STATE OF ARIZONA
AQUIFER PROTECTION PERMIT NO. P-100193
PLACE ID 2512, LTF 90007
SIGNIFICANT AMENDMENT

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Articles 1, 2, and 3, Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 1 and 2, A.A.C. Title 18, Chapter 11, Article 4 and amendments thereto, and the conditions set forth in this permit, the Arizona Department of Environmental Quality (ADEQ) hereby authorizes Freeport-McMoRan Morenci Inc. to operate the discharging facilities located at the Morenci copper mine located near Morenci, Arizona, Greenlee County, over groundwater of the Gila River groundwater basin, in all or portions of Sections 21, 22, 23, 26, 27, 28, and 32 - 35 in Township 3 South, Range 29 East; Sections 1 - 36 in Township 4 South, Range 29 East, and Sections 1 - 12 and 14 - 17 in Township 5 South, Range 29 East of the Gila and Salt River Base Line and Meridian.

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

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

1.1. PERMITTEE INFORMATION

Facility Name:	Morenci Mine
Facility Address:	4521 U.S. Highway 191, Morenci, Arizona 85540
County:	Greenlee
Annual Registration Fee Flow Rate:	10,000,000 gallons per day (gpd) or more
Permittee:	Freeport-McMoRan Morenci Inc.
Permittee Address:	4521 U.S. Highway 191, Morenci, Arizona 85540
Facility Contact:	Brent Fletcher
Emergency Phone No.:	928-865-6484
Latitude/Longitude:	33° 05' 15" N/109° 22' 00" W
Legal Description:	Sections 21, 22, 23, 26, 27, 28, and 32 - 35 in Township 3 South, Range 29 East; Sections 1 - 36 in Township 4 South, Range 29 East, and Sections 1 - 12 and 14 - 17 in Township 5 South, Range 29 East of the Gila and Salt River Base Line and Meridian.

1.2. AUTHORIZING SIGNATURE

_____

Randall Matas, Deputy Director
Water Quality Division
Arizona Department of Environmental Quality

Signed this _____ day of _____, 2022

THIS AMENDED PERMIT SUPERCEDES ALL PREVIOUS PERMITS

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2.0 SPECIFIC CONDITIONS

[A.R.S. §§ 49-203(4), 49-241(A)]

2.1. FACILITY / SITE DESCRIPTION

[A.R.S. § 49-243(K)(8)]

The Morenci Mining District is located in Greenlee County, Arizona, near the towns of Clifton and Morenci. The active mining operation is owned and operated by Freeport-McMoRan Morenci Inc. (FMMI) and encompasses an area of approximately 72 square miles. FMMI produces copper concentrate and cathode copper through mining, milling, concentrate leach process, and solution extraction/electrowinning (SX/EW). Molybdenum concentrate and minor amounts of gold and silver are produced as by-products. District facilities comprise existing and planned mining areas within the open pit, various development rock and leach stockpiles, numerous solution and stormwater impoundments, five tailing impoundments, two concentrators, several SX/EW facilities, and other ancillary facilities associated with copper mining.

The site includes the following permitted discharging facilities:

Table 1: DISCHARGING FACILITIES

Facility No.	Facility Name	Latitude	Longitude
1	Southwest 1 Tailing Dam	33° 0' 50.08" N	109° 22' 17.26" W
2	Southwest 2 Tailing Dam	32° 59' 47.36" N	109° 22' 7.77" W
3	Southwest 1 Tailing Dam Expansion	33° 0' 45.14" N	109° 22' 49.8" W
4	Silver Basin Tailing Dam Complex	33° 1' 33.02" N	109° 21' 41.05" W
5	Silver Basin Tailing Dam Expansion	33° 0' 59.25" N	109° 21' 29.07" W
6	West Tailing Dam Complex	33° 2' 11.1" N	109° 20' 23.64" W
7	East Tailing Dam Complex	33° 1' 38.38" N	109° 19' 30.34" W
8	West/East Tailing Dam Expansion	33° 1' 26.77" N	109° 20' 2.56" W
153	Tailing Stormwater Retention Dam 1X	33° 1' 9.72" N	109° 18' 52.49" W
10	Tailing Stormwater Retention Dam 2	33° 1' 2.7" N	109° 19' 18.17" W
13	Tailing Stormwater Retention Dam 3	33° 1' 4.28" N	109° 19' 42.34" W
154	Tailing Stormwater Retention Dam 4X	33° 0' 57.98" N	109° 20' 3.69" W
21	Tailing Stormwater Retention Dam 5	33° 0' 25" N	109° 20' 21" W
27	Tailing Stormwater Retention Dam 5F	33° 0' 31.91" N	109° 20' 41.23" W
28	Tailing Stormwater Retention Dam 5G	33° 0' 36.42" N	109° 20' 45.75" W
29	Tailing Stormwater Retention Dam 6	33° 0' 21.66" N	109° 20' 50.98" W
30	Tailing Stormwater Retention Dam 7	32° 59' 57.7" N	109° 21' 7.72" W
31	Tailing Stormwater Retention Dam 7A	33° 0' 11" N	109° 21' 10" W
32	Tailing Stormwater Retention Dam 7B	33° 0' 21.66" N	109° 21' 16.26" W
120	Tailing Stormwater Retention Dam 7C	33° 0' 22.16" N	109° 21' 11.41" W
33	Tailing Stormwater Retention Dam 8	32° 59' 58" N	109° 21' 22.18" W
34	Tailing Stormwater Retention Dam 9	32° 59' 57.41" N	109° 21' 29.08" W
35	Tailing Stormwater Retention Dam 9A	33° 0' 9.96" N	109° 21' 46.19" W
36	Tailing Stormwater Retention Dam 10	32° 59' 39" N	109° 21' 33" W
37	Tailing Stormwater Retention Dam 10A	33° 0' 3" N	109° 22' 0.88" W
38	Tailing Stormwater Retention Dam 11	32° 59' 38" N	109° 21' 55.72" W
39	Industrial Drain Overflow Pond (Reed Lake)	33° 3' 30.82" N	109° 20' 15.36" W
40	Bat Canyon Safety Dam 1	33° 1' 43.29" N	109° 23' 15.9" W
41	Lower Chase Creek Dam	33° 4' 11" N	109° 19' 50" W
42	Rocky Gulch Dam	33° 6' 30" N	109° 20' 4" W
43	Gold Gulch Dam	33° 4' 53.29" N	109° 23' 15.97" W
44	Columbine Reservoir	33° 3' 10" N	109° 20' 7" W
45	Horseshoe Overflow Pond	33° 4' 16" N	109° 19' 57" W
46	Stargo Overflow Pond	33° 2' 54.33" N	109° 20' 52.61" W
47	Pond 800 Feet SW of 4500 Precipitation Plant	33° 3' 41" N	109° 20' 58" W

Table 1: DISCHARGING FACILITIES			
Facility No.	**Facility Name**	**Latitude**	**Longitude**
48	Central SX Plant PLS Pond	33° 3' 40" N	109° 19' 51" W
49	Central SX Plant Raffinate Pond	33° 3' 46" N	109° 19' 51" W
50	Modoc SX Plant PLS Pond	33° 4' 28" N	109° 20' 54" W
51	Modoc SX Plant Raffinate Pond	33° 4' 26" N	109° 20' 44" W
52	Dam BC-1	33° 2' 10.82" N	109° 23' 20.99" W
53	Dam BC-2	33° 2' 6.24" N	109° 23' 19.08" W
54	Dam BC-3	33° 2' 5.73" N	109° 23' 18.15" W
55	Dam BC-4	33° 2' 3.82" N	109° 23' 17.83" W
56	Dam BC-5	33° 1' 45.35" N	109° 23' 13.43" W
57	Horseshoe Sump	33° 4' 20.9" N	109° 20' 1.16" W
58	Stargo Sump	33° 2' 53.3" N	109° 20' 59.88" W
59	5X Sump	33° 2' 36.34" N	109° 21' 7.39" W
60	Dam BC-6	33° 1' 39.22" N	109° 23' 0.94" W
61	Dam BC-7	33° 1' 37.14" N	109° 22' 54.54" W
62	27 MM Sump	33° 1' 42.95" N	109° 22' 12.97" W
63	Dam BC-8	33° 1' 43" N	109° 22' 35" W
65	29 MM Sump	33° 1' 41" N	109° 22' 47" W
66	23/25 MM Sump	33° 2' 8" N	109° 21' 43" W
68	Metcalf SX Plant PLS Pond	33° 6' 51.62" N	109° 22' 10.58" W
69	Metcalf SX Plant Raffinate Pond	33° 6' 52.56" N	109° 22' 6.38" W
70	King/Placer Diversion	33° 7' 3.31" N	109° 21' 16.51" W
71	Northwest Coronado Diversion	33° 6' 54.84" N	109° 23' 17.11" W
72	Upper Chase Creek Diversion	33° 8' 15" N	109° 22' 9" W
73	Garfield Diversion	33° 8' 19" N	109° 21' 37" W
74	Coronado Diversion	33° 6' 41.78" N	109° 23' 18.18" W
75	Santa Rosa Diversion	33° 7' 5.4" N	109° 23' 13.57" W
76	In-pit Sumps	See Table 6	See Table 6
77	Rock House Canyon / Lower Chase Creek Stockpile	33° 5' 26.55" N	109° 20' 28.99" W
80	Southwest Stockpile	33° 2' 23.52" N	109° 22' 23.7" W
81	Southwest Stockpile Expansion	33° 3' 37.14" N	109° 21' 29.62" W
82	Lone Star Stockpile	33° 4' 7.56" N	109° 22' 16.34" W
83	Medler Stockpile	33° 5' 27.41" N	109° 21' 46.24" W
84	Copper Mountain Stockpile	33° 5' 0.0" N	109° 22' 1" W
85	Santa Rosa Stockpile	33° 7' 34.61" N	109° 23' 23.9" W
86	American Mountain Stockpile	33° 5' 32.47" N	109° 22' 22.51" W
87	Placer Stockpile	33° 7' 33" N	109° 20' 26" W
88	King Stockpile	33° 7' 47" N	109° 20' 47" W
89	King/Placer Stockpile Expansion	33° 8' 39" N	109° 20' 27" W
90	Coronado Stockpile	33° 6' 44" N	109° 22' 30" W
91	Coronado Stockpile Expansion	33° 6' 30" N	109° 23' 5" W
92	Queen Hill Stockpile	33° 5' 57.09" N	109° 22' 20.69" W
93	Upper Chase Creek Stockpile	33° 7' 19" N	109° 22' 12" W
94	Upper Chase Creek Stockpile Expansion	33° 7' 19" N	109° 22' 12" W
95	Garfield Stockpile	33° 8' 34" N	109° 21' 43" W
96	Metcalf In-pit Stockpiles	33° 6' 45" N	109° 21' 20" W
97	Morenci In-pit Stockpile Expansion	33° 4' 43" N	109° 22' 22" W
98	Northwest Coronado Stockpile	33° 7' 7.32" N	109° 23' 50.28" W
99A	Morenci Wastewater Treatment Plant (WWTP)	33° 1' 38" N	109° 18' 40" W
101	New Vehicle Wash – ATV Shop Vehicle Wash	33° 4' 33.01" N	109° 21' 38.87" W
102	Metcalf Small Vehicle Wash	33° 6' 24" N	109° 21' 45" W

Table 1: DISCHARGING FACILITIES			
Facility No.	**Facility Name**	**Latitude**	**Longitude**
103	Heavy Duty Truck Wash	33° 6' 20.44" N	109° 21' 53.72" W
104	New Vehicle Washes – Within the Hydrologic Sink	To be provided	To be provided
105	RW Fuel Dock Small Vehicle Wash	33° 3' 45.05" N	109° 20' 21.04" W
106	Surface Dept. Vehicle Wash	33° 3' 38.98" N	109° 20' 26.7" W
107	Mine Gate Lube Shop Vehicle Wash	33° 4' 45.6" N	109° 20' 47.12" W
108	Concentrate Load-out Yard at the Bedding Plant	33° 4' 2" N	109° 20' 23" W
109	Pinkard Gulch Impoundment	33° 5' 3.82" N	109° 23' 51.51" W
110	West Gold Gulch Impoundment	33° 4' 54.59" N	109° 23' 37.70" W
111	East Gold Gulch Impoundment	33° 4' 35.19" N	109° 23' 6.13" W
112	Highway Relocation Stockpile Impoundment	33° 4' 27.79" N	109° 22' 54.84" W
113	Vehicle Wash – SX Pipe Yard	33° 4' 35" N	109° 21' 38" W
114	Central SX/EW Plant Vehicle Wash	33° 3' 26" N	109° 19' 30" W
118	4500 Precipitation Plant	33° 3' 46.9" N	109° 20' 53.66" W
119	Southwest Precipitation Plant	33° 2' 10.88" N	109° 21' 9.84" W
121	Tailing Stormwater Retention Dam 12X	33° 1' 2.47" N	109° 19' 25.32" W
122	Tailing Stormwater Retention Dam WFT 1	33° 0' 58" N	109° 18' 59" W
123	Tailing Stormwater Retention Dam WFT 10	32° 59' 57" N	109° 21' 51" W
150	Silver Basin Leach Stockpile	33° 3' 35.94" N	109° 22' 19.05" W
151	Silver Basin PLS Pond 1/2	33° 3' 17" N	109° 22' 19" W
152	Silver Basin NSI 1/2	33° 3' 17" N	109° 22' 27" W
155	SB PLS Pond	33° 2' 41" N	109° 21' 56" W
156	Morenci Canyon Stockpile	33° 4' 30.09" N	109° 21' 34.04" W
157	MRC PLS Pond	33° 4' 12" N	109° 21' 1" W
158	MRC Process Pond	33° 3' 47" N	109° 20' 55" W
159	Producer Leach Stockpile	33° 4' 47" N	109° 23' 33" W
160	Producer PLS Impoundment	33° 4' 14" N	109° 23' 57" W
161	Producer Process Water Impoundment	33° 4' 8" N	109° 24' 5" W

Note: Facility Nos. 124 through 149, which previously represented the Tailing Stormwater Ponds (TSPs) and Seepage Collection Ponds (SCPs), have been removed from the list of facilities. Several TSPs and SCPs have been removed, those that remain are identified under the BADCT description for Tailings Impoundments in Table 6 Permitted Facilities and BADCT, and also in the log book maintained by FMMI.

2.1.1. Annual Registration Fee

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

The annual registration fee for this permit is payable to ADEQ each year. The annual registration fee flow rate is established by the permitted flow rate identified in Section 1.1 Permittee Information. If the facility is not constructed or is incapable of discharge, the permittee may be eligible for reduced fees pursuant to A.A.C. R18-14-104(A), Table 6 Permitted Facilities and BADCT. Send all correspondence requesting reduced fees to the Groundwater Protection Value Stream. Please reference the permit number, LTF number, and the reason for requesting reduced fees under this rule.

2.1.2. Financial Capability

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

The permittee has demonstrated financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The permittee shall maintain financial capability throughout the life of the facility. The Groundwater Protection Value Stream approved the closure cost estimates of $271,864,224 and post-closure cost of $86,396,131 for a total of $358,260,355, and a Net Present Value (NPV) cost of $194,406,115.

The Groundwater Protection Value Stream also approved the closure of $7,977,342 and post-closure costs of $879,000 for facilities permitted under LTF No. 74213 for a total of $8,856,342. The permittee provided financial capability for the above amount using a corporate guarantee as per A.A.C. R18-9-A203(C)(8).

2.2. BEST AVAILABLE DEMONSTRATED CONTROL TECHNOLOGY (BADCT)

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

The permittee is authorized to operate the facilities listed in Table 6 Permitted Facilities and BADCT. The Morenci District facilities shall rely on the demonstrated passive containment capture zone (PCCZ), operational, hydrologic, and engineering controls to demonstrate BADCT. The facilities that are located within, and rely in part, on the PCCZ for BADCT demonstration are noted in Table 6.

Facility design, construction, and operational details are contained in the APP application, dated March 28, 1996, and subsequent submittals and correspondence referenced in Section 5.0 References and Pertinent Information of this APP.

All of the facilities listed in Table 2 employ BADCT requirements as set forth in A.R.S. § 49-243(B)(1). The primary discharge control technologies for each discharging facility are presented in Table 6. Operational requirements for operational aspects of BADCT are presented in Table 7 Required Inspections and Operational Monitoring. An additional and significant component of BADCT employed at the Morenci mine is the hydrologic capture of the groundwater in the general location of the Morenci open pit mining areas. A hydrologic "sink" has been created and shall be monitored in accordance with Table 16 Hydrologic Sink Verification Monitoring Parameters and Table 17 In-Pit Sump Exceedance Levels.

2.2.1. Engineering Design

Facility design, construction, and operational details are contained in the APP application dated March 28, 1996, and subsequent submittals as part of APP amendment applications.

2.2.2. Site-Specific Characteristics

Passive containment capture zone has been demonstrated as described in Section 2.5.1 Passive Containment Monitoring.

2.2.3. Pre-Operational Requirements

Not applicable.

2.2.4. Operational Requirements

The operational requirements for the permitted facilities listed in Table 6 Permitted Facilities and BADCT shall be performed at the frequencies indicated in Table 7 Required Inspections and Operational Monitoring, and recorded in a log as required by Section 2.7.2 Operation Inspection / Log Book Recordkeeping.

Operational monitoring for the Lower Chase Creek facilities is described in Table 7 and shall include periodic groundwater monitoring as described in Section 2.5.2 Operational Monitoring for Lower Chase Creek Facilities.

If damage is identified during an inspection that could cause or contribute to a discharge, proper repairs shall be promptly performed.

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 in Table 6 Permitted Facilities and BADCT 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. Liner failure in a single-lined impoundment is any condition that would result in leakage exceeding 550 gallons per day per acre. The discharge limitations in this section are not applicable to any discharge caused by precipitation in excess of a single 100-year/24-hour storm event or process overflow during a power outage exceeding 24 hours in duration.

2.3.1. Process Solution Ponds

The process solutions ponds shall only receive process solutions, process water, discharges from process or other upsets, and stormwater.

2.3.2. Non-stormwater Impoundments

The permitted non-stormwater impoundments shall only receive stormwater runoff and run-on, and process solutions as a result of storm events or process upset events.

2.4. POINT OF COMPLIANCE (POC)

[A.R.S. § 49-244]

Points of Compliance (POC) wells are listed in Table 9 Monitoring Points. Monitoring requirements for each POC well are listed in Section 4.2, Table 11 Quarterly Groundwater Compliance Monitoring for POC Wells , and Table 12 Biennial Groundwater Compliance Monitoring for Tailing Impoundment POC Wells , Table 13 Biennial Groundwater Compliance Monitoring for Chase Creek POC Wells , and Table 14 Biennial Groundwater Compliance Monitoring for all Other POC Wells. The Director may amend this permit to designate additional POCs, if information on groundwater gradients or groundwater usage indicates the need.

2.5. MONITORING REQUIREMENTS

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

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

2.5.1. Passive Containment Monitoring

The permittee has satisfactorily predicted that the open-pit mine creates a “passive containment capture zone”, as per A.R.S. § 49-243(G)(1) and demonstrated in their initial Passive Containment Capture Zone Demonstration. The permittee shall submit, every 5 years based on the compliance schedule in Section 3.0, a passive containment capture zone demonstration per Section 2.7.4.1 Passive Containment Capture Zone Demonstration Report. The permittee is authorized to reconfigure stockpiles and leach collection within the PCCZ. The permittee shall amend this permit if a change in the configuration of the PCCZ results in a discharging facility no longer being located within the capture zone created by the PCCZ. Per rule R18-9-A211(B)(9).

A list of required data that shall be used in the model recalibration is presented in Table 15 List of Monitoring Data for Passive Containment Demonstration. The list includes groundwater levels, meteorological data, dewatering rates, and parameters from the Santa Rosa Stockpile to be used for a water balance. Hourly meteorological data shall be collected at both the southern Morenci weather station located at Latitude North 33º 3' 9.67" and Longitude West 109º 19' 56.68" and the northern Morenci weather station Latitude North 33º 06' 07.42" and Longitude West 109º 22' 37.56".

Groundwater level and groundwater quality monitoring requirements that shall be conducted in support of the groundwater model are discussed below in Section 2.5.3 Groundwater Monitoring and Sampling Protocols.

2.5.1.1. Groundwater Monitoring of Hydrologic Sink

The permittee shall collect static groundwater levels and groundwater quality samples from the specified wells listed in Table 9 Monitoring Points to evaluate the status of the hydrologic sink. The information shall be used to create a potentiometric map and report that shall be submitted to the APP Program for evaluation and approval. The first report and map were submitted March 31, 2003, as part of the biennial report required in Section 2.7.4 Operational, Other or Miscellaneous Reporting. Subsequent reports shall be due by the end of the same month every 2 years thereafter.

2.5.1.1.1. Groundwater Level Monitoring of Hydrologic Sink

Static groundwater levels shall be collected quarterly from the 31 piezometers listed in Table 9 Monitoring Points. For each quarter, all water levels shall be collected within a 30-day time period. Quarterly groundwater levels shall be recorded in the log described in Section 2.7.2 Operation Inspection / Log Book Recordkeeping of this permit. The water levels shall be used to create a potentiometric map and summary report that shall be submitted to the APP Program, as discussed in Section 2.5.1 Passive Containment Monitoring.

