APPENDIX G. FURTHER DETAILS OF EAST PLANT SITE, WEST PLANT SITE, MARRCO CORRIDOR, AND FILTER PLANT AND LOADOUT FACILITY INFRASTRUCTURE

East Plant Site

Existing East Plant Site Facilities

Several of the existing mine facilities were constructed as part of the Magma Mine, which ceased operations in the mid-1990s, and are either being used by Resolution Copper Mining, LLC (Resolution Copper) to support mineral exploration or are unused legacy facilities. The unused legacy facilities include buildings, cooling towers, a descalant tank, and a wastewater treatment plant. Many of the existing East Plant Site facilities would continue to be used for mining operations and would need to be expanded. Table G-1 identifies the existing East Plant Site facilities and their proposed operations function.

Table G-1. Existing East Plant Site facilities

Facility	Current Function	Proposed Function and/or Changes During Operations
Magma Mine Road	Access to East Plant Site from U.S. Route 60	Access to East Plant Site from U.S. Route 60 (would be realigned at approximately year 8 of operations [mine year 14])
Mine Shaft 9	Supports ongoing installation of Shaft 10	Upcast exhaust shaft
Mine Shaft 10	Under construction, provides development rock for geochemical testing	Upcast exhaust shaft
Decline portal	Provides access to Shaft 10 and ventilation and refrigeration	No functional change
Batch plant	Produces concrete and shotcrete	No functional change; may be expanded, if needed
Electrical and mechanical building	Houses drill core processing and maintenance facilities	No functional change
Compressor building	Houses air compressors and water chillers	No functional change; additional compressor buildings would be constructed near new mine shafts
Water chilling plant	Chills water for Shaft 10	Would be eliminated and replaced by new refrigeration system for downcast Shafts 11, 12, and 13
115-kV Salt River Project (SRP) transmission line	Provides electricity to East Plant Site facilities	Would provide back-up redundancy to the 230-kV SRP transmission lines
115-kV Oak Flat electrical substation	Provides electricity to East Plant Site facilities	Would provide backup power for the underground mining area
Dry facilities	Provides showers, lavatories, and locker facilities for employees and contractors	No functional change; supplemental dry facility would be constructed
General administration building	Offices for mine management, operations, engineering, safety, and environmental personnel	No functional change; would be relocated and expanded
Storage and maintenance facilities	Materials and equipment storage and workshops for equipment maintenance	No functional change; additional storage and equipment maintenance workshops would be constructed
Explosives storage	Storage for explosives in accordance with ATF standards	No functional change; a storage area for surface explosives magazines would be constructed away from the main East Plant Site footprint
Contractor yards	Laydown yards for contractor deliveries	No functional change; laydown yard would be expanded
Chemical storage and containment areas	Containment area for the storage of chemicals	No functional change; chemical storage and containment areas would be located at several of the East Plant Site facilities

Facility	Current Function	Proposed Function and/or Changes During Operations
Water tanks	Two potable water tanks supplying East Plant Site with water delivered by the Never Sweat Tunnel	No functional change; a new mine service water tank would be constructed
Fuel tanks	Storage of fuel	No functional change; additional aboveground and underground fuel tanks would be constructed
Laydown areas	Areas for equipment sorting and stockpiling and materials delivery	No functional change; laydown area locations would change throughout mining phases
Stormwater management	Retention basins for stormwater runoff from impervious areas	No functional change; additional stormwater management facilities would be constructed for expanded East Plant Site footprint
Parking lot	Parking area for employees, contractors, and visitors for approximately 100 vehicles	No functional change; would be relocated and expanded to accommodate approximately 320 vehicles
Security trailer	Controls access to the East Plant Site from Magma Mine Road	No functional change
Public viewing terrace	Terrace overlooking the subsidence area with mine information	Closed to public, mine roads at East Plant Site would be closed to the public
Helicopter pad	Helicopter pad for transporting individuals to advanced medical facilities	No functional change; would be relocated
National Forest System (NFS) Roads	NFS Roads 2432, 2433, 2434, 315, and 469	Segments of these roads that are within the disturbance area and subsidence area would be closed to public access and/or decommissioned.

