STATE OF ARIZONA
SIGNIFICANT AMENDMENT TO
AQUIFER PROTECTION PERMIT NO. P-101679
PLACE ID No. 1567 LTF 74438

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Articles 1, 2, 3, and Chapter 4 Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 1 and 2, A. A. C. Title 18, Chapter 11, Article 4 and amendments thereto, and the conditions set forth in this permit, Freeport-McMoRan Sierrita Inc. is hereby authorized to operate the discharging facilities located at the Freeport-McMoRan Sierrita Mine located near Green Valley, Arizona, Pima County, over groundwater of the Upper Santa Cruz Basin, in Sections 8, 9, 13, 16, 17, 19, 20, and 21, and parts of Sections 3-7, 10, 11, 14, 15, 18, and 24, in Township 18 South, Range 12 East; and Sections 17-20, 29, and parts of Sections 16, 21, 28, and 30 in Township 18 South, Range 13 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. R-18-9-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:	Freeport-McMoRan Sierrita Inc.
Annual Fee Flow Rate:	10,000,000 gallons per day (gpd) or more
Facility Address:	6200 West Duval Mine Road, Green Valley, AZ 85622
County:	Pima
Permittee:	Freeport-McMoRan Sierrita Inc.
Permittee Address:	P.O. Box 527, Green Valley, AZ 85622-0527
Facility Contact:	David Rhoades, President - General Manager
Phone No.:	(520) 393-2134
Emergency Contact:	David Barnes
Emergency Phone No.:	(520) 393-2315
Latitude/Longitude:	31° 51' 14" N / 111° 04' 13" W
Legal Description:	Sections 8, 9, 13, 16, 17, 19, 20, and 21, and parts of Sections 3-7, 10, 11, 14, 15, 18, and 24, in Township 18 South, Range 12 East; and Sections 17-20, 29, and parts of Sections 16, 21, 28, and 30 in Township 18 South, Range 13 East, of the Gila and Salt River Base Line and Meridian.

1.2 AUTHORIZING SIGNATURE

_____

Trevor Baggiore, Director
Water Quality Division
Arizona Department of Environmental Quality
Signed this _____day of _____, 2019

THIS AMENDMENT SUPERSEDES ALL PREVIOUS PERMITS

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)]

Freeport-McMoRan Sierrita Inc. (Sierrita) is operating an open pit mine and mineral concentration facility which is located approximately 6 miles northwest of Green Valley, in Pima County, Arizona. Green Valley lies approximately 25 miles south of the city of Tucson, Arizona. Facilities at the Freeport-McMoRan Sierrita Inc. (Sierrita) mine, previously Phelps Dodge Sierrita, Inc., and before that Cyprus Sierrita Corporation, include conventional crushing and flotation followed by differential flotation, leaching and roasting of molybdenum disulfide, rhenium recovery, molybdenum disulfide production and packaging, molybdenum trioxide production and packaging, leach stockpiles, and solution extraction/electrowinning facilities.

Sierrita produces copper concentrate, cathode copper and copper sulfate, along with molybdenum products and rhenium products. Copper and molybdenum are the primary products produced by Sierrita. Copper and molybdenum disulfide are produced through conventional milling and froth flotation, and pure copper is produced through solution extraction and electrowinning. Copper sulfate is produced through solution extraction and crystallization. Molybdenum trioxide is produced through roasting. Rhenium is also recovered in the molybdenum roasting operations.

The Sierrita property consists of two operating open-pits: the Sierrita-Esperanza pit and a molybdenum satellite pit; the backfilled Ocotillo open-pit, a 115,000-ton-per-day concentrator, two molybdenum roasting plants, a rhenium plant, an oxide and low-grade sulfide stockpile leaching operation, and a copper sulfate plant. Ore production from each pit is highly variable; however, the aggregate production is limited to the capacity of the plant operation. The mine is capable of producing up to 250 million pounds of copper and, as a co-product, 25 million pounds of molybdenum, annually.

This permit authorizes the operation of the discharging facilities:

Facility Name	Facility No.	Latitude	Longitude
Amargosa Wash Drainage Area			
Non-stormwater Impoundments-			
Duval Canal Velocity Pond	D-64	31° 52' 10" N	111° 06' 05" W
Amargosa Pond	D-05	31° 51' 55" N	111° 06' 00" W
SX-1 Tank Farm Pond	D-34	31° 51' 56" N	111° 06' 02" W
Process Solution Impoundments-			
Headwall No. 1	D-02	31° 51' 49" N	111° 06' 34" W
Bailey Lake	D-03	31° 51' 52" N	111° 06' 17" W
SX-1 Drain Pond	D-33	31° 51' 55" N	111° 06' 05" W
Raffinate Pond No. 2	D-10	31° 51' 51" N	111° 06' 09" W
Drain Pond No. 2	D-15	31° 51' 53" N	111° 06' 04" W
Moly Decant Tanks and Pad Area	D-39A	31° 51' 54" N	111° 06' 11" W
B-Pond	D-07	31° 51' 52" N	111° 05' 39" W
Active Leaching Area-			
Sulfide Active Leach Area	D-17	31° 51' 19" N	111° 07' 59" W
Solution Conveyance Channels-			
Duval Canal	D-29	31° 51' 19" N	111° 04' 39" W

Facility Name	Facility No.	Latitude	Longitude
Amargosa Spillway	D-48	31° 51' 55" N	111° 05' 46" W
Demetrie Wash Area			
Non-stormwater Impoundments-			
07 Pond	D-43	31° 52' 58" N	111° 06' 29" W
New D Pond	D-45	31° 52' 31" N	111° 05' 51" W
Copper Sulfate Pipeline Ponds 1 & 2	D-59	31° 52' 02" N	111° 05' 56" W
Tailing Pipeline Containment Structures	D-62 A-F	31° 52' 07" N to 31° 52' 12" N	111° 05' 30" W to 111° 05' 37" W
Esperanza Wash Drainage Area			
Non-stormwater Impoundments-			
SX-3 Stormwater Pond	D-11	31° 50' 49" N	111° 07' 08" W
Cat Pond 1	D-42A	31° 50' 33" N	111° 07' 53" W
Cat Pond 2	D-42B	31° 50' 34" N	111° 08' 18" W
Cat Pond 3	D-42C	31° 50' 29" N	111° 08' 25" W
Process Solution Impoundments-			
Raffinate Pond No. 3	D-04	31° 50' 53" N	111° 07' 09" W
Headwall No. 2	D-46	31° 51' 08" N	111° 06' 55" W
Headwall No. 3	D-09	31° 50' 57" N	111° 07' 16" W
Headwall No. 5	D-12	31° 50' 42" N	111° 07' 57" W
Active Leaching Area-			
Oxide (Twin Buttes and Sierrita) Active Leach Area	D-18	31° 52' 02" N	111° 06' 50" W
Solution Conveyance Channel-			
Headwall No. 2 Channel	D-08	31° 50' 59" N	111° 06' 56" W
Mill Site Area			
Non-Storm water Impoundments-			
Raw Water Reservoir	D-21	31° 52' 29" N	111° 06' 35" W
Process Solution Impoundments-			
Decant Ponds and Pad Area	D-20	31° 52' 22" N	111° 06' 03" W
Tailing Thickeners	D-40	31° 52' 25" N	111° 06' 11" W
Solution Conveyance Channels-			
Drainage Channel West Plant Area	D-22	31° 52' 20" N	111° 05' 59" W
Thickeners Area Drainage Channel	D-41	31° 52' 16" N	111° 06' 01" W
Tailing Impoundments-			
Sierrita Tailing Impoundment	D-01	31° 50' 59" N	111° 02' 57" W
Sierrita Tailing Impoundment Sediment Basins	D01 A-K	31° 49' 42" N to 31° 51' 51" N	111° 01' 28" W to 111° 01' 39" W
Waste Rock Piles-			
West Waste Rock Piles	D-19	31° 51' 12" N	111° 08' 57" W

Facility Name	Facility No.	Latitude	Longitude
RS-3 Waste Rock Pile	D-36	31° 52' 50" N	111° 06' 35" W
RS-2 Waste Rock Pile	D-47	31° 52' 52" N	111° 09' 19" W
V Waste Rock Pile	D-56	31° 53' 12" N	111° 07' 06" W
Open Pit-			
Sierrita-Esperanza Pit	D-55	31° 52' 17" N	111° 08' 01" W
Ocotillo Pit	D-60	31° 53' 00" N	111° 06' 50" W
Moly Satellite Pit	D-61	31° 53' 02" N	111° 08' 18" W
Concentrate Storage-			
Non-Municipal Solid Waste Landfill-			
Non-Municipal Solid Waste Landfill	D-14	31° 51' 31" N	111° 07' 35" W
Decommissioned Facilities to be addressed at Final Mine Closure-			
A Pond	D-06	31° 51' 55" N	111° 05' 48" W
Old D Pond	D-13	31° 52' 22" N	111° 05' 50" W
Rhenium Ponds	D-23	31° 51' 59" N	111° 04' 25" W
Launders Facility	D-39	31° 51' 54" N	111° 06' 11" W

2.1.1 Duval Canal Velocity Pond (D-64)(Non-Stormwater Impoundment)
This facility is an unlined flow-through structure, and receives stormwater runoff from the crushing and conveying area. It is sized for the 100 year, 24 hour storm event. Accumulated fluids drain into Duval Canal.

2.1.2 Amargosa Pond (D-05)(Non-Stormwater Impoundment)
This facility provides containment for stormwater runoff and upset conditions from Headwall No. 1, Bailey Lake, Raffinate Pond No. 2, and Drain Pond No. 2. It has a storage capacity of 49 acre-feet, and a depth of 25 feet. It has a single 80-mil high-density polyethylene (HDPE) liner, underlain by a compacted subgrade.

2.1.3 SX-1 Drain Pond (D-33)(Process Solution Impoundment)
This facility provides containment for any wash-down and runoff from the SX-1 Plant. It is double-lined, with two 60-mil HDPE liners, and a leakage collection and recovery system (LCRS). It has a storage capacity of 0.2 acre-feet, and an approximate depth of 7 feet. Accumulated fluids are pumped back into the SX-1 leach circuit. Alert Levels for the LCRS are listed in Table 2.2.4.

2.1.4 SX-1 Tank Farm Pond (D-34)(Non-Stormwater Impoundment)
This facility provides containment for stormwater runoff and surface flows during upset conditions from the upgradient SX-1 Tank Farm Secondary Containment. It has a single 80-mil geomembrane liner, overlying a 3-inch gunite layer, with a storage capacity of 0.12 acre-feet, and a depth of 5 feet. Accumulated fluid is pumped back into the SX-1 circuit.

2.1.5 Headwall No. 1 (D-02)(PLS Impoundment)
This facility provides containment for pregnant leach solution (PLS) from the oxide leach area. It is an unlined impoundment created by an earthen dam. The impoundment has a storage capacity of 3 acre-feet, and a maximum depth of 22 feet. Accumulated PLS is directed into Bailey Lake through an HDPE-lined channel. The facility is designed to overflow into Bailey Lake.

2.1.6 Bailey Lake (D-03)(PLS Impoundment)
The facility is designed to contain overflow and subsurface flow from Headwall No. 1, and

excess fluid from the Moly Decant Tanks. It is an unlined impoundment behind an earthen dam, with a storage capacity of 135 acre-feet, and a maximum depth of 42.1 feet. Accumulated fluid is pumped to SX Plant Nos. 1 and 2. The facility is designed to overflow into Amargosa Pond through a concrete-lined spillway. A sump and pumpback system will be added downgradient to control seepage.

2.1.7 Raffinate Pond No. 2 (D-10)(Raffinate Impoundment)

This facility provides temporary storage for copper depleted leachate solution from SX Plants Nos. 1 and 2 and small amounts of leachate from the Freeport-McMoRan Exploration Corporation Office in Oro Valley and Technology Center in Tucson. It is double-lined, using two 60-mil HDPE liners with a LCRS, with a storage capacity of six acre-feet, and a maximum depth of 16 feet. Accumulated solution is pumped to the leach stockpiles for leaching operations. Alert Levels for the LCRS are listed in Table 2.2.4.

2.1.8 Drain Pond No. 2 (D-15)(Process Solution Impoundment)

This facility provides temporary containment for organics used in the SX Plant, and for upset conditions from Tank Farm 2. It is double-lined, using two 60-mil HDPE liners with a LCRS, with a storage capacity of one acre-foot, and a maximum depth of ten feet. Accumulated fluid is pumped to Raffinate Pond No. 2, the SX Strip Solution Tanks, or Headwall No. 1. It is designed to overflow into Amargosa Pond through a HDPE-lined spillway. Alert Levels for the LCRS are listed in Table 2.2.4.

2.1.9 Moly Decant Tanks and Pad Area (D-39A)(Process Solution Impoundment) [1]

Facility consists of four partially below-ground steel-reinforced concrete walls with an adjacent steel-reinforced concrete drying pad. The adjacent drying pad is approximately 60 feet by 110 feet. Each Moly Decant Tank is 50 feet by 26 feet and 3 to 4 feet deep, with a soil/bentonite admix bottom. The impoundments provide containment of overflow from the molybdenum processing thickeners. Any excess fluid is pumped to Bailey Lake. The concrete pad is used to further dry the molybdenum concentrate. Once dry, concentrate is moved to the molybdenum roaster. Downgradient, two interceptor trenches, equipped with pump-back systems, capture any potential discharge and pump it back into the SX circuit.

2.1.10 Sulfide Active Leach Area (D-17)(Leach Stockpile)

This facility is a sulfide leach stockpile. The facility covers an area of approximately 420 acres. Dilute sulfuric acid, raffinate and makeup water, which includes but is not limited to wash water generated from the mine vehicle wash facilities, is applied to the facility, and leachate is collected in the downgradient Headwall Nos. 3 and 5. Containment of the overflow and run-on from storm events is provided by Amargosa Pond and SW-3 Pond.

2.1.11 Duval Canal (D-29)(Conveyance Channel)

This facility is a solution conveyance channel lined with an 80-mil HDPE geomembrane. It is 4.25 miles long, 10 feet wide, and 6 feet deep, with a design flow capacity of 31,000 cubic feet per second (cfs). The facility receives process solutions and surface runoff from the Plant Site, including, but not limited to, overflow from Amargosa Pond, B Pond, seepage from B and C Sumps, tailings thickeners, and decant pond, bleed from the lime scrubber, dust control water from crushing and conveying, and vehicle wash water**.** Fluids are conveyed to the Sierrita Tailings Impoundment.

2.1.12 Amargosa Spillway (D-48)(Conveyance Channel)

This facility is a solution conveyance channel lined with an 80-mil HDPE geomembrane. It is 860 feet long, 29 feet wide, and 3 to 5 feet deep, with a design flow capacity of 1,762 cfs. The facility receives overflow from Amargosa Pond during upset conditions, and stormwater runoff from upgradient areas. Fluids are conveyed to B-Pond.

2.1.13 07 Pond (D-43)(Non-Stormwater Impoundment)
This facility provides containment for stormwater runoff from the Ocotillo Waste Rock Pile, and native upgradient areas to the East. This pond is a single-lined with an 80-mil HDPE liner. The pond has a storage capacity of 37.2 acre-feet, and a depth of 28.5 feet. Accumulated fluids are pumped to the Raw Water Reservoir. The facility will be closed through burial under the RS-3 Waste Rock Pile. The facility is located within the PCCZ and any impacted groundwater will report to the Sierrita-Esperanza Pit. Sierrita shall notify the Groundwater Protection Value Stream when the facility has been buried per Section 2.9.2 Closure Completion.

2.1.14 New D Pond (D-45) Non-Stormwater Impoundment)
This facility provides containment for runoff from the closed CLEAR Plant and Copper Sulfate areas. The impoundment is single lined with an 80-mil HDPE liner, has a storage capacity of 14 acre-feet, and a depth of 8 feet. Accumulated fluids are gravity fed into Duval Canal through a 10-inch HDPE pipeline.

2.1.15 Copper Sulfate Ponds 1 & 2 (D-59)(Non-Stormwater Impoundments)
These facilities provide secondary containment for upset conditions in the Copper Sulfate Plant area. They are single lined, with 60-mil HDPE liners. Each impoundment has a storage capacity of 15,000 gallons, and a depth of seven feet. Accumulated fluid is pumped into the SX/Copper Sulfate circuit.

2.1.16 Tailing Pipeline Containment Structures (D-62A-F)(Non-Stormwater Impoundments)
These facilities provide containment for breaches in the tailings slurry pipeline and reclaim pipeline. The six containment structures are soil compacted, with a depth of 8 inches. Structures A and B have a storage capacity of 1.462 million gallons, and C-F have a storage capacity of 1.815 million gallons.

2.1.17 SX-3 Stormwater Pond (D-11)(Non-Stormwater Impoundment)
This impoundment provides containment of stormwater runoff from native, upgradient terrain, upset conditions at Headwall No. 3, Raffinate Pond No. 3, and surface runoff from the Headwall No. 2 Area. The facility has a single 80-mil HDPE liner, a storage capacity of 52 acre-feet, and a depth of 17 feet. Accumulated solutions are pumped to Raffinate Pond No. 3, or, if needed, to Amargosa Pond.

2.1.18 Cat Pond 1 (D-42A)(Non-Stormwater Impoundment
The facility provides containment for drainage from the West Waste Rock Pile and upgradient native terrain, and upset conditions from Headwall No. 5. It is lined with an 80-mil HDPE liner, has a fluid storage capacity of 25.2 acre-feet, and a depth of 27 feet. Accumulated fluid is pumped into the plant process circuit.