In the event that one or more of the designated monitoring piezometers in Table 9 should become inaccessible or be destroyed, a replacement monitoring piezometer shall be constructed and installed upon approval by ADEQ. The construction and installation of a replacement piezometer, or the decision by ADEQ to delete a piezometer from the monitoring list rather than replacing the piezometer, shall constitute a minor amendment to this permit.

2.5.1.1.2. Groundwater Quality Monitoring of Hydrologic Sink

The permittee shall conduct groundwater quality sampling at piezometer GG-15 annually. A summary and discussion of the annual groundwater quality results from piezometer GG-15 shall be included in the required biennial report described in Section 2.5.1.1 Groundwater Monitoring of Hydrologic Sink.

In the event of an exceedance of an Action Level, the permittee shall notify ADEQ within 30 days of becoming aware of the exceedance and shall discuss the exceedance and its effect on the status of the hydrologic sink in the required biennial report described in Section 2.5.1.1 Groundwater Monitoring of Hydrologic Sink. In the event that GG-15 should become unusable or inaccessible due to damage, a decrease in water levels, or any other event, a replacement well shall be constructed and installed upon approval by ADEQ. The Action Levels calculated for the original well shall apply to the replacement well. The construction and installation of a replacement well for GG-15 shall constitute a minor modification or amendment to this permit.

2.5.2. Operational Monitoring for Lower Chase Creek Facilities

For the purpose of monitoring the efficacy of interceptor wells in the Lower Chase Creek area, three POC monitor wells (CC-44, CC-46, and CC-53) shall be used as operational monitoring points in addition to their usage and requirements as POC wells. As designated POC wells, wells CC-44, CC-46, and CC-53 shall be monitored in accordance with Section 2.5.3 Groundwater Monitoring and Sampling Protocols of this APP. The parameters to be used for monitoring the operational efficiency of the interceptor wells are field pH, total dissolved solids, and sulfate. These three parameters are included in the list of POC monitoring parameters; therefore, separate sampling and analyses from wells CC-44, CC-46, and CC-53 as required by this section is not necessary. The permittee may use the analytical results for field pH, total dissolved solids, and sulfate obtained from the required periodic monitoring of POC wells for the purposes of this section.

In the event of an exceedance of an Action Level (see Table 18 Action Levels for Operational Monitoring Lower Chase Creek Facilities – POC Wells CC-44, CC-46, AND CC-53), the permittee shall initiate the actions described in Section 2.6.2.4 Exceeding of Alert Levels Set for Discharge Monitoring of this permit.

2.5.3. Groundwater Monitoring and Sampling Protocols

For all sampling methods, static water levels shall be measured and recorded prior to sampling.

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

As an alternative method for sampling, the permittee may conduct sampling using a low-flow purging method in accordance with accepted EPA, USGS, or DOD protocols. The well must be purged until indicator parameters stabilize. Indicator parameters shall include dissolved oxygen, turbidity, pH, temperature, and conductivity.

2.5.3.1. 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 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 50 feet (ft) 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; however, if the permittee can provide a technical demonstration that the original ALs and AQLs are not appropriate for the replacement well, ADEQ may review and consider recalculation of the ALs and AQLs. Otherwise, the ALs and/or AQLs shall be set following the provisions in Section 2.5.3.3 Alert Levels for POC Wells and 2.5.3.4 Aquifer Quality Limits for POC Wells.

2.5.3.2. Ambient Groundwater Quality Monitoring for POC Wells

In accordance with compliance schedule item (CSI) No. 11 in Section 3.0 Compliance Schedule, the permittee shall complete eight quarterly rounds of ambient groundwater monitoring for POC wells GG-30, GG32, GG-33, and GG-34 for all constituents listed in Table 10 Quarterly Ambient Groundwater Monitoring.

2.5.3.3. Alert Levels for POC Wells

The 23 monitor wells designated as POC wells are listed in Table 9 Monitoring Points. At the time of permit issuance, the permittee has collected 8 quarters of groundwater samples from 19 of the designated POC wells, and the ALs and AQLs have been calculated as listed in Table 11 Quarterly Groundwater Compliance Monitoring for POC Wells, Table 12 – Biennial Groundwater Compliance Monitoring for Tailing Impoundment POC Wells, Table 13 – Biennial Groundwater Compliance Monitoring for Chase Creek POC Wells, and Table 14 – Biennial Groundwater Compliance Monitoring for All Other POC Wells.

ALs shall be calculated for all contaminants with an established numeric AWQS for each new POC well (POC numbers 21-24) as per compliance schedule item (CSI) No 12. ALs shall be calculated for all contaminants with an established numeric AWQS, as described below.

As per CSI No. 12, following receipt of the laboratory analyses for the final month of the ambient groundwater monitoring period for each POC well referenced in Section 4.2 Compliance or Operational Monitoring, Table 11 Quarterly Groundwater Compliance Monitoring for POC Wells and Table 14

Biennial Groundwater Compliance Monitoring for all Other POC Wells, the permittee shall submit the ambient groundwater data in tabulated form to the Groundwater Protection Value Stream for review. Copies of all laboratory analytical reports, field notes, and the Quality Assurance/Quality Control (QA/QC) procedures used in collection and analyses of the samples for all parameters listed in Section 4.2, Tables 11 and 14, to be established for each POC well, shall be submitted to the Groundwater Protection Value Stream. The permittee may submit a report with the calculations for each AL and AQL included in the permit for review and approval by ADEQ, or the permittee may defer calculation of the ALs and AQLs by the Groundwater Protection Value Stream. The ALs shall be established and calculated by the following formula, or another valid statistical method submitted to Groundwater Protection Value Stream in writing and approved for this permit by the Groundwater Protection Value Stream:

$AL = M + KS$

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

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

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

2.5.3.4. Aquifer Quality Limits for POC Wells

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

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

ADEQ reserves the right to set ALs or AQLs, where applicable, for those analytes that may have a numeric standard adopted by rule at a future time.

2.5.3.5. Compliance Groundwater Quality Monitoring for POC Wells

Quarterly compliance groundwater monitoring in each POC well shall commence within the first calendar quarter after completion of the ambient groundwater sampling period. For quarterly compliance monitoring, the permittee shall analyze groundwater samples for the parameters listed in Section 4.2 Compliance or Operational Monitoring, Table 11 Quarterly Groundwater Compliance Monitoring for POC Wells. In addition to quarterly compliance groundwater monitoring, every two years (biennial) the permittee shall analyze samples from the POC wells for an expanded list of parameters. For the biennial

monitoring events in POC wells, the parameters listed in Section 4.2 Compliance or Operational Monitoring, Table 12 Biennial Groundwater Compliance Monitoring for Tailing Impoundment POC Wells, Table 13 Biennial Groundwater Compliance Monitoring for Chase Creek POC Wells, and Table 14 Biennial Groundwater Compliance Monitoring for all Other POC Wells shall be analyzed. The first biennial sampling event for the new POC wells shall commence concurrently with the next regularly scheduled biennial sampling event for the existing POC wells and shall replace the regularly scheduled quarterly sampling event. Biennial sampling shall occur every two years thereafter.

2.5.4. Routine Discharge Monitoring for the Wastewater Treatment Plant

Routine discharge monitoring of the WWTP shall be conducted in accordance with Section 4.2 Compliance or Operational Monitoring, and Table 19 Morenci WWTP – Routine Discharge Monitoring.

2.5.5. Other Monitor Wells and Piezometers

Numerous groundwater monitoring wells and piezometers exist in the Morenci District, and are listed in the Application. To the extent practicable, these wells and piezometers should be maintained so that they are available for use for future analyses or measurements. The permittee shall notify the Groundwater Protection Value Stream prior to abandonment of any of these wells that have been registered with the Arizona Department of Water Resources. This permit does not require that the wells be maintained in operable condition, nor does it require replacement of the well or equipment should it become inoperable. Failure of the Permittee to notify ADEQ prior to abandonment of the referenced wells shall not constitute a violation of this permit.

An updated table of all monitor wells and piezometers in the Morenci District shall be included in each biennial report (see Section 2.7.4 Operational, Other or Miscellaneous Reporting).

2.5.6. Analytical Methodology

All samples collected for compliance monitoring shall be analyzed using Arizona state-approved methods. If no state-approved method exists, then any appropriate EPA-approved method shall be used. Regardless of the method used, the detection limits must be sufficient to determine compliance with the regulatory limits of the parameters specified in this permit. If all methods have detection limits higher than the applicable limit, the permittee shall follow the applicable contingency requirements of Section **Error! Reference source not found.** Contingency Plan Requirements and may propose "other actions" including amending the permit to set higher limits. Analyses shall be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification unless exempted under A.R.S. § 36-495.02. For results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods. A list of Arizona state-certified laboratories can be obtained at the address below:

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

2.5.7. Installation and Maintenance of Monitoring Equipment

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

2.6. CONTINGENCY PLAN REQUIREMENTS

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

2.6.1. General Contingency Plan Requirements

At least one copy of this permit and the approved contingency and emergency response plan submitted as CSI No. 7 under LTF 88406 dated October 2021, shall be maintained at the location where day-to-day decisions regarding the operation of the facility are made. The permittee shall be aware of and follow the contingency and emergency plans.

Any AL exceedance, or violation of an AQL, discharge limit (DL), or other permit condition shall be reported to ADEQ following the reporting requirements in Section 2.7.3 Permit Violation and Alert Level Status Reporting, unless more specific reporting requirements are set forth in Sections 2.6.2 through 2.6.5 (subsections of Contingency Plan Requirements).

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

2.6.2. Exceeding of Alert Levels and Performance Levels

2.6.2.1. Exceeding of Performance Levels Set for Operational Conditions

2.6.2.1.1. Performance Levels Set for Freeboard

In the event that freeboard performance levels required by Section 4.2 Compliance or Operational Monitoring, Table 7 Required Inspections and Operational Monitoring in a surface impoundment are not maintained, the permittee shall:

1. As soon as practicable, cease or reduce discharging to the impoundment to prevent overtopping. Remove and properly dispose or recycle to other operations the excess fluid in the reservoir until the water level is restored at or below the permitted freeboard limit.
2. Within 5 days of discovery, evaluate the cause of the incident and adjust operational conditions or identify design improvements to the affected system as necessary to avoid future occurrences.
3. Record any repair procedures, methods, and materials used to restore the facility to operating condition in the facility log/recordkeeping file.
4. If design improvements are necessary and if they trigger a permit amendment, submit an amendment application within 90 days of discovery.
5. The facility is no longer on alert status once the operational indicator no longer indicates that the freeboard performance level is being exceeded. The permittee shall, however, complete all tasks necessary to return the facility to its pre-alert operating condition.

2.6.2.1.2. Performance Levels, other than Freeboard

1. If an operational performance level (PL) listed in Section 4.2 Compliance or Operational Monitoring, Table 7 Required Inspections and Operational Monitoring has been observed

or noted during required inspection and operational monitoring, such that the result could cause or contribute to an unauthorized discharge, the permittee shall immediately investigate to determine the cause of the condition. The investigation shall include the following:

a. Inspection, testing, and assessment of the current condition of all treatment or pollutant discharge control systems that may have contributed to the operational performance condition.

b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences.

2. The PL exceedance, results of the investigation, and any corrective action taken shall be reported to the Groundwater Protection Value Stream, within 30 days of the discovery of the condition. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, or other actions.

3. The permittee shall initiate actions identified in the approved contingency plan referenced in Section 2.6.1 General Contingency Plan Requirements and any necessary contingency measures to resolve any problems identified by the investigation which may have led to a PL being exceeded. To implement any other corrective action the permittee may choose to obtain prior approval from ADEQ according to Section 2.6.6 Corrective Actions.

2.6.2.2. Exceedance of Action Leakage Rate for Process Solution Impoundments

At a minimum, the permittee shall initiate the following actions within 3 days of becoming aware of an exceedance of an action leakage rate (AL1) for a facility listed in Table 2. All information shall be recorded in a log book as described in Section 2.7.2. The permittee shall:

1. Drain and/or pump out all fluid collected in the leak collection and recovery system (LCRS) to reduce head on the liner system;
2. Quantify and record the amount of fluid pumped from the leak collection and recovery system on a weekly basis until the leakage rate is no longer exceeded;
3. Assess the potential for migration of liquids out of the containment system; and,
4. Assess the current condition of the liner system.
5. Take appropriate corrective action to mitigate the cause(s) of the exceedance.

2.6.2.3. Rapid and Large Leakage Exceedance in the Process Solution Impoundments

Additional response actions based on rapid and large leakage rate (RLL or AL2) for a facility listed in Table 2 shall include the following:

1. Notify the Groundwater Protection Value Stream within 24 hours of becoming aware of the exceedance,
2. Reduce the hydraulic head on the liner including emptying of the portion of the impoundment over the affected liner,
3. Conduct visual inspection to identify areas of leakage,
4. Repair all identified areas of leakage within 90 days of discovery,
5. Initiate closure, temporary cessation, or partial closure of the impoundment if identified areas of leakage cannot be repaired within 90 days of discovery,
6. After repairs have been made, monitor the leakage rate on a weekly basis while the impoundment is being filled, and for a period of 3 months after filling.

Within 30 days of a confirmed RLL exceedance, the permittee shall submit a written report to the Groundwater Protection Value Stream. The written report shall include a description of the exceedance and its potential causes, the period of exceedance and the anticipated time period during which the exceedance is expected to continue, and a description of any actions taken or planned to be taken to eliminate or prevent recurrence of the exceedance and to mitigate the impacts of the exceedance. Upon approval of the GWS-APP, the permittee shall initiate the actions necessary to mitigate the impacts of the exceedance.

2.6.2.4. Exceeding of Alert Levels Set for Discharge Monitoring

Not applicable.

2.6.2.5. Exceeding of Alert Levels in Groundwater Monitoring

2.6.2.5.1. Alert Levels for Indicator Parameters

Not applicable.

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

1. If an AL for a pollutant set in Section 4.2 Compliance or Operational Monitoring, Table 11 Quarterly Groundwater Compliance Monitoring for POC Wells, Table 12 Biennial Groundwater Compliance Monitoring for Tailing Impoundment POC Wells, Table 13 Biennial Groundwater Compliance Monitoring for Chase Creek POC Wells, or Table 14 Biennial Groundwater Compliance Monitoring for all Other POC Wells has been exceeded, the permittee may conduct verification sampling of the pollutant(s) that exceed their respective AL(s) within 5 days of becoming aware of an AL exceedance. The permittee may use the results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.
2. If verification sampling confirms the AL exceedance or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring of the pollutant(s) that exceed their respective AL(s) to monthly. In addition, the permittee shall immediately initiate an investigation of the cause of the AL being exceeded, including inspection of all discharging units and all related pollution control devices, review of any operational and maintenance practices that might have resulted in an unexpected discharge, and hydrologic review of groundwater conditions including upgradient water quality.
3. The permittee shall initiate actions identified in the approved contingency plan referenced in Section 5.0 References and Pertinent Information and specific contingency measures identified in Section **Error! Reference source not found.** Contingency Plan Requirements to resolve any problems identified by the investigation which may have led to an AL being exceeded. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6 Corrective Actions. Alternatively, the permittee may submit a technical demonstration, subject to written approval by the Groundwater Protection Value Stream, that although an AL is exceeded, the pollutant(s) that exceeded their respective AL(s) are not reasonably expected to cause a violation of an AQL. The demonstration may propose a revised AL or monitoring frequency, for those pollutant(s) that exceed their respective AL(s), for approval in writing by the Groundwater Protection Value Stream.
4. Within 30 days after confirmation of an AL exceedance for those pollutant(s), the permittee shall submit the laboratory results to the Groundwater Protection Value Stream along with a summary of the findings of the investigation, the cause of the AL exceedance, and actions taken to resolve the problem.

5. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, or other actions.
6. The increased monitoring for those pollutant(s) required as a result of an AL exceedance may be reduced to the regular schedule frequency, if the results of three sequential sampling events demonstrate that the parameter(s) does/do not exceed their respective AL(s).
7. If the increased monitoring required as a result of an AL exceedance for those pollutant(s) continues for more than six sequential sampling events, the permittee shall submit a second report documenting an investigation of the continued AL exceedance within 30 days of the receipt of laboratory results of the sixth sampling event.

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

Not applicable.

2.6.2.5.4. Alert Level for Groundwater Level

Not applicable.

2.6.2.6. Action Level Exceedance Contingency for Operational Monitoring in Lower Chase Creek

Within 5 days of receiving laboratory analyses indicating an exceedance of an Action Level listed in Table 18 Action Levels for Operational Monitoring Lower Chase Creek Facilities – POC Wells CC-44, CC-46, and CC-53, the permittee shall notify ADEQ Groundwater Protection Value Stream. Verification sampling shall be conducted within 15 working days of becoming aware that an Action Level has been exceeded.

Within 5 days of receiving the laboratory results for the verification sampling, the permittee shall notify the ADEQ Groundwater Protection Value Stream of the results in writing. If the results of verification sampling indicate that an Action Level has been exceeded within 30 days of receiving the verification analyses, the permittee shall submit to the APP Program one of the following:

1. A written report that includes a summary of the groundwater quality data in wells CC-44, CC-46 and CC-53, with a description of the exceedance and its cause, and a proposal for mitigative or remedial actions, if necessary, which may include, but not limited to: increased pumping of the interceptor wells, or increased monitoring frequency.
2. A written report that includes a description of the exceedance and its potential causes, the period of exceedance and the anticipated time period during which the exceedance is expected to continue, and a description of any actions taken or planned to be taken to eliminate or prevent recurrence of the exceedance and to mitigate the impacts of the exceedance. Upon approval by the APP Program, the permittee shall initiate the actions necessary to mitigate the impacts of the exceedance. At a minimum, the permittee shall provide for more frequent sampling until the constituent concentration is below the Action Level for two consecutive sampling periods.

   Upon review of item 1 and 2 listed above, the APP Program may require the permittee to submit additional information and/or require the permittee to implement the proposed action.

2.6.3. Discharge Limit Violation

2.6.3.1. Liner Failure, Containment Structure Failure, or Unexpected Loss of Fluid for reasons other than Overtopping

In the event of liner failure, containment structure failure, or unexpected loss of fluid as described in

Section 2.3 Discharge Limitations, the permittee shall take the following actions:

1. As soon as practicable, cease all discharges as necessary to prevent any further releases to the environment, including removal of any fluid remaining in the impoundment as necessary, and capture and containment of all escaped fluids.

2. Within 24 hours of discovery, notify Groundwater Protection Value Stream.

3. Within 24 hours of discovery of a failure, or as soon as practicable, estimate the quantity released, collect representative samples of the fluid remaining in affected impoundments and drainage structures, and analyze sample(s) according to Section 4.2 Compliance or Operational Monitoring, Table 7 Required Inspections and Operational Monitoring. In the 30-day report required under Section 2.7.3, include a copy of the analytical results and forward the report to Groundwater Protection Value Stream.

4. Within 15 days of discovery, initiate an evaluation to determine the cause for the incident. Identify the circumstances that resulted in the failure and assess the condition of the discharging facility and liner system. Implement corrective actions as necessary to resolve the problems identified in the evaluation. Initiate repairs to any failed liner, system, structure, or other component as needed to restore proper functioning of the discharging facility. The permittee shall not resume discharge to the facility until repairs of any failed liner or structure are performed.

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

5. Within 30 days of discovery of the incident, submit a report to Groundwater Protection Value Stream as specified in Section 2.7.3 Permit Violation and Alert Level Status Reporting. Include a description of the actions performed in Subsections 1 through 4 listed above. Upon review of the report, ADEQ may request additional monitoring or remedial actions.

6. Within 60 days of discovery, assess the impacts to soil and/or groundwater resulting from the incident. If soil or groundwater is impacted such that it could or did cause or contribute to an exceedance of an AQL at the applicable point of compliance, submit to ADEQ, for approval, a corrective action plan to address such impacts, including identification of remedial actions and a schedule for completion of activities. At the approval of ADEQ, the permittee shall implement the approved plan.

7. Within 30 days of completion of corrective actions, submit to Groundwater Protection Value Stream, a written report as specified in Section 2.6.6 Corrective Actions.

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

2.6.3.2. Overtopping of a Surface Impoundment

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

1. As soon as practicable, cease all discharges to the surface impoundment to prevent any further releases to the environment.

2. Within 24 hours of discovery, notify Groundwater Protection Value Stream.

3. Within 24 hours, or as soon as practicable, collect representative samples of the fluid contained in the surface impoundment. Samples shall be analyzed for the parameters specified in Section 4.2 Compliance or Operational Monitoring, Table 7 Required Inspections and Operational Monitoring. Within 30 days of the incident, submit a copy of the analytical results to Groundwater Protection Value Stream.

4. As soon as practicable, remove and properly dispose of excess water in the impoundment until the water level is restored at or below the appropriate freeboard as described in Section 4.2 Compliance or Operational Monitoring, Table 7 Required Inspections and Operational Monitoring. Record in the facility log/recordkeeping file the amount of fluid released, a description of the removal method and volume of any fluid removed from the impoundment and/or captured from the release area. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 Operation Inspection/LogBook/Recordkeeping File.

5. Within 30 days of discovery, evaluate the cause of the overtopping and identify the circumstances that resulted in the incident. Implement corrective actions and adjust operational conditions as necessary to resolve the problems identified in the evaluation. Repair any systems as necessary to prevent future occurrences of overtopping.