The Never Sweat Tunnel, an additional existing facility, connects the East Plant Site to the West Plant Site. The Never Sweat Tunnel currently serves two primary functions: (1) the tunnel transports development rock[1] via railcar to the West Plant Site from the underground exploratory development activities at the East Plant Site, and (2) the tunnel transports water to and from the West Plant Site and the East Plant Site. The Never Sweat Tunnel would continue with these functions during mine construction and operations phases.

New East Plant Site Facilities

The primary proposed new mine facilities at the East Plant Site include four additional mine shafts and associated hoisting facilities, the realignment of Magma Mine Road, a wastewater treatment plant, a new Oak Flat substation, the Resolution Copper North substation, and various other facilities (see figure 2.2.2-7). Two new 230-kV power lines, both operated by the Salt River Project (SRP), would be built to support the power demands and to increase the safety and reliability of underground operations.

MINE SHAFTS

Four new mine shafts and associated facilities (hoist houses and a winder house) would be constructed for ore production, hoisting employees in and out of the mine, refrigeration and ventilation purposes, and the construction of mine levels during mine development. Three of the new shafts (Shafts 11, 13, and 14) would be constructed on Resolution Copper–owned land, and one shaft would be constructed on lands currently managed by the Tonto National Forest (Shaft 12) but would be private after the execution of the land exchange.

[1] "Development rock" is rock removed during construction of tunnels and shafts. It may or may not have economic levels of copper. For the most part, development rock is stockpiled and then used during startup of the processing plant.

Table G-2 provides an overview of the six mine shafts that would be used during operations.

Table G-2. Mine shaft overview

Mine Shaft	Surface Ownership	New or Existing	Full Production Phase Function
9	Resolution Copper	Existing (currently being deepened and rehabilitated)	Upcast exhaust shaft
10	Resolution Copper	Existing	Upcast exhaust shaft
11	Resolution Copper	New	Production/downcast fresh air intake
12	Forest Service	New	Production/downcast fresh air intake
13	Resolution Copper	New	Service (employees and equipment)/downcast fresh air intake
14	Resolution Copper	New	Upcast exhaust shaft

MAGMA MINE ROAD REALIGNMENT AND EAST PLANT SITE ROADS

The existing Magma Mine Road is a two-lane paved road that provides access to the East Plant Site from U.S. Route 60. A segment of the existing Magma Mine Road would be located within the anticipated mining subsidence area. At approximately year 8 of mine operations (mine year 14), the segment of the Magma Mine Road within the subsidence area would be relocated outside the subsidence area to the north. The realigned roadway would be a two-lane paved road and would be used by mine employees, contractors, deliveries, and visitors to the mine. The proposed realignment of the Magma Mine Road is depicted in figure 2.2.2-5.

New paved and dirt roads would be constructed within the 133-acre East Plant Site that would connect the various facilities within the site. The roads would not be open for public access and would be used by mine employees and contractors only.

REFRIGERATION PLANT

A primary refrigeration system would be constructed to produce cool air and water for the underground mining operation. This system would consist of a bulk air cooler supplying each downcast shaft, a central refrigeration plant with a service water refrigeration system to provide chilled water, and thermal storage via a chilled water tank. All cooling systems would be equipped by multiple-cell condenser cooling towers for heat rejection.

WASTEWATER TREATMENT PLANT

Sewage from aboveground and underground facilities would be treated at a newly constructed wastewater treatment plant. Sewage from underground mine facilities would be transported to the plant on the surface via a system of pumps. The plant would be an extended aeration biological plant that uses a biological process for treating wastewater and separating the solids from liquid portion of the waste. Designed by the manufacturer, the “packaged plant” would provide treatment to secondary standards as defined by the Arizona Department of Environmental Quality (ADEQ).

ELECTRICAL SUBSTATIONS AND POWER LINES

Two new substations would be constructed at the East Plant Site: the Oak Flat substation and the Resolution Copper North substation and backup. The primary substation for the East Plant Site would be the 230-kV Oak Flat substation, which would be constructed north of the new production shafts to

provide power for aboveground and belowground activities. The substation would be powered by a new 230-kV transmission line originating from the SRP Silver King Substation north of U.S. Route 60.

