLDPE liner. The network of leachate collection pipes shall be placed on top of the overliner. Pipes within the network shall be covered by a 1/2" to 1" gravel envelope, at least 2-feet thick and at least 6-feet wide to protect the pipes network. 7. Areas of the Heap Leach Pad where process fluids are impounded shall be constructed with a double liner system and a leak collection and removal system (LCRS) between the two liners. The LCRS shall consist of a minimum of 12 inches of crushed rock (1-inch to ½-inch) located between the 80-mil thick LLDPE primary liner and 60-mil thick LLDPE secondary liner. |

| | | |
|-------------------------------|---------------------------------|---|
| Main PLS Pond | 33° 22' 48" N 110° 59' 53" W | <p>The Main PLS Pond is comprised of a double-liner system consisting of a primary 80-mil LLDPE liner and a 60-mil LLDPE secondary liner separated by a drainage layer with a leak collection and removal system (LCRS). The drainage layer is 12-inch thick, 1-inch - ½-inch crushed rock with 4” diameter perforated drain pipes placed in the drainage material. On the upstream face of the PLS embankment, the drainage layer is a geocomposite (GSE Fabrinet F72080080T). The impoundment was constructed and operated according to plans and specifications provided in documents entitled <i>Final Design of Heap Leach Pad and Ancillary Facilities</i> with Addendum 1 and Addendum 2, dated June 30, 1995 and the QA/QC program, <i>1996 Heap Leach Pad Construction</i>, dated February 27, 1996, construction drawings: “<i>Leach Pad and Ancillary Facilities Construction</i>, with latest revision May 8, 2008, <i>Technical Specifications for Heap Leach Pad and Ancillary Facilities</i>, with latest Revision dated April 7, 2008. The pond shall be constructed within the footprints of the heap leach pad. Specific construction and operational activities consists of the following:</p> <ol style="list-style-type: none"> 1. The Main PLS Pond has a storage capacity of 162.5 million gallons of process and stormwater. Maximum permitted elevation of the pond embankment crest shall be 3,830 feet above mean sea level, with emergency spillway elevation of 3,826 feet above mean sea level; 2. The Main PLS Pond has a normal operating capacity of 25.6 million gallons corresponding to a double lined pond elevation of 3,787 feet above mean sea level; 3. Maximum aerial extent of the Main PLS Pond shall not exceed the footprint shown in Drawing No. 96342-10 of the approved design plans provided in the document entitled Final Design Report for the Carlota Copper Project, Heap Leach Pad and Ancillary Facilities, including Addendum 1 and Addendum 2, dated June 30, 1995 ; 4. Pond embankment was constructed and operated in accordance with the plans approved by the Arizona Department of Water Resources (ADWR); 5. The Main PLS Pond was constructed to contain half the 72 hour February Probable Maximum Flood volume plus the maximum operational pool volume of 82.2 million gallons. |
| Underdrain System Impoundment | 33° 22' 54" N 111° 00' 00" W | <p>The Underdrain System Impoundment was constructed using an 80-mil HDPE composite liner located downstream of the Main PLS Pond embankments. The impoundment shall contain discharges from the underdrain system and shall be sized to accommodate a minimum of two days of discharge as measured immediately following pad construction, or a minimum volume discharge of approximately 650,000 gallons of fluid, whichever is larger.</p> |