6. Within 30 days of discovery of overtopping, submit a report to ADEQ as specified in Section 2.7.3(2) Permit Violation and Alert Level Status Reporting. Include a description of the actions performed in Subsections 1 through 5 listed above. Upon review of the report, ADEQ may request additional monitoring or remedial actions.

7. Within 60 days of discovery, and based on sampling in Item No. 3 above, assess the impacts to the subsoil and/or groundwater resulting from the incident.

8. If soil or groundwater is impacted such that it could cause or contribute to an exceedance of an AQL at the applicable point of compliance, submit to ADEQ for approval, a corrective action plan to address such impacts, including identification of remedial actions and/or monitoring, and a schedule for completion of activities. At the direction of ADEQ, the permittee shall implement the approved plan.

9. Within 30 days of completion of corrective actions, submit to ADEQ, a written report as specified in Section 2.6.6 Corrective Actions. Upon review of the report, ADEQ may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions, or other actions.

2.6.3.3. Inflows of Unexpected Materials to a Surface Impoundment

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

1. As soon as practicable, cease all unexpected inflows to the surface impoundment(s).
2. Within 24-hours of discovery, notify Groundwater Protection Value Stream.
3. Within 5 days of the incident, identify the source of the material and determine the cause for the inflow. Characterize the unexpected material and contents of the affected impoundment,

and evaluate the volume and concentration of the material to determine if it is compatible with the surface impoundment liner. Based on the evaluation of the incident, repair any systems or equipment and/or adjust operations, as necessary to prevent future occurrences of inflows of unexpected materials.

4. Within 30 days of an inflow of unexpected materials, submit a report to ADEQ as specified in Section 2.7.3(2) Permit Violation and Alert Level Status Reporting. Include a description of the actions performed in Subsections 1 through 3 listed above.

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

2.6.4. Aquifer Quality Limit Exceedances

1. If an AQL set in Section 4.2 Compliance or Operational Monitoring, Table 11 Quarterly Groundwater Compliance Monitoring for POC Wells , Table 12 Biennial Groundwater Compliance Monitoring for Tailing Impoundment POC Wells , Table 13 Biennial Groundwater Compliance Monitoring for Chase Creek POC Wells or Table 14 Biennial Groundwater Compliance Monitoring for all Other POC Wells has been exceeded, the permittee may conduct verification sampling for those pollutant(s) that were above their respective AQL(s) within 5 days of becoming aware of the exceedance. The permittee may use results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.

2. If verification sampling does not confirm an AQL exceedance, no further action is needed under this Section.

3. If verification sampling confirms that the AQL is violated for those pollutant(s) that were above their respective AQL(s) or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring to monthly for those pollutant(s) that were above their respective AQL(s). 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 Permit Violation and AL Status Reporting, 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 action that may include control of the source of discharge, cleanup of affected soil, surface water, or groundwater, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in an ADEQ approved contingency plan, or separately approved according to Section 2.6.6 Corrective Actions.

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

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

6. The increased monitoring for those pollutant(s) required as a result of an AQL exceedance may be reduced to the original sampling frequency for each respective pollutant, if the results of sampling from three consecutive months demonstrate that the parameter(s) does not exceed their respective AQL(s).

2.6.5. Emergency Response and Contingency Requirements for Unauthorized Discharges

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

2.6.5.1. Duty to Respond

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

2.6.5.2. Discharge of Hazardous Substances or Toxic Pollutants

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

2.6.5.3. Discharge of Non-Hazardous Materials

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

2.6.5.4. Reporting Requirements

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

2.6.6. Corrective Actions

Specific contingency measures identified in Section 2.6 Contingency Plan Requirements 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 Emergency Response and Contingency Requirements for Unauthorized Discharges, the permittee shall obtain written approval from the Groundwater Protection Value Stream prior to implementing a corrective action to accomplish any of the following goals in response to exceedance of an AL, AQL, DL, or other permit condition:

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

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

2.7. REPORTING AND RECORDKEEPING REQUIREMENTS

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

2.7.1. Self-Monitoring Report Form

1. The permittee shall complete the Self-Monitoring Reporting Forms (SMRFs) provided by ADEQ, and submit the completed report through the myDEQ online reporting system. The permittee shall use the format devised by ADEQ.
2. The permittee shall complete the SMRF to the extent that the information reported may be entered on the form. If no information is required during a reporting period, the permittee shall enter "not required" on the form, include an explanation.
3. The tables contained in Section 4.2 Compliance Monitoring list the monitoring parameters and the frequencies for reporting results on the SMRF:
    a. Table 11: Quarterly Groundwater Compliance Monitoring for POC Wells
    b. Table 12: Biennial Groundwater Compliance Monitoring for Tailing Impoundment POC Wells
    c. Table 13: Biennial Groundwater Compliance Monitoring for Chase Creek POC Wells
    d. Table 14: Biennial Groundwater Compliance Monitoring for all other POC Wells

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

2.7.2. Operation Inspection / Log Book Recordkeeping

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

1. Name of inspector;
2. Date and 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 A.A.C. R18-9-A206(B)(2).

TSPs and SCPs are not listed as individual APP facilities in the permit; however, they are listed under the BADCT description for Tailings Impoundments in Table 6 Permitted Facilities and BADCT, and they shall also be listed in the log book. New SCPs and/or TSPs shall be added to the log book, and to Table 6 during subsequent permit amendments. Information in the log book shall include at the minimum the name of the facility and their latitude and longitude. Inspection and monitoring requirements for these ponds shall be documented in the log book.

2.7.3. Permit Violation and Alert Level Status Reporting

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

2.7.4. Operational, Other or Miscellaneous Reporting

All data required in Section 2.5.3.3 Alert Levels for POC Wells, and Section 2.5.1 Passive Containment Monitoring reports, and Section 2.5.1.1 Groundwater Monitoring of Hydrologic Sink, shall be submitted to the APP Program for review and approval.

On a biennial basis the permittee shall submit a monitoring summary report including analytical data to the Groundwater Protection Value Stream as per the due date stablished in Section 2.7.6 Reporting Deadline. 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, AQLs, Action Levels, or operational limits that occurred during the reporting period.
3. The status of any Notice(s) of Violation issued or contingency actions invoked under this permit during the reporting period.
4. A site-wide potentiometric map of the groundwater table based on available data.
5. Graphical time versus concentration plots of field pH, sulfate, total dissolved solids, and any parameter which exceeded applicable ALs or AQLs in the past 8 quarters for each POC well. The graphs should include data from the 16 most recent quarterly analyses.
6. The biennial report on the status of the hydrologic sink as described in Section 2.5.1.1 Groundwater Monitoring of Hydrologic Sink,
7. A summary of active efforts in Gold Gulch and Rocky Gulch for as long as those efforts are ongoing.
8. An updated table of all monitor wells and piezometers in the Morenci District including, but not limited to, location of well, depth of well, depth to water.

9. A summary of any groundwater monitoring wells replaced in the reporting period including, but not limited to, location of well, depth of well, depth to water and screened interval.

10. A list of any new sumps and vehicle washes constructed within the hydrologic sink, unless exempt or covered by a General APP.

2.7.4.1. Passive Containment Capture Zone Demonstration Report

A post-audit Passive Containment Capture Zone Demonstration Report must be conducted every five (5) years per Section 3.0, Compliance Schedule. The post-audit must include re-calibration of the previous model or a new calibrated model. The results of the post-audit must be submitted to the Groundwater Protection Value Stream for review in a report that summarizes the original passive containment demonstration and any updates or revisions made to the model, and a discussion of the previous model predictions. The assumptions about mine development and infiltration must be reviewed in terms of the actual changes in the pit configuration (current, life of mine, and post-closure), leaching areas, leach rates, sump locations, water balance, annual precipitation and storm events. The resulting compilation must be compared to predictions provided by the groundwater flow model for the previous calibration period. Other factors to be evaluated in the post-audit include groundwater inflow, the estimated static water level in the pit, the estimated time to reach static water level, and any potential for the water level in the pit to rise to an elevation where the hydraulic gradient reverses and the pit ceases to function as a passive containment. The passive containment modeling projections must be based solely on natural or engineered topographical, geological, or hydrological control measures that can operate without continuous maintenance (A.R.S. § 49-243(G)(1)).

1. The report must include, at a minimum, the following items:
2. The Conceptual Site Model (CSM) and revisions, if any.
3. Maps showing the facilities and PCCZ boundary.
4. Summary of any changes to the pit configuration or facilities within the PCCZ.
5. All new data (i.e., water levels, meteorological data, inflows/outflows) collected that relates to model inputs and outputs.
6. A description of the numerical model (i.e., model code, software, history of development).
7. A description of model inputs and their values.
8. A table listing groundwater elevations from piezometer and monitor wells current at the time of the post-audit, used to demonstrate the configuration of the passive containment.
9. A potentiometric contour map based on groundwater elevations collected during the post-audit monitoring period.
10. Updated model simulations and projections.
11. Updated calibration results and revisions.
12. Summary of the model uncertainties, sensitivity analysis, and model confidence.

2.7.5. Reporting Location

All Self-Monitoring Report Forms (SMRFs) shall be submitted through the myDEQ portal accessible on the ADEQ website at: http://www.azdeq.gov/welcome-mydeq. Contact at 602-771-4571 for any inquiry related to the SMRFs.

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

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

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

2.7.6. Reporting Deadline

The following table lists the quarterly SMRF report due dates:

Table 2: QUARTERLY SMRF REPORTING DEADLINES	
Monitoring Conducted During Quarter:	**Quarterly Report Due By:**
January-March	April 30
April-June	July 30
July-September	October 30
October-December	January 30

The following table lists the biennial SMRF due date:

Table 3: BIENNIAL SMRF REPORTING DEADLINES	
Monitoring conducted during biennial period:	**Biennial SMRF Report due by:**
January-December of the following year	January 30, 2023, and every two years thereafter

The following table lists the due date for the biennial report per Sections 2.5.1.1 Groundwater Monitoring of Hydrologic Sink and 2.7.4 Operational, Other or Miscellaneous Reporting:

Table 4: BIENNIAL REPORTING DEADLINES	
Monitoring conducted during the year:	**Biennial Report due by:**
January-December of the following year	March 30, 2023, and every two years thereafter

2.7.7. Changes to Facility Information in Section 1.0

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

2.8. Temporary Cessation

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

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

1. Submittal of Self-Monitoring Report Forms (SMRFs) is still required; report “temporary cessation” in the comment section.
2. Throughout a temporary cessation, monitoring activities; pumping; and maintenance of the in-pit sumps, solution impoundments, reclaim systems, and Rocky Gulch interceptor system shall continue pursuant

to this permit. Notification of a temporary cessation does not relieve the permittee of any permit responsibilities.

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

2.9. Closure

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

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

2.9.1. Closure Plan

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

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

2.9.2. Closure Completion

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

1. Clean-closure cannot be achieved at the time of closure notification or within one year thereafter under a diligent schedule of closure actions;
2. Further action is necessary to keep the facility in compliance with the AWQS at the applicable POC or, for any pollutant for which the AWQS was exceeded at the time this permit was issued, further action is necessary to prevent the facility from further degrading the aquifer at the applicable POC with respect to that pollutant;
3. Remedial, mitigative or corrective actions or controls are necessary to comply with A.R.S. § 49-201(36) and Title 49, Chapter 2, Article 3;
4. Further action is necessary to meet property use restrictions.
5. SMRF submittals are still required until Clean Closure is issued.

2.10. Post-Closure

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

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

In the event clean-closure cannot be achieved pursuant to A.R.S. § 49-252, the permittee shall submit for approval to the Groundwater Protection Value Stream a post-closure plan that addresses post-closure maintenance and monitoring actions at the facility. The post-closure plan shall meet all requirements of A.R.S. §§ 49-201(36) 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.

3.0 COMPLIANCE SCHEDULE

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

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

NOTE: Except as exempted by A.R.S. § 32-144.A.7 (employees of mining companies), professional documents as per A.A.C. R4-30-101, such as reports, plans and specifications, are to be signed by an Arizona registered engineer or geologist (A.R.S. § 32-125).

Table 5: COMPLIANCE SCHEDULE ITEMS

No.	Description	Due By:	Permit Amendment Required?
1	The permittee shall submit a demonstration that the financial assurance mechanism listed in Section 2.1.2, Financial Capability, is being maintained as per A.R.S. 49-243.N.4 and A.A.C. R18-9-A203(H) for all estimated closure and post-closure costs including updated costs submitted under Section 3.0 Compliance Schedule, No. 2 below. The demonstration shall include a statement that the closure and post-closure strategy has not changed, the discharging facilities listed in the permit have not been altered in a manner that would affect the closure and post-closure costs, and discharging facilities have not been added. **NOTE:** The financial assurance mechanism due on the date specified in CSI No. 2, may be provided following ADEQ's approval of the closure and post-closure costs due on that same date. When submitting the closure and post-closure costs, FMI may provide a statement for the type of mechanism intended to be provided.	September 20, 2022, and every two years thereafter.	No
2	The permittee shall submit updated cost estimates for facility closure and post-closure, as per A.A.C. R18-9-A201(B)(5) and A.R.S. 49-243.N.2.a. For all non-tailings facilities, including, where applicable, those facilities located within the passive containment capture zone (PCCZ), provide a closure strategy and closure and post-closure costs containing sufficient details including unit costs (not lump sum), unit rates, materials quantities, labor costs, mobilization/ demobilization costs, equipment costs, sampling and analytical costs, detailed cost for monitor well abandonment, and other relevant information. Include source of the	September 20, 2022, and every 6 years thereafter for the duration of the permit.	Yes

Table 5: COMPLIANCE SCHEDULE ITEMS			
No.	**Description**	**Due By:**	**Permit Amendment Required?**
	information used to develop the cost estimate. The cost estimates should be derived by an Arizona licensed engineer (if the cost estimates are not prepared by an employee of the mine).		
3	The permittee shall submit an update to the passive containment capture zone demonstration, in accordance with Section 2.5.1 Passive Containment Monitoring and Section 2.7.4.1 Passive Containment Capture Zone Demonstration Report. The report shall be signed and sealed by an Arizona Registered Professional Geologist.	October 8, 2025 and every five (5) years thereafter for the duration of the permit.	No
4	The permittee may add or remove TSPs or SCPs that are located within the footprint of the approved tailings impoundment boundary. The APP will be updated with the added TSPs and SCPs during a future amendment. The permittee shall submit as-built drawings for new SCPs and TSPs constructed since the last permit amendment.	Within 6 months of completion of construction	No
5	Prior to increase in the height of the West/East Crest Elevation above 4150 ft above mean sea level (amsl), the permittee shall submit a slope stability analysis for height increase to the permitted height of 4280 ft amsl.	Prior to increase in the height of the West/East Crest Elevation above 4150 ft amsl	No
6	Existing tunnels including but not limited to the Pelican and Canyon Tunnels and any underground workings, shall be sealed using a concrete plug consisting of low slump concrete mix to form the end-walls of each plug, and a flowable, self-consolidating concrete mix to be poured against the end walls to build the monothilic core of the concrete plug. Contact grouting and consolidation grouting shall be completed in the surrounding rock mass for long-term stability of the plug and to reduce the potential for fluids to bypass the plug. As-built construction report shall be submitted upon completion of the above activities.	90 days prior to stacking ore in the Morenci Canyon Stockpile	No

Table 5: COMPLIANCE SCHEDULE ITEMS			
No.	**Description**	**Due By:**	**Permit Amendment Required?**
7	Submit updated financial capability demonstration relating to the Producer Stockpile for the approved closure and post-closure amount of $656,055,224 and $92,324,691 respectively, for a total of $748,379,915, and a Net Present Value (NPV) of $311,205,115.	90 days prior to placing any mineralized rock within the footprint of the Producer Stockpile	No
8	The permittee shall submit a biennial report in accordance with Section 2.7.4.	March 30, 2023 and every two years thereafter for the duration of the permit.	
9	Submit Construction Report including as-built drawings and QA/QC documents sealed by an Arizona registered professional engineer for each phase of the Producer Stockpile construction. The report shall include plugging design and details of any shafts and other openings.	Within 90 days of completion of the construction.	No
10	Submit Construction Report including as-built drawings and QA/QC documents sealed by an Arizona registered professional engineer for Producer PLS Impoundment.	Within 90 days of completion of the construction.	No
11	Submit Construction Report including as-built drawings and QA/QC documents sealed by an Arizona registered professional engineer for Producer Process Water Impoundment.	Within 90 days of completion of the construction.	No
12	Begin quarterly ambient groundwater monitoring in POC wells GG-30. GG-32, GG-33, and GG-34, as required under Section 2.5.3.2 Ambient Groundwater Quality Monitoring for POC wells for the parameters listed in Section 4.2 Compliance or Operational Monitoring, Table 11 Quarterly Groundwater Compliance Monitoring for POC Wells and Table 14 Biennial Groundwater Compliance Monitoring for all Other POC Wells.	Within 30 days of permit issuance.	No
13	The permittee shall submit an APP amendment application and an ambient groundwater monitoring report to establish ALs and AQLs for POC wells GG-30, GG-32, GG-33, an GG-34. The report shall be sealed by an Arizona Registered Geologist or other qualified registrant.	Within 90 days of completion of ambient groundwater monitoring under Section 4.2, Table 10 Quarterly Ambient Groundwater Compliance Monitoring Parameters for the four POC Wells.	Yes
14	Begin compliance groundwater monitoring of POC wells GG-30. GG-32, GG-33, an GG-34 as required under	During the next quarterly sampling event following the completion of the ambient groundwater monitoring	No

Table 5: COMPLIANCE SCHEDULE ITEMS			
No.	**Description**	**Due By:**	**Permit Amendment Required?**
	Section 4.2 Compliance or Operational Monitoring, Table 11 Quarterly Groundwater Compliance Monitoring for POC Wells and Table 14 Biennial Groundwater Compliance Monitoring for all Other POC Wells.	period.	

4.0 TABLES OF MONITORING REQUIREMENTS

4.1. PERMITTED FACILITIES AND BADCT

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
Tailing Impoundments:			
1	DCTT 1	Southwest 1 Tailing Dam	**Individual BADCT:** Tailing, in the slurry form, is deposited on native ground using the cyclone method of tailing deposition. The slimes, a finer fraction of the tailing material, serve as an effective barrier to infiltration. A minimum of 4 feet of freeboard shall be maintained to contain the direct precipitation over the impoundments and runoff from tributary watersheds during a 100-year, 24-hour storm event. A minimum beach distance of 200 feet shall be maintained at each of the tailing impoundments (with the exception of the West/East Tailing Dam Expansion, as noted below), and the water level in the slope stability piezometers shall be measured to ensure that the phreatic surface is maintained within safe operating limits (see Operational Requirements in Table 7). The West/East Tailing Dam Expansion is permitted for minimum beach lengths varying with tailing dam crest elevation, as follows: **Crest Elevation (ft amsl) — Minimum Beach Length (ft)** 3875 — 50 4000 — 100 4100 — 200 4150 — 400 Note: Minimum beach length can be extrapolated linearly between elevations. Stormwater runoff from the side slopes is contained in the downstream Tailing Stormwater Retention Dams and Tailing Stormwater Ponds. The maximum rate of tailing deposition is 55,000,000 tons per year. The maximum permitted crest elevation for each of the tailing dam facilities is specified as follows: • Southwest 1 Tailing Dam – 4480 ft amsl • Southwest 2 Tailing Dam – 3850 ft amsl • Southwest 1 Tailing Dam Expansion – 4480 ft amsl • Silver Basin Tailing Dam Complex – 4445 ft amsl • Silver Basin Tailing Dam Expansion – 4445 ft amsl • West Tailing Dam Complex – 4280 ft amsl • East Tailing Dam Complex – 3940 ft amsl • West/East Tailing Dam Expansion – 4280 ft amsl The referenced tailing impoundments are further permitted for the deposition of concentrate leach residue from the concentrate leach process, as described in the October 10, 2006 submittal Application for Permit Amendment, Concentrate Leach Plant Project, WWTP effluent (APP Facility 99A) and plant run-off. **Tailing Stormwater Ponds**
2	DCTT 1a	Southwest 2 Tailing Dam	
3	DCTT 1b	Southwest 1 Tailing Dam Expansion	
4	DCTT 2	Silver Basin Tailing Dam Complex	
5	DCTT 2a	Silver Basin Tailing Dam Expansion	
6	DCTT 3	West Tailing Dam Complex	
7	DCTT 4	East Tailing Dam Complex	
8	DCTT 5	West/East Tailing Dam Expansion	

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
			The Tailing Stormwater Ponds are integral components of the Tailing Dam Facilities. The impoundments are located at the northern perimeter of the tailing impoundments and designed to contain the 100-year, 24-hour storm event with a minimum of 2-feet of freeboard. The impoundments are formed as depressions at the toe of the Tailing Dams or with clay core dams. The Tailing Stormwater Ponds (TSPs) consist of the following: • TSP A – Excavated impoundment with crest elevation of 4,060 ft amsl; Storage capacity of 27.1 ac-ft. Located along the east slope of the West Tailing Dam and south of the former Columbine Reservoir. • TSP B – Clay core dam with a crest elevation of 4,000 ft amsl; Storage capacity of 61.8 ac-ft. Located downstream of TSP A along the north slope of the West Tailing Dam between the tailing and asbestos landfill. • TSP C – Clay core dam with crest elevation of 3,970 ft amsl; Storage capacity of 21.3 ac-ft. Located along the northeast slope of the West/East Tailing Dam Expansion. • TSP D – Excavated impoundment with crest elevation of 3,959 ft amsl; Storage capacity of 45.9 ac-ft. Located along the northeast slope of the West/East Tailing Dam Expansion. • TSP G – Excavated impoundment with a crest elevation of 4135 ft amsl; Storage capacity of 55.3 ac-ft. Located along the northwest slope of the Tailing Dam 4W. • TSP H – Excavated impoundment with a crest elevation of 4122 ft amsl; Storage capacity of 25.6 act-ft. Located along the west slope between Tailing Dams 3W and 4W. **Seepage Collection Ponds** The Seepage Collection Ponds (SCPs) are integral components of the Tailing Dam Facilities. The impoundments are located at the downstream toe of the West/East Tailing Dam Expansion Facility and designed to capture seepage from the tailing dam. The impoundments are designed to collect seepage water from the tailing impoundments through finger drains with a minimum of 2-feet of freeboard. A barge pump is used to convey accumulated fluids to the Expansion Tailing Pump Station. Stormwater exceeding the storage capacity of the SCPs is contained in a downstream Tailing Stormwater Retention Dam (TSRD) or in a combined SCP/TSRD. The SCPs include a concrete-lined impoundment, an upstream sediment basin, and upstream sediment berm. The impoundment is constructed above the existing grade with a 10-foot wide earthen embankment of compacted Gila conglomerate. The SCPs include the following: • SCP A2-1 – Storage capacity of 2.34 ac-ft at an elevation of 3,565 ft amsl. • SCP B2-1 (combined with TSRD 4X) – Storage capacity of 1.91 ac-ft at an elevation of 3,516.5 ft amsl. • SCP C2-1 (combined with TSRD 3) – Storage capacity of 2.60ac-ft at an elevation of 3,489 ft amsl. • SCP D2-1 (combined with TSRD 12X) – Storage capacity of 2.45 ac-ft at an elevation of 3,578 ft amsl. • SCP E2-1 (combined with TSRD 2) – Storage capacity of 1.80 ac-ft at an elevation of 3,567 ft amsl. • SCP F2-1 – Storage capacity of 2.30 ac-ft at an elevation of 3,593 ft amsl.

