FACT SHEET

(Pursuant to Nevada Administrative Code (NAC) 445A.401)

Permittee Name: **Florida Canyon Mining, Inc.**

Project Name: **Florida Canyon Mine**

Permit Number: **NEV0086001**
Review Type/Year/Revision: **Renewal 2023, Fact Sheet Revision 00**

A. Location and General Description

Location: The Florida Canyon Mine (Project) is located on both private and public land, administered by the U.S. Bureau of Land Management (BLM) Winnemucca District Humboldt Field Office, in Pershing County, approximately seven miles southwest of Imlay, Nevada in Sections 1 through 4, 9 through 16, 37, 38, and 39, Township 31 North (T31N), Range 33 East (R33E); Section 35, T33½N, R33E; and Sections 33, 34, and 35, T32N, R33E; Mount Diablo Baseline and Meridian.

General Description: The Permittee of the Project is Florida Canyon Mining, Inc. (FCMI), a wholly-owned subsidiary of Argonaut Gold. The Project consists of open pit mining, crushing, and agglomerating, with ore processing using conventional heap leach cyanidation technology with precious metal recovery by carbon adsorption followed by stripping, electrowinning, and refining. Facilities are required to be designed, constructed, operated, and closed without any discharge or release in excess of those standards established in regulation except for meteorological events which exceed the design storm event.

B. Synopsis

Brief History: Placer gold was first discovered in Humboldt Canyon during the 1860s when, what is now Pershing County, was then part of Humboldt County. Continued prospecting in the district resulted in the production of gold, silver, mercury, and tungsten from various small mines. The Standard Mine was the most productive operation yielding about one million dollars in gold and silver from 1939 to 1949. Most of the gold deposits are peripheral to the large low-grade gold deposits at the Florida Canyon Mine and the Standard Mine.

Between 1969 and 1981, Homestake, Cordex Exploration, and Asarco explored the current Florida Canyon Property; however, those mining companies decided not to pursue to the Project. Montoro Gold Company, a subsidiary of Pegasus Gold Corporation, acquired the property in 1982. Subsequent exploration drilling began in 1983 and a pilot scale permit application was submitted to the Division in July of 1986 for the construction and operation of a pilot scale leaching facility. It was determined at this time that a permit was not required for this pilot facility.

In January of 1986, an application for a Water Pollution Control Permit was submitted to the Division for the construction of a full-scale mining operation. The Permit (Permit NEV60001) was issued initially by the Bureau of Water Pollution Control in 1986, prior to the promulgation of the Bureau of Mining Regulation and Reclamation and its regulations. A revised application was received by the Division on 30 December 1993 and Water Pollution Control Permit NEV0086001 was issued.

Ownership of the facility changed from Pegasus Gold to Jipangu International, Inc. in 2005, from Jipangu to Rye Patch Gold US Inc. in 2016, and from Rye Patch Gold US Inc. to Alio Gold USA, in 2018 to Argonaut Gold. The facility was acquisitioned by Argonaut Gold in 2020, who remains the current owner of the facility. The Project has remained in various stages of operation during ownership transitions.

Geology: The ore bodies at Florida Canyon are hosted by the fracture zones that were open to solution transport. The ore zones are tabular, and trend generally north-south to northwest, with a westerly rake of about 30 degrees. The higher-grade ore zones appear to have the same northerly trend, but are narrower and vertical to steeply dipping east or west. These high-grade zones usually form the cores within the larger envelopes of lower grade material, suggesting that they are feeder structures. The ore zones also appear to be stepped down to the west in a roughly systematic pattern that likely follows a regional range-front block faulting system.