| | | |
|--------------------------|---|---|
| <p>Raffinate Pond</p> | <p>33° 22' 47" N 110° 59' 21" W</p> | <p>The Raffinate Pond is comprised of a double-liner system consisting of an 80-mil HDPE primary liner and a 60-mil HDPE secondary liner separated by a drainage layer with a leakage collection and removal system (LCRS). The impoundment was constructed and operated according to plans and specifications provided in documents entitled <i>Final Design of Heap Leach Pad and Ancillary Facilities</i> with Addendum 1 and Addendum 2, dated June 30, 1995 and the QA/QC program, <i>1996 Heap Leach Pad Construction</i>, dated February 27, 1996, construction drawings: <i>Leach Pad and Ancillary Facilities Construction</i>, with latest revision May 8, 2008, <i>Technical Specifications for Heap Leach Pad and Ancillary Facilities</i>, with latest Revision dated April 7, 2008. Specific construction and operational activities shall consist of the following:</p> <ol style="list-style-type: none"> 1. The Raffinate Pond has a maximum storage capacity of 3.5 million gallons of process solution and storm volume. Maximum permitted elevation of the pond embankment crest shall be 3,900.5 feet above mean sea level; 2. The Raffinate Pond shall have a minimum of three feet of freeboard; 3. Maximum aerial extent of the Raffinate Pond shall not exceed the footprint shown in Drawing No. 96342-23 of the approved design plans provided in the document entitled Final Design Report for the Carlota Copper Project, Heap Leach Pad and Ancillary Facilities, dated December 1997; 4. The Raffinate Pond shall be constructed and operated to contain operating pool volume plus the storm volume associated with half the 72-hour August Probable Maximum Precipitation. |
| <p>Plant PLS-SX Pond</p> | <p>33° 22' 44" N 110° 59' 24" W</p> | <p>The Plant PLS-SX Pond is comprised of a double-liner system consisting of an 80-mil HDPE primary liner and a 60-mil HDPE secondary liner separated by a drainage layer with a leakage collection and removal system (LCRS). The impoundment was constructed and operated according to plans and specifications provided in documents entitled Final Design of Heap Leach Pad and Ancillary Facilities with Addendum 1 and Addendum 2, dated June 30, 1995 and the QA/QC program, 1996 Heap Leach Pad Construction, dated February 27, 1996, construction drawings: "Leach Pad and Ancillary Facilities Construction, with latest revision May 8, 2008, Technical Specifications for Heap Leach Pad and Ancillary Facilities, with latest Revision dated April 7, 2008. Specific construction and operational activities shall consist of the following:</p> <ol style="list-style-type: none"> 1. The Plant PLS-SX Pond has a maximum storage capacity of 2.3 million gallons of process solution. Maximum permitted elevation of the pond embankment crest shall be 3,925 feet above mean sea level; 2. The Plant PLS-SX Pond shall have a minimum of three feet of freeboard; 3. Maximum aerial extent of the Plant PLS-SX Pond shall not exceed the footprint shown in Drawing No. 96342-23 of the approved design plans provided in the December 1997 document entitled Final Design Report for the Carlota Copper Project, Heap Leach Pad and Ancillary Facilities, dated December 1997, including Addendum 1 and Addendum 2, dated June 30, 1995; 4. The Plant PLS-SX Pond is constructed and operated to contain normal operating pool volume plus the storm volume associated with half the 72-hour August Probable Maximum Precipitation. |

| | | |
|---------------------|---------------------------------|---|
| Main Rock Dump | 33° 23' 36" N 110° 59' 44" W | The Main Rock Dump is constructed according to plans and specifications provided. Specific construction and operational activities will consist of the following: 1. The Main Rock Dump will have an approximate maximum capacity of 115 million tons of mining overburden; 2. Maximum permitted elevation of the facility shall be 4,160 feet above mean sea level; 3. Maximum areal extent of the facility shall not exceed the footprint shown in Figure 2-12 of the approved design plans provided in Exhibit 12 of the APP application. 4. Isolation of acid generating material within the rock dump and away from edges. |
| Cactus SW Rock Dump | 33° 22' 38" N 110° 59' 12" W | The Cactus Southwest Rock Dump is constructed according to plans and specifications provided. Specific construction and operational activities consist of the following: 1. The Cactus Southwest Rock Dump will have an approximate maximum capacity of 28 million tons of mining overburden. 2. Maximum permitted elevation of the facility shall be 4,360 feet above mean sea level; 3. Maximum areal extent of the facility shall not exceed the footprint shown in Figure 2-13 of the approved design plans provided in Exhibit 12 of the APP application. 4. Isolation of acid generating material within the rock dump and away from edges. |

4.2. COMPLIANCE OR OPERATIONAL MONITORING

| Table 7: UNDERDRAIN MONITORING | | | | | |
|--------------------------------|-------------------------------|------------------------------|------------------|--------------------|---------------------|
| Sampling Point Number | Sampling Point Identification | | Latitude (North) | | Longitude (West) |
| 1 | Underdrain System Impoundment | | 33° 22' 54" N | | 111° 00' 00" W |
| Parameter | Action Level | Discharge Limit | Units | Sampling Frequency | Reporting Frequency |
| Quantity Flow | | Reserved | mgd ¹ | Daily | Quarterly |
| pH (field) | <5.67 or >8.47 | Not Established ² | SU | Weekly | Quarterly |
| Total Dissolved Solids (TDS) | 1417 | Not Established | mg/l | Monthly | Quarterly |
| Sulfate | 497 | Not Established | mg/l | Monthly | Quarterly |
| Dissolved Copper | 0.113 | Not Established | mg/l | Monthly | Quarterly |

