STATE OF ARIZONA
AQUIFER PROTECTION PERMIT NO. P-106100
PLACE ID 135845, LTF 49639

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Articles 1, 2 and 3, and Chapter 4, 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, Rosemont Copper Company is hereby authorized by the Arizona Department of Environmental Quality (ADEQ) to operate the Rosemont Copper Project facility located in Pima County, Arizona, over groundwater of the Cienega Creek groundwater basin in portions of Township 18 South, Range 15 and 16 East of the Gila and Salt River Base Line and Meridian.

This permit becomes effective on the date of the Water Quality Division and Waste Programs Division Directors' signatures and shall be valid for the life of the facility (construction, 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:	Rosemont Copper Project
Facility Address:	21900 S. Sonoita Highway Vail, AZ 85641
Permittee:	Rosemont Copper Company
Permittee Address:	4500 Cherry Creek South Dr., Suite 1040 Denver, Colorado 80246
Facility Contact:	Katherine Arnold
Emergency Phone No.:	(520) 495-3502
Latitude/Longitude:	31° 50' N / 110° 45' W
Legal Description:	Township 18S, Range 16E, Sections 19, 20, 21, 22, 28, 29, 30, 31, 32, and 33; Township 19S, Range 16E, Sections 5 and 6; Township 18S, Range 15E, Sections 24, 25, and 36; of the Gila and Salt River Base Line and Meridian

1.2 AUTHORIZING SIGNATURE

Michael A. Fulton, Director
Water Quality Division
Arizona Department of Environmental Quality
Signed this 3rd day of April, 2012

Amanda E. Stone, Director
Waste Programs Division
Arizona Department of Environmental Quality
Signed this 3rd day of April, 2012

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 Rosemont Copper Project (Rosemont) is a facility consisting of an open-pit mining and mineral processing facility located approximately 30 miles southeast of Tucson, Arizona. Rosemont operations include conventional crushing and flotation of sulfide ore to produce copper and molybdenum concentrate to be transported offsite for further processing, as well as heap leaching of oxide ore and solution extraction/electrowinning facilities. Further descriptions of these facilities can be found in Table 4.1.1.

2.1.1 Dry Stack Tailings Facility

The Dry Stack Tailings Facility consists of two separate areas referred to as the North Stack and South Stack. The South or Phase 1 Stack, is designed to accommodate about 343 million tons of dry stack tailings and the North or Phase 2 Stack about 253 million tons. The Dry Stack Tailings facility shall receive dry stack tailings at a nominal rate of about 75,000 tons per day. The tailings material shall be stacked behind large waste rock buttresses. The Dry Stack Tailings Facility shall receive filtered (dewatered) tailings from the Tailings Filter Plant. The filter plant shall receive tailings slurry from the Copper-Molybdenum flotation circuit.

2.1.2 Primary Settling Basin

The Primary Settling Basin (PSB) shall be located in the Plant Site area and shall receive process upset materials consisting of un-filtered tailings (slurry) on a short-term basis, and stormwater. The PSB has a surface area of approximately 8.5 acres and a volume capacity of approximately 61.4 million gallons with a minimum 2-feet of freeboard.

2.1.3 Process Water Temporary Storage Pond

The Process Water Temporary Storage (PWTS) Pond shall be located in the Plant Site area and is divided into two sections identified as the Process Water (PW) Pond and the Temporary Storage (TS) Pond. The PW Pond shall be a double-lined surface impoundment that provides a minimum 24-hour storage of water for the mineral processing circuit. Water in the PW pond shall consist of makeup and process water, including potential overflow from the Primary Settling Basin. The PW Pond also provides emergency storage in case of a service interruption at the plant facilities. The TS Pond shall be a single-lined surface impoundment that receives stormwater runoff and also shall provide emergency overflow containment for the PW Pond. The PW Pond shall have a storage capacity of approximately 69.7 million gallons, including 2 feet of freeboard. The capacity to the freeboard limit shall be approximately 62.4 million gallons. The TS Pond shall have a storage capacity of approximately 38.1 million gallons, including 2 feet of freeboard. The capacity to the freeboard limit shall be approximately 34.2 million gallons.

2.1.4 Raffinate Pond

The Raffinate Pond shall be located in the Plant Site area, immediately northwest and up-gradient of the PWTS Pond, and shall be a double-lined surface impoundment. Barren solution from the Solvent Extraction/Electrowinning (SX/EW) Plant shall be acidified in the Raffinate Pond and pumped to the top of the stacked ore located on the Heap Leach Pad. The pond shall have a storage capacity of approximately 3.6 million gallons, which includes 3 feet of freeboard. The capacity to the freeboard limit shall be approximately 2.8 million gallons.

2.1.5 Heap Leach Pad

The Heap Leach Pad (Phase 1 and Phase 2) shall be constructed southeast of the Open Pit within the Barrel Canyon drainage. Oxide Ore excavated from the Open Pit shall be generally placed on the Heap Leach Pad in approximate 30-foot lifts and irrigated with raffinate using drip emitters. The Heap Leach Pad liner shall consist of a 60-mil linear low density polyethylene (LLDPE) liner on top of a GCL. Pregnant leach solution, or PLS, shall gravity drain from the pad via perforated drain pipelines designed to route solutions to the PLS Pond through a collection pipeline system. The system also includes a Stormwater Pond that shall be connected to the PLS Pond. It is anticipated that run-of-mine

(ROM) oxide ore shall be stacked on the Heap Leach Pad. Ore can be stacked to a maximum height of 450 feet above the liner.

2.1.6 PLS Pond

The PLS Pond shall be located near the northeast corner of the Heap Leach Pad, adjacent to the Stormwater Pond, and shall be a double-lined surface impoundment. The pond shall receive PLS from the Heap Leach Pad before solution is pumped to the SX/EW Plant for processing. The pond shall have a storage capacity of approximately 22.8 million gallons, which includes a freeboard limit of three feet. The capacity to the freeboard limit shall be approximately 18.9 million gallons.

2.1.7 Stormwater Pond

The Stormwater Pond shall be located northeast of the Heap Leach Pad, immediately adjacent to the PLS Pond, and shall be a single-lined surface impoundment. The Stormwater Pond shall be connected to the PLS Pond via a spillway, and as a result, may contain stormwater runoff from the Heap Leach Pad and PLS from overflow of the PLS Pond during storm events. However, the Stormwater Pond shall typically be empty during normal operating conditions. The pond shall have a storage capacity of approximately 31.6 million gallons, including 3 feet of freeboard. The capacity to the freeboard limit is approximately 26.4 million gallons.

2.1.8 Waste Rock Storage Area

The Waste Rock Storage Area shall be constructed southeast/east of the Open Pit within the Barrel Canyon drainage system and shall receive waste rock from development of the Open Pit. The overall footprint for the area is approximately 1370 acres and consists of approximately 756 million tons of waste rock.

2.1.9 Waste Management Area (Non-Municipal Solid Waste Landfill)

The Waste Management Area shall be located northwest of the Plant Site and shall be comprised of a private non-municipal solid waste landfill with an approved waste footprint of approximately 1.85 acres for the disposal of non-hazardous wastes generated on-site. The following wastes are acceptable for disposal in the Waste Management Area:

a. Clean Fill: Clean rock (no acid-generating materials) and soil.
b. Construction and Demolition Debris: as defined in A.R.S. § 49-701(5) and (7).
c. Inert Material: as defined in A.R.S. § 49-701(15).
d. Landscape Rubble: as defined in A.R.S. § 49-701(17).
e. Vegetative Waste: as defined in A.R.S. § 49-701(36).
f. Rubbish: as defined in A.A.C. R18-13-302(H).
g. White Goods: Prior to disposal, chlorofluorocarbon (CFC)-containing appliances will conform to the requirements of Title 40 of CFR § 82 Subparts E and F.
h. Empty metal containers.
i. Dry paper and cardboard.
j. Plastic containers and products.
k. Glass.

This facility shall not receive any wastes generated off-site and shall conform to the standards of a non-municipal solid waste landfill facility. Municipal solid waste, tires, batteries, septage, regulated friable asbestos containing material, and sewage sludge are prohibited for disposal at the landfill. The excavation depth will range between 5 and 43 feet deep with a minimum excavation elevation of approximately 5,190 feet above mean sea level (amsl) at the toe of the northeastern fill slope; the lowest elevation of waste placement will be at approximately 5,234 feet amsl. The maximum height of the landfill at final closure shall be no more than 5,280 feet amsl.