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
Non-Stormwater Impoundments:			
153		Tailing Stormwater Retention Dam 1X	**Individual BADCT:** Facility is a surface impoundment created by a Gila conglomerate fill dam with a storage capacity of approximately 49.9 acre-feet. The facility is dry under normal operating conditions and has sufficient capacity to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. Currently, this facility does not receive non-stormwater. If the facility receives non-stormwater, then the face of the dam shall be clay lined, the pH of the impounded water shall be maintained at or above 5 standard units (SU), and the discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment (see Operational Requirements in Table 7).
10	DCRS 2	Tailing Stormwater Retention Dam 2	**Individual BADCT:** Facility is a surface impoundment created by a Gila conglomerate fill dam with a storage capacity of approximately 12 acre-feet. The facility is dry under normal operating conditions and has sufficient capacity to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. Currently, this facility does not receive non-stormwater. If the facility receives non-stormwater, then the face of the dam shall be clay lined, the pH of the impounded water shall be maintained at or above 5 SU, and the discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment (see Operational Requirements in Table 7).
13	DCRS 5	Tailing Stormwater Retention Dam 3	**Individual BADCT:** Facility is a surface impoundment created by a Gila conglomerate fill dam with a storage capacity of approximately 57 acre-feet. The facility is dry under normal operating conditions and has sufficient capacity to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. Currently, this facility does not receive non-stormwater. If the facility receives non-stormwater, then the face of the dam shall be clay lined, the pH of the impounded water shall be maintained at or above 5 SU, and the discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment (see Operational Requirements in Table 7).
154		Tailing Stormwater Retention Dam 4X	**Individual BADCT:** Facility is a surface impoundment created by a clay core dam with a storage capacity of approximately 21.8 acre-feet. The pH of the impounded water shall be maintained at or above 5 SU (see Operational Requirements in Table 7). The facility is dry under normal operating conditions and has sufficient capacity to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. The discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment.
21	DCRS 13	Tailing Stormwater Retention Dam 5	**Individual BADCT:** Facility is a surface impoundment created by a clay core dam with a storage capacity of approximately 21.6 acre-feet. The pH of the impounded water shall be maintained at or above 5 SU (see Operational Requirements in Table 7). The facility is dry under normal operating conditions and has sufficient capacity to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
			of 2 feet of freeboard. The discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment.
27	DCRS 19	Tailing Stormwater Retention Dam 5F	**Individual BADCT:** Facility is a surface impoundment created by a compacted Gila conglomerate dam with a storage capacity of approximately 65 acre-feet. The pH of the impounded water shall be maintained at or above 5 SU (see Operational Requirements in Table 7). The facility is dry under normal operating conditions and has sufficient capacity to contain the stormwater runoff and upgradient dam overflow from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. The discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment.
28	DCSR 20	Tailing Stormwater Retention Dam 5G	**Individual BADCT:** Facility is a surface impoundment created by a Gila conglomerate fill dam with a storage capacity of approximately 5 acre-feet. The facility is dry under normal operating conditions. Stormwater overflow from this facility is captured and contained in downstream Tailing Stormwater Retention Dam 5F (Facility No. 27). The discharge shall be minimized by the presence of a layer of tailing at the bottom of the impoundment.
29	DCRS 21	Tailing Stormwater Retention Dam 6	**Individual BADCT:** Facility is a surface impoundment created by a clay core dam with a storage capacity of approximately 160 acre-feet. The pH of the impounded water shall be maintained at or above 5 SU (see Operational Requirements in Table 7). The facility is dry under normal operating conditions and has sufficient capacity to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. The discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment.
30	DCRS 22	Tailing Stormwater Retention Dam 7	**Individual BADCT:** Facility is a surface impoundment created by a Gila conglomerate fill dam with a storage capacity of approximately 30 acre-feet. The facility is dry under normal operating conditions and has sufficient capacity to contain the 100-year, 24-hour storm event runoff with a minimum of 2 feet of freeboard. This facility receives non-stormwater. The face of the dam shall be clay lined. The pH of the impounded water shall be maintained at or above 5 SU, and the discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment (see Operational Requirements in Table 7).
31	DCRS 23	Tailing Stormwater Retention Dam 7A	**Individual BADCT:** Facility is a surface impoundment created by a clay core dam with a storage capacity of approximately 15 acre-feet. The pH of the impounded water shall be maintained at or above 5 SU (see Operational Requirements in Table 7). The facility is dry under normal operating conditions and has sufficient capacity to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. The discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment.
32	DCRS 23A	Tailing Stormwater Retention Dam 7B	**Individual BADCT:** Facility is a surface impoundment created by a compacted Gila conglomerate dam with a storage capacity of approximately 22 acre-feet. The pH of the impounded water shall be maintained at or above 5 SU (see Operational Requirements in Table 7). The facility is dry under normal operating

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
			conditions and has sufficient capacity to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of free board. The discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment.
120	DCRS 23B	Tailing Stormwater Retention Dam 7C	**Individual BADCT:** Facility is a surface impoundment created by excavation into the native Gila Conglomerate soils, with a storage capacity of approximately 50 acre-feet. The pH of the impounded water shall be maintained at or above 5 SU (see Operational Requirements in Table 7). The facility is dry under normal operating conditions and has sufficient capacity to contain the stormwater runoff from the 100-year, 24-hour storm event. Under extreme storm conditions, overflow from the facility shall be contained by the downstream impoundment. The discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment.
33	DCRS 24	Tailing Stormwater Retention Dam 8	**Individual BADCT:** Facility is a surface impoundment created by a Gila conglomerate fill dam with a storage capacity of approximately 16.9 acre-feet. The facility is dry under normal operating conditions and has sufficient capacity to contain the 100-year, 24-hour storm event runoff with a minimum of 2 feet of freeboard. Currently, this facility does not receive non-stormwater. If the facility receives non-stormwater, then the face of the dam shall be clay lined, the pH of the impounded water shall be maintained at or above 5 SU, and the discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment (see Operational Requirements in Table 7).
34	DCRS 25	Tailing Stormwater Retention Dam 9	**Individual BADCT:** Facility is a surface impoundment created by a Gila conglomerate fill dam with a storage capacity of approximately 22 acre-feet. The facility is dry under normal operating conditions and has sufficient capacity to contain the 100-year, 24-hour storm event runoff with a minimum of 2 feet of free board. Currently, this facility does not receive non-stormwater. If the facility receives non-stormwater, then the face of the dam shall be clay lined, the pH of the impounded water shall be maintained at or above 5 SU, and the discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment (see Operational Requirements in Table 7).
35	DCRS 25A	Tailing Stormwater Retention Dam 9A	**Individual BADCT:** Facility is a surface impoundment created by a compacted Gila conglomerate dam with a storage capacity of approximately 52 acre-feet. The facility is dry under normal operating conditions and has sufficient capacity to contain the 100-year, 24-hour storm event runoff with a minimum of 2 feet of freeboard. Currently, this facility does not receive non-stormwater. If the facility receives non-stormwater, then the face of the dam shall be clay lined, the pH of the impounded water shall be maintained at or above 5 SU, and the discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment (see Operational Requirements in Table 7).
36	DCRS 26	Tailing Stormwater Retention Dam 10	**Individual BADCT:** Facility is a surface impoundment created by a Gila conglomerate fill dam with a storage capacity of approximately 5 acre-feet. The facility is dry under normal operating conditions and has sufficient capacity to contain the 100-year, 24-hour storm event runoff with a minimum of 2 feet of free board. Currently, this facility does not receive non-stormwater. If the facility receives non-stormwater, then

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Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
			the face of the dam shall be clay lined, the pH of the impounded water shall be maintained at or above 5 SU, and the discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment (see Operational Requirements in Table 7).
37	DCRS 26A	Tailing Stormwater Retention Dam 10A	**Individual BADCT:** Facility is a surface impoundment created by a compacted Gila conglomerate dam with a storage capacity of approximately 138 acre-feet. The facility is dry under normal operating conditions and has sufficient capacity to contain the 100-year, 24-hour storm event runoff with a minimum of 2 feet of freeboard. Currently, this facility does not receive non-stormwater. If the facility receives non-stormwater, then the face of the dam shall be clay lined, the pH of the impounded water shall be maintained at or above 5 SU, and the discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment (see Operational Requirements in Table 7).
38	DCRS 27	Tailing Stormwater Retention Dam 11	**Individual BADCT:** Facility is a surface impoundment created by a clay core dam with a storage capacity of approximately 9 acre-feet. The pH of the impounded water shall be maintained at or above 5 SU (see Operational Requirements in Table 7). The facility is dry under normal operating conditions and has sufficient capacity to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. The discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment.
121		Tailing Stormwater Retention Dam 12X	**Individual BADCT:** Facility is a surface impoundment created by a clay core dam with a storage capacity of approximately 10.3 acre-feet. The pH of the impounded water shall be maintained at or above 5 SU (see Operational Requirements in Table 7). The facility is dry under normal operating conditions and has sufficient capacity to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. The discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment.
122		Tailing Stormwater Retention Dam WFT-1	**Individual BADCT:** Currently, this facility does not receive non-stormwater. If the facility receives non-stormwater, then the face of the dam shall be clay lined, the pH of the impounded water shall be maintained at or above 5 standard units (SU), and the discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment (see Operational Requirements in Table 7).
123		Tailing Stormwater Retention Dam WFT-10	**Individual BADCT:** Currently, this facility does not receive non-stormwater. If the facility receives non-stormwater, then the face of the dam shall be clay lined, the pH of the impounded water shall be maintained at or above 5 standard units (SU), and the discharge shall be minimized by the presence of a minimum 12-inch layer of tailing at the bottom of the impoundment (see Operational Requirements in Table 7).
39	D-ECC 4	Industrial Drain Overflow Pond (Reed Lake)	**Individual BADCT:** Stormwater overflow from the Industrial Drain Pump Station enters Reed Lake and is pumped to the Industrial Drain Pump Station, which is then pumped to the tailing launder via a 500-gpm water-level activated pump. This facility is underlain by tailing with a hydraulic conductivity ranging from 4.9×10^{-5} to 7.1×10^{-5} cm/s. This facility has a storage capacity of approximately 2415 acre-feet, which is

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Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
			sufficient to contain the runoff generated during the 100-year, 24-hour storm event (approximately 27.4 acre-feet) with a minimum of 2 feet of freeboard.
40	DHRE 1	Bat Canyon Safety Dam 1	**Individual BADCT:** Facility is a surface impoundment that serves as the overflow impoundment for Dam BC-5 (Facility No. 56). The facility is dry under normal operating conditions and is capable of containing stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. Currently, this facility does not receive non-stormwater. If the facility receives non-stormwater, the facility shall be upgraded to meet Prescriptive BADCT including, at a minimum, a single liner using 60-mil HDPE over at least 6 inches of 3/8-inch minus native or natural materials compacted to 95% maximum dry density.
41	DHRR 1	Lower Chase Creek Dam	**Individual BADCT:** Facility is a surface impoundment that receives impacted stormwater runoff from the upgradient Horseshoe Overflow Pond only under severe storm conditions. The facility is dry under normal operating conditions and is capable of containing stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. The dam is keyed into bedrock.
42	DMRR 1	Rocky Gulch Dam	**Individual BADCT:** Facility is a surface impoundment underlain by Precambrian granite, a relatively low hydraulic conductivity (9.5×10^{-6} cm/s) geologic unit. A roller compacted concrete dam keyed into bedrock is designed to contain the 100-year, 24-hour storm event runoff with a minimum of 2 feet of freeboard. A grout curtain minimizes seepage under the dam. Water level in the pump bay shall be kept at or below 3 feet during normal operation. Interceptor wells have been installed downgradient of the facility.
43	DMRR 2	Gold Gulch Dam	**Individual BADCT:** Facility is a surface impoundment created by a concrete dam designed to contain the 100-year, 24-hour storm event runoff. The dam is keyed into monzonite porphyry bedrock which has a relatively low hydraulic conductivity of 4.9×10^{-6} cm/s. The facility is equipped with a dedicated water-level activated pump.
44	DCIR 1	Columbine Reservoir	**Individual BADCT:** Facility was a single-lined surface impoundment that has been decommissioned.
45	DHIS 21	Horseshoe Overflow Pond	**Prescriptive BADCT:** The facility is a single-lined overflow impoundment that receives stormwater runoff and solution from Horseshoe Sump (Facility No. 57) and Central SX/EW. The facility was upgraded in 2003 in accordance with the Compliance Schedule with a 60-mil HDPE liner over 6 inches if 3/8-inch minus material. The upgraded facility has sufficient capacity to contain the runoff generated during the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard.
46	DHIS 8	Stargo Overflow Pond	**Prescriptive BADCT:** Facility is single-lined with an 80-mil HDPE liner underlain by geosynthetic clay liner (GCL) on the bottom and geotextile on the side slopes. The facility is designed to contain the 100-year, 24-hour storm event (approximately 30.1 acre-feet) with a minimum of 2 feet of freeboard. The storage capacity of the facility is approximately 35 acre-feet with a maximum depth of approximately 25 feet. The facility is dry under normal operating conditions and temporarily impounds stormwater runoff following storm events.

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Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
47	DHIS 22	Pond 800 Feet SW of 4500 Precipitation Plant	**Individual BADCT:** The facility is a clay-lined impoundment. The facility has a storage volume of approximately 211, 800 gallons and is underlain by approximately 6 inches of low permeability bedding material. The facility receives stormwater runoff and stormwater seepage from the upgradient Southwest Stockpile. In 2003, the facility was upgraded with an automatic pump to minimize overflow and maintain a normal operating depth of less than 3 feet.
152		Silver Basin NSI 1/2	**Prescriptive BADCT:** The NSI shall be used to temporarily contain excess solution flows from the Stockpile that exceed the PLSI pump capacity, and flows that result from runoff due to large storm events. The maximum storage capacity of impoundment shall be approximately 75-acre feet at elevation 4,515 feet with 2 feet of dry freeboard below the emergency spillway. The bottom of the impoundment will slope at 1%, resulting in a maximum depth of 21 feet below the emergency spillway. The surface area of the impoundment will be approximately 6 acres. The NSI will be single-lined with a 100-mil HDPE liner underlain by 12 inches of underliner material. The maximum particle size of the underliner will be 3/8-inch minus and hydraulic conductivity no greater than 1x10-4 cm/s. The liner will be secured in an anchor trench that is designed to be 2 feet wide and 2 feet deep. The impoundment is sized to contain non-stormwater flows of up to 43,000 gallons per minute (gpm) from a 100-year, 24-hour storm event, and in addition, up to 4 hours of PLS base flows of 30,000 gpm during a pump down-time for a total peak flow of 73,000 gpm. Accounting for the total inflows and pumped outflows, the largest accumulated volume of solution in the NSI resulting from the described upset conditions is 58 acre-feet. Including a safety factor of 1.3, the resulting volume of the NSI was designed to be approximately 75 acre-feet. Solutions will be temporarily stored in the NSI until they are transferred to either the 23/25MM Sump at a nominal rate of 12,000 gpm, or the SX/EW Plant at the rate of 30,000 gpm depending upon the turbidity and suitability for processing. A channel will be constructed on the western side of the impoundment to divert unimpacted stormwater around the facility. An emergency spillway will be constructed to prevent uncontrolled overtopping of the embankment.
Process Solution Impoundments outside the Passive Containment Capture Zone:			
48	DHIP 1	Central SX Plant PLS Pond	**Individual BADCT:** Facility is a double-lined impoundment using 80-mil HDPE liners underlain by a 4-inch-thick gunite layer overlying 6 inches of low permeability (10^{-6} cm/s) clayey material. An LCRS is installed on top of the gunite layer and drains via gravity through HDPE pipe to the Central SX Plant Raffinate Pond (Facility No. 49). The ALR and RLL rates for the LCRS are 294 and 1,070 gpd, respectively (see Operational Requirements in Table 7). The facility is equipped with a high-level overflow pipe that reports to the Central SX Plant Raffinate Pond. The storage capacity of the facility is approximately 1.7 acre-feet with a maximum depth of approximately 8 feet. The facility shall maintain a minimum of 15 inches of freeboard.
49	DHIP 2	Central SX Plant Raffinate Pond	**Individual BADCT:** Facility is a double-lined impoundment using 80-mil HDPE liners incorporating an LCRS. The bottom liner is underlain by 6 inches of bedding sand overlying bedrock with hydraulic

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Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
			conductivity of 1.8 x 10^{-3} cm/s. The storage capacity of the facility is approximately 4.7 acre-feet with a maximum depth of approximately 19 feet. The facility shall maintain a minimum of 2 feet of freeboard.
50	DHIP 3	Modoc SX Plant PLS Pond	**Individual BADCT:** Facility is a double-lined impoundment using 80-mil HDPE liners incorporating an LCRS. The bottom liner is underlain by 6 inches of bedding sand overlying bedrock with hydraulic conductivity of 2.3 x 10^{-6} cm/s. The LCRS drains via gravity through HDPE pipe to the Modoc SX Plant Raffinate Pond (Facility No. 51). The ALR and RLL rates for the LCRS are 415 and 1,513 gpd, respectively (see Operational Requirements in Table 7). The facility is equipped with a high-level overflow pipe that reports to the Modoc SX Plant Raffinate Pond. The storage capacity of the facility is approximately 5.5 acre-feet with a maximum depth of approximately 16.5 feet. The facility shall maintain a minimum of 15 inches of freeboard.
51	DHIP 4	Modoc SX Plant Raffinate Pond	**Individual BADCT:** Facility is a double-lined impoundment using 80-mil HDPE liners incorporating an LCRS. The bottom liner is underlain by 6 inches of bedding sand overlying bedrock with hydraulic conductivity of 2.3 x 10^{-6} cm/s. Overflow from the facility is conveyed through HDPE pipe to the Lower Chase Creek Stockpile (Facility No. 79). The storage capacity of the facility is approximately 11.5 acre-feet with a maximum depth of approximately 14 feet. The facility shall maintain a minimum of 15 inches of freeboard.
52	DHIS 11	Dam BC-1	**Individual BADCT:** Facility is an impoundment consisting of a concrete headwall keyed into bedrock and a concrete lined channel. The facility is located at the toe of the Southwest Stockpile (facility NO. 80). The facility is approximately 10 feet wide by 38 feet long by 6 feet deep (or 2,280 cubic feet). The maximum solution depth above the outlet invert is 5 feet 8 inches. The facility collects and conveys solution, via gravity, through an HPDE pipe to Dam BC-5 (Facility No. 56). This facility is designed to convey the 100-year, 24-hour peak flow and PLS flow with a minimum of 2 feet of freeboard.
53	DHIS 12	Dam BC-2	**Individual BADCT:** Facilities are single-lined impoundments using a 100-mil HDPE liner over a 4-inch-thick layer of tailing material. The facilities are used to collect and convey solution to Dam BC-5 (Facility No. 56). The discharge pipe is located at the lowest point to ensure complete drainage of the impoundment.
54	DHIS 13	Dam BC-3	
55	DHIS 14	Dam BC-4	
56	DHIS 15	Dam BC-5	**Individual BADCT:** Facility is a single-lined impoundment using 100-mil HDPE liner over a 4-inch-thick layer of tailing material. The facility is used to collect and convey solution, using pumps, through HDPE pipe to 27 MM Sump (Facility No. 62). The maximum solution depth is approximately 35 feet. The facility is designed to control and convey the 100-year, 24-hour peak flow and PLS flow with a minimum freeboard of 2 feet.
57	DHIS 6	Horseshoe Sump	**Individual BADCT:** The facility was upgraded in 2003 in accordance with the Compliance Schedule by constructing a HDPE-lined diversion headwall and stainless steel PLS tank to contain solution formerly contained in the existing PLS sump. The existing PLS sump now collects all seepage that bypasses the new diversion headwall and is maintained in a drain-drawdown condition through pumping to reduce the static