¹ mgd = million gallons per day

² Not Established means that monitoring is required, but no limits have been specified at the time of permit issuance

Table 8: WASTE ROCK CHARACTERIZATION

| Lithology | Sampling Frequency | Analysis | Action Level |
|--|---|--|--|
| Breccia Oxide Breccia Mixed Dacite Diabase Schist Granite Limestone Gila Conglomerate | 1 sample per every 1,000,000 tons of waste rock | Acid Base Accounting (ABA) by Standard Sobek Method ³ | If Net Neutralization Potential of any sample is <20 tons CaCO ₃ /kton, implement contingency characterization in Section 2.6.2.6 |

Table 9:PARAMETERS FOR AMBIENT GROUNDWATER MONITORING FOR POINT OF COMPLIANCE ^{4,5}

| | | |
|------------------------|-----------|--|
| pH – field (SU) | Sodium | Nickel |
| | Iron | Selenium |
| Total Dissolved Solids | Aluminum | Uranium, Total (µg/L) |
| Total Alkalinity | Antimony | Zinc |
| Carbonate | Arsenic | Gross Alpha Particle Activity (pCi/L) ⁶ |
| Bicarbonate | Manganese | Radium 226 + Radium 228 (pCi/L) |
| Magnesium | Beryllium | Uranium-Isotopes (pCi/L) ⁷ |
| Sulfate | Cadmium | Water level elevation (feet amsl) |
| Chloride | Chromium | Depth to water level (feet) |
| Fluoride | Cobalt | |
| Calcium | Copper | |
| Potassium | Lead | |

³ Sobek, A.A., et al, March 1978, EPA-600/2-78-054

⁴ Units are in mg/L unless otherwise noted

⁵ Metals shall be analyzed as dissolved metals

⁶ The adjusted gross alpha particle activity is the gross alpha particle activity, including radium 226, and any other alpha emitters, if present in the water sample, minus radon and total uranium (the sum of uranium 238, uranium 235 and uranium 234 isotopes). The gross alpha analytical procedure (evaporation technique: EPA Method 900.0) drives off radon gas in the water samples. Therefore, the Adjusted Gross Alpha should be calculated using the following formula: (Laboratory Reported Gross Alpha MINUS Sum of the Uranium Isotopes).

⁷ Uranium Isotope activity results must be used for calculating Adjusted Gross Alpha

| Table 10: QUARTERLY COMPLIANCE GROUNDWATER MONITORING FOR POCS | | | | |
|--|-----------------------|-----------------|---------|---------|
| Parameter | AMW-18R | | AMW-24 | |
| | AQL ⁸ | AL ⁹ | AQL | AL |
| Depth to Water (feet) | Monitor ¹⁰ | Monitor | Monitor | Monitor |
| Water Level Elevation ¹¹ | Monitor | Monitor | Monitor | Monitor |
| Field pH (S.U.) | Monitor | Monitor | Monitor | Monitor |
| Total Dissolved Solids (mg/L) | Monitor | Monitor | Monitor | Monitor |
| Sulfate (mg/L) | Monitor | Monitor | Monitor | Monitor |
| Metals (Dissolved, mg/L) | | | | |
| Antimony | 0.006 | 0.0048 | 0.006 | 0.0048 |
| Arsenic | 0.05 | 0.04 | 0.05 | 0.04 |
| Beryllium | 0.004 | 0.0032 | 0.004 | 0.0032 |
| Cadmium | 0.005 | 0.004 | 0.005 | 0.004 |
| Chromium | 0.1 | 0.08 | 0.1 | 0.08 |
| Copper | Monitor | Monitor | Monitor | Monitor |
| Fluoride | 4 | 3.2 | 4 | 3.2 |
| Iron | Monitor | Monitor | Monitor | Monitor |
| Lead | 0.05 | 0.04 | 0.05 | 0.04 |
| Manganese | Monitor | Monitor | Monitor | Monitor |
| Nickel | 0.1 | 0.08 | 0.1 | 0.08 |
| Selenium | 0.05 | 0.04 | 0.05 | 0.04 |
| Zinc | Monitor | Monitor | Monitor | Monitor |
| Parameter | BMW-8R | | BMW-26 | |
| | AQL | AL | AQL | AL |
| Depth to Water (feet) | Monitor | Monitor | Monitor | Monitor |
| Water Level Elevation | Monitor | Monitor | Monitor | Monitor |
| Field pH (S.U.) | Monitor | Monitor | Monitor | Monitor |
| Total Dissolved Solids (mg/L) | Monitor | Monitor | Monitor | Monitor |
| Sulfate (mg/L) | Monitor | Monitor | Monitor | Monitor |
| Metals (Dissolved, mg/L) | | | | |
| Antimony | 0.006 | 0.0048 | 0.006 | 0.0048 |
| Arsenic | 0.05 | 0.04 | 0.05 | 0.04 |
| Beryllium | 0.004 | 0.0032 | 0.004 | 0.0032 |
| Cadmium | 0.005 | 0.004 | 0.005 | 0.004 |
| Chromium | 0.1 | 0.08 | 0.1 | 0.08 |
| Copper | Monitor | Monitor | Monitor | Monitor |
| Fluoride | 4 | 3.2 | 4 | 3.2 |
| Iron | Monitor | Monitor | Monitor | Monitor |
| Lead | 0.05 | 0.04 | 0.05 | 0.04 |
| Manganese | Monitor | Monitor | Monitor | Monitor |
| Nickel | 0.1 | 0.08 | 0.1 | 0.08 |
| Selenium | 0.05 | 0.04 | 0.05 | 0.04 |
| Zinc | Monitor | Monitor | Monitor | Monitor |