This permit authorizes the construction and operation of the following discharging facilities:

TABLE 2.1
Facilities

Facility	Latitude	Longitude
Dry Stack Tailings Facility	31° 50' 18"	110° 43' 51"
Process Water Temporary Storage Pond	31° 50' 9"	110° 44' 27"
Primary Settling Basin	31° 50' 23"	110° 44' 28"
Raffinate Pond	31° 50' 15"	110° 44' 35"
Heap Leach Pad	31° 49' 23"	110° 44' 48"
PLS Pond	31° 49' 32"	110° 44' 12"
Stormwater Pond	31° 49' 35"	110° 44' 9"
Waste Rock Storage Area	31° 48' 56"	110° 44' 26"
Waste Management Area (Non-Municipal Solid Waste Landfill)	31° 50' 8"	110° 44' 47"

Annual Registration Fee [A.R.S. § 49-242]
The annual registration fee for this permit is established by A.R.S. § 49-242 and is payable to ADEQ each year. The design flow is in excess of 10,000,000 gallons per day (gpd).

The annual registration fee for the Non-Municipal Solid Waste Landfill is established by A.R.S. § 49-747(C)(7) and the landfill disposal fees are established by A.R.S. § 49-836 based on the amount of waste landfilled. The fees are payable to ADEQ each year.

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 costs for the facilities listed in this area-wide APP are $2,744,100 and $1,549,035, respectively. The Dry Stack Tailings Facility shall undergo concurrent reclamation as practicable, which is covered as part of the annual operational costs. Financial assurance was demonstrated through A.A.C. R18-9-A203(C)(2) through a Surety Bond from Arch Insurance Company.

2.2 Best Available Demonstrated Control Technology [A.R.S. § 49-243(B) and A.A.C. R18-9-A202(A)(5)]
The construction and operational parameters listed in Sections 2.2.1 through 2.2.4, in addition to the design criteria and site characteristics described in the APP application referenced in Section 5.0, constitute BADCT for this facility and shall be constructed, operated, and maintained as described therein.

2.2.1 Engineering Design

All of the facilities listed in Table 2.1 have been evaluated and determined to meet the requirements of A.R.S. §49-243 and A.A.C. R18-9-A202. Specific design details for each facility are listed in Section 4, Table 4.1.1.

2.2.2 Site-specific Characteristics

Not applicable

2.2.3 Pre-operational Requirements

2.2.3.1 Subgrade Preparation and Testing

A Quality Assurance Engineer (QAE) shall be responsible for applicable Quality Assurance (QA) work related to subgrade preparation and testing. The QAE shall be an Arizona-registered Professional Engineer. The QAE shall be responsible for certifying that the subgrade preparation and testing was performed according to approved specifications in the application documents. The certification shall be included in the report required under the Compliance Schedule, Section 3.0.

2.2.3.2 Liner Installation and Testing

A QAE shall be responsible for applicable QA work related to liner installation and testing. The QAE shall be a third party Arizona-registered Professional Engineer. The QAE shall be responsible for reporting and certifying that the liner installation and testing was performed according to approved specifications in the application documents. The certification shall be included in the report required under the Compliance Schedule, Section 3.0.

2.2.3.3 Underdrain System Installation and Testing

A QAE shall be responsible for applicable QA work related to underdrain installation and testing. The QAE shall be an Arizona-registered Professional Engineer. The QAE shall be responsible for reporting and certifying that the underdrain system installation and testing was performed to approved specifications in the application documents. The certification shall be included in the report required under the Compliance Schedule, Section 3.0.

2.2.4 Operational Requirements

Permittee shall perform inspections and operational monitoring as required in Section 4, Table 4.2.1.

At a minimum, permitted facilities shall be inspected for performance levels listed in Section 4, Table 4.2.1. Results of these inspections and monitoring activities shall be documented and maintained at the project location for at least 10 years, and as required by Section 2.7.2 of this permit.

If damage is identified during an inspection that could cause or contribute to an unauthorized discharge, proper repairs shall be promptly performed. A summary of the repairs, including a description of the procedures and materials used shall be maintained with the inspection records noted above.

The Action Leakage Rates (AL 1) and Rapid and Large Leakage Rates (AL2) are established as follows in Table 2.2:

TABLE 2.2
Leak Collection and Removal System (LCRS) Monitoring

Note: The Alert Level 1 (AL1) or Alert Level 2 (AL2) is exceeded when the amount of leakage pumped from the sump for the pond is greater than the applicable quantity below. Contingency requirements of Sections 2.6.2.4 and 2.6.2.5 shall be followed for AL1 and AL2 exceedances, respectively. An exceedance of AL1 or AL2 is not a violation of the permit unless the permittee fails to perform as required under Section 2.6.2.

ADEQ Sump	Parameter	ADL gallons per day (gpd)	ADL gallons per day (gpd)	Monitoring Method	Monitoring Frequency	Reporting Frequency
PW (PWTS) Pond (PW Portion)	Liquid Pumped	3,859	82,143	Visual	Daily	Quarterly
Raffinate Pond	"	411	8,751	Visual	Daily	Quarterly
PLS Pond	"	1,797	38,239	Visual	Daily	Quarterly

2.2.4.1 Concurrent Reclamation of Dry Stack Tailings Facility
The permittee shall reclaim portions of the outer slopes of the Dry Stack Tailings Facility concurrent with on-going mine operations as described in the application documents referenced in Section 5 of the permit.

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 listed below 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, overtopping (e.g., exceeding the maximum storage capacity, defined as a fluid level exceeding the crest elevation of a permitted impoundment), berm breaches that result in an unexpected loss of fluid, accidental spills, or other unauthorized discharges. 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. Liner failure in a single-lined impoundment is any condition that would result in a leakage exceeding 550 gallons per day per acre. See Table 2.2 for allowable leakage rates associated with double-lined ponds.

2.3.1 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, Table 4.1.1, and the ultimate heights shall not exceed those set forth in the approved permit application and engineering study.

2.3.2 Pregnant Leach Solution Ponds and Other Impoundments
The PLS Pond, Raffinate Pond, Primary Settling Basin, and the PWTS Pond are designed and authorized to receive , as specified in this permit, PLS, barren leach solution, raffinate, stormwater, process water, makeup water, and process upset events.

2.3.3 Non-stormwater Impoundment
The permitted non-stormwater impoundment (referred to by the permittee as the Stormwater Pond) is authorized to receive stormwater runoff and runon, and process solutions as a result of storm events or process upset events.

2.4 Point(s) of Compliance [A.R.S. § 49-244]
The POC(s) are established by the following monitoring location(s):

TABLE 2.3
POC Well Locations

POC Locations	Latitude (Approximate)	Longitude (Approximate)
POC #1	31° 51' 07"	110° 43' 47"
POC #2	31° 50' 50"	110° 43' 10"
POC #3	31° 50' 50"	110° 42' 41"
POC #4	31° 49' 49"	110° 43' 18"
POC #5	31° 49' 24"	110° 43' 50"
POC #6	31° 48' 35"	110° 43' 49"
POC #7	31° 48' 15"	110° 44' 10"
POC #8	To be determined	To be determined

Monitoring requirements for each POC well are listed in Section 4.2, Tables 4.2.3 and 4.2.4. The location of POC #8 will be identified as required under the Compliance Schedule in Section 3.0.

The Director may amend this permit to designate additional POCs, if information on groundwater gradients or groundwater usage indicates the need. Also see Section 2.5.6.

2.5 Monitoring Requirements [A.R.S. § 49-243(B) and (K)(1), A.A.C. R18-9-A206(A)]
All monitoring required in this permit shall continue for the duration of the permit, regardless of the status of the facility. 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. The permittee shall develop a site specific Quality Assurance Project Plan (QAPP) that describes the sample collection and analysis procedures to ensure that the result of work performed under this permit will satisfy the data quality objectives of the permit. The permittee shall be responsible for the quality and accuracy of all data required by this permit. If a third party collects or analyzes samples on behalf of the permittee, the permittee shall obtain a copy of the third party site specific QAPP. The permittee shall consult with the most recent version of the ADEQ Quality Assurance Program Plan and Title 40, PART 136 of the Code of Federal Regulations (CFR) for guidance in this regard. 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
Not applicable for this permit.

2.5.2 Facility / Operational Monitoring
The operational monitoring requirements for the facilities referenced in Section 4.0, Table 4.1.1 are listed in Section 4.0, Table 4.2.1.

2.5.3 Groundwater Monitoring and Sampling Protocols
Static water levels shall be measured and recorded prior to sampling. Wells shall be purged of at least three (3) borehole volumes (as calculated using the static water level) or until field parameters (pH, temperature, 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% 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).

Alternatively, the permittee may conduct sampling using the low-flow purging method as described in the ASTM International Standard D 6771-02, and EPA Groundwater Issue 540/S-95/504 Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures. The well must be purged until indicator parameters stabilize. Indicator parameters shall include pH, temperature, specific conductance, oxidation-reduction potential, dissolved oxygen and turbidity. Due to extensive screen length, POC #5 (RP-4) must be sampled using this alternative method. If the water table in this groundwater monitor well rises to a level above the screened interval, the well must be replaced. Alternatively, the permittee may initially elect to install a new well at this location with a modified screen length and avoid low-flow purging methods.