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Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
			head on the liner, thereby minimizing discharge. Overflow from PLS sump is conveyed to the Horseshoe Overflow Pond (Facility No. 45).
58	DHIS 8	Stargo Sump	**Prescriptive BADCT:** Facility consists of an 80-mil HDPE single-lined cutoff wall keyed into bedrock and a concrete lined inlet structure with embedded HDPE. The primary function of this facility is to convey solution via gravity through HDPE pipelines to a stainless steel PLS tank. The storage capacity of the facility is approximately 0.36 acre-feet with a maximum depth of approximately 13.5 feet. The facility has a minimum of 2 feet of freeboard.
60	DHIS 16	Dam BC-6	**Individual BADCT:** The facility was upgraded by constructing a headwall. A composite liner system, consisting of a 100-mil HDPE geomembrane over a geocomposite clay liner, will be constructed on the headwall slope and extended down to a concrete cutoff wall intended to limit seepage around the headwall. HDPE pipes are used to convey the collected solution to 29 MM Sump (Facility 65). The upgraded facility is designed to convey the 100-year, 24-hour peak flow and PLS flow with a minimum of 2 feet of freeboard.
61	DHIS 17	Dam BC-7	**Individual BADCT:** The facility was upgraded by constructing a headwall. A composite liner system, consisting of a 100-mil HDPE geomembrane over a geocomposite clay liner, will be constructed on the headwall slope and extended down to a concrete cutoff wall intended to limit seepage around the headwall. HDPE pipes shall be used to convey the collected solution to 29 MM Sump (Facility 65). The upgraded facility is designed to convey the 100-year, 24-hour peak flow and PLS flow with a minimum of 2 feet of freeboard.
62	DHIS 10	27 MM Sump	**Individual BADCT**. The facility is a process solution impoundment with a composite liner system, consisting of an 80-mil HDPE geomembrane over a geocomposite clay liner over a prepared subgrade. The storage capacity of the facility is approximately 157.1 acre-feet with a maximum depth of 47 feet. The impoundment is designed to convey the 100-year, 24-hour peak flow and PLS flow. The facility shall maintain a minimum of 2 feet of freeboard below the inlet spillways.
63	DHIS 18	Dam BC-8	**Individual BADCT:** The facility was upgraded by constructing a headwall. A composite liner system, consisting of a 100-mil HDPE geomembrane over a geocomposite clay liner, will be constructed on the headwall slope and extended down to a concrete cutoff wall intended to limit seepage around the headwall. HDPE pipes shall be used to convey the collected solution to 27 MM Sump (Facility No. 62). The upgraded facility is designed to convey the 100-year, 24-hour peak flow and PLS flow with a minimum of 2 foot of freeboard.
65	DHIS 20	29 MM Sump	**Individual BADCT:** The facility is a process solution impoundment with a composite liner system, consisting of an 80-mil HDPE geomembrane over a geocomposite clay liner over a prepared subgrade. The storage capacity of the facility is approximately 6.7 acre-feet with a maximum depth of 18 feet. The impoundment is designed to convey the 100-year, 24-hour peak flow and PLS flow. The facility shall maintain a minimum of 2 feet of freeboard below the inlet spillways.

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
66	DHRR 2	23/25 MM Pond	**Individual BADCT:** The facility is a process solution impoundment with a composite liner system, consisting of an 80-mil HDPE geomembrane over a geocomposite clay liner over a prepared subgrade. The storage capacity of the facility is approximately 126.6 acre-feet with a maximum depth of 55.5 feet. The impoundment is designed to convey the 100-year, 24-hour peak flow and PLS flow. The facility shall maintain a minimum of 2 feet of freeboard below the inlet spillways.
151		Silver Basin PLS Pond 1/2	**Prescriptive BADCT:** This facility is a double-lined pond that collects pregnant leach solution from the Phase 1 and 2 headwall of the Silver Basin Leach Stockpile. It has a maximum storage capacity of 22 acre-feet with a minimum of 2-feet of freeboard. Flows in excess of the normal operating capacity are routed through an overflow channel to the Silver Basin NSI 1/2. The liner system for Silver Basin PLS Pond 1/2 consists of two layers of 100-mil HDPE, separated by a geonet to allow any leakage to drain to an LCRS, underlain by a geosynthetic clay liner and prepared subgrade. The embankments forming the pond are constructed with 3:1(H:V) interior slopes, and 2:1(H:V) exterior slopes.
155		SB PLS Pond	**Prescriptive BADCT:** This facility is designed to contain PLS flows from all phases of the Silver Basin Leach Stockpile under normal operating conditions. This facility is a double-lined impoundment using 100-mil HDPE liners separated by a geonet, and incorporates an LCRS equipped with a gravel filled collection sump. The geonet has a saturated hydraulic conductivity of 10^{-2} cm/s. The liner is underlain by a geo-composite clay liner (GCL), which has been demonstrated to be the engineering equivalent to 6-inches of compacted minus 3/8-inch material with a maximum hydraulic conductivity of $1x10^{-6}$ cm/s. Discharge from the facility is further minimized by underlying bedrock with a hydraulic conductivity of $4.94x10^{-5}$ cm/s. The storage capacity of the facility is approximately 48 acre-feet with a maximum depth of approximately 30 feet. The facility shall maintain a minimum of 2 feet of freeboard.
157		MRC PLS Pond	**Prescriptive BADCT:** This facility will receive PLS from the Morenci Canyon Stockpile. This facility is a double-lined impoundment using 80-mil HDPE liners separated by a geonet, and incorporates an LCRS. The bottom liner is underlain by 1 foot of minus 3/8-inch material overlying bedrock with hydraulic conductivity of $1x10^{-6}$ cm/s. The storage capacity of the facility is approximately 30.1 acre-feet with a maximum depth of approximately 42 feet. The facility shall maintain a minimum of 2 feet of freeboard.
158		MRC Process Pond	**Prescriptive BADCT:** This facility is designed to contain contact water that originates from precipitation events within the Morenci Canyon Stockpile and surrounding area, and to contain any PLS that is diverted from the MRC PLS Pond. This facility is a double-lined impoundment using 80-mil HDPE liners separated by a geonet, and incorporates an LCRS. The bottom liner is underlain by 1 foot of minus 3/8-inch material overlying bedrock with hydraulic conductivity of $1x10^{-6}$ cm/s. The storage capacity of the facility is approximately 22.1 acre-feet with a maximum depth of approximately 56 feet. The facility shall maintain a minimum of 2 feet of freeboard.
160		Producer PLS Impoundment	**Prescriptive BADCT:** This facility shall be constructed as a double-lined impoundment using 100-mil HDPE liners incorporating an LCRS. The storage capacity of the facility shall be approximately 134 acre-

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Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
			feet from the bottom of the impoundment to the spillway connecting the facility with the Producer PLS Impoundment, with a maximum depth of approximately 40 feet. . The impoundment shall be constructed from bottom to top as follows: 1. The subgrade shall consist of, at minimum, six inches of compacted native or natural materials to provide a firm foundation for overlying materials. 2. A geosynthetic clay liner overlying bedrock with hydraulic conductivity of 5×10^{-5} cm/s. 3. A geosynthetic clay liner (GCL) or equivalent shall be placed above the subgrade and below the secondary geomembrane. 4. 100-mil HDPE secondary liner. 5. Geonet to allow any solution leaking through the primary geomembrane to rapidly flow into the LCRS sump. Solution that collects in the sump will be removed by a dedicated pump and returned to the impoundment 6. 100-mil HDPE primary liner. The liner system will be held in place along the perimeter of the pond by an anchor trench. The impoundment shall have 2.5V:1H side slopes, and the pond floor shall be sloped at 3% to the LCRS. PLS collected in the Producer PLSI will be pumped to the Modoc and Metcalf SX Plants for processing by a pump station located upstream to the east of the impoundment. A spillway shall be constructed between the Producer PLS Impoundment and the Producer Process Water Impoundment will be a 60-ft wide spillway capable of conveying the 1,000-year, 1-hour peak flow of 449 gpm. The Producer Process Water Impoundment shall be constructed downstream of the Producer PLS Impoundment to contain overflow from the Producer PLS Impoundment and stormwater from large storm events. A pump station (Producer PLS Pump Station, having a pumping capacity for of the pump station is 37,000 gpm) located between the Producer PLS Impoundment and the Producer Process Water Impoundment shall pump PLS and non-stormwater from the impoundments to the Producer PLS Tank and to the Modoc and Metcalf SX Plants.
161		Producer Process Water Impoundment	**Prescriptive BADCT:** This facility shall be constructed as a double-lined impoundment using 100-mil HDPE liners incorporating an LCRS. The storage capacity of the facility shall be approximately 121 acre-feet from the bottom of the impoundment to the spillway connecting the facility with the Producer PLS Impoundment with a maximum depth of approximately 40 feet. The facility shall maintain a minimum of 2 feet of freeboard below the impoundment crest. The impoundment shall be constructed from bottom to top as follows: 1. The subgrade shall consist of, at minimum, six inches of compacted native or natural materials to provide a firm foundation for overlying materials. 2. A geosynthetic clay liner overlying bedrock with hydraulic conductivity of 5×10^{-5} cm/s. 3. A geosynthetic clay liner (GCL) or equivalent shall be placed above the subgrade and below the secondary geomembrane.

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Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
			4. 100-mil HDPE secondary liner. 5. Geonet to allow any solution leaking through the primary geomembrane to rapidly flow into the LCRS sump. Solution that collects in the sump will be removed by a dedicated pump and returned to the impoundment 6. 100-mil HDPE primary liner. The liner system will be held in place along the perimeter of the pond by an anchor trench. The impoundment shall have 2.5V:1H side slopes, and the pond floor shall be sloped at 3% to the LCRS. The upgradient side of the Producer Process Water Impoundment is the Producer PLS Impoundment with an embankment for the pump station platform separating the two impoundments. Producer Dam (an Arizona Department of Water Resources permitted jurisdictional dam) shall be constructed downgradient side of the Producer Process Water Impoundment. This pond will receive overflow from the Producer PLS Impoundment, located upgradient during storm or upset events, and accumulated solutions will be pumped to the Modoc and Metcalf SX Plants. The Producer Process Water Impoundment shall provide additional storage for the 100-year/24-hour storm event, two hours of pump downtime and additional flow from the interceptor wells to be located along the western and southern boundaries of the stockpile.
Process Solution Impoundments within the Passive Containment Capture Zone:			
68	DHIP 5	Metcalf SX Plant PLS Pond	**Individual BADCT:** Facility is a single-lined impoundment using 80-mil HDPE liner over relatively low permeability bedrock. The facility is equipped with a high-level overflow pipe that reports to the Metcalf SX Plant Raffinate Pond (Facility No. 69). The storage capacity of the facility is approximately 5 acre-feet with a maximum depth of approximately 23 feet. Facility is located within the PCCZ.
69	DHIP 6	Metcalf SX Plant Raffinate Pond	**Individual BADCT:** Facility is an unlined impoundment located over low permeability bedrock. The storage capacity of the facility is approximately 7 acre-feet with a maximum depth of approximately 28 feet. Facility is located within the PCCZ.
70	DHIS 1	King/Placer Diversion	**Individual BADCT:** The facility is an impoundment created by a concrete headwall keyed into a relatively low permeability bedrock. The facility collects and conveys PLS through HDPE pipelines to an SX plant or an in-pit sump. Facility is located within the PCCZ.
71	DHIS 26	Northwest Coronado Diversion	**Individual BADCT:** The facilities shall be impoundments created by a headwall keyed into relatively low permeability bedrock. The facilities shall collect and convey PLS through HDPE pipelines to an SX plant or an in-pit sump. Facilities shall be located within the PCCZ.
72	DHIS 27	Upper Chase Creek Diversion	
73	DHIS 28	Garfield Diversion	
74	DHIS 29	Coronado Diversion	

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
75	DHIS 30	Santa Rosa Diversion	**Individual BADCT:** The facility is an impoundment created by a concrete headwall keyed into relatively low permeability bedrock. The facility collects and conveys PLS through HDPE pipelines to an SX plant or an in-pit sump. Facility is located within the PCCZ.
76	DHIS 50	In-pit Sumps	**Individual BADCT:** These facilities consist of existing and future sumps that are located over relatively low permeability bedrock within the Passive Containment Capture Zone. The sumps are equipped with pumps to convey the PLS solution through HPDE pipelines. Overflow from the sumps is conveyed to adjacent sumps. The solution levels in the sumps shall be maintained to sustain the capture zone of the hydrologic sink (see Operational Requirements in Table 7). The slope stability of pit walls and stockpiles shall be assessed for new in-pit sumps prior to installation.
Leach Stockpiles outside the Passive Containment Capture Zone:			
77	DHSL 4	Rock House Canyon / Lower Chase Creek Stockpile	**Individual BADCT:** The facility is a leach stockpile constructed using the end-dumping method over moderate-to-steeply sloping topography which minimizes the potential for discharge. Originally named Rock House Canyon Stockpile, the facility now includes the former Rock House Canyon Stockpile Expansion (Facility No. 78) and Lower Chase Creek Stockpile (Facility No. 79). The natural channels, within the stockpile footprint, are underlain primarily (95%) by low hydraulic conductivity (3.4 x 10-6 cm/s) Precambrian granite and grandiorite and partially (5%) by Gila Conglomerate at the southern end of the stockpile. Flow from the facility follows the buried Lower Chase Creek and rock House Canyon channels and reports to Horseshoe Sump (Facility No. 57). The solution is pumped to Central SX Plant PLS Pond (Facility No. 48) and is diverted as needed to Horseshoe Overflow Pond (Facility No. 45), constructed in Lower Chase Creek. On the eastern slope of Rock House Canyon, the facility is equipped with an HDPE-lined concrete headwall located upstream of the Gila Conglomerate/Precambrian granite contact. PLS solution is conveyed via gravity through HDPE pipes from the headwall to Horseshoe Sump. The Horseshoe Overflow Pond is designed to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. The maximum crest elevation of the stockpile shall not exceed 5,755 feet amsl.
80	DHSL 10	Southwest Stockpile	**Individual BADCT:** The facility is a leach stockpile constructed using the end-dumping method over moderate-to-steeply sloping topography which minimizes the potential for discharge. As the leach stockpile is developed, 535 million tons of run of mine (ROM) crushed ore shall be deposited onto the stockpile by a conveyance system. The facility is underlain primarily by low hydraulic conductivity (6.9×10^{-4} to 1.1×10^{-6} cm/s) bedrock. Flow from the facility reports to Dam BC-1 through Dam BC-8, 29 MM Sump, 27 MM Sump, 23/25 MM Sump, Stargo Sump and Stargo Overflow Pond (Facility Nos. 52-56, 58-63, 65, 66, and 46). Dam BC-5, 27 MM Sump, 23/25 MM Sump, and Stargo Overflow Pond are designed to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. The maximum crest elevation of the stockpile is 5,400 ft amsl. This facility also includes the Agglomerator Area that is located adjacent to the northeast portion of the Southwest Stockpile.

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
81	DHSL 10A	Southwest Stockpile Expansion	**Individual BADCT:** The facility is a leach stockpile constructed using the end-dumping method over moderate-to-steeply sloping topography which minimizes the potential for discharge. The discharge is further minimized by underlying bedrock with a hydraulic conductivity of 6.9×10^{-4} cm/s. Flow from the facility flows through the Southwest Stockpile and Southwest Stockpile Expansion (Facility Nos. 80 and 81) and reports to Stargo Sump (Facility No. 58). The Stargo Overflow Pond is designed to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. The maximum crest elevation of the stockpile is 5,400 ft amsl.
82	D-EAC 5	Lone Star Stockpile	**Individual BADCT:** The facility is a leach stockpile constructed using the end-dumping method over moderate-to-steeply sloping topography which minimizes the potential for discharge. The discharge is further minimized by underlying bedrock with a hydraulic conductivity of 6.9×10^{-4} cm/s. Flow from the facility flows through the Southwest Stockpile and Southwest Stockpile Expansion (Facility No. 80 and 81) and reports to Stargo Sump (Facility No. 58). The Stargo Overflow Pond is designed to contain the stormwater runoff from the 100-year, 24-hour storm event with a minimum of 2 feet of freeboard. The maximum crest elevation of the stockpile is 5,400-ft amsl.
150		Silver Basin Leach Stockpile	**Individual BADCT:** The facility is a leach stockpile constructed using the end-dumping method over moderate-to-steeply sloping topography which minimizes the potential for discharge. The discharge is further minimized by underlying bedrock with a hydraulic conductivities ranging between 3.6×10^{-5} to 8.79×10^{-6} cm/s. The Silver Basin Leach Stockpile will be located upstream of the existing Southwest Stockpile and between Eagle Creek (to the west) and Stargo Canyon (to the east) drainage basins. The leach stockpile will be constructed in multiple phases. Phases 1 and 2 have been constructed in the upper portion of the drainage basin and share common solution collection facilities. Phase 3 will be constructed in the lower portion of the Silver Basin drainage and will include separate solution collection facilities. The liner system constructed over gentle hillsides and select channels consists of, from bottom to top, a prepared sub-grade, 12-inches of under-liner consisting of crushed ore having an average hydraulic conductivity of approximately 1×10^{-6} cm/s; 80 mil LLDPE geomembrane; 24-inches of over-liner consisting of ore of varying grade for liner protection, and from 6 to 40 feet of either Select or General ROM. Phase 4 will be constructed directly on top of Phases 1 through 3, the Southwest Stockpile Expansion (Facility No. 81), and the Morenci Canyon Stockpile. Solution will drain directly to the solution collection systems beneath the stockpiles. The maximum permitted crest elevation for all phases of the stockpile is 6.600ft amsl.
159		Producer Leach Stockpile	**Individual BADCT:** The facility will be constructed using the end-dumping method of ROM ore in 30-foot lifts over moderate to-steeply sloping topography which minimizes the potential for discharge. Existing historic mine openings within the stockpile footprint that required closure shall be properly sealed to mitigate the potential for infiltration of PLS into the subsurface. The discharge is further minimized by underlying bedrock with hydraulic conductivities ranging from 5×10^{-4} to 5×10^{-6} cm/s. The stockpile will fill all or parts of the Gold Gulch, West Gold Gulch, East Gold Gulch and Pinkard Gulch drainages and will extend from the Gold Gulch/Pinkard Gulch confluence in the southwest to the existing Producer

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
			Development Rock Stockpile (exempt facility) to the north. The foundation of the stockpile shall be partially lined along the major channels with geomembrane for slopes 10% or less and spent mine-for-leach (MFL) ore for slopes greater than 10% to as high as 30%. The subgrade shall consist of, at minimum, 6 inches of compacted native or natural materials which are required to provide a firm base for the overlying materials. The lined sections of the stockpile will have an internal solution collection system for the collection and conveyance of PLS to the Producer PLS Pond, located downgradient of the stockpile. The geomembrane-lined sections of the stockpile with slopes 10% or less will consist of: 1. 12 inches of low permeability underliner with a maximum hydraulic conductivity of 1x10-5 cm/sec 2. An 80-mil linear low density polyethylene (LLDPE) double- sided textured geomembrane liner. 3. 24 inches of overliner material to protect the liner, (4) 4. 4 feet minimum of select ROM material in the major channels to provide drainage for PLS. 5. 4 feet minimum of general ROM material to protect the liner system during end-dumping. The lined sections of the stockpile with slopes greater than 10% to as high as 30% will consist of 3 feet minimum compacted, spent MFL ore. The maximum crest elevation of the stockpile is 5,875 ft amsl. An 80-ft wide buttress shall be constructed at the toe of the stockpile to provide stability. Stormwater diversion structures shall divert non-contact water around the Producer Leach Stockpile into drainages located downstream of the Producer Stockpile Facilities. Stormwater diversion structures and the PLS and process water impoundments shall be sized to contain runoff resulting from the 100-year, 24-hour storm event. Additional volume requirements shall include two hours of pump downtime plus flow from the interceptor wells to be located along the western and southern boundaries of the stockpile. Pipelines and channels shall be sized to convey the 1000-year, 1-hour storm event.
Leach Stockpiles within the Passive Containment Capture Zone:			
83	DHSL 1	Medler Stockpile	**Individual BADCT:** These current and future facilities are (or shall be) leach stockpiles constructed using the end-dumping method. Flow from the facilities reports to in-pit sumps and/or diversion structures. They are underlain by moderate-to-steeply sloping topography and low hydraulic conductivity bedrock. These facilities are located within the PCCZ. Maximum crest elevations of the leach stockpiles are: • Medler Stockpile – 7,000 ft amsl • Santa Rosa Stockpile – 7,000 ft amsl • American Mountain Stockpile – 7,000 ft amsl • Placer Stockpile – 7,000 ft amsl • King Stockpile – 7,000 ft amsl
85	DHSL 3	Santa Rosa Stockpile	
86	DHSL 5	American Mountain Stockpile	
87	DHSL 7	Placer Stockpile	
88	DHSL 8	King Stockpile	