Gold mineralization in the Florida Canyon Mine area is structurally controlled, as described above, and hosted within a package of Triassic metasedimentary rocks (Grass Valley Formation). Past studies suggest that the Grass Valley Formation was deposited in a shallow marine shelf environment along a westerly prograding delta. The rocks in the area consisted mainly of pelites with interbedded quartzose sandstones that were later metamorphosed to argillite, phyllite, fine-grained quartzite, and meta-arkose. This westerly-dipping package of rocks in the mine area is roughly divided into an upper sequence of mostly argillite and phyllite and a lower, more ductile sequence comprised mainly of phyllite and shale.

Gold mineralization at Florida Canyon is associated with quartz veining, but not all quartz is associated with gold. It is probable that gold occurs both as auriferous pyrite and as free gold, and that there was a separate, and later, gold deposition or remobilization event. Additional studies will be necessary to better define the gold mineralization and related mineral paragenesis at Florida Canyon.

Mining: Ore is hauled from the pit(s) to either a stockpile near the crushing circuit or hauled directly to the leach pad (with lime added) as run-of-mine ore. The crushing circuit consists of jaw and gyratory crushers, cone crushers, vibrating screens and conveyor belts to the heap. Crushed ore (-1/2 to -3/4 inch material) is agglomerated using polymer or other additives such as cement. Lime (for pH control) and sodium cyanide are also added. The agglomerated ore is then placed on the leach pads via haul trucks or a conveyor system. All areas on the leach pads are required to be loaded in conformance with specific configurations (e.g., lift setbacks and heights) determined by the responsible professional engineer to maintain an overall slope of 3:1 horizontal to vertical (H:V). The original heap is limited to a maximum height of 300 feet measured vertically from the top of the high density polyethylene (HDPE) liner. On 26 March 2014 the Permittee submitted a Major Modification to the Water Pollution Control Permit (Permit) proposing the South Area Expansion which included the South Heap Leach Pad Phase 1. On 25 September 2019, the Division approved a Minor Modification for the incorporation of Phase 2 of the South Area Expansion. These heaps were originally limited to a maximum height of 200 feet measured vertically from the top of the HDPE liner, but this was modified to 300 feet by the Divisions approval of an EDC in April of 2021

Previously, water had been pumped at a low flow rate (approximately 1 gallon per minute (gpm)) from within the Phase 4 pit to a storage tank on the top of the southern portion of the heap, where it was either being used for dust suppression or added to the cooling pond for make-up water. The pumping was terminated to facilitate backfilling the Phase 4 Pit. The Phase 4 Pit is backfilled to at least 4,450 feet above mean seal level (ft amsl) or 35 feet above the predicted groundwater rebound elevation of 4,415 feet amsl. Potential impacts as a result of modeling concluded that “backfilling the Phase 4 Pit at the Florida Canyon Mine with the revised waste rock backfill presented in the column leach tests would not impact groundwater downgradient of the pit” (ENSR 2000). However, to confirm that groundwater was not adversely affected by the backfill, a monitoring well was developed downgradient of the pit. Former production well PW-8, located on an upper bench on the southwest edge of the Phase 4 Pit, was modified to provide a limited screen interval in the upper level of groundwater so that it could serve as an appropriate downgradient monitoring well. The modified screen interval for PW-8 is from 200 to 343 feet below ground surface (ft bgs) or 4,400 to 4,257 ft amsl, with static water level at 4,257 ft amsl. The continued expansion of the Main Pit (Phase 7) necessitated the abandonment of well PW-8. This well was replaced with MW-37, which was placed directly within the backfill to monitor water quality and groundwater elevation.

The South Area Expansion described in the 2014 Major Modification consists of additional mining in the existing pit toward the south of the Phase 4 Main Pit and the Jasperoid Hill Pit to the east, defined as the Phase 7 Pit; construction of a new heap leach pad and ponds; expansion of the waste rock storage facility; and additional facilities necessary to support the operation. The Phase 7 Pit will be mined using conventional open-pit mining methods (truck and loader). The expansion will mine the pit to the 4,460-foot elevation amsl, terminating at least 45 feet above the predicted groundwater rebound elevation of 4,435 ft amsl.