The North substation and backup would be an alternate power substation and emergency generators would be located next to the production power to provide a backup electricity system. The emergency generators would be capable of backfeeding the main distribution system and would be able to operate the service auxiliary hoist in Shaft 13, partial mine cooling/ventilation system, and other essential services. The emergency generator system would have sufficient capacity to supply the total essential mine load with one of the generators out of service for maintenance.

Two new 230-kV power lines would be built by SRP within a 150-foot corridor with tower heights not typically exceeding 140 feet. Two lines are needed to increase safety and reliability of underground operations. The Silver King to Oak Flat 230-kV transmission main would provide power from the existing Silver King substation north of U.S. Route 60 to the new Oak Flat substation at the East Plant Site. The Superior to Oak Flat 230-kV power line main would provide redundant power from the East Plant Site to the new Superior substation at the West Plant Site.

OTHER NEW EAST PLANT SITE FACILITIES

Other new facilities that would be constructed at the expanded East Plant Site include a wash bay, a standalone first aid building, and a training building. The wash bay would use high-pressure water hoses and oil-water separators to clean vehicles and equipment. Wastewater from the wash bay would be sent to the Never Sweat Tunnel, where it would be combined with East Plant Site contact water and delivered to the West Plant Site process water system. Table G-3 identifies the major consumables, materials, and supplies that would be used at the East Plant Site, their delivered form, and their storage method.

Table G-3. Consumables, materials, and supplies used at East Plant Site

Material/Supply	Delivered Form	Considered Hazardous*	Storage Method
Diesel fuel	Liquid	Yes	Tanks
Propane	Gas	Yes	Tanks
Oils/Lubricants	Liquid	Yes	Sealed drums/totes
Antifreeze	Liquid	Yes	Individual containers
Solvents	Liquid	Yes	Individual containers
Explosives (emulsion product)	Solid	Yes	Locked magazines
Explosives (blasting detonators)	Solid	Yes	Locked magazines
Welding cylinders (argon gas, acetylene, etc.)	Gas	Yes	Cylinder storage corral
Hardware	Solid	No	General stores shelving
Carpentry supplies	Solid	No	General stores shelving

* Potential for physical, chemical, and/or environmental hazard

West Plant Site

Existing West Plant Site Facilities

Currently, the West Plant Site receives development rock from construction of tunnels, shafts, and underground infrastructure at the East Plant Site via the Never Sweat Tunnel. The development rock is sorted at the West Plant Site, tested for mineral composition, and stored at stockpiles. Development rock

is later processed as part of the startup of the concentrator complex. Similar to the East Plant Site, the West Plant Site consists of existing mine facilities constructed during historic mining operations that are either being used by Resolution Copper to support mineral exploration or are unused legacy facilities. The unused legacy facilities include tailings ponds, houses and offices in the upper basin, and the smelter complex. Of these legacy facilities, several have been reclaimed, including the 500-yard waste rock facility, smelter pond, depot pond, Settling Pond 2, and Tailings Pond 5. Several additional legacy facilities at the West Plant Site are currently in the process of being reclaimed, including the smelter facility and Tailings Ponds 6 and 7.

Table G-4 identifies the existing West Plant Site facilities that are currently used for mineral exploration and would continue to be used during mining operations and the facility's proposed function.