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
			The footprint of the King Stockpile (Facility 88) is amended by the Figure "Proposed King Stockpile Expansion," dated 6/24/04, received by ADEQ on 7/7/04.
89	DHSL 8A	King/Placer Stockpile Expansion	**Individual BADCT:** These current and future facilities are (or shall be) leach stockpiles constructed using the end-dumping method. Flow from the facilities reports to in-pit sumps and/or diversion structures. The facilities are underlain by moderate-to-steeply sloping topography and low hydraulic conductivity bedrock. These facilities are located within the PCCZ. Maximum crest elevations of the leach stockpiles are: • King/Placer Stockpile Expansion – 7,000 ft amsl • Coronado Stockpile – 7,000 ft amsl • Coronado Stockpile Expansion – 7,000 ft amsl • Queen Hill Stockpile – 7,000 ft amsl • Upper Chase Creek Stockpile – 7,000 ft amsl • Upper Chase Creek Stockpile Expansion – 7,000 ft amsl • Garfield Stockpile – 7,000 ft amsl • Metcalf In-pit Stockpiles – 7,000 ft amsl • Northwest Coronado Stockpile – 7,000 ft amsl
90	DHSL 9	Coronado Stockpile	
91	DHSL 9A	Coronado Stockpile Expansion	
92	DHSL 11	Queen Hill Stockpile	
93	DHSL 12	Upper Chase Creek Stockpile	
94	DHSL 12A	Upper Chase Creek Stockpile Expansion	
95	DHSL 13	Garfield Stockpile	
96	DHSL 15	Metcalf In-pit Stockpiles	
98	DHSL 17	Northwest Coronado Stockpile	
Leach Stockpiles Partially within the Passive Containment Capture Zone:			
84	DHSL 2	Copper Mountain Stockpile	**Individual BADCT:** The facility is a leach stockpile constructed using the end-dumping method over moderate-to-steeply sloping topography which minimizes the potential for discharge. The discharge is further minimized by underlying bedrock with a hydraulic conductivity ranging from 1.5 to 7.6 x 10^{-5} cm/s. Solution from Copper Mt stockpile and Morenci in-pit stockpile expansion flows into the in-pit solution collection system (flow through the stockpile) and into Dispatch sump by following historical geologic gradient into Chase Creek Canyon. The maximum crest elevations of the leach stockpiles are: a. Copper Mountain Stockpile – 5,855 ft amsl b. Morenci In-pit Stockpile Expansion- 5,855 ft amsl
97	DHSL 16	Morenci In-pit Stockpile Expansion	
156		Morenci Canyon Stockpile	**Individual BADCT:** The proposed leach stockpile is designed for the placement of approximately 600 million tons (about 363 million cubic yards) of ROM material. The facility will be constructed using the end-dumping method over moderate-to-steeply sloping topography which minimizes the potential for discharge. The discharge is further minimized by underlying bedrock with hydraulic conductivities ranging from 2.03x10^{-3} to 4.5x10^{-6} cm/s. This stockpile will be located in Morenci Canyon between the Morenci Pit and the Reduction Works area. The stockpile will fill most of Morenci Canyon and will cover the existing Morenci Canyon Development Rock Stockpile (exempt facility), part of the existing Modoc Development Rock Stockpile (exempt facility), the eastern part of the Lone Star Stockpile (Facility No. 82), and the

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
			northern part of the Southwest Stockpile Expansion (Facility No. 81). . The foundation of the stockpile will be partially lined with geomembrane and will have an internal solution collection system for the collection and transportation of PLS to the MRC PLS Pond, located downgradient of the stockpile. The lined sections of the stockpile will consist of (1) an underliner layer consisting of minus 3/8-inch soil in areas of fill or existing regraded ore within the Southwest Stockpile Expansion, (2) an 80 mil linear low density polyethylene (LLDPE) geomembrane liner, and (3) a minimum of 2 feet of overliner material consisting of clean drain rock material of varying grade for liner protection to protect the liner following installation. The maximum crest elevation of the stockpile is 5,900 ft amsl.
Wastewater Treatment Facilities:			
99A		Morenci WWTP	**Individual BADCT:** The WWTP has a total capacity to collect and treat maximum flow of 1.25 mgd. The WWTP treats residential, commercial, and mine-site domestic sewage from the towns of Morenci, Clifton, and FMMI Morenci Mine. The WWTP also accepts septic wastes from the mine site. The Morenci WWTP is a package plant producing class B+ effluent. The WWTP is composed of two grinders, a septage unloading station, headworks containing screening and grit removal, flow equalization basin, activated sludge system (extended aeration process, clarification, Return Activated Sludge/Waste Activated Sludge (RAS/WAS), and Internal Mixed Liquor Recycling (IMLR), Solid Handling (aerobic digester and sludge drying basins), tablet calcium hypochlorite disinfection, effluent pump station, odor control, electric, and instrumentation. A backup generator is provided to contain the effluent volume during a 4-hour pump downtime, if needed. The WWTP is designed to produce Class B+ effluent and the effluent is sent to the reclaim water system.
Vehicle Wash Facilities within the Passive Containment Capture Zone:			
101	D-NASY 11B	New Vehicle Wash – ATV Shop Vehicle Was	**Individual BADCT:** The facility shall be a vehicle wash constructed with a concrete slab. Wash water from the facility shall be collected in a concrete settling basin that shall be equipped with an oil/water separator. The facility shall use non-hazardous cleaning agents. Water from the oil/water separator shall report to the In-pit Sumps (Facility No. 76). The facility shall be located within the PCCZ.
102	DMMV 1	Metcalf Small Vehicle Wash	**Individual BADCT:** The facility is a vehicle wash constructed with a concrete slab. Wash water from the facility shall be collected in a concrete settling basin. The facility uses non-hazardous cleaning agents. The settling basin drains onto the underlying stockpile and reports to the 4250 Sump (Facility No. 76). The facility is located within the PCCZ.
103	DMMV 2	Heavy Duty Truck Wash	**Individual BADCT:** The facility is a vehicle wash constructed with a concrete slab. Wash water from the facility shall be collected in a concrete settling basin equipped with a grease trap. The facility uses non-hazardous cleaning agents. Water from the grease trap drains onto the underlying stockpile and reports to the 4250 Sump (Facility No. 76). The facility is located within the PCCZ.

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
104		New Vehicle Washes – within the Hydrologic Sink	**Individual BADCT:** These facilities are vehicle washes that shall be constructed with a concrete slab. Wash water from these facilities shall be collected in a concrete settling basin. Water from the settling basins shall report to the In-pit Sumps (Facility No. 76). These facilities shall be located within the PCCZ.
Vehicle Wash Facilities outside the Passive Containment Capture Zone:			
105	DMMV 4	RW Fuel Dock Small Vehicle Wash	**Individual BADCT:** The facilities are vehicle washes that are constructed with a concrete slab. The facilities use non-hazardous cleaning agents. Wash water flows overland to Reed Lake (Facility No. 39).
106	DMMV7	Surface Dept. Vehicle Wash	
107	D-NMBW 6A	Mine Gate Lube Shop Vehicle Wash	**Individual BADCT:** The facility is a vehicle wash that is constructed with a concrete slab. The facility uses non-hazardous cleaning agents. Wash water from the facility is collected in a concrete settling basin. The settling basin drains through the Lower Chase Creek Stockpile (Facility No. 79) and reports to Horseshoe Sump (Facility No. 57).
Miscellaneous Facilities outside the Passive Containment Capture Zone:			
108	DCOP 2	Concentrate Load-out Yard at the Bedding Plant	**Individual BADCT:** This facility is an unlined pad designated for loading concentrate into rail cars. The facility was upgraded in 2006. Regrading of the area north and west of the load-out yard was completed to divert stormwater run-on away from the facility. Undiverted stormwater run-on is ultimately diverted by a 3-foot-high earthen berm along the north side of the load-out yard. Non-impacted stormwater to the east of the facility is diverted into an unlined diversion channel through an existing catch box and into another unlined diversion channel that reports to the industrial drain. A tire wash area has been constructed on a concrete slab. Water from the tire wash reports to a settling basin and then to an HDPE-lined evaporation pond. All conveyances from the load-out area leading to the Industrial Drain have been blocked.
109	DMRR 3	Pinkard Gulch Impoundment	**Individual BADCT:** Currently, these facilities are stormwater impoundments. The impoundments are designed to contain the 100-year, 24-hour storm event runoff with a minimum of 2 feet of freeboard. The APP status of these facilities (i.e., subject to general or individual APP requirements) shall be determined following completion of stormwater sampling. See Compliance Schedule.
110	DMRR 4	West Gold Gulch Impoundment	
111	DMRR 5	East Gold Gulch Impoundment	
112	DMRR 6	Highway Relocation Stockpile Impoundment	
Facilities to be Closed or Addressed Per Section 2.9.2:			
9	DCRS 1	Tailing Stormwater Retention Dam 1	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
11	DCRS 3	Tailing Stormwater Retention Dam 2A	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.
12	DCRS 4	Tailing Stormwater Retention Dam 2B	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.
14	DCRS 6	Tailing Stormwater Retention Dam 3A	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.
15	DCRS 7	Tailing Stormwater Retention Dam 3B	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.
16	DCRS 8	Tailing Stormwater Retention Dam 3C	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.
17	DCRS 9	Tailing Stormwater Retention Dam 3D	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.
18	DCRS 10	Tailing Stormwater Retention Dam 4	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.
19	DCRS 11	Tailing Stormwater Retention Dam 4A	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.
20	DCRS 12	Tailing Stormwater Retention Dam 4B	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.
22	DCRS 14	Tailing Stormwater Retention Dam 5A	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.
23	DCRS 15	Tailing Stormwater Retention Dam 5B	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.
24	DCRS 16	Tailing Stormwater Retention Dam 5C	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.9.2 Closure Completion.
25	DCRS 17	Tailing Stormwater Retention Dam 5D	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.92 Closure Completion.
26	DCRS 18	Tailing Stormwater Retention Dam 5E	Facility will be closed through burial under the Tailings Impoundment. Morenci will notify ADEQ when the facility has been buried per section 2.92 Closure Completion.
59	DHIS 9	5X Sump	Facility is in permanent cessation. Final closure for this facility will be completed during mine closure.

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
64	DHIS 19	Dam BC-9	Facility is in permanent cessation. Final closure for this facility will be completed during mine closure.
67		Three Former Ponds at 23/25MM Pond	Facility is in permanent cessation. Final closure for this facility will be completed during mine closure. (consumed by 23/25MM Pond, see Southwest MFL amendment application dated 4/14/08)
100	D-NMBW 5A	Morenci Machine Shop Vehicle Wash	Facility is in permanent cessation. Final closure for this facility will be completed during mine closure.
102	DMMV 1	Metcalf Small Vehicle Wash	This facility was demolished in April 2016. Final closure for this facility will be completed during mine closure.
113	D-NASY 11A	Vehicle Wash – SX Pipe Yard	Facility is in temporary cessation. Final closure for this facility will be completed during mine closure.
114	DMMV 6	Central SX/EW Plant Vehicle Wash	Facility is in temporary cessation. Final closure for this facility will be completed during mine closure.
118	D-NASY 16	4500 Precipitation Plant	Facility is in temporary cessation. Final closure for this facility will be completed during mine closure.
119	DHLS 1	Southwest Precipitation Plant	Facility is in temporary cessation. Final closure for this facility will be completed during mine closure.
135		Seepage Collection Pond A1-1	Facility is buried under the Tailings Impoundment. Final closure for this facility will be completed during mine closure.
136		Seepage Collection Pond A1-2	Facility is buried under the Tailings Impoundment. Final closure for this facility will be completed during mine closure.
137		Seepage Collection Pond B1-1	Facility is buried under the Tailings Impoundment. Final closure for this facility will be completed during mine closure.
138		Seepage Collection Pond C1-1	Facility is buried under the Tailings Impoundment. Final closure for this facility will be completed during mine closure.
139		Seepage Collection Pond D1-1	Facility is buried under the Tailings Impoundment. Final closure for this facility will be completed during mine closure.
140		Seepage Collection Pond E1-1	Facility is buried under the Tailings Impoundment. Final closure for this facility will be completed during mine closure.
141		Seepage Collection Pond F1-1	Facility is buried under the Tailings Impoundment. Final closure for this facility will be completed during mine closure.
142		Seepage Collection Pond G1-1	Facility is buried under the Tailings Impoundment. Final closure for this facility will be completed during mine closure.

Table 6: PERMITTED FACILITIES AND BADCT			
Facility No.	**FMMI No.**	**Facility Name**	**Facility BADCT [A,B,C]**
143		Seepage Collection Pond G1-2	Facility is buried under the Tailings Impoundment. Final closure for this facility will be completed during mine closure.

Notes:

A The primary discharge control technologies for each discharging facility are presented; however, additional discharge controls are discussed in the APP application and subsequent submittals.

B Individual and Prescriptive BADCT requirements are defined in the ADEQ Arizona Mining BADCT Guidance Manual, dated September 1998.

C Definitions:

BADCT – best available demonstrated control technology
HDPE – high-density polyethylene
bgs – below ground surface
LCRS – leak collection and removal system
GCL – geosynthetic clay liner
amsl – above mean sea level
RLL – rapid and large leakage
ALR – action leakage rate

4.2. COMPLIANCE OR OPERATIONAL MONITORING

<table>
<tr><th colspan="4">Table 7: REQUIRED INSPECTIONS AND OPERATIONAL MONITORING</th></tr>
<tr><th>Facility No.</th><th>FMMI No.</th><th>Facility Name</th><th>Operational Requirements</th></tr>
<tr><td colspan="4">Tailing Impoundments:</td></tr>
<tr><td>1</td><td>DCTT 1</td><td>Southwest 1 Tailing Dam</td><td rowspan="8">
Crest Elevation (ft amsl) Minimum Beach Length (ft)
3875 50
4000 100
4100 200
4150 400
Note: Minimum beach distance can be extrapolated linearly between elevations.

Quarterly:
• Inspect for crest failure, translation of toe or sloughing.
• Note visible cracks or erosion features and perform maintenance.
• Check for seepage from toe and face of tailing dam.

<u>REQUIREMENTS SPECIFIC TO MONITORING SLOPE STABILITY PIEZOMETERS</u>
Quarterly:
• During periods of operation and the first year following temporary cessation of tailing impoundments, measure water levels in slope stability piezometers to ensure phreatic surface is maintained within safe operating limits.

Annually:
• During the second and subsequent years following temporary cessation of tailing impoundments, measure water levels in slope stability piezometers to ensure phreatic surface is maintained within safe operating limits.

<u>REQUIREMENTS SPECIFIC TO MONITORING TAILING STORMWATER PONDS</u>

Following precipitation events measuring at least 1-inch in a 24-hour period[A]:
• Maintain sufficient capacity within each dam system to contain the 100-year, 24-hour runoff volume.
• Visually inspect upgradient channels for blockages.

Monthly and following precipitation events measuring at least 1-inch in a 24-hour period[A]:
• Measure pH in impoundments that receive impacted stormwater runoff. If pH is less than 5.0 SU, raise the pH to 5.0 within 30 days of initial pH measurement.

Quarterly:
• Inspect pumps, pump structures, and access.
</td></tr>
<tr><td>2</td><td>DCTT 1a</td><td>Southwest 2 Tailing Dam</td></tr>
<tr><td>3</td><td>DCTT 1b</td><td>Southwest 1 Tailing Dam Expansion</td></tr>
<tr><td>4</td><td>DCTT 2</td><td>Silver Basin Tailing Dam Complex</td></tr>
<tr><td>5</td><td>DCTT 2a</td><td>Silver Basin Tailing Dam Expansion</td></tr>
<tr><td>6</td><td>DCTT 3</td><td>West Tailing Dam Complex</td></tr>
<tr><td>7</td><td>DCTT 4</td><td>East Tailing Dam Complex</td></tr>
<tr><td>8</td><td>DCTT 5</td><td>West/East Tailing Dam Expansion</td></tr>
</table>

Table 7: REQUIRED INSPECTIONS AND OPERATIONAL MONITORING			
Facility No.	**FMMI No.**	**Facility Name**	**Operational Requirements**
			Annually: • Remove excess tailing from stormwater retention dams as needed to maintain 100-year, 24-hour runoff volume storage capacity. **<u>REQUIREMENTS SPECIFIC TO MONITORING SEEPAGE COLLECTION PONDS</u>** **Daily:** • Visually inspect and maintain 2 feet of freeboard, as applicable. **Weekly and following precipitation events measuring at least 1-inch in a 24-hour period[A]:** • Visually check freeboard in the impoundment. If water is present, inspect facility daily until stormwater inflow to the impoundment ceases. • Visually inspect the dams for erosion features, surface cracks and seeps. **Quarterly:** • Visually inspect concrete integrity, such as cracks and other damage. • Visually inspect embankment integrity, as applicable. • Inspect pumps, pump structures, and access, as applicable.
Non-Stormwater Impoundments - Unlined Tailing Stormwater Retention Dams:			
153		Tailing Stormwater Retention Dam 1X	**Following precipitation events measuring at least 1-inch in a 24-hour period[A]:** • Maintain sufficient capacity within each dam system to contain the 100-year, 24-hour runoff volume. • Visually inspect upgradient channels for blockages. • Visually inspect the dams for erosion features, surface cracks and seeps. **Monthly and following precipitation events measuring at least 1-inch in a 24-hour period[A]:** • Measure pH in impoundments formed by compacted Gila conglomerate, clay core and concrete dams that receive impacted stormwater runoff. This includes Dams 1X, 5F, 6, 7A, 7B, 7C, and 11. If pH is less than 5.0 SU, raise the pH to 5.0 within 30 days of initial pH measurement. **Quarterly:** • Inspect pumps, pump structures, and access. **Annually:** • Remove excess tailing from stormwater retention dams as needed to maintain 100-year, 24-hour runoff volume storage capacity.
10	DCRS 2	Tailing Stormwater Retention Dam 2	
13	DCRS 5	Tailing Stormwater Retention Dam 3	
154		Tailing Stormwater Retention Dam 4X	
21	DCRS 13	Tailing Stormwater Retention Dam 5	
27	DCRS 19	Tailing Stormwater Retention Dam 5F	
28	DCSR 20	Tailing Stormwater Retention Dam 5G	
29	DCRS 21	Tailing Stormwater Retention Dam 6	
30	DCRS 22	Tailing Stormwater Retention Dam 7	

Table 7: REQUIRED INSPECTIONS AND OPERATIONAL MONITORING			
Facility No.	**FMMI No.**	**Facility Name**	**Operational Requirements**
31	DCRS 23	Tailing Stormwater Retention Dam 7A	
32	DCRS 23A	Tailing Stormwater Retention Dam 7B	
120	DCRS 23B	Tailing Stormwater Retention Dam 7C	
33	DCRS 24	Tailing Stormwater Retention Dam 8	
34	DCRS 25	Tailing Stormwater Retention Dam 9	
35	DCRS 25A	Tailing Stormwater Retention Dam 9A	
36	DCRS 26	Tailing Stormwater Retention Dam 10	
37	DCRS 26A	Tailing Stormwater Retention Dam 10A	
38	DCRS 27	Tailing Stormwater Retention Dam 11	
121		Tailing Stormwater Retention Dam 12X	
122		Tailing Stormwater Retention Dam WFT-1	
123		Tailing Stormwater Retention Dam WFT-10	
Non-Stormwater Impoundments – Unlined:			
39	D-ECC 4	Industrial Drain Overflow Pond (Reed Lake)	**Daily:** • Visually inspect and maintain appropriate freeboard in Rocky Gulch Dam and Gold Gulch Dam (See BADCT – Table 6). **Weekly and following precipitation events measuring at least 1-inch in a 24-hour period[A]:** • For the Industrial Drain Overflow Pond, Bat Canyon Safety Dam 1, and Lower Chase Creek Dam, visually check freeboard in the impoundments (See BADCT – Table 6). If water is present, inspect facility daily until inflow to the impoundment ceases. **Quarterly:** • Inspect embankment integrity, pumps, pump structures, and access.
40	DHRE 1	Bat Canyon Safety Dam 1	
41	DHRR 1	Lower Chase Creek Dam	
42	DMRR 1	Rocky Gulch Dam	
43	DMRR 2	Gold Gulch Dam	