2.1.19 Cat Pond 2 (D-42B)(Non-Stormwater Impoundment)
The facility provides containment for drainage from the West Waste Rock Pile and upgradient native terrain. It is lined with an 80-mil HDPE liner, has a fluid storage capacity of 60.1 acre-feet, and a depth of 40 feet. Accumulated fluid is pumped into the plant process circuit.

2.1.20 Raffinate Pond No. 3 (D-04)(Process Solution Impoundment)
This facility provides containment for stormwater runoff, during upset conditions from SX-3 Stormwater Pond, Headwall No.3, and Headwall No. 5, and subsurface flows pumped from Interceptor No. 3. It is designed to overflow through a lined spillway into SX-3 Stormwater Pond. It is double-lined with two 60-mil HDPE liners and LCRS, with a

storage capacity of 16 acre-feet, and a maximum depth of 22 feet. Alert Levels for the LCRS are listed in Table 2.2.4.

2.1.21 Headwall No. 2 (D-46)(Process Solution Impoundment)
This facility collects PLS from the oxide and sulfide leach areas. The headwall is lined with an 80-mil HDPE liner on the face of the dam, and is keyed into bedrock. Accumulated fluid is discharged into Raffinate Pond No. 3 using a 10-inch diameter HDPE pipeline. The facility is designed to overflow through Headwall No. 2 Channel into SX-3 Stormwater Pond.

2.1.22 Headwall No. 3 (D-09)(Process Solution Impoundment)
This facility collects PLS from the Sierrita Sulfide Active Leach Area, and upgradient stormwater runoff. It is partially lined with 80-mil HDPE liners, with a storage capacity of 15 acre-feet, and a maximum depth of 21 feet. Accumulated fluid is pumped through two 24-inch HDPE pipelines into a concrete vault, and then to Raffinate Pond No. 3. It is designed to overflow through a concrete-lined spillway into Stormwater No. 3 Pond.

2.1.23 Headwall No. 5 (D-12)(Process Solution Impoundment)
The facility receives potentially impacted stormwater commingled with PLS from the Sierrita Active Leach Area. It is double lined with two 80-mil HDPE liners and an LCRS underlain by a geocomposite clay liner (GCL), has a storage capacity of 11.44 acre-feet, and a maximum depth of 20 feet. Accumulated fluid is pumped by a barge-mounted pump to Headwall No. 3. Alert Levels for the LCRS are listed in Table 2.2.4.

2.1.24 Oxide (Twin Buttes and Sierrita) Active Leach Area (D-18)(Leach Stockpile)
This facility is an oxide leach stockpile, covering a surface area of approximately 580 acres. Dilute sulfuric acid and raffinate is applied to the facility, and the PLS collected at Headwall No. 1, Headwall No. 2 and Headwall No. 3. Stormwater overflow and run-on is contained in Amargosa Pond and SW-3 Pond.

2.1.25 Headwall No. 2 Channel (D-08)(Solution Conveyance Channel)
This facility provides conveyance for stormwater from upgradient native terrain, and during upset conditions from an upgradient booster station. It is 2,500 feet long, 10 feet wide at the base, and 2.5 feet deep. It is lined with a 60-mil HDPE liner, and has a flow capacity 420 cfs. Accumulated fluid is discharged at the east end of SX-3 Stormwater Pond.

2.1.26 Raw Water Reservoir (D-21)(Non-Stormwater Impoundment)
The facility is a single-lined impoundment with a 3-foot thick compacted bentonite-amended soil liner with a hydraulic conductivity of approximately 2×10^{-8} cm/sec. The impoundment has a fluid storage capacity of 25 acre-feet, with a depth of 50 feet. The impoundment provides containment for plant make-up water, which includes but is not limited to water pumped from the interceptor wellfield east of the tailing impoundment, reclaim water from the tailings, fresh water from Canoa wellfield and Esperanza wellfield, stormwater from 07 Pond and the Cat Ponds.

2.1.27 Decant Ponds and Pad Area (D-20)(Process Solution Impoundments)
This facility consists of reinforced concrete lined basins (6-inch thick concrete with polyethylene tape-sealed joints and PVC liner on the side walls) covered by gunite. The pad area is 44 feet by 276 feet. The facility provides containment of overflow from the copper-moly thickeners and used for settling and recovery of solids. Reclaimed fluids are pumped to the reclaim circuit in the Sierrita Tailing Thickeners.

2.1.28 Tailing Thickeners (D-40)(Process Solution Impoundments)
This facility consists of four circular walls, each with a diameter of 508 feet, and a maximum depth of 23 feet. The walls are constructed with concrete, the floor with 3 feet of compacted soil-bentonite admix with an average hydraulic conductivity of 2.2×10^{-8} cm/sec and average moisture content of 8.9%. The thickener area is underlain by Tertiary intrusives. The impoundments provide containment of the tailings before they are deposited in the tailing impoundment.

2.1.29 Drainage Channel West Plant Area (D-22)(Solution Conveyance Channel)
This facility provides conveyance for stormwater runoff, and upset conditions from the West Plant Area. It is approximately 3,800 feet long, 40-100 feet wide, and 4-10 feet deep, with a 60-mil HDPE liner. It is designed to flow into Duval Canal.

2.1.30 Thickeners Area Drainage Channel (D-41)(Solution Conveyance Channel)
This facility conveys stormwater runoff, and upset conditions of process solutions in the Sierrita Mill tailing thickener area. It is lined with a 60-mil HDPE liner, is 18 feet wide, with an average depth of 6 feet, and is designed to flow into Duval Canal.

2.1.31 Sierrita Tailing Impoundment (D-01)(Tailing Impoundment)
This tailings impoundment covers an area of approximately 4,316 acres, with a 2,500 foot divider dam to separate it into north and south sections. Water accumulates toward the west side of the impoundment, and is pumped to the Raw Water Reservoir. Tailings are deposited such that the finer grained tailings slimes provide a low permeability coating of the floor of the impoundment, to minimize infiltration of fluids. Effluent from the wastewater system (Type 1.09 General Permit) is also discharged to the tailings impoundment at a maximum rate of 10,000 gallons per day. The facility also receives process solutions, stormwater runoff, and sediment from the Plant Site delivered via the Duval Canal to the Duval Canal Impoundment, an impoundment lined with compacted fine tailings material and operated as part of the Sierrita Tailing Impoundment. Four sediment basins located along the south end of the Sierrita Tailing Impoundment are also lined with compacted fine tailings material and operated as part of the Sierrita Tailing Impoundment.

2.1.32 Sierrita Tailing Impoundment Sediment Basins (D-01 A-K)(Tailings Impoundments)
The facility consists of eleven unlined sediment ponds with varying storage capacities. Caliche layers provide a zone of permeability relatively lower than the underlying alluvium. The sediment ponds provide containment for surface water runoff from the face of tailing dam along with the tailings that have been discharged off the tailing impoundment and deposited into these ponds. Accumulated fluid is allowed to evaporate. Interceptor well water is pumped to the Raw Water Reservoir.

2.1.33 West Waste Rock Piles (D-19)(Waste Rock Piles)
This facility stores waste rock from mining operations and small amounts of waste rock from the Freeport-McMoRan Exploration Corporation Office in Oro Valley and Technology Center in Tucson, covering a surface area of 1,285 acres. Upstream stormwater run-on will be allowed to contact and penetrate the waste rock pile, while runoff from precipitation falling on the piles will flow toward Cat Ponds 1, 2, and 3.

2.1.34 RS-3 Waste Rock Pile (D-36)(Waste Rock Pile)
This facility stores waste rock from mining operations and small amounts of waste rock from the Freeport-McMoRan Exploration Corporation Office in Oro Valley and Technology Center in Tucson. The facility covers approximately 910 acres. Stormwater run-on is diverted upstream of the waste rock pile via a diversion channel. Stormwater runoff from precipitation falling on the pile flows directly to the pit, or toward stormwater detention features located at the toe of the pile.

2.1.35 RS-2 Waste Rock Pile (D-47)(Waste Rock Pile)

This facility stores waste rock from mining operations and small amounts of waste rock from the Freeport-McMoRan Exploration Corporation Office in Oro Valley and Technology Center in Tucson. The facility covers approximately 693 acres. Stormwater run-on is diverted upstream of the waste rock pile via a diversion channel. Stormwater runoff due to precipitation falling on the pile flows directly to the pit or toward stormwater detention features located near the toe of the pile.

2.1.36 V Waste Rock Pile (D-56)(Waste Rock Pile)

This facility stores waste rock from mining operations and small amounts of waste rock from the Freeport-McMoRan Exploration Corporation Office in Oro Valley and Technology Center in Tucson, covering a surface area of 30 acres. The runoff from the facility follows the natural drainage. The facility will be closed through burial under the RS-3 Waste Rock Pile. The facility is located within the PCCZ and any impacted groundwater will report to the Sierrita-Esperanza Pit. Sierrita shall notify the Groundwater Protection Value Stream when the facility has been buried per Section 2.9.2 Closure Completion.

2.1.37 Sierrita-Esperanza Pit (D-55)(Open Pit)

This facility is an open pit created by mining operations. It has a surface area of 98 million square feet, and a depth of approximately 1,650 feet. The pit creates a passive containment with the groundwater boundary at an elevation of 3800 feet amsl. The storage capacity of the facility is about 500 million gallons. The pit receives surface stormwater, and overflow from SX-3 Stormwater Pond and Amargosa Pond. Accumulated fluid is pumped to the SX Plant and the reclaim water system.

2.1.38 Ocotillo Pit (D-60)(Open Pit)

This facility has been backfilled with waste rock from the mining operations. The facility is closed through burial under the RS-3 Waste Rock Pile. The facility is located within the PCCZ and any impacted groundwater will report to the Sierrita-Esperanza Pit. FMI shall notify the Groundwater Protection Value Stream when the facility has been buried per Section 2.9.2 Closure Completion requirements.

2.1.39 Moly Satellite Pit (D-61)(Open Pit)

This facility is a series of push-backs representing the beginnings of a new open pit, located immediately north of the Sierrita-Esperanza Pit. Accumulated stormwater is pumped to the solution storage area in the Sierrita-Esperanza Pit. The facility will be closed through burial under the RS-2 Waste Rock Pile. The facility is located within the PCCZ and any impacted groundwater will report to the Sierrita-Esperanza Pit. Sierrita shall notify the Groundwater Protection Value Stream when the facility has been buried per Section 2.9.2 Closure Completion requirements.

2.1.40 Cat Pond 3 (D-42C)(Non-Stormwater Impoundment)

The facility provides containment for drainage from the West Waste Rock Pile and upgradient native terrain. It is lined with an 80-mil HDPE liner, has an operational storage capacity of 53.9 acre-feet, and a depth of 34 feet. Accumulated fluid is pumped into the plant process circuit.

2.1.41 B-Pond (D-07) (Process Solution Impoundment)

This upgraded facility receives a mixture of process solutions which includes but is not limited to pregnant leach solution and storm water from upgradient facilities. It is lined with an 80-mil HDPE upper liner and 60-mil HDPE lower liner, separated by a geonet, and

equipped with an LCRS, and has a storage capacity of approximately 49 acre-feet at a depth of 20feet with a minimum freeboard of 2 feet. Alert Levels for the LCRS are listed in Table 2.2.4. The facility is designed to overflow into Duval Canal through a concrete-lined spillway.

2.1.42 Non-Municipal Solid Waste Landfill (D-14)

The landfill is used to dispose of non-municipal solid waste. This facility is located on stockpiled, run-of-mine (ROM) material directly north of the boundary between the Sierrita Oxide Active Leach Area (D-17) and the Sulfide Active Leach Area (D-18) and approximately 1500 feet south of the Sierrita-Esperanza Pit. The facility consists of a pit formed by the placement of ROM material on the bedrock surface and surrounding land surfaces. Storm water runoff and run-on is controlled with dirt berms, and controlled drainage on adjoining facilities. The landfill is located within the pollutant management area of this aquifer protection permit. The landfill has obtained authorization for disposal of solid waste pursuant to the Disposal General Permit: Non-Municipal Solid Waste Landfills at Mining Operations (A.A.C. R18-13-802).

Note 1: Some facilities use the term "tank" or "sump" in their descriptive title. These are listed among the discharging facilities covered by this permit because they do not meet the statutory definition of exempt facilities.

Annual Registration Fee [A.R.S. § 49-242(E)]

The Annual Registration Fee for this permit is established by A.R.S. § 49-242(E) and is payable to the Groundwater Protection Value Stream each year. The design flow is 10,000,000 gallons per day or more.

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 costs of $202,805,529 and post-closure cost of $14,694,840. The permittee provided financial capability for the estimated Net Present Value (NPV) of the closure and post-closure costs in the amount of $171,004,739. The financial capability was demonstrated through a corporate guarantee per A.A.C. R18-9-A203(C)(8).

Mitigation Order [A.R.S. § 49-286]

The permittee shall perform the mitigation measures required by Mitigation Order on Consent No. P-50-06 issued on June 14, 2006 (Consent Order).

- Conduct community advisory group (CAG) meetings
- Maintain public information repository at Green Valley Joyner Library
- Maintain Sierrita Internet Document Repository at:
  - http://www.fcx.com/sierrita
- Fulfill the following reporting requirements:
  - Semiannual Groundwater Monitoring Report
  - Annual Mitigation Performance Review
  - Annual Mitigation Facilities Monitoring Report

2.2 Best Available Demonstrated Control Technology (BADCT) [A.R.S. § 49-243(B) and A.A.C. R18-9-A202(A)(5)]

For facilities listed in Section 4, Table 4.1.1, design and construction details are described in the APP application and supplemental file documents. Also, this technical information outlines how each facility is operated to ensure the greatest degree of discharge reduction achievable through application of BADCT, processes, operating methods or other alternatives, including, where practicable, a technology permitting no discharge of pollutants. All permitted facilities shall be constructed, operated, and maintained in accordance

with BADCT, as outlined in the application and Section 4, Table 4.1.1. All facilities have been evaluated for BADCT under APP requirements.

2.2.1 Engineering Design
The facilities list, with BADCT descriptions, is located in Section 4, Table 4.1.1.

2.2.2 Site-specific Characteristics
The passive containment created by the Sierrita-Esperanza Pit is used as an integral part of BADCT for the following facilities:
Non-Municipal Solid Waste Landfill (D-14), Sulfide Active Leach Area (D-17), Oxide (Twin Buttes and Sierrita) Active Leach Area (D-18), West Waste Rock Piles (D-19), RS-2 Waste Rock Pile (D-47), Moly Satellite Pit (D-61) and RS-3 Waste Rock Pile (D-36).

2.2.3 Pre-operational Requirements
Not applicable

2.2.4 Operational Requirements
At a minimum, permitted facilities shall be inspected for performance levels listed in Section 4, Table 4.2.1. Results of these inspections and monitoring activities shall be documented and maintained at the mine location for at least 10 years, and as required by Section 2.7.2 of this permit. If damage is identified during an inspection that could cause or contribute to an unauthorized discharge, proper repairs shall be promptly performed. A summary of the repairs, including a description of the procedures and materials used shall be maintained with the inspection records noted above.

Table 2.2.4
Leakage Rates for LCRS Facilities

Facility Name (#)	Action Leakage Rate (GPD)	Rapid and Large Leakage Rate (GPD)
Raffinate Pond No. 3 (D-04)	1,132	9,947
Raffinate Pond #2 (D-10)	1,081	9,498
Drain Pond No. 2 (D-15)	124	1,089
Headwall No. 5 (D-12)	911	8,008
SX-1 Drain Pond (D-33)	28	245
B-Pond (D-07)	4,089	35,932

GPD = gallons per day

2.3 Discharge Limitations [A.R.S. §§ 49-201(14), 49-243 and A.A.C. R18-9-A205(B)]
The permittee shall operate and maintain all permitted facilities listed below to prevent unauthorized discharges pursuant to A.R.S. §§ 49-201(12) resulting from failure or bypassing of BADCT pollutant control technologies including liner failure[1], uncontrollable leakage, overtopping (e.g., exceeding the maximum storage capacity, defined as a fluid level exceeding the crest elevation of a permitted impoundment), berm breaches that result in an unexpected loss of fluid, accidental spills, or other unauthorized discharges. The discharge limitations in this section are not applicable to any discharge caused by precipitation in excess of a single 100-year/24 hour storm event or process overflow during a power outage exceeding 24 hours in duration.

2.3.1 Leaching Facilities
The Leaching Facilities are designed and authorized for use in leaching of ore. The Leaching Facilities shall be constructed and operated in accordance with the BADCT outlined in Section 4,

1 Liner failure in a single-lined impoundment is any condition that would result in a leakage exceeding 550 gallons per day per acre.