Table G-4. Existing West Plant Site facilities

Facility	Current Function	Proposed Function and/or Changes during Operations
Development rock stockpile	Storage of inert NPAG development rock from the East Plant Site for use in construction and reclamation	No functional change; stockpile would expand to a maximum capacity of 10.3 million cubic yards
Intermediate rock stockpiles	Storage of mineralized development rock delivered from the East Plant Site; maximum capacity of up to 774,000 tons or 498,000 cubic yards	No change
Staging areas	Temporary storage of development rock	No functional change; additional staging areas would be constructed near new mine entrance and other facilities
Borrow areas	Aggregate material supply for ongoing closure, redevelopment, and erosion control	No functional change or change in location
General administration building	Offices for mine management, operations, engineering, safety, and environmental personnel	No functional change; a larger additional administration building would be constructed near the new main entrance
Chemical storage facility	Chemicals used in mining activities are stored in Building 203	No functional change; chemical storage and containment areas would be located at several of the West Plant Site facilities
High-density sludge treatment system	Treatment of dewatering water to reduce total dissolved solids, metals, and pH	Dewatering water would be used in the processing cycle
Apex tunnel	Stormwater diversion	No change
Parking lots	Employee, contractor, and visitor parking	New parking areas would be constructed throughout the expanded West Plant Site; new main entrance at Lone Tree; parking for 650 vehicles
Security buildings and gates at access points	Controls access at Main Gate and Lone Tree access points	No functional change; two new security buildings and gates would be constructed: (1) at the relocated main entrance at Main Street and Magma Heights Road, and (2) NFS Road 229 to control access during construction of new substation
Arizona Water Company CAP water tank	500,000-gallon potable water and fire flow supply for West Plant Site and East Plant Site; receives water from a 36-inch water pipeline	No change
Water supply pipelines	Distributes water throughout the West Plant Site and to the mine supply water tank for delivery to East Plant Site via a 16-inch pipeline in the Never Sweat Tunnel	Additional water supply pipelines would be constructed for new and expanded facilities
SRP 115-kV Trask substation	Distribute electricity throughout West Plant Site	Power supplied from the substation would be replaced with a 34.5-kV overhead transmission line to a new 34.5/4.16-kV transformer

Facility	Current Function	Proposed Function and/or Changes during Operations
115-kV SRP transmission line	Electrical supply for West Plant Site	Rerouted to new Superior substation
Stormwater management	Controls and contains stormwater drainage from West Plant Site	Stormwater management system would be expanded to accommodate new and expanded facilities
Laydown yards	Temporary storage for construction deliveries	New laydown yards would be constructed for new and expanded facilities
Private roads	Roads within West Plant Site connecting facilities	New roads would be constructed to connect new and expanded facilities
NFS Road 229 (Silver King Mine Road) and NFS Road 1010	Provides secondary road access to the West Plant Site	NFS Road 229 would be reconstructed between U.S. Route 60 and the West Plant Site to allow for use by construction and mine equipment
Never Sweat Tunnel substation	Provides electricity to Never Sweat Tunnel	No change
Never Sweat Tunnel ventilation	Provides cooling for the Never Sweat Tunnel	No change

New West Plant Site Facilities

The proposed action would expand the West Plant Site from 422 acres to 980 acres to accommodate new facilities. The proposed new mine facilities at the West Plant Site include a new concentrator complex, reconstructed NFS Road 229, new administrative facilities, a water treatment plant, retention and contact water ponds, and electrical substations (see figure 2.2.2-9).

CONCENTRATOR COMPLEX

The concentrator complex at the West Plant Site would employ a traditional sulfide ore processing technique to process up between 132,000 to 165,000 tons of ore per day. The primary structural components of the concentrator complex would be the water process pond, the ore stockpile facility, the grinding circuit, the flotation circuit, and the molybdenum plant.

Process Water Pond and Storage Tank

The process water pond would hold up to 50 million gallons of water for use at the concentrator complex. The pond would be located west of the concentrator complex buildings and be used to pump process water to a 1-million-gallon storage tank at elevation above the concentrator. The tank provides the required head pressure needed at the concentrator. The pond would receive water from a variety of water sources, including Central Arizona Project (CAP) water, return water from the underground mine, and recovered water from the filter plant. The pond would be equipped with emergency overflow and a diversion ditch would be provided to route any potential overflows to a contact water pond south of the concentrator complex. The pond would be constructed so that it is double lined with leak detection and collection in accordance with the ADEQ best available demonstrated control technology requirements. Personnel and wildlife would be protected from entering the pond site with a chain-link fence surrounding the designated area. An emergency overflow containment downstream of the pond located on Resolution Copper property would be required.

Fresh Water Storage Tank

Fresh water would be supplied to the mine from the CAP water canal and wells along the Magma Arizona Railroad Company (MARRCO) corridor. Water is pumped to the West Plant Site along the MARRCO

rail line to a 2-million-gallon CAP water distribution tank. This tank would be located above the concentrator.

Ore Stockpile

Crushed ore from the East Plant Site would be delivered to the West Plant Site via a conveyor system. The conveyor would unload the crushed ore at a covered ore stockpile adjacent to the concentrator complex. The ore stockpile would have a living capacity of 132,000 tons of ore and a total capacity of 441,000 tons. The ore stockpile is a surge facility for the mining operation to allow for short-term shutdowns of either the active mining operations at the East Plant Site or the concentrator operations while the other facility is still in operation.