As part of the 2022 renewal, the Division approved of an EDC that permitted a pit boundary revision for simplification of Reclamation Bonding and a provisional expansion of the Radio Towers and eastern Central (also referred to as Alien Nations) pits. The expansion of the Radio Towers and Central pits will produce 35.7 and 25.9 million tons of waste rock, respectively. The revised pit boundary was utilized to consolidate disturbances from mining. The consolidated pit is named the "One Pit" but still consists of the Brown, Central, Derby, Jasperoid, Main, Radio Tower West, and Switchback/Headwaters/Radio Tower Pits.

With the approval of the above EDC, the Division provisionally approved of the expansion of the Radio Towers and Central pits. The Division requested, within 120 Days after the approval of the Permit renewal, that a comprehensive waste rock management plan be submitted, for Division review and approval, that includes currently approved pit boundaries (plan images and cross-sections), the approved documents, the proposed tonnages for the life of mine from each pit, and sampling measures that will be implemented to characterize areas that are currently lacking.

Waste Rock Management: The expanded South Waste Rock Storage Facility, approved with the 2014 Major Modification, will be an extension of the existing facility to the west and southwest. The footprint of the expanded waste rock storage facility will encompass Sediment Pond 1. Flows directed to Sediment Pond 1 will be rerouted to Sediment Pond 9 located on the south side of the South Heap Leach Pad then Sediment Pond 1 will be permanently closed.

With the expansion of the Phase 7 pit, there included the possibility of encountering potentially acid generating (PAG) materials. These materials are predicted to be less than 1% of the overall waste rock produced. Management of these materials will be placed in 20-foot lifts within the SWRSF and will be encapsulated with non-potentially acid generating materials to a minimum depth of 50-feet in all directions. No adverse impacts to the environment are anticipated when PAG materials are handled in this fashion due to the high neutralizing capacity of the non-PAG materials and low overall percentage of PAG materials produced from mining.

In June of 2020, the Division gave approval of a Minor Modification for the Permittee to construct the North Heap Leach Pad (NHLP) Waste Rock Storage Facility (WRSF) on a closed portion of the eastern face of the existing NHLP. Existing non-abutting WRSF's will be advanced from east to west and eventually abut the face of the NHLP. The initial lift will be butt dumped in the area of the perimeter berm to minimize the possibility of end-dumped materials damaging the covered liner materials. The following lifts will be end-dumped in 50-foot lifts with sufficient setback to produce an overall slope of 3 horizontal to 1 vertical (3H:1V) at closure. This configuration will provide for approximately 5 million tons of waste rock storage.

To ensure that the new NHLP WRSF would not adversely affect the closed portion of the NHLP and that it would remain stable in both a static and seismic (pseudostatic) event, a stability and settlement analysis was performed. The stability and settlement analysis utilized the NHLP as-built drawings and previously collected geotechnical data and literary values when none were available. The results of this analysis concluded that the NHLP WRSF would remain stable during static (Factor of Safety [FOS] > 1.3) and pseudostatic (FOS > 1.05) conditions and that the amount of anticipated settlement produced by the loading of wasterock would not adversely affect the process solution flow directions within the NHLP.

Closure of the NHLP WRSF will consist of regrading the side-slopes to an overall 3H:1V slope and the grading of the top plateau to a minimum 1% slope to preclude ponding. A minimum of 12-inches of growth media will be placed over the entire regarded surface of the NHLP WRDF and seeded to revegetate the surface. However, this final growth media depth may change and is dependent on the ability of the material to be successfully revegetated and achieve the requirements outlined by the NAC 519A regulations and the Divisions guidance document titled *Attachment A – Documentation of Reclamation Activates for Surety Release.*

With the 2022 Renewal of the Permit, the Division gave approval of an EDC that proposed to expand the NHLP WRSF to the north while continuing to abut the leach pad. This expansion will provide storage for an additional 12.4 million tons of waste rock and expand the footprint of the facility by an additional 61.9 acres, but will be constructed on existing disturbance. The waste rock facility will utilize the same construction methods and overall 3H:1V side slopes with grading of the top plateau to a minim of 1% to preclude ponding and route stormwater off the waste. A 2-foot closure cover will be installed and will be seeded to revegetate the surface and establish an evapotranspirative cover.