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

2.3.2 Pregnant Leach Solution Ponds and Impoundments

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

2.3.3 Non-stormwater Impoundments

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

2.4 Points of Compliance [A.R.S. § 49-244]

There are 12 established POC well locations. Table 2.4.1 lists the POC wells:

Table 2.4.1
POINTS OF COMPLIANCE FOR SIERRITA MINE

Well Number	Designation [2]	Cadastral Location [1]	Latitude North [1]	Longitude West [1]	ADWR Number
MH-14*	Hazardous / Non-Hazardous	(D-18-13) 16bcc2	31° 51’ 48.8”	111° 01’ 28.8”	55-528098
MH-15W*	Hazardous / Non-Hazardous	(D-18-13) 21cbc	31° 50’ 44”	111° 01’ 28.5”	55-528093
MH-16W*	Hazardous / Non-Hazardous	(D-18-13) 28cbb3	31° 49’ 58.3”	111° 01’ 28.7”	55-528099
MH-18	Hazardous / Non-Hazardous	(D-18-12) 20cdd	31° 50’ 28.4”	111° 08’ 26”	55-561874
MH-19	Hazardous / Non-Hazardous	(D-18-12) 21ccc	31° 50’ 29.1”	111° 07’ 43.7”	55-561878
MH-20	Hazardous / Non-Hazardous	(D-18-12) 21dda	31° 50’ 38”	111° 06’ 47.1”	55-561880
MH-21	Hazardous / Non-Hazardous	(D-18-12) 11bbc	31° 52’ 58.7”	111° 05’ 36.3”	55-561881
MH-22	Hazardous/ Non-Hazardous	(D-18-12) 14bdd1	31° 51’ 50.8”	111° 05’ 17.5”	55-561872
MH-23	Hazardous / Non-Hazardous	(D-18-12) 14bdd2	31° 51’ 51.6”	111° 05’ 17.4”	55-561871
MH-27	Hazardous/ Non-Hazardous	(D-18-12)21add	31° 51’ 02”	111° 06’ 54”	55-203702
MH-28*	Hazardous / Non-Hazardous	(D-18-13)21bbb3	31° 51’ 19.6”	111° 01’ 34.0”	55-903648
MH-29*	Hazardous / Non-Hazardous	(D-18-12)28bba3	31° 50’ 20.9”	111° 01’ 29.2”	55-903649

1 Cadastral coordinates and latitude and longitude bearings are approximate.
2 Hazardous = Well used to monitor hazardous constituents. Non-Hazardous = Well used to monitor non-hazardous constituents.
* East-Half POC Wells

The monitoring parameters and requirements for each POC well are listed in Section 4, Tables 4.2.2, 4.2.3 and 4.2.4. 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. 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 the Groundwater Protection Value Stream personnel.

2.5.1 Discharge Monitoring

None required by this permit.

2.5.2 Facility / Operational Monitoring

The operational monitoring requirements for the facilities referenced in Section 4.1, Table 4.1.1 are listed in Section 4.2, Table 4.2.1. If damage is identified during an inspection that could cause or contribute to an unauthorized discharge pursuant to A.R.S. § 49-201(12), proper repairs shall be promptly performed. Results of these inspections and monitoring activities shall be documented and maintained at the facility location for at least 10 years, and as required by Section 2.7.2 of this permit.

2.5.3 Groundwater Monitoring and Sampling Protocols

2.5.3.1 Groundwater Sampling Protocol

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 72 hours, whichever is shorter, prior to sampling. If after 72 hours there is not sufficient water for sampling, the well shall be recorded as "dry" for the monitoring event. An explanation for reduced pumping volumes, a record of the volume pumped, and modified sampling procedures shall be reported and submitted with the Self-monitoring Report Form (SMRF).

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

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

2.5.3.2 POC Well Installation

Not applicable

2.5.3.3 Alert Levels (ALs) for POC Wells

ALs shall be calculated for all contaminants with an established numeric AWQS for each POC well. The AL and AQL for each parameter for which the eight rounds of ambient samples have been completed, are listed in Section 4, Tables 4.2.3, 4.2.4.

Where ambient sampling is required, within 90 days of the receipt of the laboratory analyses for the final quarter or month of the ambient groundwater monitoring period for each POC well referenced in Section 2.4, Table 2.4.1 the permittee shall submit the ambient groundwater data in tabulated form to the Groundwater Protection Value Stream. 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, Tables 4.2.3, and 4.2.4 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 the Groundwater Protection Value Stream, 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 percent 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:

A. The AL shall be calculated for a parameter using the analyses from a minimum of eight consecutive sample events. For wells MH-27, MH-28, and MH-29, eight consecutive monthly sample rounds were used to calculate ALs. The permittee shall not use more than eight sample rounds in the calculation of a parameter. Any data where the PQL exceeds 80 percent of the AWQS shall not be included in the AL calculation.
B. 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.
C. If the analytical results from more than 50 percent of the samples for a specific parameter are non-detect, then the AL shall be set at 80 percent of the AWQS.
D. If the calculated AL for a specific constituent and well is less than 80 percent of the AWQS, the AL shall be set at 80 percent 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 the monitoring point.

2.5.3.5 Compliance Groundwater Monitoring for POC Wells

Quarterly compliance groundwater monitoring in all other POC wells shall commence

within the first calendar quarter after the effective date of this permit. For quarterly compliance monitoring, the permittee shall analyze groundwater samples for the parameters listed in Section 4, Table 4.2.3. In addition to quarterly compliance groundwater monitoring, an additional list of parameters shall be monitored at each POC well every 8th quarter (biennial). For the biennial monitoring event, the parameters listed in Section 4, Table 4.2.4 shall be analyzed. The permittee may submit a written request to the Groundwater Protection Value Stream to modify, reduce or delete a monitoring parameter in the quarterly or biennial compliance groundwater monitoring tables (Section 4, Tables 4.2.3 and 4.2.4) in accordance with the following criteria:

1. The parameter in question has not been detected for at least two consecutive biennial or four consecutive quarterly monitoring events in the well. The PQL reported by the laboratory shall be less than 80 percent of the established numeric AWQS, and shall not be greater than three times the laboratory method detection limit for that parameter.
2. The permittee shall submit a written report indicating the parameter(s) proposed for modification, accompanied by supporting data, including laboratory analytical reports and quality assurance/quality control data, to the Groundwater Protection Value Stream for review.
3. Upon review, the Groundwater Protection Value Stream will determine if the modification(s) requested is justified and approved. The respective changes, if approved, will require an amendment to the permit.

2.5.3.6 POC Well Replacement

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

2.5.3.7 Passive Containment Demonstration

Based on supporting documentation provided in the Application, the permittee has satisfactorily predicted that the Sierrita-Esperanza and Twin Buttes open-pits will create "passive containment capture zones," as per A.R.S. § 49-243(G). Passive containment, per A.R.S. § 49-243(G)(1), means natural or engineered topographical, geological or hydrological control measures that can operate without continuous maintenance. Monitoring and inspections to confirm performance of the passive containment do not constitute maintenance.

A post-audit of the approved groundwater flow model shall be conducted every five (5) years in accordance with Compliance Schedule Item No. 5 and Section 2.7.6. Factors to be evaluated in the post-audit include groundwater inflow, the estimated static water level in the pits, 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 shall 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).

Every five (5) years thereafter, the permittee shall compare the current groundwater data to the previous model predictions. The assumptions about mine development and infiltration shall be reviewed in terms of the actual changes in the pit configuration, leaching areas, leach rates, sump locations, water balance, annual precipitation and storm

events. The resulting compilation shall be compared to predictions provided by the groundwater flow model for the previous calibration period.

2.5.4 Surface Water Monitoring and Sampling Protocols

None required by this permit.

2.5.5 Analytical Methodology

All samples collected for compliance monitoring shall be analyzed using Arizona state-approved methods. If no state-approved method exists, then any appropriate EPA-approved method shall be used. Regardless of the method used, the detection limits must be sufficient to determine compliance with the regulatory limits of the parameters specified in this permit. If all methods have detection limits higher than the applicable limit, the permittee shall follow the contingency requirements of Section 2.6 and may propose "other actions" including amending the permit to set higher limits. Except for field parameters, 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 Ave.
Phoenix, AZ 85007
Phone: (602) 364-0720

2.5.6 Installation and Maintenance of Monitoring Equipment

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

2.6 Contingency Plan Requirements

2.6.1 General Contingency Plan Requirements

At least one copy of the approved contingency and emergency response plan 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 approved Sierrita APP contingency and emergency plan.

Any AL that is exceeded or any violation of an AQL, discharge limit (DL), or other permit condition shall be reported to the Groundwater Protection Value Stream following the reporting requirements in Section 2.7.3, unless more specific reporting requirements are set forth in Sections 2.6.2 through 2.6.5.

Some contingency actions involve verification sampling. Verification sampling shall consist of the first follow-up sample collected from a location that previously indicated a violation of an AQL, or the exceedance of an AL. Collection and analysis of the verification sample shall use the same protocols and test methods to analyze for the pollutant or pollutants that exceeded an AL or violated an AQL. The permittee is subject to enforcement action for the failure to comply with any contingency actions in this permit. Where verification sampling is specified in this permit, it is the option of the permittee to perform such sampling. If verification sampling is not conducted within the timeframe allotted, the Groundwater Protection Value Stream and

the permittee shall presume the initial sampling result to be confirmed as if verification sampling has been conducted. The permittee is responsible for compliance with contingency plans relating to the exceedance of an AL or violation of a DL, AQL or any other permit condition.

2.6.2 Exceeding of Alert Levels, Performance Levels, and Leakage Rates

2.6.2.1 Exceeding of Performance Levels Set for Operational Conditions

A. Performance Levels Set for Freeboard

In the event that freeboard performance levels 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 impoundment 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 as necessary to avoid future occurrences.
3. Record in the facility log, the amount of fluid removed, a description of the removal method, and the disposal arrangements. The facility log shall be maintained according to Section 2.7.2 (Operational Inspection / Log Book Recordkeeping). Records documenting each freeboard incident and actions taken to correct the problem shall be included in the current report as required in Section 2.7.1 (Self-Monitoring Report Forms).
4. 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.

B. Performance Levels, Other Than Freeboard

1. If an operational performance level listed in Section 4, Table 4.2.1 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 as soon as practicable 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 performance level exceedance, results of the investigation, and any corrective action taken shall be reported to the Water Quality 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 3 and any specific contingency measures identified in Section 2.6 to resolve any problems identified by the investigation which may have led to a performance level being exceeded. To implement any other corrective action the permittee shall obtain prior approval from the Groundwater Protection Value Stream according to Section 2.6.6.

2.6.2.2 Exceeding of Alert Levels Set for Discharge Monitoring
Not applicable

2.6.2.3 Exceeding of Alert Levels in Groundwater Monitoring Wells

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

2.6.2.3.2 Alert Levels for Pollutants with Numeric Aquifer Water Quality Standards

1. If an AL for a pollutant set in Section 4, Tables 4.2.3 or 4.2.4 has been exceeded, the permittee may conduct verification sampling within 5 days of becoming aware of an AL being exceeded. 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 being exceeded or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring to monthly. In addition, the permittee shall immediately initiate an investigation of the cause of the AL 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 and specific contingency measures identified in Section 2.6 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 the Groundwater Protection Value Stream according to Section 2.6.6. Alternatively, the permittee may submit a technical demonstration, subject to written approval by the Groundwater Protection Value Stream, that although an AL is exceeded, pollutants are not reasonably expected to cause a violation of an AQL. The demonstration may propose a revised AL or monitoring frequency for approval in writing by the Groundwater Protection Value Stream.
4. Within 30 days after confirmation of an AL being exceeded, the permittee shall submit the laboratory results to the Water Quality Groundwater Protection Value Stream, along with a summary of the findings of the investigation, the cause of the AL being exceeded, and actions taken to resolve the problem.
5. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, or other actions.
6. The increased monitoring required as a result of ALs being exceeded may be reduced to the regularly scheduled frequency, if the results of three consecutive monthly sampling events demonstrate that no parameters exceed the AL.

2.6.2.3.3 Alert Levels to Protect Downgradient Users from Pollutants without Numeric Aquifer Water Quality Standards
Not applicable

2.6.2.4 Exceedance of 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 for a facility listed in Section 2.2.4, Table 2.2.4. 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;
4. Assess the current condition of the liner system; and
5. Take appropriate corrective action to mitigate the cause(s) of the exceedance.

2.6.2.5 Rapid and Large Leakage Exceedance in the Process Solution Impoundments

Additional response actions based on rapid and large leakage rate (RLL) for a facility listed in Section 2.2.4, Table 2.2.4 shall include the following:

1. Notify the Water Quality Compliance 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.
7. 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 Groundwater Protection Value Stream, the permittee shall initiate the actions necessary to mitigate the impacts of the exceedance.

2.6.3 Discharge Limitations Violations

If a DL set in Sections 2.6.3.1, 2.6.3.2 or 2.6.3.3 has been violated, the permittee shall immediately investigate to determine the cause of the violation.

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

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

1. As soon as practicable, cease all discharges to the surface impoundment as necessary to prevent any further releases to the environment.
2. Within 24-hours of discovery, notify the Groundwater Protection Value Stream.
3. Within 5 days of discovery of a failure that resulted in a release to the subsurface, collect representative samples of the fluid remaining in the surface impoundment. Samples shall be analyzed for the parameters specified in Section 4, Table 4.2.2. Within 30 days of the incident, submit a copy of the

analytical results to the 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 surface impoundment and liner system. Implement corrective actions as necessary to resolve the problems identified in the evaluation. Initiate repairs to any failed liner, system, structure, or other component as needed to restore proper functioning of the surface impoundment. The permittee shall not resume discharging to the surface impoundment until repairs of any failed liner or structure are performed. Repair procedures, methods, and materials used to restore the system(s) to proper operating condition shall be described in the facility log/recordkeeping file and available for the Groundwater Protection Value Stream review.
5. As soon as practicable, remove fluid remaining in the surface impoundment as necessary to prevent further releases to the subsurface and/or to perform repairs. Record in the facility log/recordkeeping file the amount of fluid removed, a description of the removal method, and other disposal arrangements. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 (Operation Inspection / Log/Recordkeeping File).
6. Within 30 days of discovery of the incident, submit a report to the Groundwater Protection Value Stream as specified in Section 2.7.3 (Permit Violation and AL Status Reporting). Include a description of the actions performed in Subsections 1 through 5 listed above. Upon review of the report, to the Groundwater Protection Value Stream may request additional monitoring or remedial actions.
7. Within 60 days of discovery, conduct an assessment of the impacts to the subsoil and/or groundwater resulting from the incident. If soil or groundwater is impacted such that it could cause or contribute to an exceedance of an AQL at the applicable point of compliance, submit to the Groundwater Protection Value Stream, 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 the Groundwater Protection Value Stream, the permittee shall implement the approved plan.
8. Within 30 days of completion of corrective actions, submit to the Groundwater Protection Value Stream, a written report as specified in section 2.6.6 (Corrective Actions). Upon review of the report, the Groundwater Protection Value Stream 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 the Groundwater Protection Value Stream.
3. Within 5 days, collect representative samples of the fluid contained in the surface impoundment. Samples shall be analyzed for the parameters specified in Table 4.2.2. Within 30 days of the incident, submit a copy of the analytical results to the Groundwater Protection Value Stream.
4. As soon as practicable, remove and properly dispose of excess water in the impoundment until the water level is restored at or below the appropriate freeboard as described in Table 4.1.1. Record in the facility log, the amount of fluid removed, a description of the removal method, and the disposal arrangements. The facility log/recordkeeping file shall be maintained according to Section 2.7.2 (Operation Inspection / Log/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 the Groundwater Protection Value Stream as specified in section 2.7.3 (Permit Violation and AL Status Reporting). Include a description of the actions performed in Subsections 1 through 5 listed above. Upon review of the report, the Groundwater Protection Value Stream may request additional monitoring or remedial actions.
7. Within 60 days of discovery, and based on sampling in Subsection 3 above, conduct an assessment of the impacts to the subsoil and/or groundwater resulting from the incident.
8. If soil or groundwater is impacted such that it could cause or contribute to an exceedance of an AQL at the applicable point of compliance, submit to the Groundwater Protection Value Stream 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 the Groundwater Protection Value Stream, the permittee shall implement the approved plan.
9. Within 30 days of completion of corrective actions, submit to the Groundwater Protection Value Stream, a written report as specified in Section 2.6.6 (Corrective Actions). Upon review of the report, the Groundwater Protection Value Stream 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 the 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 the Groundwater Protection Value Stream as specified in section 2.7.3 (Permit Violation and AL Status Reporting). Include a description of the actions performed in Subsections 1 through 3 listed above. Upon review of the report, the Groundwater Protection Value Stream may request additional monitoring or remedial actions.
5. Upon review of the report, the Groundwater Protection Value Stream may amend the permit to require additional monitoring, increased frequency of monitoring, amendments to permit conditions, or other actions.

2.6.4 Aquifer Quality Limit Violation in Groundwater Monitor Wells

1. If an AQL set in Tables 4.2.3 or 4.2.4 has been exceeded, the permittee may conduct verification sampling within 5 days of becoming aware of an AQL being exceeded. The

permittee may use the results of another sample taken between the date of the last sampling event and the date of receiving the result as verification.

2. If verification sampling confirms that the AQL is violated for any parameter or if the permittee opts not to perform verification sampling, then the permittee shall increase the frequency of monitoring to monthly. In addition, the permittee shall immediately initiate an evaluation for the cause of the violation, including inspection of all discharging units and all related pollution control devices, and review of any operational and maintenance practices that might have resulted in unexpected discharge.
   The permittee also shall submit a report according to Section 2.7.3, which includes a summary of the findings of the investigation, the cause of the violation, and actions taken to resolve the problem. A verified exceedance of an AQL will be considered a violation unless the permittee demonstrates within 30 days that the exceedance was not caused or contributed to by pollutants discharged from the facility. Unless the permittee has demonstrated that the exceedance was not caused or contributed to by pollutants discharged from the facility, the permittee shall consider and the Groundwater Protection Value Stream 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 a Groundwater Protection Value Stream approved contingency plan, or separately approved according to Section 2.6.6.
3. Upon review of the submitted report, the Department may amend the permit to require additional monitoring, increased frequency of monitoring, or other actions.
4. The permittee shall notify any downstream or downgradient users who may be directly affected by the discharge.
5. The permittee shall continue monitoring at the increased frequency until the contaminant(s) is below the AQL and AL for three consecutive months.