Grinding Circuit

Ore from the East Plant Site and the ore stockpile would be delivered to the grinding circuit, where the crushed ore would be further ground with water into a slurry before being sent to the flotation circuit. Final grinding circuit design would be determined closer to operations, but according to the General Plan of Operations (GPO) (2016d), the grinding circuit is currently expected to consist of either two semi-autogenous grinding mills and four ball mills or three semi-autogenous mills and six ball mills. Once ore is processed at the semi-autogenous mills and ball mills, the slurry would be distributed to hydrocyclone classifiers (cyclones). Cyclone overflow, the final grinding circuit product, would then be delivered to the flotation circuit for further concentrate processing.

Flotation Circuit

After leaving the grinding circuit, copper and molybdenum would be concentrated in the bulk copper-molybdenum flotation circuit. The flotation circuit would consist of flotation tank cells, a regrind mill, cleaner cells, and copper and molybdenum thickening tanks. Chemical reagents would be used at the thickening tanks to further concentrate the copper and molybdenum and cause it to float to the surface of the slurry where it can be recovered. Chemical reagents would be stored and handled at a separate enclosed reagent building adjacent to the concentrator complex. Recovered molybdenum would be sent to the molybdenum plant at the concentrator complex for further processing. Recovered copper would be sent to the filter plant via the MAARCO corridor for further processing. Tailings—the processed non-economic waste material that results from copper ore processing—would be sent to the tailings storage facility approximately 3 miles west of the West Plant Site via two pipelines. The GPO (2016d) indicates that tailings slurry would be thickened to solids content of approximately 55 to 65 percent. Tailings low in sulfide or pyrite are considered non-potentially acid generating (NPAG). Tailings high in sulfide or pyrite are considered potentially acid generating (PAG). For a list of reagents that would be used in the concentrator complex's flotation circuit, see GPO table 3.9-3.

Molybdenum Plant

Molybdenum concentrate recovered in the flotation circuit would be further concentrated at the molybdenum plant, where it would be turned into molybdenum filter cake and packaged into sacks or containers. These sacks or containers would be ready for shipment to customers from the molybdenum plant. Approximately four shipments of molybdenum concentrate would be shipped by truck every day from the West Plant Site.

RECONSTRUCTED NFS ROAD 229 (SILVER KING MINE ROAD)

Approximately 1.3 miles of Silver King Mine Road (NFS Road 229) would be reconstructed between U.S. Route 60 and the West Plant Site to provide construction access to the new 230-kV substation. The road would also serve as a secondary access to the West Plant Site that would be designed for use by large construction and mining vehicles and equipment, and would be the main access for large deliveries to and from the West Plant Site.

ADMINISTRATIVE FACILITIES

The existing administrative building would be retained for continued use, and a larger additional administrative building would be constructed near the new main entrance to the West Plant Site. The new administrative building would provide office space for reception, mine management, document control, operations, engineering, safety, and environmental personnel. Space would also be available for conference and safety training rooms, a metallurgical laboratory, a first aid clinic, and dry change house facility.

WATER TREATMENT PLANT

An existing water treatment system is located at the West Plant Site for the treatment water from mine dewatering water at the East Plant Site. Treatment reduces total dissolved solids, metals, and pH prior to delivery to the new Magma Irrigation and Drainage District. During mine operations, water from mine dewatering would be incorporated into the tailings thickener process; however, the water treatment system would remain in place for use as needed.

RETENTION AND CONTACT WATER PONDS

Three new retention and contact water ponds would be constructed to collect and control stormwater flowing from the concentrator and stockpile facilities. The ponds would be located at the foot of the development rock pile and would be designed to collect stormwater for 100-year, 24-hour storm events.