⁸ AQL = Aquifer Quality Limit

⁹ AL = Alert Level

¹⁰ Monitor = Analysis is required but an AQL and/or AL is not established in the permit

¹¹ Water Level Elevation to be measured and reported in units of feet above mean sea level

| Table 11: BIENNIAL COMPLIANCE GROUNDWATER MONITORING REQUIREMENTS FOR POC WELLS | | | | |
|---|---------|---------|---------|---------|
| Parameter | AMW-18R | | AMW-24 | |
| | AQL | AL | AQL | AL |
| Aluminum | Monitor | Monitor | Monitor | Monitor |
| Gross Alpha Particle Activity (pCi/L) ¹² | 15 | 14.3 | 16.5 | None |
| Radium 226 + Radium 228 (pCi/L) | 7.4 | None | 5 | 4 |
| Uranium (µg/L) ¹³ | Monitor | Monitor | Monitor | Monitor |
| TPH | Monitor | Monitor | Monitor | Monitor |
| Parameter | BMW-8R | | BMW-26 | |
| | AQL | AL | AQL | AL |
| Aluminum | Monitor | Monitor | Monitor | Monitor |
| Gross Alpha Particle Activity (pCi/L) ¹ | 15 | 14.2 | 45.7 | None |
| Radium 226 + Radium 228 (pCi/L) | 5.39 | None | 12.5 | None |
| Uranium (µg/L) ² | Monitor | Monitor | Monitor | Monitor |
| TPH | Monitor | Monitor | Monitor | Monitor |

¹² If the gross alpha particle activity is greater than the AL or AQL, then calculate adjusted gross alpha particle activity. The adjusted gross alpha particle activity is the gross alpha particle activity, including radium 226, and any other alpha emitters, if present in the water sample, minus radon and total uranium (the sum of the uranium 238, uranium 235 and uranium 234 isotopes). The gross alpha analytical procedure (evaporation technique: EPA Method 900.0) drives off radon gas in the water samples. Therefore, the Adjusted Gross Alpha should be calculated using the following formula: (Laboratory Reported Gross Alpha MINUS Sum of the Uranium Isotopes).

¹³ Uranium Isotope activity results must be used for calculating Adjusted Gross Alpha.

Table 12: FACILITY INSPECTION AND OPERATIONAL MONITORING

The permittee shall record the inspection performance levels in a log book as per Section 2.7.2, and report any violations or exceedances as per Section 2.7.3. In the case of an exceedance, identify which structure exceeds the performance level in the log book.