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 (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 (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)) from a permitted facility, 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 and the Southern Regional Office within 24-hours upon discovering the discharge of hazardous material which: a) has the potential to cause an AQL to be exceeded; or b) could pose an endangerment to public health or the environment.

2.6.5.3 Discharge of Non-hazardous Materials

In the event of any unauthorized discharge (A.R.S. § 49-201(12)) of non-hazardous materials from a permitted 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 and the Southern Regional Office within 24-hours upon discovering the discharge of non-hazardous material

which: a) has the potential to cause an AQL to be exceeded at the applicable point of compliance; or b) could pose an endangerment to public health or the environment.

2.6.5.4 Reporting Requirements

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

2.6.6 Corrective Actions

Specific contingency measures identified in Section 2.6 and actions identified in the approved contingency plan referenced in Section 3.0 have already been approved by the Groundwater Protection Value Stream and do not require written approval to implement.

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

1. Control of the source of an unauthorized discharge;
2. Soil cleanup;
3. Cleanup of affected surface waters;
4. Cleanup of affected parts of the aquifer;
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 Forms

1. When submitting hard copy, the permittee shall complete the Self-monitoring Report Form (SMRF) provided by the Groundwater Protection Value Stream including contact information for the person completing the form. Submit the completed form to the Water Groundwater Protection Value Stream.
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 and include an explanation, and submit the form to the Groundwater Protection Value Stream. The permittee shall use the format devised by the Groundwater Protection Value Stream.
3. The groundwater monitoring tables contained in Section 4.2, Tables 4.2.3 and 4.2.4 of this permit list the parameters to be monitored and the frequency for reporting results for groundwater compliance monitoring. The parameters listed in the identified tables from Section 4.2 are the only parameters for which SMRF reporting is required.
4. In addition to the SMRF, the applicable information contained in Section 6.6 shall be included for exceeding an AL or violation of an AQL, DL, or any other permit condition

being reported in the current reporting period.

2.7.2 Operation Inspection / Log Book Recordkeeping

A signed copy of this permit, and a log book (paper copies, forms or electronic data) of the inspections and measurements required by this permit, shall be maintained at all times at the location where day-to-day decisions regarding the operation of the facility are made.

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 the Groundwater Protection Value Stream 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).

2.7.3 Permit Violation and Alert Level Status Reporting

1. The permittee shall notify the Groundwater Protection Value Stream in writing within 5 days (except as provided in Section 2.6.5) of becoming aware of a violation of any permit condition, discharge limitation or of an AL being exceeded.
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 or discharge limitation. The report shall document all of the following:
   a. Identification and description of the permit condition for which there has been a violation and a description of its cause;
   b. The period of violation including exact date(s) and time(s), if known, and the anticipated time period during which the violation is expected to continue;
   c. Any corrective action taken or planned to mitigate the effects of the violation, or to eliminate or prevent a recurrence of the violation;
   d. Any monitoring activity or other information which indicates that any pollutants would be reasonably expected to cause a violation of an AWQS;
   e. Proposed changes to the monitoring which include changes in constituents or increased frequency of monitoring; and
   f. Description of any malfunction or failure of pollution control devices or other equipment or processes.

2.7.4 Operational, Other or Miscellaneous Reporting

The permittee shall, upon completion of the biennial sampling described in Table 4.2.4, submit a monitoring summary report to the Groundwater Protection Value Stream. This report shall be due at the same time as the SMRF form for the biennial sampling event per Section 3.0 , Compliance Schedule Item (CSI) No. 1 and Section 2.7.8. 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, or operational limits that occurred during the reporting period.
3 Graphical time versus concentration plots of field pH, sulfate, total dissolved solids, and any parameter which exceeded an applicable AL or AQL in the past eight quarters at each POC well, and tabulated sampling data for all wells required to be sampled by this permit

during the last eight quarters.

4. An updated table of all monitor wells and piezometers in the Discharge Impact Area including, but not limited to, location of well, depth to water, and depth of well.
5. A summary of any groundwater monitor wells replaced in the reporting period including, but not limited to, location of well, depth of well, depth to water, and screened interval.
6. A list of any new sumps, impoundments, or vehicle washes constructed within the passive containment, unless exempt or covered by a general APP.
7. The report shall also include an evaluation of the performance of the interceptor wellfield to provide hydrologic capture to prevent exceedance of an AWQS at any applicable point of compliance.

2.7.5 Sierra Tailings Impoundment Reporting

The permittee shall submit a biennial technical report to the Groundwater Protection Value Stream that is prepared, signed and sealed by the Engineer of Record. This report shall be due as specified in Section 3.0, Compliance Schedule Item (CSI) No. 7. The report shall include the following:

1. A summary of STI Buttress construction activities for the reporting period including maps and construction completion documents such as as-built documentation and construction quality control summary
2. A summary of construction activities planned for the upcoming 2 year period.
3. Interpretation and evaluation of the inspections and monitoring data including maps and graphs
4. Description of any updates to the STI stability model and updates to the potential failure modes analysis.

2.7.6 Passive Containment Capture Zone Demonstration Reporting

The results of the post-audit shall 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 in accordance with Compliance Schedule Item 5 and Section 2.5.3.7. Each post-audit report shall include a revised table listing the groundwater elevations for the data points used to demonstrate the configuration of the hydraulic containment, flow vector analysis (including plan and cross-sectional figures at inflection points), and a potentiometric contour map based on groundwater elevations used in the post-audit demonstration. The Groundwater Protection Value Stream will determine whether a full model recalibration is required. If a recalibration is necessary, a report describing the model output and the revisions and/or changes to the model shall be submitted to the Groundwater Protection Value Stream. The permittee shall compare the current groundwater data to the previous model predictions and a report on the comparison shall be submitted to the Groundwater Protection Value Stream for review.

2.7.7 Reporting Location

All SMRFs shall be submitted to:

Arizona Department of Environmental Quality
Groundwater Protection Value Stream
Mail Code: 5415B-1
1110 W. Washington Street
Phoenix, AZ 85007
Phone (602) 771-4681

Or

Through the myDEQ portal accessible on the ADEQ website at:
http://www.azdeq.gov/welcome-mydeq

All documents required by this permit to be submitted to the Groundwater Protection Value Stream shall be directed to:

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

2.7.8 Reporting Deadline

The following table lists the quarterly report (SMRF) due dates:

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 report due date:

Monitoring conducted during biennial period:	Biennial Report due by:
January-December of the following year	January 30, 2018, and every two years thereafter

2.7.9 Changes to Facility Information in Section 1.0

The Water Quality Groundwater Protection Value Stream shall be notified within fifteen (15) days of any change of facility information including Facility Name, Permittee Name, Mailing or Street Address, Facility Contact Person or Emergency Telephone Number.

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

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

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

At the time of notification the permittee shall submit for Groundwater Protection Value Stream approval a plan for maintenance of discharge control systems and for monitoring during the period of temporary cessation. Immediately following the Groundwater Protection Value Stream's approval, the permittee shall implement the approved plan. If necessary, the Groundwater Protection Value Stream 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 Water Quality Groundwater Protection Value Stream of the permittee's 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 ninety 90 days following notification of closure, the permittee shall submit for approval to the Water Permits Section, a Closure Plan which meets the requirements of A.R.S. § 49-252 and A.A.C. R18-9-A209(B)(3).

If the closure plan achieves clean closure immediately, the Groundwater Protection Value Stream 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, the Groundwater Protection Value Stream 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, the Groundwater Protection Value Stream 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 aquifer water quality standards at the applicable point of compliance;
3. Continued action is required to verify that the closure design has eliminated discharge to the extent intended;
4. Remedial or mitigative measures are necessary to achieve compliance with Title 49, Ch. 2;
5. Further action is necessary to meet property use restrictions.
6. SMRFs submittals are still required until Clean Closure is issued.

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

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

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

for approval to the Groundwater Protection Value Stream a Post-closure Plan that addresses post-closure maintenance and monitoring actions at the facility. The Post-closure Plan shall meet all requirements of A.R.S. §§ 49-201(30) and 49-252 and A.A.C. R18-9-A209(C). Upon approval of the Post-closure Plan, this permit shall be amended or a new permit shall be issued to incorporate all post-closure controls and monitoring activities of the Post-closure Plan.

2.10.1 Post-closure Plan
Reserved

2.10.2 Post-closure Completion
Reserved

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

For each compliance schedule item listed below, the permittee shall submit the required information, including a cover letter that lists the compliance schedule items, to the Groundwater Protection Value Stream.

No.	Description	Due by:	Permit Amendment Required?
1	In accordance with Section 2.7.4, submit a monitoring summary report for the biennial sampling conducted for well and parameters listed Table 4.2.4	January 30, 2020, and every two years thereafter.	No
2	The permittee shall submit a demonstration that the financial assurance mechanism listed in Section 2.1, Financial Capability, is being maintained as per A.R.S. 49-243.N.4 and A.A.C. R18-9-A203(H) for all estimated closure and post-closure costs including updated costs submitted under Section 3.0, No. 3 below. The demonstration shall include a statement that the closure and post-closure strategy has not changed, the discharging facilities listed in the permit have not been altered in a manner that would affect the closure and post-closure costs, and discharging facilities have not been added. The demonstration shall also include information in support of a corporate guarantee as required in A.A.C. R18-9-A203(C)(8).	On April 1, 2020 and every 2 years thereafter.	No
3	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.	On April 1, 2022, and every 6 years thereafter.	Yes
4	Submit as-built documentation for construction of the compacted tailings liner in the Duval Canal Impoundment	Within 90 days of completion of construction	No
5	Submit a post-audit report of the approved groundwater flow model which demonstrates that the Sierrita-Esperanza and Twin Buttes open pits create passive containment capture zones in accordance with Sections 2.5.3.7 and 2.7.6.	December 31, 2022 and every five (5) years thereafter.	No
6	Sierrita plans to raise the STI crest elevation in phases beginning with the Phase 1 elevation of 3,510 feet amsl. The Phase 2 maximum crest elevation is 3,585 feet amsl and Phase 3 maximum elevation is 3,710 feet amsl. Phase 1 and 2 buttress design has been evaluated for stability and meets ADEQ BADCT minimum factor of under static and dynamic conditions. The Phase 1 and 2 buttress has been constructed. The permittee shall submit a demonstration that the design of STI and supporting structures in critical cross sections 8 and 10, as depicted in the November 20, 2018 permit amendment application, meet ADEQ BADCT minimum factor of safety under static and dynamic conditions.	Ninety (90) days prior to raising the STI crest elevation above 3,585 feet amsl	No
7	The permittee shall submit a biennial report for the Sierrita Tailings Impoundment as described in Section 2.7.5.	By January 30 , 2020 and every two years thereafter	No
8	The permittee shall submit construction documentation including as-built drawings and construction quality control documentation for the Phase 2 buttress and storm water controls.	By June 30, 2020	No

4.0 TABLES AND FIGURES

4.1 FACILITY AND POC TABLES

TABLE 4.1.1 Permitted Facilities and BADCT

4.2 COMPLIANCE AND OPERATIONAL MONITORING

TABLE 4.2.1 Required Inspections and Operational Monitoring
TABLE 4.2.2 Table of Parameters for Ambient Groundwater Monitoring for Point of Compliance (POC) Wells
TABLE 4.2.3 Quarterly Compliance Groundwater Monitoring Requirements for Hazardous POC Wells
TABLE 4.2.4 Biennial Compliance Groundwater Monitoring Requirements for POC Wells
TABLE 4.2.5 Freeboard Requirements

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name (Sierrita Facility No.)	Latitude/ Longitude	Facility BADCT
AMARGOSA WASH DRAINAGE AREA		
Non-stormwater Impoundments:		
Duval Canal Velocity Pond (D-64)	31° 52' 10" N 111° 06' 05" W	**Individual BADCT:** Facility is an unlined flow-through structure over-excavated and backfilled with on-site borrow material that was moisture conditioned and compacted to 95 percent maximum dry density. The facility is an energy dissipation and sediment pond that receives stormwater runoff from the crushing and conveying area. Accumulated fluids drain into Duval Canal.
Amargosa Pond (D-05)	31° 51' 55" N 111° 06' 00" W	**Individual BADCT:** Facility is an existing, single-lined impoundment with an 80-mil HDPE liner underlain by a 12-inch-thick layer of compacted on-site native material. The HDPE liner is secured in an engineered anchor trench. The competent, andesite bedrock underlying the facility has relatively low hydraulic conductivity ranging from 10^{-4} cm/sec to 10^{-6} cm/sec. The impoundment has a fluid storage capacity of 49 acre-feet with a depth of 25 feet and is sufficient to contain stormwater run-on from a 100-year, 24-hour storm event. The impoundment provides containment for stormwater runoff and during upset conditions from Headwall No. 1, Bailey Lake, Raffinate Pond No. 2, and Drain Pond No. 2. Upstream, Interceptor No. 1 – a primary cutoff trench equipped with a sump and pump-back system captures any subsurface flow and pumps it back to Raffinate Pond No. 2. Downstream, Interceptor No. 2, a secondary cutoff trench equipped with a sump and pump-back system, captures any seepage from Amargosa Pond and subsurface flow not captured by the primary cutoff trench. The facility is designed to overflow through a 6-inch thick concrete-lined Amargosa spillway into Duval Canal.
SX-1 Tank Farm Pond (D-34)	31° 51' 56" N 111° 06' 02" W	**Individual BADCT:** Facility is an existing, single-lined impoundment with an 80-mil geomembrane overlying a 3-inch thick gunite layer. The geomembrane is secured in an engineered anchor trench. The competent bedrock underlying the facility has relatively low hydraulic conductivity ranging from 10^{-5} cm/sec to 10^{-7} cm/sec. The impoundment has a storage capacity of 0.12 acre-feet with a depth of 5 feet. The impoundment provides containment for stormwater runoff and surface flows during upset conditions from the upgradient SX-1 Tank Farm Secondary Containment. Accumulated fluid is pumped back into the SX-1 circuit. The facility is designed to overflow into Amargosa Pond.
Process Solution Impoundments:		
Headwall No. 1 (D-02)	31° 51' 49" N 111° 06' 34" W	**Individual BADCT:** Facility is an existing unlined impoundment created behind an earthen dam across Amargosa Wash which is underlain by the existing land surface comprised of Quaternary alluvium and Demetrie volcanics. The impoundment has a fluid storage capacity of 3 acre-feet with a maximum depth of 22 feet. The impoundment provides containment for leachate (PLS) from the oxide leach area. Accumulated PLS is directed through an HDPE lined discharge channel and gravity fed to Bailey Lake. The facility is designed to overflow into Bailey Lake.

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name (Sierrita Facility No.)	Latitude/ Longitude	Facility BADCT
Bailey Lake (D-03)	31° 51' 52" N 111° 06' 17" W	**Individual BADCT:** Facility is an existing unlined impoundment constructed behind an earthen dam immediately below the Headwall No. 1 in Amargosa Wash. The subgrade, consisting of on-site native material, is compacted to 95 percent maximum dry density and is underlain by Quaternary alluvium and Demetrie volcanics. The impoundment has a fluid storage capacity of 135 acre-feet with a maximum depth of 42.1 feet. The impoundment provides containment for overflow and any subsurface flow from the upgradient Headwall No. 1. Accumulated fluid is pumped to SX Plant Nos. 1 and 2. Facility upgrade includes an interceptor trench, excavated into bedrock The trench, equipped with a sump and pump-back system, is located immediately downgradient to capture any seepage from Bailey Lake. The facility is designed to overflow through a concrete-lined spillway into Amargosa Pond.
SX-1 Drain Pond (D-33)	31° 51' 55" N 111° 06' 05" W	**Prescriptive BADCT:** Facility is upgraded from a single-lined to a double-lined impoundment using 60-mil HDPE liners incorporating an LCRS. The bottom liner is underlain by a minimum of 6-inch thick layer of compacted 3/8-inch minus sand and gravel layer over a 1-inch minus gravel sub-grade. The competent andesite bedrock underlying the facility has relatively low hydraulic conductivity ranging from 10^{-4} cm/sec to 10^{-7} cm/sec. The HDPE liners are secured in an engineered anchor trench. The impoundment has a fluid storage capacity of 0.2 acre-feet with an approximate depth of 7 feet. The impoundment provides containment for any washdown and runoff from SX-1 Plant. Upstream, stormwater is diverted via roadway, away from facility. The facility is designed to overflow through an 8-inch HDPE pipe, installed 12 inches below the embankment crest, to SX-2 Drain Pond.
Raffinate Pond No. 2 (D-10)	31° 51' 51" N 111° 06' 09" W	**Individual BADCT:** Facility is an existing double-lined impoundment using 60-mil HDPE liners incorporating an LCRS. The bottom liner is underlain by a geotextile cushion underlain by a 6-inch thick layer of compacted native material. The facility overlies shallow bedrock that has a low permeability ranging from 10^{-4} cm/sec to 10^{-6} cm/sec. The liners are secured in an engineered anchor trench around the impoundment perimeter. The impoundment has a fluid storage capacity of 6 acre-feet with a maximum depth of 16 feet. Surface water runoff is diverted away from the facility. The impoundment provides temporary containment for copper depleted leachate solution from SX Plant Nos. 1 and 2. Accumulated fluid is pumped to the leach stockpiles. The facility is designed to overflow through a HDPE-lined spillway into Amargosa Pond.
Drain Pond No. 2 (D-15)	31° 51' 53" N 111° 06' 04" W	**Individual BADCT:** Facility is an existing double-lined impoundment using 60-mil HDPE liners incorporating an LCRS. The bottom liner is underlain by a geotextile cushion over 6-inch layer of compacted fine-grained material. The facility overlies shallow bedrock which has a low permeability ranging from 10^{-5} cm/sec to 10^{-7} cm/sec. The liners are secured in an engineered anchor trench around the impoundment perimeter. The impoundment has a fluid storage capacity of 1 acre-foot with a maximum depth of 10 feet. The impoundment provides temporary containment for organics used at SX Plant Nos. 1 and 2 and during upset conditions from Tank Farm 2. Accumulated fluid is pumped to Raffinate Pond No.2, SX Strip Solution Tanks, or Headwall No.1. Downstream, Interceptor No. 1 trench is excavated into bedrock to capture any subsurface flow. The trench is equipped with a sump and pump to discharge captured fluid, via an HDPE pipeline, into Raffinate Pond No. 2. The facility is designed to overflow through a concrete-lined spillway into Amargosa Pond.
Moly Decant Tanks and Pad Area (D-39A)	31° 51' 54" N 111° 06' 11" W	**Individual BADCT:** Facility consists of four partially below-ground steel-reinforced concrete walls with an adjacent steel-reinforced concrete drying pad. The adjacent drying pad is approximately 60 feet by 110 feet. The facility is underlain by crystalline (andesite) bedrock with relatively low permeability of 10^{-4} cm/sec to 10^{-7} cm/sec. Each Moly Decant Tank is 50 feet