2.5.3.1 POC Well Installation

Groundwater monitor wells must be installed at POC locations POC #1, POC #2, POC #3, POC #4, POC #5 if re-installed, POC #6, POC #7, and POC #8 in accordance with the Compliance Schedule, Section 3.0.

2.5.3.2 POC Well Replacement

In the event that one or more of the designated POC wells should become unusable or inaccessible due to damage, insufficient water in the well for more than 2 (two) sampling events, or any other event, a replacement POC well shall be constructed and installed upon approval by ADEQ. If the replacement well is fifty (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 2.5.3.4 and Section 2.5.3.5 of this permit.

2.5.3.3 Ambient Groundwater Quality Monitoring for POC Wells

Eight (8) quarters of groundwater sampling are required to establish ambient groundwater quality in all POC groundwater monitoring wells (POC#1 through POC#8), in accordance with the Compliance Schedule, Section 3.0. Each quarterly sample shall be analyzed for the parameters listed in Section 4, Table 4.2.2. Alert levels and aquifer quality limits shall be established as required in Sections 2.5.3.4 and 2.5.3.5.

2.5.3.4 Alert Levels for POC Wells

AQLs and ALs for POC wells will be calculated for all parameters listed in Section 4, Table 4.2.2 with an established AWQS, based on the eight (8) quarterly groundwater samples as required in the compliance schedule. Within 90 days of receipt of the laboratory analyses for the final quarter of the ambient groundwater monitoring period for each POC well, the permittee shall submit the ambient groundwater monitoring data in tabulated form to the ADEQ Groundwater Section (GWS) for review. Copies of all laboratory analytical reports, field notes, and the Quality Assurance/Quality Control (QA/QC) procedures used in the collection and analyses of the samples for all parameters listed in Section 4, Tables 4.2.3 and 4.2.4 shall be submitted to the GWS. The permittee may submit a report with the calculations for each AQL and AL included in the permit for review and approval by ADEQ, or the permittee may defer calculation of the AQLs and ALs to the GWS. The AQLs and ALs shall be established and calculated by the following formula or another valid statistical method submitted to GWS in writing and approved for this permit by the GWS:

$$AL = M + KS$$

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 (8) consecutive quarterly sample rounds. The permittee shall not use more than eight (8) sample rounds in the calculation.
2. Any data where the practical quantification 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.

2.5.3.5 Aquifer Quality Limits for POC Well

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.

2.5.3.6 Compliance Groundwater Quality Monitoring for POC Wells

Quarterly compliance groundwater monitoring in all POC wells shall commence beginning in the first calendar quarter after the completion of the ambient sampling period for that well. For quarterly compliance monitoring, the permittee shall analyze groundwater samples for the parameters listed in Section 4, Table 4.2.3. In addition to quarterly compliance groundwater monitoring, every two (2) years (biennial) the permittee shall analyze samples from the POC wells for an expanded list of parameters listed in Section 4, Table 4.2.4. The biennial sampling event shall replace the regularly scheduled quarterly sampling event for the quarter in which the biennial sampling event is conducted.

2.5.4 Surface Water Monitoring and Sampling Protocols

Not applicable for this permit.

2.5.5 Analytical Methodology

All groundwater 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. Analyses shall be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification. 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 ADEQ Groundwater Section 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 a contingency and emergency response plan shall be maintained at the location where day-to-day decisions regarding the operation of the facility are made. A contingency plan shall be submitted to ADEQ pursuant to the compliance schedule in Section 3.0. The permittee shall be aware of and follow the contingency and emergency response plan.

Any AL that is exceeded or any violation of an AQL, DL, or other permit condition shall be reported to ADEQ following the reporting requirements in Section 2.7.3.

Some contingency actions may 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. The permittee is subject to enforcement action for the failure to comply with any mandatory contingency actions in this permit. 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 has 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.

2.6.2 Exceeding of Alert Levels and Performance Levels

2.6.2.1 Exceeding of Performance Levels Set for Operational Conditions

1 Performance Levels Set for Freeboard

In the event that minimum freeboard levels established in Table 4.2.5 in a surface impoundment are not maintained, the permittee shall:

a. 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.
b. Within 5 days of discovery, evaluate the cause of the incident and adjust operational conditions as necessary to avoid future occurrences.
c. Record in the facility log, the amount of fluid removed, a description of the removal method, and the disposal arrangements. The facility log shall be maintained according to Section 2.7.2 (Operational Inspection/Log Book Recordkeeping).

Records documenting each freeboard incident and actions taken to correct the problem shall be included in the current report as required in Section 2.7.1 (Self Monitoring Report Forms).

d. 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. Performance Levels, Other Than Freeboard

a. If a Performance Level listed in Section 4.0, Table 4.2.1 has been observed or noted during required inspection and operational monitoring, such that the observed condition 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:
   1. 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.
   2. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences.

b. The Performance Level exceedance, results of the investigation, and any corrective action taken shall be reported to the Water Quality Compliance Section (WQCS), within thirty (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.

c. The permittee shall initiate actions identified in the approved contingency and emergency response plan referenced in Section 3.0 and any specific contingency measures identified in Section 2.6 to resolve any problems identified by the investigation which may have led to a Performance Level being exceeded. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6.

2.6.2.2 Exceeding of Alert Levels Set for Discharge Monitoring
Not applicable to this permit.

2.6.2.3 Exceeding of Alert Levels in Groundwater Monitoring

2.6.2.3.1 Alert Levels for Indicator Parameters
Not applicable to this permit.

2.6.2.3.2 Alert Levels for Pollutants with Numeric Aquifer Water Quality Standards

1. If an AL for a pollutant set in Section 4.2, Table 4.2.3 or 4.2.4 has been exceeded, the permittee may conduct verification sampling 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 to monthly. In addition, the permittee shall immediately initiate an investigation of the cause of the AL exceedance, including inspection of all discharging facilities 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 from existing wells.

3. The permittee shall initiate actions identified in the approved contingency plan referenced in Section 3.0 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 Section, that although an AL is exceeded, pollutants are not reasonably expected to cause a violation of an AQL. The demonstration may propose a revised AL or monitoring frequency for approval in writing by the Groundwater Section.
4. Within 30 days after confirmation of an AL exceedance, the permittee shall submit the laboratory results to the Water Quality Compliance Section 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 required as a result of an AL exceedance may be reduced to the regular frequency, if the results of three (3) sequential sampling events demonstrate that no parameters exceed the AL.
7. If the increased monitoring required as a result of an AL exceedance continues for more than six (6) sequential sampling events, the permittee shall submit a second (2^{nd}) report documenting an investigation of the continued AL exceedance within 30 days of the receipt of laboratory results of the sixth (6^{th}) sampling event.

2.6.2.3.3 Alert Levels to Protect Downgradient Users from Pollutants without Numeric Aquifer Water Quality Standards

Not applicable.

2.6.2.4 Exceedance of LCRS Alert Level 1 (AL1)

If an Alert Level 1 (AL 1) as specified in Section 2.2.4, Table 2.2, has been exceeded, the permittee shall take the following actions:

1. Within five (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 for a direct comparison in water quality. Notify ADEQ Water Quality Compliance Section, Enforcement Unit, in accordance with Section 2.7.3 (Permit Violation and Alert Level Status Reporting), and include in the notification an assessment of the type of water in the sump. Monitor fluid removal from the Leak Collection and Recovery System (LCRS) on a daily basis until the daily volume of fluid quantified remains below AL1 for 30 days in order to minimize the hydraulic head on the lower liner.
2. Within 15 days, assess the condition of the liner system using visual methods for visible portions of the 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 AL1, the permittee shall submit an initial report to ADEQ Water Quality Compliance Section 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.

2.6.2.5 Exceedance of LCRS Alert Level 2 (AL2)

If the AL 2 specified in Section 2.2.4, Table 2.22, has been exceeded, the permittee shall:

1. To the extent practicable, cease all discharge to the impoundment, and notify ADEQ's Water Quality Compliance Section orally, electronically, or, by facsimile, of the AL2 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 five (5) days of discovery, notify ADEQ Water Quality Compliance Section, in accordance with Section 2.7.3 (Permit Violation and Alert Level 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 or a schedule for completion of the repairs in Item No. 4 below. Normal operational discharge to the impoundment shall not be re-initiated until the leak(s) have been identified and repaired.
4. Within 30 days of exceeding AL2, submit a report to ADEQ as specified in Section 2.7.3 (Permit Violation and Alert Level 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 or planned 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, ADEQ may request additional monitoring or remedial actions.
5. If AL2 continues to be exceeded following completion of repairs, submit for approval to ADEQ, 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 ADEQ's approval, the permittee shall implement the approved plan and schedule of corrective actions.
6. Within 30 days of completion of corrective actions performed pursuant to Item No. 5 above, submit to ADEQ a written report as specified in Section 2.6.6 (Corrective Actions).