| Facility Name / Pollution Control Structure / Parameter | Operational Requirement / Performance Alert Level | Inspection Frequency |
|---|--|------------------------------------|
| Main PLS Pond | Discharge pump in good working order Fluid Elevation < 3,787 feet; No evidence of seepage | Weekly Daily |
| Plant PLS-SX Pond | No visible cracks, holes or leaks in liner; Discharge pump in good working order; No vegetation within the lined impoundment No vegetation that could potentially affect the integrity of the liner system within 5 feet of the pond perimeter Minimum 3-feet freeboard; No evidence of seepage | Weekly Monthly Daily |
| Raffinate Pond | No visible cracks, holes or leaks in liner; Discharge pump in good working order; No vegetation within the lined impoundment No vegetation that could potentially affect the integrity of the liner system within 5 feet of the pond perimeter Minimum 3-feet freeboard; No evidence of seepage | Weekly Monthly Daily |
| Underdrain System Impoundment | Presence of fluid and rate of inflow; No visible cracks, holes or leaks in liner; Discharge pump in good working order; No evidence of seepage No vegetation within the lined impoundment No vegetation that could potentially affect the integrity of the liner system within 5 feet of the pond perimeter | Weekly Monthly |
| Main Rock Dump and Cactus SW Rock Dump | No substantial slips at toe. No substantial evidence of crest failures. | Monthly |
| Surface Water Diversions (associated with Heap Leach Pad BADCT) | No substantial erosion; Free of unintended obstruction and debris | Monthly |
| Inlet Control Structure (associated with Heap Leach Pad BADCT) | No substantial erosion; Free of unintended obstruction and debris (per requirements of the ADWR Dam Safety program) | Monthly |
| Heap Leach Pad | No evidence of heap deformations, no visible surface cracks, slides, sloughs or unusual differential settlement affecting slope stability; no seepage along perimeter berm; no visible liner tears, punctures, cracks, deformities, or other damage due to sunlight, wind, weather, debris, vegetation, animals, or other adverse conditions; no impairment of access; no excessive erosion or unintended accumulation of debris in conveyances and diversions; no accumulation of debris in leach pad solution conveyance channels causing unintended flow restriction. | Quarterly |
| LCRS (Plant Raffinate and Plant PLS Ponds) | Pumping status; Pump working properly; | Weekly |
| LCRS (Main Heap Leach PLS Pond) | No impairment of stand pipe access; Pumping status; Pump working properly; Level of fluids in stand pipe | Weekly |

| Table 13: PROCESS POND AND LCRS MONITORING - MAIN PLS POND | | | | |
|--|--|-------------------|----------------------|---------------------|
| Parameter | Alert Level | Analytical Method | Monitoring Frequency | Reporting Frequency |
| Operating Fluid Levels | | | | |
| PLS Elevation | > 3,787 feet above mean sea level (amsl) | | Daily | Quarterly |
| LCRS | | | | |
| Volume Pumped | N/A | N/A | Weekly | Quarterly |
| Rate Pumped | N/A | Meter/Calc. | As pumped | " |
| Alert Level 1 | 5,000 gallons per day (gpd) | Meter/Calc. | As pumped | " |
| Alert Level 2 | 56,000 gpd | Calculation | Weekly | " |
| pH | N/A | Meter | As pumped | " |
| Specific Conductance | N/A | Meter | As pumped | " |

| Table 14: PROCESS POND AND LCRS MONITORING - PLANT-SX PLS POND | | | | |
|--|-------------|-------------------|----------------------|----------------------------|
| Parameter | Alert Level | Analytical Method | Monitoring Frequency | Reporting Frequency |
| Operating Fluid Levels | | | | |
| Minimum Freeboard | 3 feet | Ruled Gauge | Daily | Record in on-site log book |
| LCRS | | | | |
| Volume Pumped | N/A | N/A | Weekly | Quarterly |
| Rate Pumped | N/A | Meter/Calc. | As pumped | " |
| Alert Level 1 | 160 gpd | Meter/Calc. | As pumped | " |
| Alert Level 2 | 1,650 gpd | Calculation | Weekly | " |
| pH | N/A | Calculation | Weekly | " |
| Specific Conductance | N/A | Meter | As pumped | " |

| Table 15: PROCESS POND AND LCRS MONITORING - RAFFINATE POND | | | | |
|---|-------------|-------------------|----------------------|----------------------------|
| Parameter | Alert Level | Analytical Method | Monitoring Frequency | Reporting Frequency |
| Operating Fluid Levels | | | | |
| Minimum Freeboard | 3 feet | Ruled Gauge | Daily | Record in on-site log book |
| LCRS | | | | |
| Volume Pumped | N/A | N/A | Weekly | Quarterly |
| Rate Pumped | N/A | Meter/Calc. | As pumped | " |
| Alert Level 1 | 300 gpd | Meter/Calc. | As pumped | " |
| Alert Level 2 | 1,450 gpd | Calculation | Weekly | " |
| pH | N/A | Calculation | Weekly | " |
| Specific Conductance | N/A | Meter | As pumped | " |

5.0 REFERENCES AND PERTINENT INFORMATION

The terms and conditions set forth in this permit have been developed based upon the information contained in the following, which are on file with the Department:

APP Application, dated: June 25, 2021

Contingency Plan, dated: October 2021

6.0 NOTIFICATION PROVISIONS

6.1. Annual Registration Fees

The permittee is notified of the obligation to pay an Annual Registration Fee to ADEQ. The Annual Registration Fee is based on the amount of daily influent or discharge of pollutants in gallons per day (gpd) as established by A.R.S. § 49-242.