ELECTRICAL SUBSTATIONS AND POWER LINES

A new 230-kV Superior substation would be constructed to provide electricity to West Plant Site facilities. The proposed realignment of Silver King Mine Road would provide access to the new substation during construction. Electricity would be delivered to the new 230-kV substation via a transmission line connection to the existing 230- and 500-kV transmission lines west of the West Plant Site. A redundant electricity supply from the existing Silver King Substation, via the new Oak Flat substation at the East Plant Site, would connect to the new 230-kV substation at the West Plant Site. As needed, several smaller substations would be constructed and connected to the new 230-kV substation to provide electricity to facilities in the West Plant Site.

The existing 115-kV transmission line would be rerouted within the existing West Plant Site boundary to avoid new facilities. A 34.5-kV transmission line would provide power from the West Plant Site along the tailings conveyance corridor to the tailings storage facility. This would power the new facilities at the tailings storage facility.

CONSUMABLES, MATERIALS, AND SUPPLIES USED AT THE WEST PLANT SITE

Table G-5 identifies the major consumables, materials, and supplies that would be used at the West Plant Site, their delivered form, and their storage method. Table G-6 identifies the reagents that would be delivered to, stored, and used at the concentrator complex.

Table G-5. Consumables, materials, and supplies used at the West Plant Site

Material/Supply	Delivered Form	Considered Hazardous*	Storage Method
Diesel fuel	Liquid	Yes	Tanks
Oils/lubricants	Liquid	Yes	Sealed drums/totes
Antifreeze	Liquid	Yes	Individual containers
Solvents	Liquid	Yes	Individual containers
Office supplies	Solid	No	Individual containers
Propane	Gas	Yes	Tanks
Grinding balls	Solid	Yes	Locked magazines
Lab chemicals	Solid	Yes	Locked magazines
Welding cylinders (argon gas, acetylene, etc.)	Gas	Yes	Cylinder storage corral
Hardware	Solid	No	General stores shelving
Carpentry supplies	Solid	No	General stores shelving

* Potential for physical, chemical, and/or environmental hazard

Table G-6. Concentrator complex reagents

Material/Supply	Delivered Form	Considered Hazardous*	Storage Method
Dithiophosphate/monothiosulfate (Cytec 8989; collector) or equivalent copper collector	Bulk truck (liquid)	Yes	Storage tank
Sodium isopropyl xanthate (SIPX; collector)	Drums (dry)	Yes	Drums on pallets
Methyl isobutyl carbinol (MIBC; frother)	Bulk truck (liquid)	Yes	Storage tank
MCO (non-polar flotation oil; molybdenum collector) or #2 Diesel Fuel	Bulk truck (liquid)	Yes	Storage tank
Sodium hydrosulfide (NaHS; copper mineral depressant)	Bulk truck (liquid 30% concentration)	Yes	Storage tank
Flocculant (settling agent)	Bags or super sacks (dry)	Yes	Bags or sacks on pallet
Lime (90% CaO; pH modifier)	Bulk truck (dry)	Yes	Dry storage silos
Antiscalant (water treatment)	Drums (dry) or liquid (totes)	Yes	Drums or totes on pallets
Nitrogen (molybdenum sparge gas)	Vendor or Resolution Copper–owned nitrogen plant	Yes	Nitrogen tank

* Potential for physical, chemical, and/or environmental hazard

MARRCO CORRIDOR

Existing MARRCO Corridor Facilities

The MARRCO corridor is a historic mining railroad corridor that was originally built in the 1920s and ceased operations in the mid-1990s after the closure of the Magma Mine. Several utilities are currently collocated within the MARRCO corridor, including a buried fiber-optic line, an overhead transmission line and telephone line, and buried natural gas pipelines. In addition, the Arizona Water Company maintains a water pipeline and associated facilities within the corridor that supplies the town of Superior with CAP water. More recently, Resolution Copper installed an 18-inch dewatering line within the corridor that delivers treated water from the water treatment plant at the West Plant Site to the new Magma Irrigation and Drainage District. The proposed action would not require these utilities to be relocated or significantly modified.

New MARRCO Corridor Facilities

The proposed action would install several new facilities within or adjacent to the MARRCO corridor. Table G-7 identifies the proposed new facilities in the MARRCO corridor and their function.