Since waste rock from this expansion will abut an un-closed portion of the heap that is no longer being leached, additional measures needed to be taken to ensure that stormwater from the unclosed upgradient watershed would not be routed off containment. A stormwater diversion capable of collecting and conveying a 25-year, 24-hour storm event will be constructed on the heap at the intersection of the top lift of the expanded NHLP WRSF and the un-closed leach pad. Due to the temporary nature of the diversion, more stringent design criteria were not required (i.e., designed to convey a 500-year, 24hr storm event). The peak discharge from this upgradient watershed was determined to be 0.2 cubic feet per second and will be transported to a level spreader by a 2,861 foot long “V” channel that will have a minimum depth of 2 feet and 1.5H:1.5V side slopes. The level spreader will measure approximately 15 by 6.5 feet and will utilize 4-inch riprap to allow any stormwater to infiltrate into the heap materials or be routed to the perimeter channel for conveyance to the process ponds. During construction of the dump, the way in which the materials will be placed will not allow any contact stormwater to run-off containment.

With the EDC for the NHLP WRSF, the Division also gave the Permittee approval to backfill the Brown, Central, Derby, Main, and Jasperoid pits with non-PAG waste rock. These pits will provide approximately 179.5 million tons of backfill capacity. Since backfilling of the pits is seen as a benefit to minimize surface disturbance, the Division gave advance approval to begin backfilling efforts on 29 April 2022.

Waste rock, overburden, and ore material are routinely tested in accordance with the Permit. Characterization of the waste rock and overburden to date indicates that the material does not have a potential to degrade waters of the State.

Heap Leach and Pads: Leaching of the ore is accomplished by applying a weak cyanide solution to the ore via emitters, wobblers, and sprinklers. The typical application rate is approximately 0.003 to 0.004 gallons per minute per square foot (gpm/ft^2).

North Heap Leach Pad: The total NHLP area is 438 acres, which consists of the 238-acre circular pad, the 75-acre semi-circular pad, the 91-acre semi-circular pad, and a 34-acre pad. These pads are single-lined systems pursuant to regulation consisting of a minimum of a one foot low permeability (1×10^{-5} centimeters per second (cm/sec)) compacted subbase, an 80-mil HDPE liner, and a free-draining overliner material (3-5 feet thick) with hydraulic relief pipes spaced to reduce the hydraulic head on the 80-mil HDPE liner and collect and transport pregnant solution to the periphery of the pad where the solution channels convey the solution to the pregnant pond.

On 3 April 2008, the Permittee submitted an Engineering Design Change (EDC) to reconfigure the footprint of the Phase 5 expansion to resolve over-stacking issues along the east edges of cells 2 and 3. The new configuration required the removal of the truck wash bay and a new facility was proposed to take its place near the southwest corner of cell 4 as part of the same EDC. The EDC was approved by the Division and construction of the heap expansion and the truck wash bay was completed in November of 2008.

Leak detection systems are installed between the synthetic liner and the subbase of the leach pads. These systems are designed to collect and transport solution to a downgradient location for monitoring. Ten leak detection pipes (LP1 thru LP10) are located beneath the 238-acre leach pad. However, LP4 was abandoned as a result of failure of the pipe used to convey solution from the sump. Leak detectors LP11 thru LP19 monitor the 75-acre pad, leak detectors LP20 thru LP24 monitor the 91-acre pad, and leak detectors LP25-29 monitor respective cells in 34-acre pad (aka East Pad) expansion and the northeast section of the solution conveyance channel.