6.2. Duty to Comply

[A.R.S. §§ 49-221 through 263]

The permittee is notified of the obligation to comply with all conditions of this permit and all applicable provisions of Title 49, Chapter 2, Articles 1, 2 and 3 of the Arizona Revised Statutes, Title 18, Chapter 9, Articles 1 through 4, and Title 18, Chapter 11, Article 4 of the Arizona Administrative Code. Any permit non-compliance constitutes a violation and is grounds for an enforcement action pursuant to Title 49, Chapter 2, Article 4 or permit amendment, suspension, or revocation.

6.3. Duty to Provide Information

[A.R.S. §§ 49-243(K)(2) and 49-243(K)(8)]

The permittee shall furnish to the Director, or an authorized representative, within a time specified, any information which the Director may request to determine whether cause exists for amending 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.

6.4. Compliance with Aquifer Water Quality Standards

[A.R.S. §§ 49-243(B)(2) and 49-243(B)(3)]

The permittee shall not cause or contribute to a violation of an Aquifer Water Quality Standard (AWQS) at the applicable point of compliance (POC) for the facility. Where, at the time of issuance of the permit, an aquifer already exceeds an AWQS for a pollutant, the permittee shall not discharge that pollutant so as to further degrade, at the applicable point of compliance for the facility, the water quality of any aquifer for that pollutant.

6.5. Technical and Financial Capability

[A.R.S. §§ 49-243(K)(8) and 49-243(N) and A.A.C. R18-9-A202(B) and R18-9-A203(E) and (F)]

The permittee shall have and maintain the technical and financial capability necessary to fully carry out the terms and conditions of this permit. Any bond, insurance policy, trust fund, or other financial assurance mechanism provided as a demonstration of financial capability in the permit application, pursuant to A.A.C. R18-9-A203(C), shall be in effect prior to any discharge authorized by this permit and shall remain in effect for the duration of the permit.

6.6. Reporting of Bankruptcy or Environmental Enforcement

[A.A.C. R18-9-A207(C)]

The permittee shall notify the Director within five days after the occurrence of any one of the following:

1. the filing of bankruptcy by the permittee; or
2. the entry of any order or judgment not issued by the Director against the permittee for the enforcement of any environmental protection statute or rule.

6.7. Monitoring and Records

[A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A206]

The permittee shall conduct any monitoring activity necessary to assure compliance with this permit, with the applicable water quality standards established pursuant to A.R.S. §§ 49-221 and 49-223 and §§ 49-241 through 49-252.

6.8. Inspection and Entry

[A.R.S. §§ 49-1009, 49-203(B), and 49-243(K)(8)]

In accordance with A.R.S. §§ 41-1009 and 49-203(B), 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 enter and inspect the facility as reasonably necessary to ensure compliance with Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes, and Title 18, Chapter 9, Articles 1 through 4 of the Arizona Administrative Code and the terms and conditions of this permit.

6.9. Duty to Modify

[A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A211]

The permittee shall apply for and receive a written amendment before deviating from any of the designs or operational practices authorized by this permit.

6.10. Permit Action: Amendment, Transfer, Suspension, and Revocation

[A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

This permit may be amended, transferred, suspended, or revoked for cause, under the rules of the Department. The permittee shall notify the Groundwater Protection Value Stream in writing within 15 days after any change in the owner or operator of the facility. The notification shall state the permit number, the name of the facility, the date of property transfer, and the name, address, and phone number where the new owner or operator can be reached. The operator shall advise the new owner or operators of the terms of this permit and the need for permit transfer in accordance with the rules.

7.0. ADDITIONAL PERMIT CONDITIONS

7.1. Other Information

[A.R.S. § 49-243(K)(8)]

Where 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 in any report to the Director, the permittee shall promptly submit the correct facts or information.

7.2. Severability

[A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

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. The filing of a request by the permittee for a permit action does not stay or suspend the effectiveness of any existing permit condition.

7.3. Permit Transfer

This permit may not be transferred to any other person except after notice to and approval of the transfer by the Department. No transfer shall be approved until the applicant complies with all transfer requirements as specified in A.A.C. R18-9-A212(B) and (C).