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name (Sierrita Facility No.)	Latitude/ Longitude	Facility BADCT
		by 26 feet and 3-4 feet deep. The impoundments provide containment of overflow from the molybdenum processing thickeners. Any excess fluid is pumped to Bailey Lake. The concrete pad is used to further dry the molybdenum concentrate. Once dry, concentrate is moved to the molybdenum roaster. Downgradient, two interceptor trenches, equipped with pump-back systems, capture any potential discharge and pump it back into the SX circuit.
B-Pond (D-07)	31° 51' 52" N 111° 05' 39" W	**Prescriptive BADCT:** Facility is a double-lined process solution pond with side slopes of 2.5H:1V and a LCRS. The primary/upper HDPE liner is 80-mil and a secondary/lower 60-mil HDPE liner separated by a geonet drainage layer with a saturated hydraulic conductivity of 10^{-2} cm/sec or greater at a 3 percent slope. The liner system also includes an underdrain system that consists of a geocomposite of two (2) six (6) ounce geotextiles laminated to a 300-mil geonet. The geocomposite will direct the intercepted flows into an 8-inch N-12 corrugated, perforated, high density polyethylene (HDPE) pipe buried in a trench filled with appropriate sized drain rock. The dedicated LCRS pump, flow meter and piezometer tube are designed to discharge solution back into B-Pond. Capacity at the spillway is estimated at approximately 49 acre-feet or less at a depth of 20 feet. The facility is designed to overflow into Duval Canal through a concrete-lined spillway. The B-Pond spillway is designed to handle discharge flow of 1,762 cubic feet per second (cfs). Storm water diversion ditches located along the north and south sides of B-Pond direct storm water run-on away from flowing into B-Pond and discharge it on the eastern side of B-Pond.
Stockpile Leaching Area:		
Sulfide Active Leach Area (D-17)	31° 51' 19" N 111° 07' 59" W	**Individual BADCT:** Facility is an existing **sulfide** leach stockpile, constructed using the end dumping method over moderate-to-steeply sloping topography which minimizes the potential for discharge. The natural channels within the leach stockpile footprint are underlain by relatively low hydraulic conductivity bedrock. The facility covers a surface area of approximately 446 acres. The leachate is collected at the headwalls located immediately downgradient of the facility. Containment of overflow and run-on from a 100-year, 24-hour storm event is provided by Amargosa Pond and SW-3 Pond. The facility shall not exceed the aerial footprint shown in the Geotechnical Review of the Ultimate Rock Stockpile Plan at Sierrita Mine (Revised 21 August 2009) that forms an integral part of the APP application**.** The ultimate crest elevation of the facility shall not exceed 4,900 feet amsl.
Solution Conveyance Channels:		
Duval Canal (D-29)	31° 51' 32" N 111° 04' 39" W	**Individual BADCT:** Facility is an existing canal (conveyance channel), initially lined with an 80-mil HDPE geomembrane extending from Sierrita Mill to Demetrie Wash Crossing. Recent upgrade includes installation of an 80-mil HDPE liner along the remaining segment from Demetrie Wash Crossing to Duval Canal Impoundment. The liner is anchored in an engineered trench. The canal is approximately 4.25 miles long, 10 feet wide, and 6 feet deep and has side slopes at 1.3H:1V. The canal has a design capacity of 3,100 cubic feet per second and an average gradient of 3.4 percent. The facility receives process solutions and surface runoff from the Plant Site, including, but not limited to, overflow from Amargosa Pond, B Pond, bleed from the lime scrubber, dust control water from crushing and conveying, vehicle wash water effluent and seepage collected and pumped from B and C Sumps. Solution conveyed by the Duval Canal discharges to the Duval Canal Impoundment located at the western edge of the Sierrita Tailings Impoundment.

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name (Sierrita Facility No.)	Latitude/ Longitude	Facility BADCT
Amargosa Spillway (D-48)	31° 51' 55" N 111° 05' 46" W	**Individual BADCT:** Facility is an existing single-lined spillway (conveyance channel) with an 80-mil HDPE geomembrane overlying a 6-inch bedding layer of compacted native material. The liner is anchored in an engineered trench. The conveyance channel is approximately 860 feet long, 15 feet wide at the base, 29 feet wide at the crest, 3 to 5 feet deep, with an average slope of 1 percent, has a design capacity of 1,762 cubic feet per second. A 26-feet x 18-feet x 2-feet deep stilling basin is designed at the confluence of the spillway and the Amargosa Pond concrete overflow. The spillway receives overflow from Amargosa Pond during upset conditions or stormwater runoff from the upgradient areas. Containment of surface flow and runoff from a 100-year, 24-hour storm event is provided by B Pond and the Duval Canal Impoundment.
DEMETRIE WASH AREA		
Non-stormwater Impoundments:		
07 Pond (D-43)	31° 52' 58" N 111° 06' 29" W	**Individual BADCT:** Facility is an existing, single-lined impoundment with an 80-mil HDPE liner underlain by alluvium and shallow, igneous intrusive bedrock with relatively low permeability ranging from 10^{-4} cm/sec to 10^{-6} cm/sec. The HDPE liner is secured in an engineered anchor trench. The impoundment has a storage capacity of 37.2 acre-feet with a depth of 28.5 feet. The impoundment provides containment for potentially impacted runoff from the Ocotillo Waste Rock Pile and stormwater from native upgradient hills to the east. Accumulated fluid is pumped via HDPE pipeline below the Ocotillo Waste Rock Pile and discharged back into the process and used as makeup water or used as dust control on roads on-site. Upstream, a 750 foot long interceptor trench, lined with an 80-mil HDPE geomembrane and equipped with a sump and pump system captures any stormwater from the upgradient watershed and discharges at the east end of 07 Pond. The facility is designed to contain stormwater runoff from a 100-year, 24-hour storm event. Facility shall maintain a minimum of 2 feet of freeboard.
New D Pond (D-45)	31° 52' 31" N 111° 05' 51" W	**Individual BADCT:** Facility is an existing, single-lined impoundment with an 80-mil HDPE geomembrane underlain by 12-inch-thick compacted layer of native material. The HDPE liner is secured in an engineered anchor trench. The facility overlies shallow andesite and granodiorite with relatively low permeability of 10^{-6} cm/sec. The pond has a storage capacity of 14 acre-feet with a depth of 8 feet. The impoundment provides containment for runoff from the closed CLEAR Plant and Copper Sulfate areas. Accumulated fluid collected in the pond is gravity fed via 10-inch diameter HDPE pipeline into the Duval Canal. Upstream, a 300-foot long diversion channel, lined with a 60-mil HDPE geomembrane underlain by a 12-inch-thick layer of compacted native material, diverts any stormwater to a reinforced shotcrete-lined sediment basin. Subsurface flow is captured by a French Drain System constructed below the pond liner (Ref. Diagram of French Drain at New D Pond, dated June 14, 2007) and discharges solutions through a 4-inch HDPE pipe into the New D Pond's 10-inch diameter outlet pipeline that reports to the Duval Canal. The pond is designed as a surge pond and is normally dry. The bottom of the pond slopes toward a perforated HDPE drainpipe, which protrudes 2 feet above the bottom of the pond in the southwest corner. The side slopes have a grade of 3H:1V. Although normally dry, the facility is designed to contain surface flows and runoff from a 100-year, 24-hour storm event. The facility shall be operated with a minimum of 2 feet of freeboard. **Note:** The French Drain System replaces the Upstream Intercept Structure No. 1 and Downstream Intercept Structure No. 3 shown on the drawing titled, General Site Construction Plan (for) D Pond, Drawing No. C101, Rev. 1, referenced in the 1995 APP application.

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name (Sierrita Facility No.)	Latitude/ Longitude	Facility BADCT
Copper Sulfate Pipeline Ponds 1 & 2 (D-59)	31° 52' 02" N 111° 05' 56" W	**Prescriptive BADCT:** Facilities are single-lined impoundments with a 60-mil HDPE liner underlain by a 12-inch-thick layer of 3/8-inch minus native material compacted to 95 percent maximum dry density. The HDPE liners are secured in an engineered anchor trench. The facilities are approximately 73 feet long, 67 feet wide, 7 feet deep, with sides sloping at 3H:1V. Each impoundment has a fluid storage capacity of 15,000 gallons. The impoundments provide secondary containment during an upset condition for the Copper Sulfate Plant area. The facilities shall be operated with a minimum of 2 feet of freeboard.
Tailing Pipeline Containment Structures (D-62 A-F)	31° 52' 07" N to 31° 52' 12" N 111° 05' 30" W to 111° 05' 37" W	**Individual BADCT:** Facilities consist of six secondary containment structures over-excavated to a depth of 8 inches, moisture conditioned, and backfilled and compacted to 95 percent maximum dry density within plus or minus 3 percent of optimum moisture content. Containment structures A and B have a combined fluid storage capacity of 1.462 million gallons. Containment structures C-F have a combined fluid storage capacity of 1.815 million gallons. The structures provide containment in the event that the reclaim pipeline or tailing slurry pipeline should have a breach.
ESPERANZA WASH DRAINAGE AREA		
Non-stormwater Impoundments:		
SX-3 Stormwater Pond (D-11)	31° 50' 49" N 111° 07' 08" W	**Individual BADCT:** Facility is an existing, single-lined impoundment with an 80-mil HDPE liner underlain by a compacted alluvium material overlying shallow andesite bedrock with relatively low permeability ranging from 10^{-5} cm/sec to 10^{-7} cm/sec. The HDPE liner is secured in an engineered anchor trench. The impoundment has a fluid storage capacity of 52 acre-feet, with a depth of 17 feet. The impoundment provides containment of stormwater runoff from upgradient, native terrain, during upset conditions at Headwall No.3, Raffinate Pond No.3 and surface runoff from the Headwall No. 2 and stockpile complex areas. Any solutions impounded in the pond are pumped out by a floating barge pump back to Raffinate Pond No. 3. An additional pump may be used to transport solutions to Amargosa Pond if needed. Upstream, Interceptor No. 3, an HDPE-lined interceptor trench keyed into bedrock, captures any subsurface flow which may have bypassed the primary interceptor trench upgradient of Headwall No. 3 and pumps it back to Raffinate Pond No.3. The trench contains a subsurface drain consisting of gravel size material wrapped in geotextile extending the length of the trench diverting any subsurface flow and directing it to the sump which pumps it back to Raffinate Pond No.3. The facility is designed to contain stormwater runoff from a 100-year, 24-hour storm event. .The facility shall be operated with a minimum of 2 feet of freeboard.

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name (Sierrita Facility No.)	Latitude/ Longitude	Facility BADCT
Cat Pond 1 (D-42A)	31° 50' 33" N 111° 07' 53" W	**Individual BADCT:** Facility is an existing, single-lined impoundment with an 80-mil HDPE liner underlain by a 12-inch-thick layer of 3/8-inch minus native material compacted to 95 percent maximum dry density. The HDPE liner is secured in an engineered anchor trench. The facility overlies more competent bedrock with relatively low permeability of 10^{-5} cm/sec. The impoundment has a fluid storage capacity of 25.2 acre-feet, with a depth of 27 feet. The sides of the pond have a slope of 3H:1V. The impoundment provides containment for drainage from the upgradient native terrain, the waste rock piles, and during upset conditions from Headwall No. 5. Upgradient and to the west, a single-lined channel with an 80-mil HDPE liner underlain by a 12-inch-thick layer of bedding material discharges stormwater from the upgradient watershed into Cat Pond 1. The channel is 8 feet wide at the base, approximately 11.5 feet wide at the crest with 3H:1V side slopes. The channel is approximately 1,400 feet long with an average grade at 1 percent. This facility is designed to contain flows from a 100-year, 24-hour storm event. In the event of overflow, discharge would flow into a single-lined spillway with an 80-mil HDPE liner underlain by a 12-inch-thick layer of native material. The spillway consists of a 40-foot long riprap apron for energy dissipation. The spillway is 10 feet wide at the base with 3H:1V side slopes. Accumulated fluid is pumped back into the process and used as makeup water or used for dust control on roads on-site. The facility shall be operated with a minimum of 2 feet of freeboard.
Cat Pond 2 (D-42B)	31° 50' 34" N 111° 08' 18" W	**Individual BADCT:** Facility is an existing, single-lined impoundment with an 80-mil HDPE liner underlain by a 12-inch-thick layer of 3/8-inch minus native material compacted to 95 percent maximum dry density. The HDPE liner is secured in an engineered anchor trench. The facility overlies more competent bedrock with relatively low permeability of 10^{-5} cm/sec. The impoundment has a fluid storage capacity of 60.1 acre-feet, with a depth of 40 feet. The sides of the pond have a slope of 3H:1V. The impoundment provides containment for drainage from the upgradient native terrain and the waste rock piles. Upgradient and to the west, a single-lined channel with an 80-mil HDPE geomembrane underlain by a 12-inch-thick layer of compacted native material, discharges stormwater from the upgradient watershed into Cat Pond 2. The channel is 20 feet wide at the base, approximately 34 feet wide at the crest with 3H:1V side slopes. The channel is approximately 1,800 feet long with an average grade of 1 percent. The facility is designed to contain a 100-year, 24-hour storm event. In the event of overflow, discharge would flow into a single-lined spillway with an 80-mil HDPE geomembrane underlain by a 12-inch-thick layer of compacted bedding material and a 50-feet long riprap apron for energy dissipation. The spillway is 20 feet wide at the base with 3H:1V side slopes. Accumulated fluid is pumped back into the process and used as makeup water or used for dust control on roads on-site. The facility shall be operated with a minimum of 2 feet of freeboard.
Cat Pond 3 (D-42C)	31° 50' 29" N 111° 08' 25" W	**Individual BADCT:** Facility is an existing, single-lined impoundment with and 80-mil HDPE geomembrane liner underlain by a 12-ounce non-woven geotextile. The geotextile and the liner are secured in an engineered anchor trench. The impoundment has an operational fluid storage capacity of 53.9 acre-feet, and a depth of 34 feet. The sides of the pond have a slope of 3H:1V. The impoundment provides containment for drainage from the upgradient native terrain and the waste rock piles. Upgradient and to the west, a single-lined channel with an 80-mil HDPE geomembrane underlain by a 12-inch-thick layer of compacted native material, discharges stormwater from the upgradient watershed into Cat Pond 3. The channel is 20 feet wide at the base, approximately 34 feet wide at the crest with 3H:1V side slopes. The channel is approximately 1,800 feet long with an average grade of 1 percent. The facility is designed to contain a 100-year, 24-hour storm event. In the event of overflow, discharge would flow into a single-lined spillway with an 80-mil HDPE geomembrane underlain by a 12-inch-thick layer of compacted bedding material and a 50-feet long riprap apron for energy dissipation. The spillway is 20 feet wide at the base with 3H:1V side slopes. Accumulated fluid is pumped back into the process and used as makeup water or used for dust control on roads on-site. The