2.6.3 Discharge Limitations Violations

2.6.3.1 Liner Failure, Containment Structure Failure, or Unexpected Loss of Fluid for a Reason Other than Overtopping

In the event of liner failure, containment structure failure, or unexpected loss of fluid resulting in a discharge as defined by A.R.S. § 49-201(12) and as described in Section 2.3, the permittee shall take the following actions:

1. As soon as practicable, cease all discharges to the surface impoundment as necessary to prevent any further releases to the environment.
2) Within 24-hours of discovery, notify ADEQ Water Quality Compliance Section, Enforcement Unit.
3. Within five (5) days of discovery of a failure that resulted in a release to the subsurface, collect representative samples of the fluid remaining in the surface impoundment.

Samples shall be analyzed for the parameters specified in Section 4.0, Table 4.2.3. Within thirty (30) days of the incident, submit a copy of the analytical results to ADEQ Water Quality Compliance Section, Enforcement Unit.

4. Within fifteen (15) days of discovery, initiate an evaluation to determine the cause of the incident. Identify the circumstances that resulted in the failure and assess the condition of the surface impoundment 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 surface impoundment. The permittee shall not resume discharging to the surface impoundment 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.
5. As soon as practicable, remove fluid remaining in the surface impoundment as necessary to prevent further releases to the subsurface and/or to perform repairs. Record in the facility log/recordkeeping file the amount of fluid removed, a description of the removal method, and other disposal arrangements. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 (Operation Inspection/LogBook/Recordkeeping File).
6. Within thirty (30) days of discovery of the incident, 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 sixty (60) days of discovery, conduct an assessment of the impacts to the subsoil and/or groundwater resulting from the incident. 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.
8. Within thirty (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.

2.6.3.2 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 ADEQ Water Quality Compliance Section, Enforcement Unit.
3. Within five (5) days, collect representative samples of the fluid contained in the surface impoundment. Samples shall be analyzed for the parameters specified in Section 4, Table 4.2.3. Within thirty (30) days of the incident, submit a copy of the analytical results to ADEQ Water Quality Compliance Section, Enforcement Unit.
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 4.1.1. Record in the facility log, the amount of fluid removed, a description of the removal method, and the disposal arrangements. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 (Operation

Inspection/LogBook/Recordkeeping File).

5. Within thirty (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 thirty (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 sixty (60) days of discovery, and based on sampling in Subsection 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 thirty (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 ADEQ Water Quality Compliance Section, Enforcement Unit.
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 thirty (30) days of an inflow of unexpected materials, 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 3 listed above. Upon review of the report, ADEQ may request additional monitoring or remedial actions.
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.

2.6.4 Aquifer Quality Limit (AQL) Violation

1. If an AQL set in Section 4.2, Tables 4.2.3 or 4.2.4 has been exceeded, the permittee may conduct verification sampling within five (5) days of becoming aware of an AQL 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 that the AQL is violated for any parameter or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of

monitoring to monthly 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 30 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 actions 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.

3. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, or other actions.
4. 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 Pursuant to 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 ADEQ Water Quality Compliance Section and the Southern Regional Office within 24 hours upon discovering the discharge of hazardous material which (a) has the potential to cause an AWQS or AQL to be exceeded, 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 ADEQ Water Quality Compliance Section and the Southern Regional Office within 24 hours upon discovering the discharge of non-hazardous material which (a) has the potential to cause an AQL to be exceeded, or (b) 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 ADEQ Water Quality Compliance Section and the Southern Regional Office 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 that 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 Section prior to implementing a corrective action to accomplish any of the following goals in response to exceeding an AL or violation of an 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; and/or
5. Mitigation to limit the impact of pollutants on existing uses of the aquifer.

Within 30 days of completion of any corrective action, the permittee shall submit to the ADEQ Water Quality Compliance Section, 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 Forms (SMRFs)

1. The permittee shall complete the SMRFs provided by ADEQ, and submit them to the Water Quality Compliance Section, Data Unit.
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 SMRF and submit the report to ADEQ. The permittee shall use the format devised by ADEQ.
3. The groundwater monitoring tables contained in Section 4.0 list the parameters to be monitored and the frequency for reporting results for compliance monitoring. Monitoring and analytical methods shall be recorded on the SMRFs.
4. In addition to the SMRF, the information contained in A.A.C. R18-9-A206(B)(1) shall be included for exceeding an AL or violation of an AQL, DL, or any other permit condition being reported in the current reporting period.

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 shift 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 R18-9 A206(B)(2).

2.7.3 Permit Violation and Alert Level Status Reporting

1. The permittee shall notify the Water Quality Compliance Section in writing within five (5) days (except as provided in Section 2.6.5) of becoming aware of a violation of any permit condition, discharge limitation or of an AL exceedance.
2. The permittee shall submit a written report to the Water Quality Compliance Section within 30 days of becoming aware of the violation of any permit condition or discharge limitation. 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 its 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, upon completion of the biennial sampling described in Table 4.2.4, submit a monitoring summary report to the Groundwater Section. This report shall be due at the same time as the SMRF form for the biennial sampling event. The report shall include, but not be limited to the following:

1. A description of any deviations from standard sampling protocols during the reporting period.
2. A summary of all exceedances of ALs and AQLs that occurred during the reporting period.
3 Graphical time versus concentration plots of field pH, sulfate, total dissolved solids, and any parameter which exceeded an applicable AL or AQL in the past eight (8) quarters at each POC well, and tabulated sampling data for all wells required to be sampled by this permit during the last eight (8) quarters.
4. An updated table of all monitor wells in or within ¼ mile of the Pollutant Management Area including, but not limited to, location of well, depth of well, depth to water, and water level elevation.
5. A summary of any groundwater monitor wells replaced in the reporting period including, but not limited to, location of well, depth of well, depth to water, water level elevation, and screened interval.

2.7.5 Reporting Location

All SMRFs shall be submitted to:

Arizona Department of Environmental Quality
Water Quality Compliance Section, Data Unit
Mail Code: 5415B-1
1110 W. Washington Street
Phoenix, AZ 85007
Phone (602) 771-4513

All documents required by this permit to be submitted to the Water Quality Compliance Section shall be directed to:

Arizona Department of Environmental Quality
Water Quality Compliance Section
Mail Code: 5415B-1
1110 W. Washington Street
Phoenix, AZ 85007
Phone (602) 771-4497

Arizona Department of Environmental Quality
Southern Regional Office
400 West Congress Street, Suite 433
Tucson, Arizona 85701
Phone (520) 628-6733
Fax (520) 628-6745

All documents required by this permit to be submitted to the Groundwater Section shall be directed to:

Arizona Department of Environmental Quality
Groundwater Section
Mail Code: 5415B-3
1110 W. Washington Street
Phoenix, AZ 85007
Phone (602) 771-4428

All documents required by this permit to be submitted to the Solid Waste Plan Review Unit shall be directed to:

Arizona Department of Environmental Quality
Waste Programs Division
Solid Waste Plan Review Unit
1110 W. Washington Street
Phoenix, AZ 85007
Phone (602) 771-4110

2.7.6 Reporting Deadline

The following table lists the quarterly report due dates[1]

Monitoring conducted during quarter:	Quarterly Report due by:
January-March	April 30
April-June	July 30
July-September	October 30
October-December	January 30

[1]A post-mark date no later than the due date is considered meeting the due date requirements under this Section.

The following table lists the semi-annual and annual report due dates:

Monitoring conducted:	Report due by:
Semi-annual: January-June	July 30
Semi-annual: July-December	January 30
Annual: January-December	January 30

2.7.7 Changes to Facility Information in Section 1.0
The Groundwater Section and Water Quality Compliance Section shall be notified within 10 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 Water Quality Compliance Section and the Southern Regional Office before ceasing operation of the facility for a period of 60 days or greater. The permittee shall take the following measures upon temporary cessation:

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's 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 Water Quality Compliance Section and the Southern Regional Office 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 Water Quality Compliance Section of the permittee's intent to cease operation without resuming activity for which the facility was designed or operated.

2.9.1 Closure Plan
Within 90 days following notification of closure, the permittee shall submit for approval to the Groundwater Section, 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 Section indicating that the approved Closure Plan has been fully implemented and supporting documentation provided 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 post-closure terms stated in this permit:

1. Clean closure cannot be achieved at the time of closure notification or within 1 (one) year thereafter under a diligent schedule of closure actions;
2. Further action is necessary to keep the facility in compliance with AWQS at the applicable POC;
3. Continued action is required to verify that the closure design has eliminated discharge to the

extent intended;

4. Remediation or mitigation measures are necessary to achieve compliance with Title 49, Ch. 2; and/or
5. Further action is necessary to meet property use restrictions.