Table 7: REQUIRED INSPECTIONS AND OPERATIONAL MONITORING			
Facility No.	**FMMI No.**	**Facility Name**	**Operational Requirements**
Non-Stormwater Impoundments – Lined:			
44	DCIR 1	Columbine Reservoir	**Daily:** • Visually inspect and maintain 2 feet of freeboard, as applicable. **Weekly and following precipitation events measuring at least 1-inch in a 24-hour period[A]:** • Visually check freeboard in the impoundment. If water is present, inspect facility daily until inflow to the impoundment ceases. • Evacuate solution as soon as practicable. • For Horseshoe Overflow Pond and Stargo Overflow Pond, visually check freeboard in the impoundments (See BADCT – Table 6). If water is present, inspect facility daily until inflow to the impoundment ceases. • For Horseshoe and Stargo Overflow Ponds, solution must be evacuated as soon as practicable. **Quarterly:** • Visually inspect liners for holes and tears, and anchor trench integrity (clay or HDPE liners, as applicable). • Visually inspect embankment integrity, as applicable. • Inspect pumps, pump structures, and access, as applicable. • For Horseshoe Overflow Pond, collect one groundwater sample from wells CC-44, CC-46, and CC-53, analyze for field pH, and submit samples for laboratory analysis of total dissolved solids and sulfate (refer to Section 2.5.4 Routine Discharge Monitoring for the Wastewater Treatment Plant). Evaluate and compare analytical results with calculated and established Action Levels. If results exceed an established Action Level, initiate actions stated in Contingency Plan, Section 2.6 Contingency Plan Requirements.
45	DHIS 21	Horseshoe Overflow Pond	
46	DHIS 8	Stargo Overflow Pond	
47	DHIS 22	Pond 800 Feet SW of 4500 Precipitation Plant	
152		Silver Basin NSI 1/2	
Process Solution Impoundments - Double-Lined; Outside the PCCZ:			
48	DHIP 1	Central SX Plant PLS Pond	**Daily:** • Check overflow pipes for blockages. • Visually inspect and maintain appropriate freeboard in impoundments (See BADCT –Table 6). **Weekly:** • Monitor the flow rate in the leak collection and removal systems. For Central SX Plant and Modoc SX Plant PLS ponds, compare flow rate with Action Leakage Rate (see BADCT – Table 6). **Quarterly:** • Visually inspect liners for holes and tears, and anchor trench integrity. • Inspect pumps, pump structures, and access. • Inspect upgradient stormwater diversion ditches for blockage and erosion.
49	DHIP 2	Central SX Plant Raffinate Pond	
50	DHIP 3	Modoc SX Plant PLS Pond	
51	DHIP 4	Modoc SX Plant Raffinate Pond	
151		Silver Basin PLS Pond 1/2	
155		SB PLS Pond	
157		MRC PLS Pond	
158		MRC Process Pond	
160		Producer PLS	

Table 7: REQUIRED INSPECTIONS AND OPERATIONAL MONITORING			
Facility No.	**FMMI No.**	**Facility Name**	**Operational Requirements**
		Impoundment	
161		Producer Process Water Impoundment	
Process Solution Impoundments – Single-Lined; Outside the PCCZ:			
52	DHIS 11	Dam BC-1	**Daily:** • Visually inspect and maintain appropriate freeboard in impoundments (See BADCT –Table 6). **Quarterly:** • Visually inspect liners for holes and tears, and anchor trench integrity. • Inspect pumps, pump structures, and access. • Visually inspect embankment integrity (at applicable facilities).
53	DHIS 12	Dam BC-2	
54	DHIS 13	Dam BC-3	
55	DHIS 14	Dam BC-4	
56	DHIS 15	Dam BC-5	
57	DHIS 6	Horseshoe Sump	
58	DHIS 8	Stargo Sump	
62	DHIS 10	27 MM Sump	
65	DHIS 20	29 MM Sump	
66	DHRR 2	23/25 MM Pond	
Process Solution Impoundments – Unlined; Outside the PCCZ:			
60	DHIS 16	Dam BC-6	**Daily:** • Visually inspect and maintain appropriate freeboard in impoundments (See BADCT – Table 6). **Quarterly:** • Inspect pumps, pump structures, and access. • Visually inspect embankment integrity, as applicable.
61	DHIS 17	Dam BC-7	
63	DHIS 18	Dam BC-8	
Process Solution Impoundments - Single-Lined; Within the PCCZ:			
68	DHIP 5	Metcalf SX Plant PLS Pond	**Quarterly:** • Visually inspect liners for holes and tears, and anchor trench integrity. • Inspect pumps, pump structures, and access.
Process Solution Impoundments and Solution Conveyance Facilities – Unlined; Within the PCCZ:			
69	DHIP 6	Metcalf SX Plant Raffinate Pond	**Daily:** • For In-pit Sumps, check solution level in Dispatch Hill Sump, or its future equivalent Maximum operating level is 3,800 ft above mean sea level elevation • For Diversion Structures, check screens for blockage, as applicable. **Quarterly:** • Inspect pumps, pump structures, and access, as applicable.
70	DHIS 1	King/Placer Diversion	
71	DHIS 26	Northwest Coronado Diversion	
72	DHIS 27	Upper Chase Creek Diversion	

Table 7: REQUIRED INSPECTIONS AND OPERATIONAL MONITORING			
Facility No.	**FMMI No.**	**Facility Name**	**Operational Requirements**
73	DHIS 28	Garfield Diversion	• Visually inspect embankment integrity, as applicable.
74	DHIS 29	Coronado Diversion	
75	DHIS 30	Santa Rosa Diversion	
76	DHIS 50	In-pit Sumps	
Leach Stockpiles:			
77	DHSL 4	Rock House Canyon / Lower Chase Creek Stockpile	**Monthly:** • Visually observe deformations, including surface cracks, slides, sloughs, or unusual settlement, for slope stability.
80	DHSL 10	Southwest Stockpile	
81	DHSL 10A	Southwest Stockpile Expansion	
82	D-EAC 5	Lone Star Stockpile	
83	DHSL 1	Medler Stockpile	
84	DHSL 2	Copper Mountain Stockpile	
85	DHSL 3	Santa Rosa Stockpile	
86	DHSL 5	American Mountain Stockpile	
87	DHSL 7	Placer Stockpile	
88	DHSL 8	King Stockpile	
89	DHSL 8A	King/Placer Stockpile Expansion	
90	DHSL 9	Coronado Stockpile	
91	DHSL 9A	Coronado Stockpile Expansion	
92	DHSL 11	Queen Hill Stockpile	
93	DHSL 12	Upper Chase Creek Stockpile	
94	DHSL 12A	Upper Chase Creek Stockpile Expansion	
95	DHSL 13	Garfield Stockpile	
96	DHSL 15	Metcalf In-pit Stockpiles	
97	DHSL 16	Morenci In-pit Stockpile Expansion	
98	DHSL 17	Northwest Coronado Stockpile	

Table 7: REQUIRED INSPECTIONS AND OPERATIONAL MONITORING			
Facility No.	**FMMI No.**	**Facility Name**	**Operational Requirements**
150		Silver Basin Leach Stockpile	
156		Morenci Canyon Stockpile	
159		Producer Leach Stockpile	
Wastewater Treatment Facilities:			
99A		Morenci WWTP	**Daily:** • Clean filters and screens. • Check if the treatment plant system is in operating condition. **Quarterly:** • Inspect pumps and pump structures, and tanks for integrity.
Vehicle Wash Facilities within the Passive Containment Capture Zone:			
101	D-NASY 11B	New Vehicle Wash – ATV Shop Vehicle Was	**Quarterly:** • Maintain oil water separators, grease traps, and sediment basins in operational condition, as applicable. • Inspect concrete structures for integrity, as applicable. • Visually inspect liners of evaporation ponds for holes and tears, as applicable.
102	DMMV 1	Metcalf Small Vehicle Wash	
103	DMMV 2	Heavy Duty Truck Wash	
104		New Vehicle Washes – within the Hydrologic Sink	
105	DMMV 4	RW Fuel Dock Small Vehicle Wash	
106	DMMV7	Surface Dept. Vehicle Wash	
107	D-NMBW 6A	Mine Gate Lube Shop Vehicle Wash	
Miscellaneous Facilities:			
108	DCOP 2	Concentrate Load-out Yard at the Bedding Plant	**Monthly:** • Perform scraping of concentrate from ground surface in Load-out Yard. **Quarterly:** • Inspect upgradient stormwater diversion structures for blockage and erosion.

Table 7: REQUIRED INSPECTIONS AND OPERATIONAL MONITORING			
Facility No.	**FMMI No.**	**Facility Name**	**Operational Requirements**
109	DMRR 3	Pinkard Gulch Impoundment	**Monthly and following precipitation events measuring at least 1-inch in a 24-hour period[A]:** • Visually inspect and maintain appropriate freeboard in impoundments (See BADCT – Table 6). **Quarterly:** • Inspect dam integrity, pumps, pump structures, and access.
110	DMRR 4	West Gold Gulch Impoundment	
111	DMRR 5	East Gold Gulch Impoundment	
112	DMRR 6	Highway Relocation Stockpile Impoundment	
Notes: **A - Precipitation depths shall be based on readings obtained from the Townsite Weather Station (FMM I coordinate location 33° 03' 10.57" N, 109° 14' 57.73" W)**			

Table 8: LEAK COLLECTION AND REMOVAL SYSTEM MONITORING				
LCRS Sump	**Alert Level 1 (gallons per day (gpd))**	**Alert Level 2 (gpd)**	**Monitoring Method**	**Monitoring Frequency**
Central SX Plant PLS Pond	294	1,070	Manual Measurement	Weekly
Modoc SX Plant PLS Pond	415	1,513	Manual Measurement	Weekly
Silver Basin PLS Pond 1/2	813	25,892	Automated	Continuous
MRC PLS Pond	1,478	47,030	Automated	Continuous
MRC Process Pond	6,197	197,159	Automated	Continuous
SB PLS Pond	1,728	55,029	Automated	Continuous
Central SX Raffinate Pond[1]	N/A	N/A	N/A	N/A
Modoc SX Raffinate Pond[1]	N/A	N/A	N/A	N/A
Producer PLS Impoundment	4,821	102,638	Automated	Continuous
Producer Process Water Impoundment	4,187	89,118	Automated	Continuous

Note: The information in this table shall be maintained in a Log Book.

The volume of liquid pumped from the LCRS shall be monitored on a continuous basis using a totalizer and entered in a facility log book on a daily basis. The Alert Level 1 (AL1) or Alert Level 2 (AL2) shall be exceeded when the amount of leakage pumped from the sump for the UCP is greater than the applicable quantity above. Contingency requirements of Sections 2.6.2.2 Exceedance of Action Leakage Rate for Process Solution Impoundments and 2.6.2.3 Rapid and Large Leakage Exceedance in the Process Solution Impoundments shall be followed for AL1 and AL2 exceedances, respectively. An exceedance of AL 1 or AL2 is not a violation of the permit unless the permittee fails to perform actions as required under the Sections referenced above.

[1] Central SX Raffinate Pond and Modoc SX Raffinate Pond do not allow for a flowmeter to be installed (gravitational flow); therefore, leakage is inspected via their overflow pipe.

Table 9: MONITORING POINTS					
No.	**Monitoring Point**	**Designation**	**Cadastral**	**Latitude/Longitude**	**ADWR Number**
Point of Compliance (POC) Monitoring Wells					
1	Groundwater well GG-18	Hazardous/ non-hazardous POC	(D-04-29) 17CAD	33° 04' 48" N / 109° 23' 13" W	55-549326
2	Groundwater well SW-105	Hazardous/ non-hazardous POC	(D-05-29) 05ACB	33° 01' 39" N / 109° 23' 18" W	55-579560
3	Groundwater well SW-33	Hazardous/ non-hazardous POC	(D-05-29) 11ADA	33° 00' 53" N / 109° 19' 58" W	55-517293
4	Groundwater well SW-34	Hazardous/ non-hazardous POC	(D-05-29) 11DCC	33° 00' 22" N / 109° 20' 19" W	55-517294
5	Groundwater well SW-35	Hazardous/ non-hazardous POC	(D-05-29) 14BBB	33° 00' 13" N / 109° 20' 53" W	55-517295
6	Groundwater well SW-36	Hazardous/ non-hazardous POC	(D-05-29) 15ADD	32° 59' 56" N / 109° 21' 01" W	55-517296
7	Groundwater well SW-37	Hazardous/ non-hazardous POC	(D-05-29) 15ACC	32° 59' 52" N / 109° 21' 16" W	55-517297
8	Groundwater well SW-39	Hazardous/ non-hazardous POC	(D-05-29) 15CAA	32° 59' 34" N / 109° 21' 46" W	55-517299
9	Groundwater well SW-41	Hazardous/ non-hazardous POC	(D-05-29) 12BCA	33° 00' 55" N / 109° 19' 13" W	55-519765
10	Groundwater well SW-42	Hazardous/ non-hazardous POC	(D-05-29) 12B	33° 00' 58" N / 109° 19' 44" W	55-519763
11	Groundwater well SW-87	Hazardous/ non-hazardous POC	(D-04-29) 26DCA	33° 02' 55" N / 109° 19' 38" W	55-556712
12	Groundwater well SW-88	Hazardous/ non-hazardous POC	(D-04-29) 35DAD	33° 02' 24" N / 109° 19' 34" W	55-556713
13	Groundwater well CC-5	Hazardous/ non-hazardous POC	(D-04-29) 26ABD	33° 03' 26" N / 109° 19' 37" W	55-524794
14	Groundwater well CC-44	Hazardous/ non-hazardous POC	(D-04-29) 23DDD	33° 33' 51" N / 109° 19' 38" W	55-545539
15	Groundwater well CC-46	Hazardous/ non-hazardous POC	(D-04-29) 23ADA	33° 04' 24" N / 109° 19' 28" W	55-549320
16	Groundwater well CC-51	Hazardous/ non-hazardous POC	(D-04-29) 26ACA	33° 03' 45" N / 109° 19' 46" W	55-553440
17	Groundwater well CC-53	Hazardous/ non-hazardous POC	(D-04-29) 23DAB	33° 04' 51" N / 109° 19' 47" W	55-579554
18	Groundwater well CC-54	Hazardous/ non-hazardous POC	(D-04-29) 14DAC	33° 04' 07" N / 109° 19' 29" W	55-579555
19	Groundwater well RG-7	Hazardous/ non-hazardous POC	(D-04-29) 02DDC	33° 06' 26" N / 109° 19' 59" W	55-579553
20	Groundwater well GG-30	Hazardous/ non-hazardous POC	(D-04-29) 18DDB	33° 05' 02" N / 109° 24' 17" W	55-923712

Table 9: MONITORING POINTS					
No.	**Monitoring Point**	**Designation**	**Cadastral**	**Latitude/Longitude**	**ADWR Number**
21	Groundwater well GG-32	Hazardous/ non-hazardous POC	(D-04-29) 19ABB	33° 04' 29" N / 109° 24' 18" W	55-923714
22	Groundwater well GG-33	Hazardous/ non-hazardous POC	(D-04-29) 19DDB	33° 04' 03" N / 109° 24' 15" W	55-923715
23	Groundwater well GG-34	Hazardous/ non-hazardous POC	(D-04-29) 20BBC	33° 04' 15" N / 109° 23' 20" W	55-923716
Conceptual POC Wells					
1	New Morenci WWTP	Hazardous/ non-hazardous POC	N/A	33° 01' 08" N / 109° 18' 29" W	N/A
2	Los Taos	Hazardous/ non-hazardous POC	N/A	33° 05’ 56.19” N / 109° 23’ 41.23” W	N/A
POC Wells to be Constructed – On Contingency for Southwest 1 Tailing Dam					
	Groundwater well	Hazardous/non-hazardous POC	(D-05-29) 16BC or CB	32° 59' 45" N / 33° 00' 05" N 109° 22' 50" W / 109° 23' 03" W	
	Groundwater well	Hazardous/non-hazardous POC	(D-05-29) 08DB or DC	33° 00' 30" – 40” N / 109° 23' 10" – 20” W	
POC Well to be Constructed – On Contingency for Western Portion of Lone Star Stockpile					
	Groundwater well	Hazardous/non-hazardous POC	(D-04-29) 21 CB or CC	33° 33' 40" – 60” N / 109° 22' 15" – 28” W	
Groundwater Level Monitoring Points for Hydrologic Sink Verification					
1	Groundwater well CC-42	Groundwater Level Monitoring Point	(D-04-29) 15DBC	33° 04' 50" N / 109° 20' 54" W	55-546230
2	Groundwater well CC-50	Groundwater Level Monitoring Point	(D-04-29) 11CCD	33° 05' 34" N / 109° 20' 13" W	55-549332
3	Groundwater well GG-29	Groundwater Level Monitoring Point	(D-04-29) 18AAB	33º 05' 17" N / 109º 24' 00" W	55-923711
4	Groundwater well GG-20	Groundwater Level Monitoring Point	(D-04-29) 21BDB	33° 04' 20" N / 109° 22' 14" W	55-579559
6	Groundwater well GG-30	Groundwater Level Monitoring Point	(D-04-29) 18DDB	33º 05' 02" N / 109º 24' 17" W	55-923712
7	Groundwater well GG-13	Groundwater Level Monitoring Point	(D-04-29) 17DAC	33° 04' 51" N / 109° 16' 28" W	55-549325
8	Groundwater well GG-14	Groundwater Level Monitoring Point	(D-04-29) 20ABB	33° 04' 31" N / 109° 22' 52" W	55-549324

Table 9: MONITORING POINTS					
No.	**Monitoring Point**	**Designation**	**Cadastral**	**Latitude/Longitude**	**ADWR Number**
9	Groundwater well GG-15	Groundwater Level Monitoring Point	(D-04-29) 20ADB	33° 04' 19" N / 109° 22' 41" W	55-549321
10	Groundwater well GG-18	Groundwater Level Monitoring Point	(D-04-29) 17CAD	33° 04' 48" N / 109° 23' 13" W	55-550449
11	Groundwater well GG-19	Groundwater Level Monitoring Point	(D-04-29) 08CCA	33° 05' 38" N / 109° 23' 20" W	55-549333
12	Groundwater well DW-27	Groundwater Level Monitoring Point	(D-04-29) 06DDD	33° 06' 21." N / 109° 23' 35" W	55-564435
13	Groundwater well DW-36	Groundwater Level Monitoring Point	(D-04-29) 06DAC	33° 06' 35" N / 109° 23' 48" W	55-566429
14	Groundwater well DW-12	Groundwater Level Monitoring Point	(D-03-29) 33CBC	33°07' 34" N / 109° 22' 27" W	55-549343
15	Groundwater well DW-19	Groundwater Level Monitoring Point	(D-03-29) 27ACA	33° 06' 56" N / 109° 20' 40" W	55-549350
16	Groundwater well DW-20	Groundwater Level Monitoring Point	(D-03-29) 23CDD	33° 09' 03" N / 109° 19' 58" W	55-549352
17	Groundwater well DW-14	Groundwater Level Monitoring Point	(D-03-29) 29DAD	33° 08' 26" N / 109° 22' 29" W	55-549345
18	Groundwater well DW-22	Groundwater Level Monitoring Point	(D-03-29) 26DDB	33° 08' 19" N / 109° 19' 31" W	55-549351
19	Groundwater well DW-23	Groundwater Level Monitoring Point	(D-03-29) 35ADC	33° 07’ 45" N / 109° 19' 33" W	55-549340
20	Groundwater well DW-24U	Groundwater Level Monitoring Point	(D-03-29) 35DCD	33° 07' 18" N / 109° 19' 43" W	55-549339
21	Groundwater well DW-30	Groundwater Level Monitoring Point	(D-04-29) 06DCB	33° 06' 31" N / 109° 24' 05" W	55-564433
22	Groundwater well DW-31	Groundwater Level Monitoring Point	(D-04-29) 06DDC	33° 06' 19" N / 109° 23' 48" W	55-564434
23	Groundwater well DW-32	Groundwater Level Monitoring Point	(D-04-29) 07ADD	33° 06' 02" N / 109° 23' 39" W	55-564436
24	Groundwater well DW-16	Groundwater Level Monitoring Point	(D-03-29) 27CBB	33° 08' 54" N / 109° 21' 31" W	55-549346
25	Groundwater well DW-39	Groundwater Level Monitoring Point	(D-04-29) 06ACD	33° 06' 53" N / 109° 24' 02" W	55-566432
26	Groundwater well DW-38	Groundwater Level Monitoring Point	(D-04-29) 06DBA	33° 06' 43" N / 109° 24' 05" W	55-566431
27	Groundwater well DW-43	Groundwater Level Monitoring Point	(D-04-29) 06CBA	33° 07' 06" N / 109° 24' 10" W	55-915474

Table 9: MONITORING POINTS					
No.	**Monitoring Point**	**Designation**	**Cadastral**	**Latitude/Longitude**	**ADWR Number**
28	Groundwater well MP-1	Groundwater Level Monitoring Point	(D-04-29) 15BBA	33° 05’ 25" N / 109° 21' 12" W	Not registered[2]
29	Groundwater well SW-104A	Groundwater Level Monitoring Point	(D-04-29) 22BBC	33° 04' 28" N / 109° 21' 34" W	55-559316
31	Groundwater well MP-9	Groundwater Level Monitoring Point	(D-04-29) 15BBD	33° 06’ 08” N / 109° 21’ 03” W	55-559822
32	Groundwater well RG-1	Groundwater Level Monitoring Point	(D-04-29) 02CDC	33° 06’ 26” N / 109° 20’ 01” W	55-545314
33	Groundwater well RG-3	Groundwater Level Monitoring Point	(D-04-29) 02BCA	33° 06’ 29” N / 109° 20’ 06” W	55-545312
Groundwater Quality Monitoring for Hydrologic Sink Verification					
1	Piezometer GG-15	Groundwater Quality Monitoring Point	(D-04-29) 20ADB	33° 04’ 19” N / 109° 22’ 41” W	55-549321
Operational Monitoring Points for Lower Chase Creek Facilities					
1	Groundwater well CC-44	Operational Monitoring Point	(D-04-29) 23DDD	33° 33’ 51” N / 109° 19’ 38” W	55-545539
2	Groundwater well CC-46	Operational Monitoring Point	(D-04-29) 23ADA	33° 04' 24" N / 109° 19' 28" W	55-549320
3	Groundwater well CC-53	Operational Monitoring Point	(D-04-29) 23DAB	33° 04’ 07” N / 109° 19’ 27” W	55-579554

[2] Registration of these wells is not required by ADWR based on their location in the bottom of the mine pit.