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name (Sierrita Facility No.)	Latitude/ Longitude	Facility BADCT
		facility shall be operated with a minimum of 2 feet of freeboard.
Process solution Impoundments:		
Raffinate Pond No. 3 (D-04)	31° 50' 53" N 111° 07' 09" W	**Individual BADCT:** Facility is an existing double-lined impoundment with 60-mil HDPE liners incorporating an LCRS. The bottom liner is underlain by a geotextile cushion underlain by 6 inches of 3/4-inch minus native material compacted to 95% of maximum dry density. The facility is underlain by andesite with relatively low permeability ranging from 10^{-5} cm/sec to 10^{-7} cm/sec. The liners are secured in an engineered anchor trench around the impoundment perimeter. The impoundment has a fluid storage capacity of 16 acre-feet with a maximum depth of 22 feet. The pond has side slopes of 2.5H:1V. The impoundment provides containment for stormwater runoff and during upset conditions at SX-3 Stormwater Pond, Headwall #3, Headwall #5, and subsurface flows pumped from Interceptor No. 3. The facility is designed to overflow through lined spillway into SX-3 Stormwater Pond.
Headwall No. 2 (D-46)	31° 51' 08" N 111° 06' 55" W	**Individual BADCT:** Facility is an existing, partially lined impoundment created behind an earthen dam. The headwall is lined with an 80-mil HDPE on the upstream face of the dam and is keyed into bedrock. The facility is underlain by Demetrie Volcanics. The impoundment provides containment of leachate (PLS) from the oxide and sulfide leach areas. The facility is designed to discharge accumulated fluid via 10-inch diameter HDPE pipeline into Raffinate Pond No. 3. The facility is designed to overflow through Headwall No.2 Channel into SX-3 Stormwater Pond.
Headwall No. 3 (D-09)	31° 50' 57" N 111° 07' 16" W	**Individual BADCT:** Facility is an existing, partially lined impoundment created behind an earthen dam. The upstream face of the dam is lined with two face-to face 80-mil HDPE liners, keyed into bedrock, underlain by a 12-inch-thick layer of compacted native material. The excavation for the impoundment is lined with bentonite-amended soil having a permeability of less than 10^{-6} cm/sec. The facility is underlain by andesite bedrock with relatively low permeability of 10^{-5} cm/sec to 10^{-7} cm/sec. The HDPE geomembrane is secured in an engineered anchor trench around the perimeter. The impoundment has a fluid storage capacity of 15 acre-feet, with a maximum depth of 21 feet. The impoundment provides containment for stormwater from relatively undisturbed terrain above the dam site and leachate (PLS) from the Sierrita Oxide and Sulfide Active Leach Areas. Accumulated fluid is pumped through two 24-inch HDPE pipelines installed near the bottom of the impoundment to a concrete vault and then to Raffinate Pond No. 3. Upstream, an 80-mil HDPE double lined interceptor trench captures subsurface flows and directs the collected fluid to the Headwall No. 3 Reservoir. The facility is designed to accommodate flow from a 25-year, 24-hour storm event. The facility is designed to overflow through a concrete-lined spillway into Stormwater No. 3 Pond.
Headwall No. 5 (D-12)	31° 50' 42" N 111° 07' 57" W	**Individual BADCT:** Facility is an existing double-lined impoundment created behind an earthen dam. The facility is double-lined with two layers of 80-mil HDPE with an LCRS. The LCRS consists of a 200-mil thick geonet placed between the two liners to collect and remove solutions from between the two liners. Any solutions that drain into the LCRS will be carried to a single two-foot deep, gravel filled sump. The liner is secured into an engineered anchor trench. The facility is underlain by bedrock with relatively low permeability of 10^{-5} cm/sec. The impoundment has a fluid storage capacity of 11.44 acre-feet with a maximum depth of 20 feet. The impoundment receives potentially impacted stormwater commingled with PLS from the leach area. Accumulated fluid is pumped to Headwall No.3 by a self-activated floating barge pump. To the East, a diversion channel diverts

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name (Sierrita Facility No.)	Latitude/ Longitude	Facility BADCT
		any runoff around the reservoir to the natural drainage channel downstream of the headwall. The trapezoidal channel has a 12-foot wide base and 1H:1V side slopes. Downgradient, a cutoff trench intercepts any subsurface flow or seepage through the dam.
Stockpile Leaching Area:		
Oxide (Twin Buttes and Sierrita) Active Leach Area (D-18)	31° 52' 02" N 111° 06' 50" W	**Individual BADCT:** Facility is an existing **oxide** leach stockpile, constructed using the end dumping method over moderate-to-steeply sloping topography which minimizes the potential for discharge. The natural channels, within the leach stockpile footprint, are underlain by bedrock with relatively low permeability of 10^{-5} to 10^{-9} cm/sec. The facility covers a surface area of approximately 570 acres. The leachate is collected at the headwalls (Headwall No. 1 and/or Headwall No. 3) located immediately downgradient of the facility. Containment of overflow and run-on from a 100-year, 24-hour storm event is provided by Amargosa Pond and SW-3 Pond. The facility shall not exceed the aerial footprint shown in the Geotechnical Review of the Ultimate Rock Stockpile Plan at Sierrita Mine (Revised 21 August 2009) that forms an integral part of this APP. The ultimate crest elevation of the facility shall not exceed 4,900 feet amsl.
Solution Conveyance Channel:		
Headwall No. 2 Channel (D-08)	31° 50' 59" N 111° 06' 56" W	**Individual BADCT:** Facility is an existing single-lined conveyance channel with a 60-mil HDPE geomembrane underlain by a 6-inch layer of compacted native bedding material. The facility is underlain by andesite with relatively low permeability ranging from 10^{-4} cm/sec to 10^{-6} cm/sec. The HDPE liner is anchored in an engineered trench. The conveyance channel is approximately 2,500 feet long, 10 feet wide at the base, 2.5 feet deep with 2H:1V slopes, having an average gradient of 1.2 percent. The channel has a design capacity of 420.6 cubic feet per second. The channel provides conveyance for stormwater from native upgradient terrain and during upset conditions from Headwall No. 2 and an upgradient booster station. Accumulated fluid is discharged at the east end of SX-3 Stormwater Pond.
MILL SITE AREA		
Non-stormwater Impoundments:		
Raw Water Reservoir (D-21)	31° 52' 29" N 111° 06' 35" W	**Individual BADCT:** Facility is an existing, single-lined impoundment with a 3-foot thick compacted bentonite-amended soil liner with a hydraulic conductivity of approximately 2×10^{-8} cm/sec. The impoundment has a fluid storage capacity of 25 acre-feet, with a depth of 50 feet. The impoundment provides containment for plant make-up water that includes but is not limited to water pumped from the interceptor wellfield east of the tailing impoundment, reclaim water from the tailings, fresh water from Canoa wellfield and Esperanza wellfield and periodically stormwater from 07 Pond and Cat Pond 1, Cat Pond 2 and Cat Pond 3. The stormwater runoff is diverted away from the impoundment.
Process Solution Impoundment:		

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name (Sierrita Facility No.)	Latitude/ Longitude	Facility BADCT
Decant Ponds and Pad Area (D-20)	31° 52' 22" N 111° 06' 03" W	**Individual BADCT:** Facility consists of reinforced concrete lined basins (6-inch thick concrete. with polyethylene tape-sealed joints and PVC liner on the side walls) covered by gunite. The pad covers 400 feet by 276 feet in area. The facility provides containment of overflow from the copper-moly thickeners and used for settling and recovery of solids. Reclaimed fluids are pumped to the reclaim circuit and the Tailing Thickeners.
Tailing Thickeners (D-40)	31° 52' 25" N 111° 06' 11" W	**Individual BADCT**: Facility consists of four circular walls, each with a diameter of 508 feet, and a maximum depth of 23 feet. The walls are constructed with concrete, the floor with 3 feet of compacted soil-bentonite admix with an average hydraulic conductivity of $2.2x10^{-8}$ cm/sec and average moisture content of 8.9%. The thickener area is underlain by Tertiary intrusives. The Thickeners allow for the recovery and recycling of makeup water prior to transfer of the tailing material to the Tailing Impoundment.
Solution Conveyance Channels:		
Drainage Channel West Plant Area (D-22)	31° 52' 20" N 111° 05' 59" W	**Individual BADCT:** Facility is an existing single-lined conveyance channel with 60-mil HDPE geomembrane underlain by compacted native material overlying Tertiary intrusives. The liner is secured in an engineered anchor trench. The channel is approximately 3,800 feet long, 15-30 feet wide and 4-6 feet deep. The channel provides conveyance for stormwater runoff and accommodates fluids during upset conditions from the West Plant area. The facility is designed to flow into Duval Canal.
Thickeners Area Drainage Channel (D-41)	31° 52' 16" N 111° 06' 01" W	**Individual BADCT:** Facility is an existing single-lined conveyance channel with 60-mil HDPE geomembrane liner underlain by compacted native material overlying Tertiary intrusives. The liner is secured in an engineered anchor trench**.** The channel provides containment for stormwater runoff and during upset conditions of process flows in the Sierrita Mill tailing thickener area. It is 15 feet in width, with an average depth of 4 feet. The facility is designed to flow into Duval Canal.
TAILING IMPOUNDMENTS		
Sierrita Tailing Impoundment (D-01)	31° 50' 59" N 111° 02' 57" W	**Individual BADCT:** Facility is an existing tailing impoundment, where tailing in the slurry form is deposited using conventional upstream method of tailing deposition. The slimes, a finer fraction of the tailing material, provide a relatively low permeability coating of the floor surface to minimize infiltration. The tailing impoundment covers a surface area of approximately 4,316 acres, with a 2,500 feet long divider dam separating the pond into north and south sections. Diversion channels to the west and upgradient are designed to divert surface run-on from a 100-year, 24-hour storm event. The runoff from the embankment is captured by the catchment basins. Water accumulates toward the west side of the impoundment in the reclaim pond where it is recovered and pumped to the Raw Water Reservoir for use in the milling process. Piezometers and inclinometers are installed along the impoundment dam for monitoring phreatic surface and to ensure dam stability. The facility shall be operated with a minimum of 4 feet of freeboard. The maximum crest elevation of the tailing dam shall not exceed 3,710 feet amsl. The facility is operated with a beach width (distance from the embankment crest to the nearest edge of the pond) no less than 2,000 feet. The facility shall not exceed the aerial footprint shown in the application. Effluent from the wastewater system is discharged to the tailings impoundment at a maximum rate of 10,000 gallons per day. The facility also receives process solutions and surface runoff from the Plant Site, including, but not limited to, overflow from Amargosa Pond, B Pond, bleed from the lime scrubber, dust control water from crushing and conveying, vehicle wash water

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name (Sierrita Facility No.)	Latitude/ Longitude	Facility BADCT
		effluent and seepage collected and pumped from B and C Sumps. These solutions and sediments are delivered via the Duval Canal to the Duval Canal Impoundment, which is lined with compacted fine tailings material and operated as part of the Sierrita Tailing Impoundment. After allowing sediment to settle, a barge-mounted pump conveys solutions from the Duval Canal Impoundment to the Reclaim Water System and/or the upper surface of the Sierrita Tailing Impoundment. With completion of the Phase 1 and Phase 2 buttress constructed on the south embankment, the Sierrita Tailing Impoundment meets the Arizona Mining BADCT minimum factors of safety for static and dynamic conditions for STI maximum crest elevation of 3,585 feet amsl. Further raises of the crest elevation above 3,585 feet amsl, up to a maximum elevation of 3,710 feet amsl, will only follow additional analyses to confirm sufficient safety factors are present as required by Compliance Schedule Item 6. Phase 2 storm water controls shall be constructed in accordance with the document *Design Drawings, Sierrita Tailings Impoundment Phase 2 Buttress Stormwater Controls, Sierrita Mine, Green Valley, Arizona June 2019*, signed and sealed by Michael Grass, P.E., Golder (Drawings G-001 through G-004, C-001 through C-007). Phase 2 buttress and storm water control construction documentation shall be submitted as required by Compliance Schedule Item 8. Four sediment basins located along the south end of the Sierrita Tailings Impoundment shall be lined with compacted fine tailings material and operated as part of the Sierrita Tailings Impoundment. Accumulated sediment shall be removed from the Duval canal impoundment and four sediment basins as needed to maintain design capacity using heavy equipment equipped with GPS sensors to determine cut depth. Immediately following removal of accumulated sediment, the liner will be inspected to ensure no penetration of the liner has occurred.
Sierrita Tailing Impoundment Sediment Basins (D-01 A-K)	31° 49’ 42” N to 31° 51’ 51” N 111° 01’ 28” W to 111° 01’ 39” W	**Individual BADCT:** Facility consists of eleven unlined sediment ponds of varying storage capacities, underlain by alluvial deposits consisting of sand and gravel with caliche layers near the ground surface. Caliche layers provide a zone of permeability relatively lower than the underlying alluvium. Hydraulic conductivity of the tailing sediments ranges from1.5×10^{-6} to 1.2×10^{-3} cm/sec with a geometric mean value of 7.7×10^{-6} cm/s. The sediment ponds provide containment for surface water runoff from the face of tailing dam along with the tailings that have been discharged off the tailing impoundment and deposited into these ponds. Accumulated fluid is allowed to evaporate. In the event that infiltration of impacted water from sediment ponds occurs, it would be captured by a series of interceptor wells located along the east side of the tailing impoundment. Water is pumped from the wells to the Raw Water Reservoir for use in the milling process.
WASTE ROCK PILES		

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name (Sierrita Facility No.)	Latitude/ Longitude	Facility BADCT
West Waste Rock Piles (D-19)	31° 51' 12" N 111° 08' 57" W	**Individual BADCT:** Most of the facility is located within the passive containment capture zone of the Sierrita-Esperanza Pit. Facilities are waste rock piles constructed using the end dumping method over moderate-to-steeply sloping topography which minimizes the potential for discharge. The facility covers a surface area of approximately 1,285 acres Runoff that is contained in Tinaja Wash is captured by Headwall No.5, Cat Ponds 1, 2 and 3. Upstream stormwater run-on will be allowed to contact and penetrate the waste rock pile but downstream discharge will be directed to Cat Pond 3. Runoff that is contained in Tinaja Wash is captured by Headwall No. 5, Cat Ponds 1, 2 and 3.The facility shall not exceed the maximum crest elevation of 4,900 feet amsl. The facility shall not exceed the aerial footprint shown on Figure 2.1 of the APP Amendment application dated August 30, 2016.
RS-3 Waste Rock Pile (D-36)	31° 52' 50" N 111° 06' 35" W	**Individual BADCT:** The western half of this facility is located within the passive containment capture zone of the Sierrita-Esperanza Pit and the eastern half is located within the passive containment capture zone of the Twin Buttes Open Pit. Facility is a waste rock pile constructed using the end dumping method over moderate-to-steeply sloping topography which minimizes the potential for discharge. The facility covers a total surface area of approximately 910 acres. Stormwater runon is diverted upstream of the pile through a diversion channel that will route Demetrie Wash around the pile. Runoff along the north- and east-facing slopes of the facility will be diverted to stormwater detention features located near the toe of the pile. The facility shall not exceed the maximum crest elevation of 4,600 feet amsl. The facility shall not exceed the aerial footprint shown on Figure 2.1 of the APP Amendment application dated August 30, 2016. . The facility shall not exceed the aerial footprint shown on Figure 2.1 of the APP Amendment application dated August 30, 2016.
RS-2 Waste Rock Pile (D-47)	31° 52' 52" N 111° 09' 19" W	**Individual BADCT:** The facility is located within the passive containment capture zone of the Sierrita-Esperanza Pit. Facility is a waste rock pile constructed using the end dumping method over moderate-to-steeply sloping topography which minimizes the potential for discharge. The facility covers a surface area of approximately 693 acres. Stormwater run-on is diverted upstream of the pile through a diversion channel that will route Demetrie Wash around the pile. Runoff along the west- and north- facing slopes of the facility will be diverted to stormwater detention features located near the toe of the pile. Runoff from the southern portion of the rock pile will enter the pit. The facility shall not exceed the maximum crest elevation of 4,800 feet amsl. The facility shall not exceed the aerial footprint shown on Figure 2.1 of the APP Amendment application dated August 30, 2016..
"V" Waste Rock Pile (D-56)	31° 53' 12" N 111°07' 06" W	**Individual BADCT:** Facility is waste rock pile underlain by Quaternary alluvium and Tertiary intrusives. The facility covers a surface area of approximately 30 acres. Runoff from the facility follows the natural drainage. Downgradient, monitor well MH-21 provides warning of any potential discharge to the groundwater. The facility shall not exceed the maximum crest elevation of 4,350 feet. The facility shall not exceed the aerial footprint shown in the Geotechnical Review of the Ultimate Rock Stockpile Plan at Sierrita Mine (Revised 21 August 2009) that forms an integral part of this APP.

TABLE 4.1.1 PERMITTED FACILITIES AND BADCT		
Facility Name (Sierrita Facility No.)	**Latitude/ Longitude**	**Facility BADCT**
OPEN PITS		
Sierrita-Esperanza Pit (D-55)	31° 52' 17" N 111° 08' 01" W	**Individual BADCT:** Facility is an open pit approximately 9,200 by 12,600 feet in plan area, and is currently mined for copper ore. The top elevation of the pit is approximately 4,100 feet amsl and the bottom is approximately 2,550 feet amsl. The pit is underlain by Tertiary intrusive rocks with a permeability ranging from 1x 10^{-6} cm/sec to 7x10^{-4} cm/sec and quartz monzonite with a permeability of 5x10^{-6} cm/sec. The Sierrita and Esperanza pits were mined into one large pit causing a passive containment. The pit creates a passive containment with a capture zone defined by the 3800 foot potentiometric contour. The impoundment has a fluid storage capacity of 500 million gallons of solution. The passive containment provides containment for water conservation and receives surface stormwater and overflow from SX-3 Stormwater Pond and Amargosa Pond. Accumulated fluid is pumped to SX Plant and the reclaim water system.
Ocotillo Pit (D-60)	31° 53' 00" N 111° 06' 50" W	**Individual BADCT:** This facility has been backfilled with waste rock from the mining operation and receives only direct precipitation falling directly onto the backfilled Ocotillo Pit.
Moly Satellite Pit (D-61)	31° 53' 02" N 111° 08' 18" W	**Individual BADCT:** Facility consists of a series of push-backs located immediately north of the Sierrita-Esperanza Pit. These push-backs are the beginning of a pit being mined for molybdenum ore. The facility is underlain by Ruby Star quartz monzonite porphyry and Harris Ranch quartz monzonite. Accumulated fluid is pumped out and conveyed to the Sierrita-Esperanza Pit solution storage area. Sierrita plans to backfill this pit with waste rock, which will minimize the potential for discharge.
NON-MUNICIPAL SOLID WASTE LANDFILL		
Non-Municipal Solid Waste Landfill (D-14)	31° 51' 31" N 111° 07' 35" W	**Individual BADCT:** Facility is an unlined, relatively deep conical depression in waste rock formed from the end –dumping of run of mine material on top of native bedrock. The facility overlies shallow competent bedrock which has a low permeability ranging from 0.004 feet/day (1.4 x 10^{-6} cm/s) to 0.51 feet/day (1.8 x 10^{-4} cm/s). Surface water run-on is controlled by berms around the facility.
Facilities to be Closed Under Compliance Schedule and/or to cease operation without intent to resume activities		
A Pond (D-06)	31° 51' 55" N 111° 05' 48" W	Facility has been decommissioned and no longer exists. The test results of soil samples have been submitted to the Groundwater Protection Value Stream for review and comments. No further action is required.
Old D Pond (D-13)	31° 52' 22" N 111° 05' 50" W	Facility has ceased operation without intent to resume activity for which it was designed. All of the sample results for total metals and SPLP submitted to the Groundwater Protection Value Stream are within the SRL requirements and AWQS. This site is scheduled for reclamation. Final closure for the facility will be completed during mine closure.
Rhenium Ponds (D-23)	31° 51' 59" N 111° 04' 25" W	Facility ceased operation in 1998. The test results of soil samples have been submitted to the Groundwater Protection Value Stream for review and comment. Final closure for the facility will be completed during mine closure.
Launders Facility (D-39)	31° 51' 54" N 111° 06' 11" W	The facility has ceased operation without intent to resume activity for which it was designed. Final closure for the facility will be completed during mine closure.