Table G-7. New MARRCO corridor facilities

New Facility	Function	Upgrade Needed
CAP water pipeline and associated pump stations and recovery wells	Transport CAP water from CAP canal and recovered filter plant water to West Plant Site through new aboveground 36-inch steel pipeline.	New pump stations would be constructed along corridor to pump CAP water and pressurize pipeline for upgradient delivery to West Plant Site. Locations within the MARRCO corridor between the Queen Creek pump station and West Plant Site would need to be improved by grading and slope stabilization.
Concentrator pipelines	Transport copper concentrate from the West Plant Site to the filter plant and loadout facility through two new 8-inch HDPE-lined steel pipelines.	Grading and slope stabilization would be required at various locations. Depending on site conditions, pipelines would be built aboveground or belowground. The aboveground segments would be located within a containment ditch.
Containment basins	Allow for the emergency storage of concentrate if the pipeline needs to be emptied.	Various locations within the corridor would be excavated and lined with concrete to accommodate upstream volume of concentrate should the pipeline need to be emptied.
Access roads	Provide access to the facilities within the corridor and to the filter plant and loadout facility.	Access roads are described in detail in the Transportation and Access section in chapter 3.
Upgraded rail line and connection to Union Pacific Railroad	Transport copper concentrate from filter plant and loadout facility to the Union Pacific Railroad connection at Magma.	Segment of the rail line between the filter plant and loadout facility and Magma would be upgraded to handle the increase load weight, including an associated upgrade of the rail connection to the Union Pacific Railroad rail line.
Electric lines	Provide electricity to the recovery wells, pump stations, and the filter plant and loadout facility.	Double-circuit 69-kV power lines would be constructed adjacent to the MARRCO corridor to power lines within a new utility easement. The power lines would originate from the Abel substation near the MARRCO corridor's intersection with the CAP canal to the filter plant and loadout facility. A 12-kV power line on the same poles would provide power for the recovery wells within the MARRCO corridor. The power lines would require an additional 50-foot easement adjacent to the northern side of the MARRCO corridor.

FILTER PLANT AND LOADOUT FACILITIES

New Filter Plant and Loadout Facilities

The filter plant (see figure 2.2.2-14) would include a control room, three concentrate stock tanks, up to six concentrate filters, a filtrate clarifier, and compressors. The concentrate would be pumped to the stock tanks and then to the filters. The filtered concentrate would feed via conveyor to the adjacent loadout facility. The filtrate (water) would be separated in the filters and sent to the filtrate clarifier for thickening. Recovered filter water would be sent to a 3-million-gallon water storage tank, where it would mix with CAP water or groundwater before returning to the process water pond at the West Plant Site via a new water supply pipeline within the MARRCO corridor.

The loadout facility (see figure 2.2.2-14) would have a covered stockpile with a capacity of 110,000 tons of concentrate from the filter plant. Concentrate would be loaded into railcars through four hoppers. From the loadout facility, the concentrate would be shipped southwest into Magma Junction, where it would be loaded onto container cars for delivery via the Union Pacific Railroad to an off-site smelter.

As a precautionary measure, a concrete containment basin would also be constructed at the filter plant and loadout facility. The containment basin would allow for the emergency storage of concentrate if the concentrate pipeline in the MARRCO corridor needs to be emptied. The basin would be designed to contain the full volume of both concentrate pipelines.

The filter plant and loadout facility would be accessible from the west by East Skyline Road, east of San Tan Valley, and from the east by State Route 79 and the existing road in the MARRCO corridor. Auxiliary facilities to the filter plant and loadout facility would include a new electrical substation receiving electricity from a transmission line that runs within the MARRCO corridor, a security building, an employee and visitor parking lot, internal roadways, and potable water and wastewater treatment facilities.

CONSUMABLES, MATERIALS, AND SUPPLIES USED AT THE FILTER PLANT AND LOADOUT FACILITY

Table G-8 identifies the major consumables, materials, and supplies that would be used at the filter plant and loadout facility, their delivered form, and their storage method.

Table G-8. Consumables, materials, and supplies used at filter plant and loadout facility

Material/Supply	Delivered Form	Considered Hazardous*	Storage Method
Hardware	Solid	No	General stores shelving
Carpentry supplies	Solid	No	General stores shelving
Office supplies	Solid	No	General stores shelving
Flocculant	Bags or super sacks (dry)	Yes	Bags or sacks on pallets

* Potential for physical, chemical, and/or environmental hazard