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 Section.

In the event clean closure cannot be achieved pursuant to A.R.S. § 49-252, the permittee shall submit for approval to the Groundwater Section 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

Reserved.

2.10.2 Post-closure Completion

Reserved.

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

For each compliance schedule item listed below, the permittee shall submit the required information, including a cover letter that lists the compliance schedule items, to the Groundwater Section. A copy of the cover letter must also be submitted to the Water Quality Compliance Section.

Actions and Submittals

Item Description	Time to Complete	Requirements
Identification of POC #8 location	Within 60 days of permit issuance	The applicant shall propose the location of POC #8. This location shall be on the downgradient edge of the pollutant management area, between the locations of POC #3 and POC #4, on the southeast side of Barrel Canyon Wash.
POC Well Installation:	Within 1 (one) year of permit issuance and prior to discharge	The wells shall be installed in accordance with all Arizona Department of Water Resources (ADWR) requirements. A work plan including the location of the well and the well design shall be submitted to ADEQ thirty (30) days prior to installation for approval by Groundwater Section. The well shall be appropriately screened (within 10 feet above the water table and 50 feet below the water table for an unconfined aquifer, or no more than 60 feet in length within a confined aquifer) within the uppermost aquifer. A well completion report, including a discussion of well installation and development activities, and geologic and well construction logs shall be submitted to ADEQ within forty-five (45) days of well installation. The logs shall include the ADWR well registration number, and the "as-built" cadastral and latitude and longitude coordinates for the well.
Ambient Water Quality Monitoring in all POC Wells	Within twenty-nine (29) months after well installation	Each POC well shall be sampled for ambient water quality quarterly for eight (8) consecutive quarters. Ambient water quality monitoring shall start within the first calendar quarter following the calendar quarter of installation of the well. The wells shall be sampled for all of the parameters listed in Table 4.2.2.
Contingency Plan	Within ninety (90) days after effective date of permit	Permittee shall submit an updated contingency and emergency response plan that complies with the requirements of Arizona Administrative Code R18-9-A204.
Subgrade Preparation, Grading & Drainage, Liner Installation, Underdrains, and Construction of Impoundments	Within ninety (90) days after completion of construction	Permittee shall submit a final Construction Quality Assurance (CQA) Report verifying that the work undertaken was built in accordance with the final technical documents, design drawings, and specifications provided to ADEQ. The Permittee shall also provide the results of all required testing. As-built documentation shall supersede all previous design documents and still meet all permit requirements.

Amendments

Alert Levels (AL) and Aquifer Quality Limits (AQL) for all POC Wells	Within ninety (90) days after the completion of the ambient monitoring period for each well	Submit within ninety (90) days following completion of the ambient sampling period for each well, copies of all laboratory analytical reports, field notes, the QA/QC limits used in collection and analysis of the samples, and a report including the statistical calculations of the ALs and AQLs to the GWS. Incorporation of these data in the permit shall constitute an amendment to the permit.

4.0 TABLES OF FACILITY INFORMATION AND MONITORING REQUIREMENTS

4.1 FACILITY DESIGN INFORMATION

TABLE 4.1.1 –Permitted Facilities and BADCT

4.2 COMPLIANCE (or OPERATIONAL) MONITORING

TABLE 4.2.1 – Required Inspections and Operational Monitoring

TABLE 4.2.2 – Parameters for Ambient Groundwater Monitoring for POC Wells

TABLE 4.2.3 – Quarterly Compliance Groundwater Monitoring

TABLE 4.2.4 – Biennial Compliance Groundwater Monitoring

TABLE 4.2.5 – Freeboard Requirements

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name	Latitude/Longitude	Facility BADCT
Dry Stack Tailings Facility	31° 50' 18" N/ 110° 43' 51" W	The Dry Stack Tailings Storage Facility (TSF) shall be located east of the Open Pit and north of the Waste Rock Storage Area. The dry stack or filtered tailings shall be stored behind waste rock buttresses/berms. The TSF shall be constructed in two (2) phases: Phase 1 and Phase 2. Phase 1 shall be operated in Year 1 through Year 12 and Phase 2 shall be operated in Year 12 through 20+. Phase 1 shall be located between McCleary Canyon to the north and the Waste Rock Storage Area to the south. Phase 2 shall be located within McCleary Canyon. The TSF plan area will cover approximately 1,135 acres. The overall TSF tonnage will be approximately 596 million tons, which includes approximately 343 million tons for Phase 1 and approximately 253 million tons for Phase 2. Assessments were performed on the foundation conditions to insure the stability of the constructed perimeter berms and outer slopes. The stability of the TSF was evaluated under both static and seismic loading conditions where the factors of safety meet those required of the Arizona Mining Guidance Manual Best Available Demonstrated Control Technology (BADCT). The waste rock buttresses will have a minimum width of 150-feet and 3H:1V inter-bench slopes. The overall outer slopes of the TSF shall achieve a slope of 3.5H:1V. Flow-through drains shall be constructed in the significant washes within the TSF area to augment the existing drainage courses and allow them to pass runoff beneath the facility. Stormwater management associated with the outer slopes of the TSF has been designed to control stormwater and minimize the potential for erosion. All components of the TSF shall conform to the application documents listed in Section 5 of the permit.
Process Water Temporary Storage Pond (PWTS)	31° 50' 9" N/ 110° 44' 27" W	The Process Water Temporary Storage Pond (PWTS) shall be located at the eastern end of the Plant Site area and to the south of the Primary Settling Basin. The PWTS shall be divided into two (2) cells (ponds) identified as the Process Water (PW) Pond and the Temporary Storage (TS) Pond. The PW Pond shall be managed to optimize the containment of process water, and the TS pond is designed for the temporary and emergency storage only and will be dry during normal operation. All impounded water in the TS Pond shall be removed within 60-days. The PW Pond liner system shall

		consist of (from bottom to top): a minimum 6-inch thick layer of compacted bedding soil (prepared subgrade); a sodium bentonite GCL with permeability equal to or less than 1 x 10^{-6} cm/sec; a secondary (bottom) 60-mil HDPE geomembrane liner; a geonet and leak collection and removal system (LCRS); and a primary (top) 60-mil HDPE geomembrane liner. The liner system shall be secured in an engineered anchor trench. The PW Pond has a surface area of approximately 12 acres at a pond crest elevation of 4950 feet above mean sea level (amsl) and a volume capacity of approximately 69.7 million gallons at the same elevation. The PW Pond shall maintain 2-feet of freeboard below the pond crest at an elevation of 4948 feet amsl. The PWTS Pond's anticipated normal operating level will be about 4941 feet amsl or 41-feet in depth. The PWTS Pond internal and external side slopes shall be 2.5H:1V. The TS Pond liner system shall consist of (from bottom to top): a minimum 6-inch thick layer of compacted bedding soil (prepared subgrade); a sodium bentonite GCL with permeability equal to or less than 1 x 10^{-6} cm/sec; and a 60-mil geomembrane liner. The liner system shall be secured in an engineered anchor trench. The TS Pond has a surface area of approximately 6.5 acres at a pond crest elevation of 4950 feet above mean sea level (amsl) and a volume capacity of approximately 38.1 million gallons at the same elevation. The TS Pond shall maintain 2-feet of freeboard below the pond crest at an elevation of 4948 feet amsl. A slope stability analysis of static and pseudostatic factors of safety against global failure of the PWTS Pond embankments was found to be adequate under BADCT stability requirements under normal operating conditions,
Primary Settling Basin	31° 50' 23" N/ 110° 44' 28" W	The Primary Settling Basin (PSB) will be located east of the Plant Site Area and will receive process upset materials comprised of non-filtered tailings on a short-term basis, and stormwater. The PSB has a surface area of approximately 8.5 acres at a pond crest elevation of 4952 feet amsl and a volume capacity of approximately 61.4 million gallons at the same elevation. The PSB will maintain 2-feet of freeboard below the pond crest at an elevation of 4950 feet amsl. The PSB internal and external side slopes shall be graded to 2.5H:1V with a maximum embankment height of 65-feet. The PSB liner system will consist of (from bottom to top): a minimum 6-inch thick layer of compacted bedding soil (prepared subgrade); a sodium bentonite GCL with permeability equal to or less than 1 x 10^{-6} cm/sec; and a 60-mil HDPE geomembrane liner. The liner