TABLE 4.1.1
PERMITTED FACILITIES AND BADCT

Facility Name (Sierrita Facility No.)	Latitude/ Longitude	Facility BADCT
Septic/Wastewater Systems and Waste Tire Facilities Regulated under other Permits		
Wastewater system (40-101) 10,000 gpd	N/A	General Permit 1.09 (A.A.C. R-18-9-B301.I)
Mine Waste Tires	N/A	General Permit 1.06 (A.A.C. R18-9-B301.F)
Mine Area Septic 20,000 gal.	N/A	General Permit 1.09 (A.A.C. R18-9-B301.I)
Primary Crusher Septic (Holding Tank) 1,500 gal.	N/A	General Permit 1.09 (A.A.C. R18-9-B301.I)
Clear Plant Septic 10,000 gal.	N/A	General Permit 1.09 (A.A.C. R18-9-B301.I)
Esperanza Mill Area Septic 10,000 gal.	N/A	General Permit 1.09 (A.A.C. R18-9-B301.I)
SX Maintenance septic 1,200 gal.	N/A	General Permit 1.09 (A.A.C. R18-9-B301.I)
Tailing Impoundment Office Septic 1,200 gal.	N/A	General Permit 1.09 (A.A.C. R18-9-B301.I)
SX Office Trailer Septic 1000 gal.	31 52' 22"N 111 05' 48"W	General Permit 4.02 (A.A.C. R18-9-E302)
CMP Trailer Septic 1250 gal	31 52' 11" N 111 06' 15" W	General Permit 4.02 (A.A.C. R18-9-E302)
Sierrita Water Company Shop Septic 1000 gal	31 52' 06" N 111 04' 53" W	General Permit 4.02 (A.A.C. R18-9-E302)
New Shovel Shop Septic 4000 gal. capacity	32 51 18.56 N 111 7 10.3 W	General Permit 4.02 (A.A.C. R18-9-E302) General Permit 4.09 (A.A.C. R18-9-E309)

Notes:

A. The primary discharge control technologies (DCTs) for each discharging facility are presented; however, additional discharge controls are discussed in the APP application and subsequent submittals and correspondence referenced in Section 5.0 of this APP.

B. Prescriptive BADCT design involves a prescribed engineering approach that utilizes pre-approved discharge control technologies or engineering equivalents to meet the requirements of A.R.S 49-243(B)(1).
Individual BADCT design involves general principals of engineering design, and is based upon alternative discharge control measures considered, the technical and economic advantages and disadvantages of each alternative, and justification for the selection of the best alternative to meet the requirements of A.R.S. 49-243(B)(1).

C. Definitions/Abbreviations:

BADCT – Best Available Demonstrated Control Technology
HDPE – High Density Polyethylene

PVC – Poly Vinyl Chloride
LCRS – Leakage Collection and Recovery System
ALR – Action Leakage Rate
RLL – Rapid and Large Leakage
PLS – Pregnant Leachate Solution
amsl – above mean sea level
N/A – Not Applicable

TABLE 4.2.1 **Required Inspections and Operational Monitoring***	
Facility Name (#)	**Operational Requirements**
AMARGOSA WASH DRAINAGE AREA - Non-stormwater Impoundments; Lined	
Non-stormwater Impoundments - Ponds, Sumps, and Associated Conveyance Systems: Amargosa Pond (D-05) SX-1 Tank Farm Pond (D-34)	**Quarterly and following precipitation events measuring at least 1 inch in a 24-hour period:** (Precipitation depth to be measured based on readings obtained from the mine weather station used for such measurements) Visually inspect and take appropriate action if any evidence of: -perforated, cut, tear or damaged liner and impairment of anchor trench integrity; -impairment of embankment integrity as applicable; -excessive erosion in conveyances and diversions; -excess accumulation of debris in conveyances and diversions; and -impairment of access. As applicable at pump locations, inspect pumps, valves and structures for pump operation and structural integrity. **Annually:** Remove excess sediments/sludge from the impoundments, conveyances and diversions as needed to maintain at least 80 percent of designed capacity. **Specific Requirement** Remove accumulated fluid - the process solution or impacted stormwater due to process upsets and/or storm event, from the impoundment as soon as practical, but no later than 30 days after cessation of the upset or storm event, or 60 days for Amargosa Pond.
AMARGOSA WASH DRAINAGE AREA – Process Solution Impoundments; Double-lined	
Process Solution Impoundments - Ponds, Sumps, and Associated Conveyance Systems: Raffinate Pond No. 2 (D-10) Drain Pond No. 2 (D-15)	**Daily:** Visually inspect and take appropriate action if any evidence of : -blocked overflow pipes/spillway structures or loss of fluid containment in the pond for any reason. **Weekly:** Measure flow rate in the LCRS; confirm that it is less than specified Action Leakage Rate (ALR) (See BADCT TABLE 2.2.4 and Section 2.6.2.4) and less than specified rate for Rapid and Large Leakage (RLL) (See BADCT TABLE 2.2.4 and Section 2.6.2.5); and take appropriate action if exceedance is observed in the ALR or RLL.

TABLE 4.2.1
Required Inspections and Operational Monitoring*

Facility Name (#)	Operational Requirements
SX-1 Drain Pond (D-33) B-Pond (D-07)	**Quarterly:** Visually inspect and take appropriate action if any evidence of: -perforated, cut, tear or damaged liner and impairment of anchor trench integrity; -impairment of embankment integrity as applicable; -excessive erosion in conveyances and diversions; -excess accumulation of debris in conveyances and diversions; and -impairment of access. As applicable at pump locations, inspect pumps, valves and structures for pump operation and structural integrity. **Annually:** **Drain Pond No. 2 (D-15) and SX-1 Drain Pond (D-33)**- Remove excess sediments/sludge from the impoundments, conveyances and diversions as needed to maintain at least 80 percent of designed capacity. **Raffinate Pond No. 2 (D-10)** Remove excess sediments/sludge from the impoundments, conveyances, and diversions as needed to ensure that the capacity of the Duval Canal Impoundment used in conjunction with the Raffinate Pond No. 2 satisfies the specified design capacity.

TABLE 4.2.1 **Required Inspections and Operational Monitoring***	
Facility Name (#)	**Operational Requirements**
AMARGOSA WASH DRAINAGE AREA – Process Solution Impoundments; Unlined	
Process Solution Impoundments - Ponds, Sumps, and Associated Conveyance Systems: Headwall No. 1 (D-02) Bailey Lake (D-03) Moly Decant Tanks and Pad Area (D-39A)	**Quarterly:** Visually inspect and take appropriate action if any evidence of: -impairment of embankment integrity as applicable; -excessive erosion in conveyances and diversions; -excess accumulation of debris in conveyances and diversions; and -impairment of access. As applicable at pump locations, inspect pumps, valves and structures for pump operation and structural integrity. **<u>Moly Decant Tanks & Pad Areas:</u>** **Quarterly:** Visually inspect and take appropriate action if there is any evidence of seepage or cracks that affect the structural integrity of the concrete tanks or pad area. **Annually:** **Headwall No. 1 (D-02) and Bailey Lake (D-03)** Remove excess sediments/sludge from the impoundments, conveyances and diversions as needed to ensure that the capacity of the Duval Canal Impoundment used in conjunction with the Headwall No. 1 and Bailey Lake satisfies the specified design capacity. (Does not apply to Moly Decant Tanks & Pad Area.)
AMARGOSA WASH DRAINAGE AREA – Stockpile Leaching	
Oxide (Twin Buttes and Sierrita) Active Leach Area (D-18)	**Monthly:** Visually inspect and take appropriate action if any evidence of: -stockpile deformations, including surface cracks, slides, sloughs, or differential settlement affecting slope stability.
AMARGOSA WASH DRAINAGE AREA – Solution Conveyance Channels	
Duval Canal - Lined (D-29) Amargosa Spillway - Lined (D-48)	**Quarterly and following precipitation events measuring at least 1 inch in a 24-hour period:** (Precipitation depth to be measured based on readings obtained from the mine weather station used for such measurements) Visually inspect and take appropriate action if any evidence of: -perforated, cut, tear or damaged liner and impairment of anchor trench integrity (lined conveyances);

TABLE 4.2.1
Required Inspections and Operational Monitoring*

Facility Name (#)	Operational Requirements
Duval Canal Velocity Pond (D-64) - Unlined	-impairment of embankment integrity as applicable; -excessive erosion in conveyances and diversions; -excess accumulation of debris in conveyances and diversions; and -impairment of access.
DEMETRIE WASH DRAINAGE AREA – Non-Stormwater Impoundments	
New D Pond - Lined (D-45) Copper Sulfate Ponds 1&2 - Lined (D-59) Tailing Pipeline Containment Structures - Unlined (D-62 A-F)	**Monthly:** Visually inspect and maintain a minimum 2 feet freeboard for the following impoundments: 07-Pond, New D Pond, and Copper Sulfate Ponds 1&2. **Quarterly and following precipitation events measuring at least 1 inch in a 24-hour period:** (Precipitation depth to be measured based on readings obtained from the mine weather station used for such measurements) Visually inspect and take appropriate action if any evidence of: -perforated, cut, tear or damaged liner and impairment of anchor trench integrity (lined ponds); -surface cracks at concrete-lined structures and impoundments; -impairment of embankment integrity as applicable; -excessive erosion in conveyances and diversions; -excess accumulation of debris in conveyances and diversions; and -impairment of access. As applicable at pump locations, inspect pumps, valves and structures for pump operation and structural integrity. **Annually:** Remove excess sediments/sludge from the impoundments, conveyances and diversions as needed to maintain at least 80 percent of designed capacity. **Specific Requirement** Remove accumulated fluid - the process solution or impacted stormwater due to process upsets and/or storm event, from the impoundment as soon as practical, but no later than 30 days after cessation of the upset or storm event.

TABLE 4.2.1
Required Inspections and Operational Monitoring*

Facility Name (#)	Operational Requirements
ESPERANZA WASH DRAINAGE AREA - Non-stormwater Impoundments; Lined	
Non-stormwater Impoundments - Ponds, Sumps, and Associated Conveyance Systems: SX-3 Stormwater Pond (D-11) Cat Pond 1 (D-42A) Cat Pond 2 (D-42B) Cat Pond 3 (D-42C)	**Monthly:** Visually inspect and maintain 2 feet freeboard for the following impoundments: SX-3 Stormwater Pond, Cat Pond 1, and Cat Pond 2. **Quarterly and following precipitation events measuring at least 1 inch in a 24-hour period:** (Precipitation depth to be measured based on readings obtained from the mine weather station used for such measurements) Visually inspect and take appropriate action if any evidence of: -perforated, cut, tear or damaged liner and impairment of anchor trench integrity; -impairment of embankment integrity as applicable; -excessive erosion in conveyances and diversions; -excess accumulation of debris in conveyances and diversions; and -impairment of access. As applicable at pump locations, inspect pumps, valves and structures for pump operation and structural integrity. **Annually:** Remove excess sediments/sludge from the impoundments, conveyances and diversions as needed to maintain at least 80 percent of designed capacity. **Specific Requirement** Remove accumulated fluid - the process solution or impacted stormwater due to process upsets and/or storm event, from the impoundment as soon as practical, but no later than 30 days after cessation of the upset or storm event.

TABLE 4.2.1
Required Inspections and Operational Monitoring*

Facility Name (#)	Operational Requirements
ESPERANZA WASH DRAINAGE AREA – Process Solution Impoundments	
Process Solution Impoundments - Ponds, Sumps, and Associated Conveyance Systems: Raffinate Pond No. 3 - Double Lined (D-04) Headwall No.2 - Partially Lined (D-46) Headwall No. 3 –Partially Lined (D-09) Headwall No. 5 – Double Lined (D-12)	**Daily:** Visually inspect and take appropriate action if any evidence of : -blocked overflow pipes/spillway structures. **Weekly – Raffinate Pond No. 3:** For Raffinate Pond No. 3 and Headwall No. 5, measure flow rate in the LCRS; confirm that it is less than specified Action Leakage Rate (ALR) (See BADCT TABLE 2.2.4, Section 2.6.2.4, and Table 2.2.4) and less than specified rate for Rapid and Large Leakage (RLL) (See BADCT TABLE 2.2.4, Section 2.6.2.5); and take appropriate action if exceedance is observed in the ALR or RLL. **Quarterly:** Visually inspect and take appropriate action if any evidence of: -perforated, cut, tear or damaged liner and impairment of anchor trench integrity; -impairment of embankment integrity as applicable; -excessive erosion in conveyances and diversions; -excess accumulation of debris in conveyances and diversions; and -impairment of access. As applicable at pump locations, inspect pumps, valves and structures for pump operation and structural integrity. **Annually:** Remove excess sediments/sludge from the impoundments: Raffinate Pond No. 3, Headwall No. 2 and Headwall No. 3 as needed to ensure that the capacity of the SX-3 Stormwater Pond used in conjunction with the ponds (Raffinate Pond No. 3, Headwall No. 2 and Headwall No.3) volumes satisfies the specified design capacity, conveyances and diversions as needed to maintain at least 80 percent of designed capacity.
ESPERANZA WASH DRAINAGE AREA – Stockpile Leaching	
Sulfide Active Leach Area (D-17)	**Monthly:** Visually inspect and take appropriate action if any evidence of: -stockpile deformations, including surface cracks, slides, sloughs, or differential settlement affecting slope stability.

TABLE 4.2.1 **Required Inspections and Operational Monitoring***	
Facility Name (#)	**Operational Requirements**
ESPERANZA WASH DRAINAGE AREA – Solution Conveyance Channel	
Headwall No. 2 Channel - Lined (D-08)	**Quarterly and following precipitation events measuring at least 1 inch in a 24-hour period:** (Precipitation depth to be measured based on readings obtained from the mine weather station used for such measurements) Visually inspect and take appropriate action if any evidence of: -perforated, cut, tear or damaged liner and impairment of anchor trench integrity; -impairment of embankment integrity as applicable; -excessive erosion in conveyances and diversions; -excess accumulation of debris in conveyances and diversions; and -impairment of access. As applicable at pump locations, inspect pumps, valves and structures for pump operation and structural integrity. **Annually:** Remove excess sediments/sludge from the impoundments, conveyances and diversions as needed to maintain at least 80 percent of designed capacity.
MILL SITE - Non-stormwater Impoundments and Concentrate Storage; Lined	
Raw Water Reservoir – Bentonite Liner (D-21)	**Quarterly and following precipitation events measuring at least 1 inch in a 24-hour period:** (Precipitation depth to be measured based on readings obtained from the mine weather station used for such measurements) Visually inspect and take appropriate action if any evidence of: -perforated, cut, tear or damaged liner and impairment of anchor trench integrity (Rhenium Plant Sump) -desiccation, gaps or gouges in bentonite amended soil liner (Raw Water Reservoir after clean out) -surface cracks at concrete-lined impoundment (Copper Concentrate Storage) -impairment of embankment integrity as applicable; -excessive erosion in conveyances and diversions; -excess accumulation of debris in conveyances and diversions; and -impairment of access. As applicable at pump locations, inspect pumps, valves and structures for pump operation and structural integrity.

TABLE 4.2.1
Required Inspections and Operational Monitoring*

Facility Name (#)	Operational Requirements
	Annually: **Raw Water Reservoir** Remove excess sediments/sludge from the impoundment, conveyances and diversions as needed to ensure that the capacity of the Duval Canal Impoundment used in conjunction with the Raw Water Reservoir satisfies the specified design capacity.
MILL SITE – Process Solution Impoundments; Lined	
Tailing Thickeners (D-40) Decant Ponds and Pad Areas (D-20)	**Tailings Thickeners** **Quarterly:** Visually inspect thickeners and take appropriate action if any evidence of: -seepage through surface cracks of concrete-lined walls. **After Cleanout:** Visually inspect thickeners and take appropriate action if any evidence of: -desiccation, gaps or gouges in bentonite-amended soil liner during the clean out cycle; **Decant Ponds & Pad Areas:** **Quarterly:** Visually inspect & take appropriate action if there is any evidence of: -seepage or cracks that affect the structural integrity of the concrete tanks or pad area.