Table 10: QUARTERLY AMBIENT GROUNDWATER MONITORING PARAMETERS FOR ANY NEW POC WELLS		
pH - field and lab	Toluene	Chromium[3]
Specific conductivity - field and lab	Ethylbenzene	Lead [3]
Total dissolved solids	Total Xylenes	Nickel [3]
Sulfate	Calcium	Selenium[3]
Chloride	Magnesium	Silicate[3]
Fluoride	Potassium	Thallium[3]
Carbonate	Sodium	Total cyanide
Bicarbonate	Antimony[3]	Gross alpha particle activity
Hydroxide	Arsenic[3]	Radium 226
Nitrate (as N)	Beryllium[3]	Radium 228
Benzene	Cadmium[3]	Total uranium

Table 11: QUARTERLY GROUNDWATER COMPLIANCE MONITORING FOR POC WELLS									
Parameter	**Units**	**SW-33**		**SW-34**		**SW-35**		**SW-36**	
		AQL	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**
Depth to groundwater	Feet (ft)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Groundwater elevation	ft (amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field pH	S.U.	Monitor	5.5	Monitor	5.5	Monitor	5.5	Monitor	5.5
Field specific conductance	µmhos/cm	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field temperature	°F	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total dissolved solids	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total alkalinity	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Hydroxide	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sulfate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Magnesium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Silicate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate and Nitrite	mg/l	10.0	8.0	10.0	8.0	10.0	8.0	10.0	8.0
Fluoride	mg/l	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2
Beryllium[4]	mg/l	0.004	0.003	0.004	0.003	0.004	0.003	0.004	0.003
Cadmium[4]	mg/l	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004
Chromium[4]	mg/l	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08
Nickel[4]	mg/l	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08
Gross alpha particle Activity[5]	pCi/l	15.0	12.0	15.0	12.0	15.0	12.0	15.0	12.0

[4] Metals shall be analyzed as Dissolved Metals

[5] If Gross alpha particle activity concentration exceeds 15 pCi/L for any well, total uranium analysis shall be conducted on the same groundwater sample

Table 11: QUARTERLY GROUNDWATER COMPLIANCE MONITORING FOR POC WELLS (Continued)									
Parameter	**Units**	**SW-37**		**SW-39**		**SW-41**		**SW-42**	
		AQL	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**
Depth to groundwater	Feet (ft)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Groundwater elevation	ft (amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field pH	S.U.	Monitor	5.5	Monitor	5.5	Monitor	5.5	Monitor	5.5
Field specific conductance	µmhos/cm	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field temperature	°F	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total dissolved solids	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total alkalinity	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Hydroxide	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sulfate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Magnesium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Silicate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate and Nitrite	mg/l	10.0	8.0	10.0	8.0	10.0	8.0	10.0	8.0
Fluoride	mg/l	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2
Beryllium[6]	mg/l	0.004	0.003	0.004	0.003	0.004	0.003	0.004	0.003
Cadmium[8]	mg/l	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004
Chromium[8]	mg/l	0.10	0.08	0.10	0.08	0.10	0.08	0.1	0.08
Nickel[8]	mg/l	0.10	0.08	0.10	0.08	0.10	0.08	0.1	0.08
Gross alpha particle Activity[7]	pCi/l	15.0	12.0	15.0	12.0	15.0	12.0	15.0	12.0

[6] Metals shall be analyzed as Dissolved Metals

[7] If Gross alpha particle activity concentration exceeds 15 pCi/L for any well, total uranium analysis shall be conducted on the same groundwater sample

Table 11: QUARTERLY GROUNDWATER COMPLIANCE MONITORING FOR POC WELLS (Continued)							
Parameter	**Units**	**SW-105**		**SW-87**		**SW-88**	
		AQL	**AL**	**AQL**	**AL**	**AQL**	**AL**
Depth to groundwater	Feet (ft)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Groundwater elevation	ft (amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field pH	S.U.	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field specific conductance	µmhos/cm	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field temperature	°F	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total dissolved solids	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total alkalinity	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Hydroxide	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sulfate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Magnesium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Silicate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate and Nitrite	mg/l	10.0	8.0	10.0	8.0	10.0	8.0
Fluoride	mg/l	4.0	3.2	4.0	3.2	4.0	3.2
Beryllium[8]	mg/l	0.004	0.0032	0.004	0.003	0.004	0.003
Cadmium[10]	mg/l	0.005	0.0040	0.005	0.004	0.005	0.004
Chromium[10]	mg/l	0.1	0.080	0.10	0.09	0.19	Monitor
Nickel[10]	mg/l	0.1	0.080	0.10	0.08	0.10	0.08
Gross alpha particle Activity[9]	pCi/l	15.0	12.0	15.0	12.0	15.0	12.0

[8] Metals shall be analyzed as Dissolved Metals

[9] If Gross alpha particle activity concentration exceeds 15 pCi/L for any well, total uranium analysis shall be conducted on the same groundwater sample

Table 11: QUARTERLY GROUNDWATER COMPLIANCE MONITORING FOR POC WELLS (Continued)									
Parameter	**Units**	**CC-5**		**CC-44**		**CC-46**		**CC-51**	
		AQL	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**
Depth to groundwater	Feet (ft)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Groundwater elevation	ft (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
Field temperature	°F	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total dissolved solids	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total alkalinity	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Hydroxide	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sulfate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Magnesium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Silicate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate and Nitrite	mg/l	10.0	8.0	10.0	8.0	10.0	8.0	10.0	8.0
Fluoride	mg/l	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2
Beryllium[10]	mg/l	0.004	0.0032	0.004	0.0032	0.004	0.003	0.004	0.003
Cadmium[12]	mg/l	0.005	0.0040	0.005	0.0040	0.005	0.004	0.005	0.004
Chromium[12]	mg/l	0.57	Monitor	0.1	0.080	Monitor	Monitor	0.1	0.08
Nickel[12]	mg/l	0.1	0.080	0.1	0.080	Monitor	Monitor	0.1	0.08
Gross alpha particle Activity[11]	pCi/l	15.0	12.0	15.0	12.0	15.0	12.0	15.0	12.3

[10] Metals shall be analyzed as Dissolved Metals

[11] If Gross alpha particle activity concentration exceeds 15 pCi/L for any well, total uranium analysis shall be conducted on the same groundwater sample

Table 11: QUARTERLY GROUNDWATER COMPLIANCE MONITORING FOR POC WELLS (Continued)									
Parameter	**Units**	**CC-53**		**CC-54**		**RG-7**		**GG-18**	
		AQL	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**
Depth to groundwater	Feet (ft)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Groundwater elevation	ft (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
Field temperature	°F	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total dissolved solids	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total alkalinity	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Hydroxide	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sulfate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Magnesium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Silicate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate and Nitrite	mg/l	10.0	8.0	10.0	8.0	10.0	8.0	10.0	8.0
Fluoride	mg/l	4.0	3.2	4.0	3.2	4.2	Monitor	4.0	3.2
Beryllium[12]	mg/l	0.004	0.0032	0.004	0.0032	0.028	Monitor	0.004	0.003
Cadmium[14]	mg/l	0.005	0.0040	0.005	0.0040	0.005	0.004	0.005	0.004
Chromium[14]	mg/l	0.1	0.080	0.1	0.080	0.10	.08	0.10	0.08
Lead[14]	mg/l	NR[13]	NR	NR	NR	NR	NR	0.22	Monitor
Nickel[14]	mg/l	0.1	0.080	0.1	0.080	0.10	0.08	0.10	0.08
Gross alpha particle Activity[14]	pCi/l	15.0	12.0	15.0	12.0	15.0	12.0	15.0	14.4

[12] Metals shall be analyzed as Dissolved Metals

[13] NR = Analysis not required; lead analyses is only required quarterly at POC well GG-18

[14] If Gross alpha particle activity concentration exceeds 15 pCi/L for any well, total uranium analysis shall be conducted on the same groundwater sample

Table 11: QUARTERLY GROUNDWATER COMPLIANCE MONITORING FOR POC WELLS (Continued)									
Parameter	**Units**	**GG-30**		**GG-32**		**GG-33**		**GG-34**	
		AQL	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**
Depth to groundwater	Feet (ft)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Groundwater elevation	ft (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
Field temperature	°F	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total dissolved solids	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total alkalinity	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Hydroxide	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sulfate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Magnesium	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Silicate	mg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Nitrate and Nitrite	mg/l	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Fluoride	mg/l	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Beryllium[15]	mg/l	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Cadmium[14]	mg/l	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Chromium[14]	mg/l	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Lead[14]	mg/l	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Nickel[14]	mg/l	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved
Gross alpha particle Activity[16]	pCi/l	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved

[15] Metals shall be analyzed as Dissolved Metals

[16] If Gross alpha particle activity concentration exceeds 15 pCi/L for any well, total uranium analysis shall be conducted on the same groundwater sample

Table 12: BIENNIAL GROUNDWATER COMPLIANCE MONITORING FOR TAILING IMPOUNDMENT POC WELLS									
Parameter	**Units**	**SW-33**		**SW-34**		**SW-35**		**SW-36**	
		AQL	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**
Antimony[17]	mg/l	0.006	0.005	0.006	0.005	0.006	0.005	0.006	0.005
Arsenic[17]	mg/l	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Lead[17]	mg/l	0.05	0.05	0.05	0.04	0.05	0.04	0.05	0.04
Selenium[17]	mg/l	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Thallium[17]	mg/l	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Radium 226 + Radium 228	pCi/l	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0
Cyanide, total	mg/l	0.20	Monitor	0.20	Monitor	0.20	Monitor	0.20	Monitor
Carbon disulfide	µg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Benzene (mg/l)	mg/l	.005	Monitor	.005	Monitor	.005	Monitor	.005	Monitor
Toluene (mg/l)	mg/l	1.0	Monitor	1.0	Monitor	1.0	Monitor	1.0	Monitor
Ethylbenzene (mg/l)	mg/l	0.7	Monitor	.07	Monitor	.07	Monitor	.07	Monitor
Total Xylenes (mg/l)	mg/l	10.0	Monitor	10.0	Monitor	10.0	Monitor	10.0	Monitor
Methyl isobutyl carbinol	µg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Methyl isobutyl ketone	µg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor

[17] Metals shall be analyzed as Dissolved Metals

Table 12: BIENNIAL GROUNDWATER COMPLIANCE MONITORING FOR TAILING IMPOUNDMENT POC WELLS (Continued)													
Parameter	**Units**	**SW-37**		**SW-39**		**SW-41**		**SW-42**		**SW-87**		**SW-88**	
		AQL	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**
Antimony[18]	mg/l	0.006	0.005	0.006	0.005	0.006	0.005	0.006	0.005	0.006	0.005	0.006	0.005
Arsenic[18]	mg/l	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Lead[18]	mg/l	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Selenium[18]	mg/l	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Thallium[18]	mg/l	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.0016	0.002	0.002	0.002	0.002
Radium 226 + Radium 228	pCi/l	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0
Cyanide, total	mg/l	0.20	Monitor	0.20	Monitor	0.20	Monitor	0.20	Monitor	0.20	Monitor	0.20	Monitor
Carbon disulfide	μg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Benzene	mg/l	.005	Monitor	.005	Monitor	.005	Monitor	.005	Monitor	.005	Monitor	.005	Monitor
Toluene	mg/l	1.0	Monitor	1.0	Monitor	1.0	Monitor	1.0	Monitor	1.0	Monitor	1.0	Monitor
Ethylbenzene	mg/l	0.7	Monitor	0.7	Monitor	0.7	Monitor	0.7	Monitor	0.7	Monitor	0.7	Monitor
Total Xylenes	mg/l	10.0	Monitor	10.0	Monitor	10.0	Monitor	10.0	Monitor	10.0	Monitor	10.0	Monitor
Methyl isobutyl carbinol	μg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Methyl isobutyl ketone	μg/l	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor

[18] Metals shall be analyzed as Dissolved Metals

Table 13: BIENNIAL GROUNDWATER COMPLIANCE MONITORING FOR CHASE CREEK POC WELLS													
Parameter	**Units**	**CC-5**		**CC-44**		**CC-46**		**CC-51**		**CC-53**		**CC-54**	
		AQL	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**
Antimony[19]	mg/l	0.006	0.0048	0.006	0.0048	0.006	0.005	0.006	0.005	0.006	0.0048	0.006	0.0048
Arsenic[20]	mg/l	0.05	0.040	0.05	0.040	0.05	0.04	0.05	0.04	0.05	0.040	0.05	0.040
Lead[20]	mg/l	0.05	0.040	0.05	0.040	0.05	0.04	0.05	0.04	0.05	0.040	0.05	0.040
Selenium[20]	mg/l	0.05	0.040	0.05	0.040	0.05	0.04	0.05	0.04	0.05	0.040	0.05	0.040
Thallium[20]	mg/l	0.002	0.0016	0.002	0.0016	0.002	0.002	0.002	0.0016	0.002	0.0016	0.002	0.0016
Radium 226 + Radium 228	pCi/l	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0
Benzene	mg/l	0.005	Monitor	0.005	Monitor	0.005	Monitor	0.005	Monitor	0.005	Monitor	0.005	Monitor
Toluene	mg/l	1.0	Monitor	1.0	Monitor	1.0	Monitor	1.0	Monitor	1.0	Monitor	1.0	Monitor
Ethylbenzene	mg/l	0.7	Monitor	0.7	Monitor	0.7	Monitor	0.7	Monitor	0.7	Monitor	0.7	Monitor
Total Xylenes	mg/l	10.0	Monitor	10.0	Monitor	10.0	Monitor	10.0	Monitor	10.0	Monitor	10.0	Monitor

[19] Metals shall be analyzed as Dissolved Metals

Table 14: BIENNIAL GROUNDWATER COMPLIANCE MONITORING FOR ALL OTHER POC WELLS															
Parameters	**Units**	**GG-18**		**GG-30**		**GG-32**		**GG-33**		**GG-34**		**SW-105**		**RG-7**	
		AQL	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**	**AQL**	**AL**
Antimony[20]	mg/l	0.006	0.005	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	0.006	0.0048	0.006	0.005
Arsenic[21]	mg/l	0.05	0.04	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	0.05	0.040	0.05	0.04
Lead[21]	mg/l	0.22	Monitor	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	0.05	0.040	0.05	0.047
Selenium[21]	mg/l	0.05	0.04	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	0.05	0.040	0.05	0.04
Thallium[21]	mg/l	0.002	0.002	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	0.002	0.0016	0.002	0.0016
Radium 226 + Radium 228	pCi/l	5.0	4.0	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	5.0	4.0	5	4

[20] Metals shall be analyzed as Dissolved Metals

Table 15: LIST OF MONITORING DATA FOR PASSIVE CONTAINMENT DEMONSTRATION		
Description	**Sample**	**Comments**
Groundwater Levels:		
As per Section 2.7.4 Operational, Other or Miscellaneous Reporting of this permit	Quarterly	Biennial potentiometric map and report to be submitted starting March 31, 2003, and then every 2 years thereafter.
Drop-cut blast holes (in-pit drop cuts)	Annually	Obtain water level measurements in active drop-cuts
Drop-cut piezometers (in-pit drop cuts)	5 years	Temporary in nature; attempt to install and obtain data in each drop-cut, if possible
Meteorological:		
Precipitation	Hourly	Obtain data from southern and northern weather station
Air temperature	Hourly	Obtain data from southern and northern weather station
Relative humidity	Hourly	Obtain data from southern and northern weather station
Wind speed & direction	Hourly	Obtain data from southern and northern weather station
Soil moisture and/or temperature	Hourly	Obtain data from southern and northern weather station
Solar radiation	Hourly	Obtain data from southern and northern weather station
Pan evaporation	Hourly	Obtain data from southern and northern weather station
Barometric pressure	Hourly	Obtain data from southern and northern weather station
Pit evaporation		May include humidity levels, visual inspections for springs or wet bedrock surfaces, or other
Dewatering rate from pit sumps	Annually	Bottom of open-pit
Representative fluid balance:		
Precipitation and runoff	Frequency at the discretion of permittee	For Santa Rosa Stockpile only
Raffinate applied		For Santa Rosa Stockpile only
PLS recovered		For Santa Rosa Stockpile only
Ore placement volume		For Santa Rosa Stockpile only
Initial ore moisture content		For Santa Rosa Stockpile only
Downgradient monitor well		For Santa Rosa Stockpile only (to be installed if practicable)

Table 16: HYDROLOGIC SINK VERIFICATION MONITORING PARAMETERS		
Parameter	**Action Level**	**Frequency**
	GG-15	
Field pH (standard units)	5.9	Annually
Total dissolved solids (milligrams per liter [mg/l])	610	Annually
Sulfate (mg/l)	170	Annually

Table 17: IN-PIT SUMP EXCEEDANCE LEVELS			
Facility	**Latitude/Longitude**	**Action Level**	**Violation Level**
In-Pit Sump	33º05'27.68"N / 109º21'32.01"W	3,800 ft above mean sea level	3,980 ft above mean sea level

Table 18: ACTION LEVELS FOR OPERATIONAL MONITORING LOWER CHASE CREEK FACILITIES – POC WELLS CC-44, CC-46, AND CC-53	
Parameter	**Action Level**
Field Ph (standard units)	6.0
Total dissolved solids (mg/L)	2,100
Sulfate (mg/L)	1,000

Table 19: MORENCI WWTP – ROUTINE DISCHARGE MONITORING					
Sampling Point Number	**Sampling Point Identification**			**Latitude**	**Longitude**
1	Effluent Lift Station			33° 01' 38" N	109° 18' 38" W
Parameter	**AL**[21]	**DL**[22]	**Units**	**Sampling Frequency**	**Reporting Frequency**
Total Flow[23]: Daily[24]	Not Established[25]	Not established	mgd[26]	Daily	Quarterly
Total Flow: Monthly Average[27]	1.19	1.25	mgd	Monthly Calculation	Quarterly
Fecal Coliform: Single sample maximum	Not established	800	CFU[28]	Daily[29]	Quarterly
Fecal Coliform: four (4) of seven (7) samples in a week[30]	Not established	200[31]	CFU	Weekly Evaluation	Quarterly
Total Nitrogen[32]: Five-sample rolling geometric mean[33]	Not established	Not established	mg/l[34]	Monthly Calculation	Quarterly

[21]AL = Alert Level

[22]DL = Discharge Limit

[23]Total flow for all methods of disposal.

[24]Flow shall be measured using a continuous recording flow meter which totals the flow daily.

[25]Not Established means monitoring is required but no limits are specified.

[26]mgd = million gallons per day

[27]Monthly average of daily flow values.

[28]CFU = Colony Forming Units / 100 ml sample. For CFU, a value of <1.0 shall be considered to be non-detect.

[29]For fecal coliform **only**, "daily" sampling means every day in which a sample can practicably be obtained and delivered in sufficient time for proper analysis, provided that no less than four (4) samples in each week are obtained and analyzed.

[30]**Week** means the seven-day period starting on Sunday and ending on the following Saturday. The reporting form for this parameter consists of 13 weeks per quarter.

[31]Fecal coliform four (4) of seven (7) samples requires entering "Compliance" or "Non-compliance" on the SMRF for each week of the reporting period. Evaluate the daily fecal coliform results for that week (Sunday through Saturday). If, of these seven (7) days, four (4) or more of the daily fecal coliform results are non-detect, report "Compliance" for that week's entry on the SMRF. If three (3) or fewer of the daily fecal coliform results are non-detect, report "Non-compliance for that week's entry on the SMRF.

[32]Total Nitrogen = Nitrate as N + Nitrite as N + Total Kjeldahl Nitrogen

[33]The five-sample rolling geometric mean is determined by multiplying the five (5) most recent monthly sample values together then taking the fifth root of the product. *Example:* $GM_5 = \sqrt[5]{(m_1)(m_2)(m_3)(m_4)(m_5)}$ "For the first four samples, enter "Not Required" on the SMRF."

[34]mg/l = milligrams per liter

5.0 REFERENCES AND PERTINENT INFORMATION

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

APP Application, dated:	August 31, 2021
Revised Contingency Plan, dated:	October 2021 (submitted under LTF 88406, CSI No. 7)

6.0 NOTIFICATION PROVISIONS

6.1. Annual Registration Fees

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

6.2. Duty to Comply

[A.R.S. §§ 49-221 through 263]

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

6.3. Duty to Provide Information

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

The permittee shall furnish to the Director, or an authorized representative, within a time specified, any information which the Director may request to determine whether cause exists for amending or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

6.4. Compliance with Aquifer Water Quality Standards

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

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

6.5. Technical and Financial Capability

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

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

6.6. Reporting of Bankruptcy or Environmental Enforcement

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

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

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

6.7. Monitoring and Records

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

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

6.8. Inspection and Entry

[A.R.S. §§ 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 authorized by this permit.

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

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

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

7.0 ADDITIONAL PERMIT CONDITIONS

7.1. Other Information

[A.R.S. § 49-243(K)(8)]

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, the permittee shall promptly submit the correct facts or information.

7.2. Severability

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

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby. The filing of a request by the permittee for a permit action does not stay or suspend the effectiveness of any existing permit condition.

7.3. Permit Transfer

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