		system shall be secured in an engineered anchor trench. The PSB was designed as part of a system, which also includes the PW Pond and TS Pond, to contain the normal or maximum operational volumes plus stormwater run-off from a Probable Maximum Precipitation (PMP) event, with the PSB empty. All impounded water in the PSB Pond shall be removed within 60-days. A slope stability analysis of static and pseudostatic factors of safety against rotational failure of the PSB embankment was found to be adequate under BADCT stability requirements.
Raffinate Pond	31° 50' 15" N/ 110° 44' 35" W	The Raffinate Pond (RP) shall be located within the Plant Site area. The RP shall store raffinate from the SX-EW plant before it's pumped to the Heap Leach Pad. The RP has a surface area of approximately 1.0 acres at a pond crest elevation of 4995 feet amsl and a volume capacity of approximately 3.6 million gallons at the same elevation. The RP shall maintain 3-feet of freeboard below the pond crest at an elevation of 4992 feet amsl. The RP internal and external side slopes shall be no steeper than 2H:1V. The RP liner system shall consist of (from bottom to top): a minimum 6-inch thick layer of compacted bedding soil (prepared subgrade); a sodium bentonite GCL with permeability equal to or less than 1×10^{-6} cm/sec; a secondary (bottom) 60-mil LLDPE geomembrane liner; a geonet and LCRS; and a primary (top) 80-mil HDPE geomembrane liner. The liner system shall be secured in an engineered anchor trench. A slope stability analysis of static and pseudostatic factors of safety against a full-height failure of the RP embankment was found to be adequate under BADCT stability requirements.
Heap Leach Pad	31° 49' 23" N/ 110° 44' 48" W	The Heap Leach Pad (HLP) is located southeast of the Open Pit. Total pad plan area is approximately 170.5 acres. Phase 1 plan area is approximately 97 acres and Phase 2 plan area is approximately 73.5 acres. Total pad ore tonnage is approximately 65 million tons. Phase 1 pad tonnage is approximately 46 million tons and Phase 2 pad tonnage is approximately 19 million tons. The maximum design height of the HLP shall be 450-feet stacked between slopes of 1.75H:1V to 2.0H:1V. The HLP liner system shall consist of (from bottom to top); a minimum 6-inch thick layer of compacted bedding soil (prepared subgrade); a sodium bentonite GCL with permeability equal to or less than 1×10^{-6} cm/sec; a 60-mil LLDPE geomembrane liner; and minimum 3-foot layer of Overliner Drain Fill (ODF) (minus 1.5-inch free-draining crushed rock). The liner system shall be secured in an engineered anchor trench. A slope stability analysis of static and pseudostatic factors of safety against a full-height

		failure of the HLP was found to meet BADCT minimum stability requirements. Pregnant Leach Solution (PLS) shall be transferred from the HLP(s) to the PLS Pond via a network of solution collection piping located within the ODF.
PLS Pond	31° 49' 32" N/ 110° 44' 12" W	The Pregnant Leach Solution (PLS) Pond shall be constructed near the northeast corner of the HLP, south of the Stormwater Pond. The PLS Pond shall store solution that has been collected from the HLP before being pumped to the SX-EW plant for processing and is designed to provide storage of eight (8) hours of operational flows plus 24-hours of drain-down flows. The PLS Pond has a surface area of approximately 4.5 acres at a pond crest elevation of 4890 feet amsl and a volume capacity of approximately 22.8 million gallons at the same elevation. The PLS Pond shall maintain 3-feet of freeboard below the pond crest at 4887 feet amsl. The PLS Pond internal and external side slopes shall be no steeper than 2H:1V. The PLS Pond's anticipated normal operating level will be about 4884 feet amsl or 22-feet in depth. The PLS liner system shall consist of (from bottom to top): a minimum 6-inch thick layer of compacted bedding soil (prepared subgrade); a sodium bentonite GCL with permeability equal to or less than 1 x 10^{-6} cm/sec; a secondary (bottom) 60-mil LLDPE geomembrane liner; a geonet and LCRS; and a primary (top) 80-mil HDPE geomembrane liner. The liner system shall be secured in an engineered anchor trench. PLS and stormwater will be transferred from the HLP via a network of solution collection piping located within the ODF. A slope stability analysis of static and pseudostatic factors of safety against a full-height failure of the PLS Pond embankment was found to be adequate under BADCT minimum stability requirements.
Stormwater Pond	31° 49' 35" N/ 110° 44' 9" W	The Stormwater (SW) Pond shall be constructed near the HLP, adjacent to the PLS Pond. The PLS/SW Pond system is designed to store operational flows plus stormwater coincident to the HLP/SW Pond area from a 100-year 24-hour storm event. Solution in excess of the PLS Pond capacity will pass into the SW Pond via the interconnecting spillway. All impounded water in the SW Pond shall be removed as soon as practical, but no later than 45-days. The SW Pond has a surface area of approximately 5.5 acres at a pond crest elevation of 4890 feet amsl and a volume capacity of approximately 31.6 million gallons at the same elevation. The SW Pond shall maintain 3-feet of freeboard below the pond crest at an elevation of 4887 feet amsl. The SW Pond

		internal and external side slopes shall be no steeper than 2H:1V. The SW Pond liner system shall consist of (from bottom to top): a minimum 6-inch thick layer of compacted bedding soil (prepared subgrade); a sodium bentonite GCL with permeability equal to or less than 1 x 10^{-6} cm/sec; and a primary 80-mil HDPE geomembrane liner. The liner system shall be secured in an engineered anchor trench. A slope stability analysis of static and pseudostatic factors of safety against a full-height failure of the NSW Pond embankment was found to meet the minimum BADCT stability requirements.
Waste Rock Storage Area	31° 48' 56" N/ 110° 44' 26" W	The Waste Rock Storage Area (WRSA) shall be located east of the Open Pit and south of the TSF. Waste rock, or non-ore material, mined from the Open Pit will be placed within the WRSA, and also used to construct the perimeter buttresses of the TSF. The plan area for the WRSA is approximately 1370 acres. The tonnage of waste rock located within the WRSA is approximately 756 million tons and overall waste rock tonnage will be approximately 1.2 billion tons. The waste rock placed in the WRSA will be comprised mostly of limestone-hosted materials with a minor amount of potentially acid-generating (PAG) material. A material testing program (waste rock segregation plan) will be implemented to insure that placement of the PAG within the WRSA is not on the outer slopes or other areas subject to contact with stormwater. Assessments were performed on the foundation conditions to insure the stability of the constructed perimeter berms and outer slopes. The stability of the WRSA was evaluated under both static and seismic factors of safety against a full-height failure, block sliding failure, and for global stability and was found to meet the BADCT minimum stability requirements. In general, the modeling of WRSA inter-bench slopes ranged from 3H:1V to 4.2H:1V. Stormwater management associated with the outer slopes of the WRSA has been designed to control stormwater and minimize the potential for erosion.
Waste Management Area (Non-Municipal Solid Waste Landfill)	31° 50' 8" N/ 110° 44' 47" W	The liner system consists of 24-inch thick re-compacted clay layer with a permeability of less than or equal to 1 x 10^{-6} cm/sec. The final cover/cap shall consist of a 24-inch thick soil layer. The final cap system shall be constructed as follows (from bottom to top): a 6-inch intermediate cover/foundation layer of soil, an 18-inch layer of compacted soil with a permeability of 1 x 10^{-5} cm/sec, and a 6-inch evapotranspiration

		vegetative cover.
Facilities Covered Under Other General Permits		
Coarse Ore Stockpile	31° 50' 24" N/ 110° 44' 56" W	Type 2.02 General Permit
Temporary Run-Of-Mine Stockpile	31° 49' 57" N/ 110° 44' 52" W	Type 2.02 General Permit
Vehicle and Equipment Wash	31° 49' 14" N/ 110° 45' 30" W	Type 3.03 General Permit

TABLE 4.2.1
REQUIRED INSPECTIONS AND OPERATIONAL MONITORING

Facility Name	Operational Requirements
Process Ponds –	
Process Water Temporary Storage Pond Raffinate Pond PLS Pond	**Daily:** Visually inspect and take appropriate action if any evidence of blocked overflow pipes/spillway structures. **Weekly:** Inspect the LCRS pump system for proper functioning. Measure flow rate in the LCRS; confirm that it is less than specified AL1 (See TABLE 2.2 and Section 2.6.2.4) and less than specified rate for AL2 (See BADCT TABLE 2.2, Section 2.6.2.5); and take appropriate action if exceedence is observed in the AL1 or AL2. **Quarterly:** Visually inspect and take appropriate action if any evidence of: -perforated, cut, torn or damaged liner and impairment of anchor trench integrity; -impairment of embankment integrity as applicable; -excessive erosion in conveyances and diversions; -excess accumulation of debris in conveyances and diversions; and -impairment of access. Physical inspection of the pond to ensure the design capacity is not exceeded. As applicable at pump locations, inspect pumps, valves and structures for pump operation and structural integrity. **Other:** Visually inspect the pond areas after significant rainfall[1]/surface water flow events.
Other Ponds -	
Stormwater Pond Primary Settling Basin	**Quarterly:** Visual inspection and assessment of the pond integrity including a physical appraisal of pond capacity. **Other:** A complete inspection (testing, materials, etc.) shall be made at the time of construction. Additional inspections for process upset events or significant rainfall[1] events. Fluids accumulated in the Stormwater Pond shall be removed within 45 days of discharge.