TABLE 4.2.1
Required Inspections and Operational Monitoring*

Facility Name (#)	Operational Requirements
MILL SITE – Solution Conveyance Channels	
Drainage Channel West Plant Area - Lined (D-22) Thickeners Area Drainage Channel - Lined (D-41)	**Quarterly and following precipitation events measuring at least 1 inch in a 24-hour period:** (Precipitation depth to be measured based on readings obtained from the mine weather station used for such measurements) Visually inspect and take appropriate action if any evidence of: -perforated, cut, tear or damaged liner and impairment of anchor trench integrity; -impairment of embankment integrity as applicable; -excessive erosion in conveyances and diversions; -excess accumulation of debris in conveyances and diversions; and -impairment of access. **Annually:** Remove excess sediments/sludge from the impoundments, conveyances and diversions as needed to maintain at least 80 percent of designed capacity.
TAILINGS IMPOUNDMENTS	
Sierrita Tailing Impoundment (D-01) Sierrita Tailing Impoundment Sediment Basins (D-01A-K) and four sediment basins at the south end of the STI	**Sierrita Tailings Impoundment** **Daily:** Visually inspect and maintain the following applicable beach distance and freeboard: -Beach distance - no less than 2,000 feet -Freeboard - 4 feet (2 feet in Duval Canal Impoundment) Visually inspect and take appropriate action if any evidence of: -tailing dam deformation, including surface cracks, slides, sloughs, seeps, erosion features or differential settlement affecting dam stability. **Quarterly:** Monitor piezometers and inclinometers along the tailing dam to maintain phreatic surface within safe operating limits and to ensure dam safety. **Sierrita Tailing Impoundment Interceptor Wells** **Monthly:** At pump locations: -Inspect pumps, valves, and structures for pump operation, and structural integrity.

TABLE 4.2.1
Required Inspections and Operational Monitoring*

Facility Name (#)	Operational Requirements
	Sierrita Tailing Impoundment Sediment Basins **Weekly:** Visually inspect and maintain- 1 foot of freeboard in the Sediment Basins. **Quarterly:** Visually inspect and take appropriate action if any evidence of: -impairment of embankment integrity ; -impairment of access. As applicable at pump locations, inspect pumps and structures for pump operation and structural integrity. **Annually:** Remove excess sediments/sludge from the Sediment Basins as needed to maintain at least 80 percent of designed capacity.
WASTE ROCK PILES	
West Waste Rock Piles (D-19) RS-3 Waste Rock Pile (D-36) RS-2 Waste Rock Pile (D-47)	**Monthly:** Visually inspect and take appropriate action if any evidence of: -stockpile deformation, including surface cracks, slides, sloughs, or differential settlement affecting slope stability.
OPEN PITS	
Sierrita-Esperanza Pit (D-55)	**Quarterly and following precipitation events measuring at least 1 inch in a 24-hour period:** Visually inspect and maintain the fluid level in the pit below the maximum operating elevation of 3,700 feet amsl. **Quarterly:** At pump locations, inspect pumps and pump structures for pump operation and structural integrity. Visually inspect and take appropriate action if any evidence of: -impairment of embankment integrity as applicable; -impairment of access.

TABLE 4.2.1
Required Inspections and Operational Monitoring*

Facility Name (#)	Operational Requirements
Non-Municipal Solid Waste Landfill	
Non-Municipal Solid Waste Landfill (D-14)	**Quarterly and following precipitation events measuring at least 1/2 inch in a 24-hour period:** Visually inspect berms around the perimeter of the landfill for signs of erosion/damage; perform maintenance on an as-needed basis. The landfill has obtained authorization for disposal of solid waste pursuant to the Disposal General Permit: Non-Municipal Solid Waste Landfills at Mining Operations (A.A.C. R18-13-802). The General Permit and associated Authority to Operate include inspection and operational requirements.

*- Results to be kept on-site in the logbook and not reported on SMRFs.

Table 4.2.2 **Table of Parameters for Ambient Groundwater Monitoring for Point of Compliance (POC) Wells***		
Depth to Water Level (feet)	Potassium [1]	Nickel [1]
Water Level Elevation (feet amsl)	Sodium [1]	Selenium [1]
Temperature – field (ºF)	Iron [1]	Thallium [1]
pH – Field & Lab (S.U.)	Aluminum [1]	Zinc [1]
Field Specific Conductance (µmhos/cm)	Antimony [1]	Free Cyanide
Total Dissolved Solids – Lab	Arsenic [1]	Adjusted Gross Alpha Particle Activity (pCi/L) [2]
Total Alkalinity	Barium [1]	Radium 226 (pCi/L)
Bicarbonate	Beryllium [1]	Radium 228 (pCi/L)
Carbonate	Cadmium [1]	Uranium-Isotopes(pCi/L) [3]
Hydroxide	Chromium [1]	Carbon Disulfide
Sulfate	Cobalt [1]	Benzene
Chloride	Copper [1]	Toluene
Fluoride	Lead [1]	Ethylbenzene
Nitrate + Nitrite	Manganese [1]	Total Xylenes
Calcium	Mercury [1]	Uranium
Magnesium [1]	Molybdenum [1]	

* This table is being provided in the event that it becomes necessary to install additional POC wells

1 Metals must be analyzed as dissolved metals.

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

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

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

Table 4.2.3
Quarterly Compliance Groundwater Monitoring Requirements for Hazardous POC Wells

PARAMETER	MH-14		MH-15W		MH-16W		MH-18	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Depth to Water (in feet)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (in feet amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field pH (S.U.)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field Specific Conductance (µmhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Temperature – field (ºF)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cadmium	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004
Cobalt	NR	NR	NR	NR	NR	NR	Monitor	Monitor
Copper	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Molybdenum	NR	NR	NR	NR	NR	NR	Monitor	Monitor
Fluoride	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2
Nitrate + Nitrite	10	8	10	8	10	8	10	8
Sulfate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Dissolved Solids	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Beryllium	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032
Nickel	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08
Selenium	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Magnesium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Antimony	0.006	0.0048	0.006	0.0048	0.006	0.0048	0.006	0.0048
Arsenic	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Chromium	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08
Lead	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Thallium	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016

NR = Analysis is not required
Monitor = Monitoring required, but no AQL or AL established in the permit.
AQL = Aquifer Quality Limit
AL = Alert Level

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

Metals will be analyzed as dissolved metals.

Table 4.2.3 indicates the parameters for monitoring on a quarterly basis. The Self-Monitoring Report Form shall be completed for this quarterly sampling for every quarterly sampling event. On a biennial basis, the additional parameters listed in Table 4.2.4 shall be analyzed, and reported on the Self-Monitoring Report Form for biennial sampling.
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Table 4.2.3
Quarterly Compliance Groundwater Monitoring Requirements for Hazardous POC Wells

PARAMETER	MH-19		MH-20		MH-21		MH-22	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Depth to Water (in feet)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (in feet amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field pH (S.U.)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field Specific Conductance (µmhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Temperature – field (ºF)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cadmium	0.005	0.004	0.005	0.004	0.005	0.004	0.010	Monitor
Cobalt	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Copper	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Molybdenum	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Fluoride	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2
Nitrate + Nitrite	10.0	8.3	10.0	8.0	10.0	8.0	10.0	8.0
Sulfate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Dissolved Solids	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Beryllium	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032
Nickel	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08
Selenium	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Magnesium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Antimony	0.006	0.0048	0.006	0.0048	0.006	0.0048	0.006	0.0048
Arsenic	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Chromium	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08
Lead	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Thallium	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016

NR = Analysis is not required
Monitor = Monitoring required, but no AQL or AL established in the permit.
AQL = Aquifer Quality Limit
AL = Alert Level

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

Metals will be analyzed as dissolved metals.

Table 4.2.3 indicates the parameters for monitoring on a quarterly basis. The Self-Monitoring Report Form shall be completed for this quarterly sampling for every quarterly sampling event. On a biennial basis, the additional parameters listed in Table 4.2.4 shall be analyzed, and reported on the Self-Monitoring Report Form for biennial sampling.

Table 4.2.3
Quarterly Compliance Groundwater Monitoring Requirements for Hazardous POC Wells

PARAMETER	MH-23		MH-27		MH-28		MH-29	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Depth to Water (in feet)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Water Level Elevation (in feet amsl)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field pH (S.U.)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Field Specific Conductance (µmhos/cm)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Temperature – field (ºF)	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Cadmium	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004
Cobalt	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Copper	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Molybdenum	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Fluoride	4.0	3.2	4.0	3.2	4.0	3.2	4.0	3.2
Nitrate + Nitrite	10.0	8.0	10.0	8.0	10.0	8.0	10.0	8.0
Sulfate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Total Dissolved Solids	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Beryllium	0.004	0.0032	0.004	0.0032	0.004	0.0032	0.004	0.0032
Nickel	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08
Selenium	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Magnesium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Antimony	0.006	0.0048	0.006	0.0048	0.006	0.0048	0.006	0.0048
Arsenic	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Chromium	0.10	0.08	0.10	0.08	0.10	0.08	0.10	0.08
Lead	0.05	0.04	0.05	0.04	0.05	0.04	0.05	0.04
Thallium	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016

NR = Analysis is not required
Monitor = Monitoring required, but no AQL or AL established in the permit.
AQL = Aquifer Quality Limit
AL = Alert Level

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

Metals will be analyzed as dissolved metals.

Table 4.2.3 indicates the parameters for monitoring on a quarterly basis. The Self-Monitoring Report Form shall be completed for this quarterly sampling for every quarterly sampling event. On a biennial basis, the additional parameters listed in Table 4.2.4 shall be analyzed, and reported on the Self-Monitoring Report Form for biennial sampling.

Table 4.2.4
Biennial Compliance Groundwater Monitoring Requirements for POC Wells

PARAMETER	MH-14		MH-15W		MH-16W		MH-18	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Total Alkalinity	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Hydroxide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Aluminum	NR	NR	NR	NR	NR	NR	Monitor	Monitor
Barium	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6
Iron	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Mercury	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016
Manganese	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Zinc	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Adjusted Gross Alpha Particle Activity (pCi/L)	15	13	32	NA	15	12	15	12
Radium 226+Radium 228 (pCi/L)	5	4	5	4	5	4	5	4
Uranium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Uranium-isotopes (pCi/L) [1,2]	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Benzene	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004
Toluene	1.0	0.800	1.0	0.800	1.0	0.800	1.0	0.800
Ethylbenzene	0.70	0.560	0.70	0.560	0.70	0.560	0.70	0.560
Total Xylenes	10	8	10	8	10	8	10	8
Free Cyanide	0.2	0.16	0.2	0.16	0.2	0.16	0.2	0.16
Carbon Disulfide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor

NA = AL not applicable. AQL exceeds AWQS at time of permit issuance.
NR = Analysis not required
Monitor = Analysis required but no AQL or AL established in permit
AQL = Aquifer Quality Limit
AL = Alert Level
All concentrations in parts per million (ppm) unless otherwise specified

Table 4.2.4
Biennial Compliance Groundwater Monitoring Requirements for POC Wells

PARAMETER	MH-14		MH-15W		MH-16W		MH-18	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL

Metals will be analyzed as dissolved metals

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

Table 4.2.4 lists the parameters for monitoring on a biennial basis (i.e. every 8th quarter). The Self-Monitoring Report Form shall be completed for this biennial sampling for every biennial sampling event. The biennial sampling shall be conducted concurrently with a quarterly sampling event, so that analysis shall be conducted for both the biennial and quarterly parameters listed in Tables 4.2.3 and 4.2.4, respectively. See also permit Section 2.5.3.5 and 2.7.8.

Table 4.2.4
Biennial Compliance Groundwater Monitoring Requirements for POC Wells

PARAMETER	MH-19		MH-20		MH-21		MH-22	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Total Alkalinity	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Hydroxide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Aluminum	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Barium	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6
Iron	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Mercury	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016
Manganese	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Zinc	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Adjusted Gross Alpha Particle Activity (pCi/L)	15	12	15	12	138	NA	15	12
Radium 226+Radium 228 (pCi/L)	5	4	5	4	31	NA	5	4
Uranium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Uranium-isotopes (pCi/L) [1,2]	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Benzene	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004
Toluene	1.0	0.800	1.0	0.800	1.0	0.800	1.0	0.800
Ethylbenzene	0.700	0.560	0.700	0.560	0.700	0.560	0.700	0.560
Total Xylenes	10	8	10	8	10	8	10	8
Free Cyanide	0.20	0.16	0.20	0.16	0.20	0.16	0.20	0.16
Carbon Disulfide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor

NA = AL not applicable. AQL exceeds AWQS at time of permit issuance.
NR = Analysis not required
Monitor = Analysis required but no AQL or AL established in permit
AQL = Aquifer Quality Limit
AL = Alert Level
All concentrations in parts per million (ppm) unless otherwise specified

Table 4.2.4
Biennial Compliance Groundwater Monitoring Requirements for POC Wells

PARAMETER	MH-19		MH-20		MH-21		MH-22	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL

Metals will be analyzed as dissolved metals

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

Table 4.2.4 lists the parameters for monitoring on a biennial basis (i.e. every 8th quarter). The Self-Monitoring Report Form shall be completed for this biennial sampling for every biennial sampling event. The biennial sampling shall be conducted concurrently with a quarterly sampling event, so that analysis shall be conducted for both the biennial and quarterly parameters listed in Tables 4.2.3 and 4.2.4, respectively. See also permit Section 2.5.3.5 and 2.7.8.

Table 4.2.4
Biennial Compliance Groundwater Monitoring Requirements for POC Wells

PARAMETER	MH-23		MH-27		MH-28		MH-29	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL
Total Alkalinity	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Carbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Bicarbonate	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Hydroxide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Chloride	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Sodium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Potassium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Calcium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Aluminum	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Barium	2.0	1.6	2.0	1.6	2.0	1.6	2.0	1.6
Iron	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Mercury	0.002	0.0016	0.002	0.0016	0.002	0.0016	0.002	0.0016
Manganese	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Zinc	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Adjusted Gross Alpha Particle Activity (pCi/L)	15	12	15	12	15	12	15	12
Radium 226+Radium 228 (pCi/L)	5	4	5	4	5	4	5	4
Uranium	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Uranium-isotopes (pCi/L) [1,2]	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor
Benzene	0.005	0.004	0.005	0.004	0.005	0.004	0.005	0.004
Toluene	1.000	0.800	1.000	0.800	1.000	0.800	1.000	0.800
Ethylbenzene	0.700	0.560	0.700	0.560	0.700	0.560	0.700	0.560
Total Xylenes	10	8	10	8	10	8	10	8
Free Cyanide	0.20	0.16	0.20	0.16	0.20	0.16	0.20	0.16
Carbon Disulfide	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor	Monitor

NA = AL not applicable. AQL exceeds AWQS at time of permit issuance.
NR = Analysis not required
Monitor = Analysis required but no AQL or AL established in permit
AQL = Aquifer Quality Limit
AL = Alert Level
All concentrations in parts per million (ppm) unless otherwise specified

Table 4.2.4
Biennial Compliance Groundwater Monitoring Requirements for POC Wells

PARAMETER	MH-23		MH-27		MH-28		MH-29	
	AQL	AL	AQL	AL	AQL	AL	AQL	AL

Metals will be analyzed as dissolved metals

1) If the gross alpha particle activity is greater than 15 pCi/L, then calculate adjusted gross alpha particle activity. The adjusted gross alpha particle activity is the gross alpha particle activity, including radium 226, and any other alpha emitters, if present in the water sample, minus radon and total uranium (the sum of the uranium 238, uranium 235 and uranium 234 isotopes). The gross alpha analytical procedure (evaporation technique: EPA Method 900.0) drives off radon gas in the water samples. Therefore, the Adjusted Gross Alpha should be calculated using the following formula: (Laboratory Reported Gross Alpha MINUS Sum of the Uranium Isotopes).
2) Uranium Isotope activity results must be used for calculating Adjusted Gross Alpha.

Table 4.2.4 lists the parameters for monitoring on a biennial basis (i.e. every 8th quarter). The Self-Monitoring Report Form shall be completed for this biennial sampling for every biennial sampling event. The biennial sampling shall be conducted concurrently with a quarterly sampling event, so that analysis shall be conducted for both the biennial and quarterly parameters listed in Tables 4.2.3 and 4.2.4, respectively. See also permit Section 2.5.3.5 and 2.7.8.

Table 4.2.5 **Freeboard Requirements***	
Facility Name	**Minimum Freeboard**
New D Pond (D-45)	2 feet
Copper Sulfate Pipeline Ponds 1 & 2 (D-59)	2 feet
SX-3 Stormwater Pond (D-11)	2 feet
Cat Ponds 1, 2 & 3 (D-42A, B & C)	2 feet
Sierrita Tailings Impoundment (D-01)	4 feet
Sierrita Tailing Impoundment Sediment Basins (D01 A-K)	1 foot
Duval Canal Impoundment (D- 62)	2 feet

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

5.0 REFERENCES AND PERTINENT INFORMATION

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

1. Significant Amendment Application dated November 20, 2018, and subsequent submittals

6.0 NOTIFICATION PROVISIONS

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

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

6.2 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.

6.3 Compliance with Aquifer Water Quality Standards [A.R.S. §§ 49-243(B)(2) and 49-243(B)(3)]

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

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

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

6.5 Reporting of Bankruptcy or Environmental Enforcement [A.A.C. R18-9-A207(C)]

The permittee shall notify the Director within 5 days after the occurrence of any one of the following:

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

6.6 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.

6.7 Inspection and Entry [A.R.S. §§ 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 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.

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

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

6. 9 Permit Action: Amendment, Transfer, Suspension & Revocation
[A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]
This permit may be amended, transferred, renewed, or revoked for cause, under the rules of the Department.

The permittee shall notify the Groundwater Protection Value Stream in writing within 15days 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).