Tailings Storage Facility –	
Dry Stack Tailings Facility	**Daily:** Visual inspections to spot unusual physical conditions and take appropriate actions: -excessive ponding of water on dry stack -evidence of dry stack deformation -evidence of excessive erosion of the dry stack tailings surface. Inspect and monitor for a maximum of 18-percent moisture content (by dry weight) out of the Tailings Filter Plant. **Other Daily:** Additional inspections shall be completed during or immediately following significant rainfall[1] or seismic events. Detailed inspections shall include: -evidence of excessive ponding (lack of drainage) -evidence of slope sloughing -evidence of erosion on the dry stack tailings surface -evidence of surface cracking, movement, settlement -subsidence or sinkholes in the tailings -condition of perimeter ditches and flow-through drains -other unusual conditions. **Annually:** Compile an annual report of all compaction and daily inspection data.
Waste Rock Piles –	
Waste Rock Storage Area	**Monthly:** Visually inspect and take appropriate action if any evidence of: -stockpile deformation, including surface cracks, slides, sloughs, or differential settlement affecting slope stability. **Quarterly:** Visual inspection and evaluation of the Waste Rock Storage Area's overall integrity. **Other:** -Waste rock will be managed by monitoring PAG and non-acid generating (NAG) rock and placing in designated areas per the ADEQ approved Waste Rock Segregation Plan (WRSP). -Visually inspect the Waste Rock Storage Area after significant rainfall[1] events.

Leaching Facility -	
Heap Leach Pad	**Monthly:** Visually inspect and take appropriate action if any evidence of: -Heap Leach pile deformations, including surface cracks, slides, sloughs, or differential settlement affecting slope stability. **Quarterly:** Visual inspection and evaluation of the leach pad's overall integrity including a physical appraisal to ensure pad design capacity and safety criteria are not exceeded. Additionally, all conveyance ditches that convey solutions from or to the Heap Leach Pad must be inspected to evaluate the integrity of the structure over time. **Other:** Visually inspect the Heap Leach Pad after significant rainfall[1] events.

[1] A significant rain event shall be defined as 0.50 inches or greater of precipitation within a 24-hour period.

TABLE 4.2.2
PARAMETERS FOR AMBIENT GROUNDWATER MONITORING FOR POC WELLS

Depth to Water Level (feet)	Potassium [1]	Nickel [1]
Water Level Elevation (feet amsl)	Sodium [1]	Selenium [1]
Temperature – field (°F)	Magnesium [1]	Thallium [1]
pH – Field & Lab (S.U.)	Aluminum [1]	Zinc [1]
Field Specific Conductance (µmhos/cm)	Antimony [1]	Molybdenum [1]
Total Dissolved Solids – Lab	Arsenic [1]	Gross Alpha Particle Activity (pCi/L) [2]
Total Alkalinity	Barium [1]	Radium 226 (pCi/L)
Bicarbonate	Beryllium [1]	Radium 228 (pCi/L)
Carbonate	Cadmium [1]	Uranium-Isotopes(pCi/L) [3]
Hydroxide	Chromium [1]	Carbon Disulfide
Sulfate	Cobalt [1]	Calcium [1]
Chloride	Copper [1]	Mercury [1]
Fluoride	Lead [1]	Uranium (total)
Nitrate + Nitrite	Manganese [1]	Iron (total)

1 Metals must be analyzed as dissolved metals, unless otherwise specified.

2 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).

3 Uranium isotope activity results must be used for calculating Adjusted Gross Alpha.

All concentrations are in milligrams per liter (mg/L), unless otherwise specified.

Table 4.2.3
Quarterly Compliance Groundwater Monitoring

PARAMETER	POC-1		POC-2		POC-3		POC-4	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Depth to Water (in feet)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (in feet amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field pH (S.U.)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field Specific Conductance (µmhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Temperature – field (^{0}F)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cadmium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Copper	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Molybdenum	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate + Nitrite	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Sulfate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Dissolved Solids	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Selenium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Antimony	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Arsenic	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Lead	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.

Res. = Reserved: At the conclusion of eight (8) rounds of groundwater sampling, the permittee is required to submit an Ambient Groundwater Monitoring Report and permit amendment request to the GWS to propose AQLs and ALs based upon the ambient data. AQLs and ALs will be calculated based on the criteria in 2.5.3.4 and 2.5.3.5.

Monitor = Monitoring required, but no AQL or AL will be established in the permit.
AQL = Aquifer Quality Limit
AL = Alert Level

All concentrations are in milligrams per liter (mg/L) unless otherwise specified.

Metals will be analyzed as dissolved metals, unless otherwise specified.

Use Table 4.2.4 parameter list for biennial sampling events.

Table 4.2.3
Quarterly Compliance Groundwater Monitoring

PARAMETER	POC-5		POC-6		POC-7		POC-8	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Depth to Water (in feet)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (in feet amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field pH (S.U.)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field Specific Conductance (µmhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Temperature – field (^{0}F)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cadmium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Copper	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Molybdenum	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate + Nitrite	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Sulfate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Dissolved Solids	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Selenium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Antimony	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Arsenic	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Lead	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.

Res. = Reserved: At the conclusion of eight (8) rounds of groundwater sampling, the permittee is required to submit an Ambient Groundwater Monitoring Report and permit amendment request to the GWS to propose AQLs and ALs based upon the ambient data. AQLs and ALs will be calculated based on the criteria in 2.5.3.4 and 2.5.3.5.

Monitor = Monitoring required, but no AQL or AL will be established in the permit.
AQL = Aquifer Quality Limit
AL = Alert Level

All concentrations are in milligrams per liter (mg/L) unless otherwise specified.

Metals will be analyzed as dissolved metals, unless otherwise specified.

Use Table 4.2.4 parameter list for biennial sampling events.

Table 4.2.4
Biennial Compliance Groundwater Monitoring

PARAMETER	POC-1		POC-2		POC-3		POC-4	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Depth to Water (in feet)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (in feet amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field pH (S.U.)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field Specific Conductance (µmhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Temperature – Field (^{0}F)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Dissolved Solids	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Alkalinity	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Hydroxide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sulfate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Magnesium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate + Nitrite	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Fluoride	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Aluminum	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Antimony	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Arsenic	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Beryllium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Barium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Cadmium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Chromium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.

Table 4.2.4
Biennial Compliance Groundwater Monitoring

PARAMETER	POC-1		POC-2		POC-3		POC-4	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Lead	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Iron (total)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Mercury	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Nickel	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Selenium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Thallium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Copper	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cobalt	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Manganese	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Molybdenum	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Zinc	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Gross Alpha Particle Activity (pCi/L)	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Radium 226+Radium 228 (pCi/L)	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Uranium (total)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Uranium-isotopes (pCi/L) [1,2]	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbon Disulfide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor

Res. = Reserved- The permittee is required to submit an Ambient Groundwater Monitoring Report and permit amendment request pursuant to Section 3.0 to the GWS to propose AQLs and ALs based upon the ambient data. AQLs and ALs will be calculated based on the criteria in 2.5.3.4 and 2.5.3.5.

Monitor = Analysis required but no AQL or AL established in permit
AQL = Aquifer Quality Limit
AL = Alert Level

All concentrations in parts per million (ppm) unless otherwise specified
Metals will be analyzed as dissolved metals, unless otherwise specified.

1) 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).
2) Uranium isotope activity results must be used for calculating Adjusted Gross Alpha.
Use Table 4.2.3 parameters for quarterly sampling events between biennial events.

Table 4.2.4
Biennial Compliance Groundwater Monitoring

PARAMETER	POC-5		POC-6		POC-7		POC-8	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Depth to Water (in feet)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (in feet amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field pH (S.U.)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field Specific Conductance (µmhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Temperature – Field (^{0}F)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Dissolved Solids	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Alkalinity	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Hydroxide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sulfate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Magnesium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate + Nitrite	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Fluoride	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Aluminum	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Antimony	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Arsenic	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Beryllium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Barium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Cadmium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Chromium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.

Table 4.2.4
Biennial Compliance Groundwater Monitoring

PARAMETER	POC 5		POC 6		POC 7		POC 8	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Lead	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Iron (total)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Mercury	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Nickel	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Selenium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Thallium	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Copper	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cobalt	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Manganese	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Molybdenum	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Zinc	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Gross Alpha Particle Activity (pCi/L)	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Radium 226+Radium 228 (pCi/L)	Res.	Res.	Res.	Res.	Res.	Res.	Res.	Res.
Uranium (total)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Uranium-isotopes (pCi/L) [1,2]	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbon Disulfide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor

Res. = Reserved- The permittee is required to submit an Ambient Groundwater Monitoring Report and permit amendment request pursuant to Section 3.0 to the GWS to propose AQLs and ALs based upon the ambient data. AQLs and ALs will be calculated based on the criteria in 2.5.3.4 and 2.5.3.5.

Monitor = Analysis required but no AQL or AL established in permit
AQL = Aquifer Quality Limit
AL = Alert Level

All concentrations in parts per million (ppm) unless otherwise specified
Metals will be analyzed as dissolved metals, unless otherwise specified.

1) 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).
2) Uranium isotope activity results must be used for calculating Adjusted Gross Alpha.
Use Table 4.2.3 parameters for quarterly sampling events between biennial events.

TABLE 4.2.5
FREEBOARD REQUIREMENTS

Facility Name	Minimum Freeboard
Process Water Temporary Storage Pond	2 feet
Primary Settling Basin	2 feet
Raffinate Pond	3 feet
PLS Pond	3 feet
Stormwater Pond	3 feet

*- Freeboard incidents shall be reported as required in Section 2.6.2.1

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:

1. APP Application dated February 2009 and subsequent submittals.
2. Public Notice dated December 20, 2011
3. Public Hearing dated January 5, 2012
4. Responsiveness Summary dated April 2012.

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 upon the amount of daily influent or discharge of pollutants in gallons per day as established by A.R.S. § 49-242.

6.2 Duty to Comply [A.R.S. §§ 49-221 through 49-263]

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 at the applicable point of compliance for the facility. Where, at the time of issuance of the permit, an aquifer already exceeds an aquifer water quality standard 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(D), 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.
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. §§ 41-1009, 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 specified by this permit.

6.10 Permit Action: Amendment, Transfer, Suspension & 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, renewed, or revoked for cause, under the rules of the Department.

The permittee shall notify the Groundwater Section 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).

7.4 Solid Waste Provisions

Annual Registration Fee [A.R.S. § 49-242] The annual registration fee for the Non-Municipal Solid Waste Landfill is established by A.R.S. § 49-747(C)(7) and the landfill disposal fees are established by A.R.S. § 49-836 based on the amount of waste landfilled. The fees are payable to ADEQ each year.

The 2.6-acre Waste Management Area northwest of the Plant Site will contain a private non-municipal solid waste landfill with an approved waste footprint of 1.85 acres for the disposal of non-hazardous wastes generated on-site. The following wastes are acceptable for disposal:

a. Clean Fill: Clean rock (no acid-generating materials) and soil.
b. Construction and Demolition Debris: as defined in A.R.S. § 49-701(5) and (7).
c. Inert Material: as defined in A.R.S. § 49-701(15).
d. Landscape Rubble: as defined in A.R.S. § 49-701(17).
e. Vegetative Waste: as defined in A.R.S. § 49-701(36).
f. Rubbish: as defined in A.A.C. R18-13-302(H).
g. White Goods: Prior to disposal, chlorofluorocarbon (CFC)-containing appliances will conform to the requirements of Title 40 of CFR Part 82 Subparts E and F.
h. Empty metal containers.
i. Dry paper and cardboard.
j. Plastic containers and products.

k. Glass.

This facility shall not receive any wastes generated off-site and shall conform to the standards of a non-municipal solid waste landfill facility. Municipal solid waste, tires, batteries, septage, regulated friable asbestos containing material, and sewage sludge are prohibited for disposal at the landfill. The excavation depth will range between 5 and 43 feet deep with a minimum excavation elevation of approximately 5,190 feet above mean sea level (amsl) at the toe of the northeastern fill slope; the lowest elevation of waste placement will be at approximately 5,234 feet amsl. The maximum height of the landfill at final closure shall be no more than 5,280 feet amsl.

7.4.1 Methane Gas Monitoring – Operational and Closure/Post-Closure

1. Routine methane gas monitoring shall be conducted quarterly during the operational lifetime and post-closure period of the non-municipal solid waste landfill. The Director may allow the frequency of the post-closure monitoring program to be decreased to a semi-annual or annual basis.
2. Methane gas monitoring shall be conducted in accordance with the Methane Monitoring Plan dated August, 2011.
3. The permittee shall operate and maintain methane gas monitoring equipment to ensure that the standards of 40 CFR § 257.3-8 are met. Such routine methane monitoring shall include monitoring gas probes GM-1, GM-2, GM-3 and GM-4, to be installed around the landfill footprint as shown on Figure 2 of the August, 2011 Methane Monitoring Plan.
    a. The permittee shall begin implementation of the Methane Monitoring Plan following the disposal of 2,500 cubic yards of waste material in the landfill.
    b. A certification report shall be submitted to the ADEQ Solid Waste Plan Review Unit (SWPRU) containing the following: record drawing showing the locations and identifications of all monitoring punch bars, geologic logs from installation of each punch bar, depth and length of screened intervals for each punch bar, and initial gas monitoring results.
4. The permittee must ensure, in accordance with 40 CFR § 257.3-8, that the concentration of explosive gases does not exceed:

    a. Twenty-five percent (25%) of the lower explosive limit for the gases in facility structures, (excluding gas control or recovery system components); and
    b. The lower explosive limit for the gases at the property boundary.

5. If a methane gas exceedance occurs at facility structures or at the facility property boundaries, as described above, the permittee shall immediately report the exceedance to SWPRU as specified in Section 2.7.5.

7.4.2 Gas Monitoring Protocols

All gas measurements shall be analyzed using a real-time gas monitor that is calibrated each day prior to use, according to the manufacturer's specifications. Each gas monitoring well will be measured by inserting the sample tube into the riser and recording the highest reading on the Methane Monitoring Report Form. Measurements shall not be made on days of high wind or rain.

7.4.3 Contingency Actions for Methane Gas Exceedance of Lower Explosive Limit (LEL)

In the event that methane gas concentrations equal or exceed the LEL, the following contingency actions shall be implemented:

1. Take all necessary steps to ensure protection of human health and the environment.
2. Notify the SWPRU (at 602-771-4110) within 48 hours. Within seven (7) days, the monitoring results and a description of the contingency steps to be taken to protect human health shall be submitted to the SWPRU.

3. Increase monitoring frequency of all monitoring locations from quarterly to weekly.
4. Continue weekly monitoring until such time that methane concentrations in all punch bar locations are below the LEL for three (3) consecutive monitoring events, over a period of two (2) weeks.
5. If methane gas exceedances continue, install monitoring punch bar(s) in the vicinity of the methane exceedances. Punch bars shall be installed on a 50-foot grid until the lateral extent of migrating gas has been determined.
6. Within 30 days of detection, submit a written corrective action plan to the SWPRU for approval.
7. Upon approval by ADEQ, the permittee shall implement the corrective action plan within 30 days, or as soon as practical. Records shall be maintained of all corrective action conducted by the permittee.

7.4.4 Gas Monitoring Well Replacement

In the event that one, or more, of the designated gas monitoring wells should become unusable or inaccessible due to damage, or any other event, a replacement gas monitoring well shall be constructed and installed within 60 days upon approval by the SWPRU.

TABLE 7.4.1
PERMITTED SOLID WASTE FACILITY AND BADCT

Facility Name	Latitude/Longitude	Facility BADCT
Waste Management Area (Non-Municipal Solid Waste Landfill)	31° 50' 8" N/ 110° 44' 47" W	The liner system consists of 24-inch thick re-compacted clay layer with a permeability of less than or equal to 1×10^{-6} cm/sec. The final cover/cap shall consist of a 24-inch thick soil layer. The final cap system shall be constructed as follows (from bottom to top): a 6-inch intermediate cover/foundation layer of soil, an 18-inch layer of compacted soil with a permeability of 1×10^{-5} cm/sec, and a 6-inch evapotranspiration vegetative cover.

TABLE 7.4.2
REQUIRED INSPECTIONS AND OPERATIONAL MONITORING

SOLID WASTE LANDFILL		
Parameter	**Performance Level**	**Inspection Frequency**
Perimeter channels	No visible erosion that would affect the integrity of the structure, no evidence of seepage, cracking, piping, sloughing, or sliding.	Quarterly and after every significant rain event[1]
Drainage control structure (down drain structures and riprap channels) integrity	No visible erosion that would affect the integrity of the structure, no evidence of seepage, cracking, piping, sloughing, or sliding.	Quarterly and after every significant rain event[1]
Operating area ponding due to rainfall event.	Operating area graded to minimize the amount of standing water.	After every significant rain event[1]
Public access control	Maintenance, repair and replacement, as necessary, of fence and all signage.	Quarterly and as needed basis
Gas monitoring probe integrity and operability	No visible evidence of damage or loss of operability.	Quarterly

[1] A significant rain event shall be defined as 0.50 inches or greater of precipitation within a 24-hour period.

TABLE 7.4.3
METHANE GAS MONITORING

Specific Reference	Frequency
Section 7.4.1	Quarterly