The Permittee submitted an EDC on 29 March 2006 for a heap injection system comprised of up to 50 gravity injection wells constructed of 8-inch polyvinyl chloride (PVC) pipe to 60 feet deep, centrally located on the heap. Operation of the approved injection system did not result in exceedance of the aggregate daily heap application flow rate limit of 9,000 gpm or the max permitted application rate of 0.005 gpm/ft^2. Only 7 gravity-only injection holes were available for use.

Based on the successful operation of the gravity feed injection holes, the Permittee submitted an EDC on 9 January 2008 to expand the operation to include the pressure injection of process solution into the injection holes at 300 gpm. This proposal was approved by the Division with limitations on the number of holes in which pressure injection was allowed (23), limitation of total down-hole flow, whether by injection or gravity, to 6,900 gpm, the requirement to leave hole #23 inactive to use as an inspection point to monitor fluid migration toward the closed section of the heap, and the requirement to monitor the French drain and nearby wells more frequently than previously required by the Permit. A subsequent EDC submitted in March 2009 and approved by the Division modified the permitted flowrate to a maximum of 600 gpm with a limit of 300 gpm averaged over any 24-hour period. Operation of the pressure injection system was suspended in August 2010 and the system was abandoned pursuant to the 2015 Finding of Alleged Violation (FOAV) and Order.

South Heap Leach Pad – Phase 1: The South Area Expansion, approved by the Division in March 2015, included a new South Heap Leach Pad. The completely new heap leach facility will encompass approximately 13.44 million square feet in total, with each of the three phases having an area of approximately 4.48 million square feet. The processing of the ore from the proposed Phase 7 Pit required the lining of an approximately 2,800-foot by 1,600-foot wide area of land, defined as the Phase 1. Phases 2 and 3 will be designed in detail, to be permitted as Minor Modifications, and constructed in the future. General design elements for the heap leach facility entail a lined system with leak detection including a compacted low hydraulic conductivity soil layer (LHCSL) overlain by 80-mil smooth HDPE liner, a leachate collection and recovery system, and protective overliner. The expansion also includes the construction of a solution conveyance system to a set of 3 process ponds west of the proposed heap leach pad. Leak detection will be placed under areas of concentrated flow. The maximum height permitted for the Phase 1 pad is 300 feet measured vertically from the 80-mil HDPE liner. The cumulative application rate to the pad, by all methods, shall not exceed 5,200 gpm. Additionally, the solution surface application rate per unit area shall not exceed 0.004 gpm/ft^2.

Construction of the subgrade consisted of clearing, grubbing, and cutting and filling activities. The entire footprint was moisture conditioned and compacted to a minimum depth of 1-foot to provide a non-yielding surface. A minimum 1-foot thick LHCSL was placed in the footprint of the Phase 1 directly on the prepared subgrade and had a placed hydraulic conductivity of less than 1 x 10^{-5} cm/sec. Since the surface materials present within the footprint of the Phase 1 pad are generally unsuitable for use as LHCSL, materials were imported from a designated borrow source location. Remolded saturated hydraulic conductivity testing of this material displayed hydraulic conductivities of 1 x 10^{-6} to 1 x 10^{-7} cm/sec, which is less than the 1 x 10^{-5} cm/sec required for a lined facility with leak detection.

A 5-foot thick overliner was incorporated into the design to provide protection of the HDPE liner from equipment and vehicle traffic during stacking of the ore material. The protective overliner material was placed in a single lift using haul trucks and pushed onto the exposed liner with a dozer. The overliner functions as a component of the leachate collection and recovery system that allows solution to flow readily through the material to the HDPE liner and ultimately toward the leachate collection and recovery system.

The leachate collection and recovery system consists of 4-inch diameter HDPE corrugated-perforated pipe placed directly on top of the 80-mil HDPE primary liner at 24-foot centers. The 4-inch collection pipes are oriented in an approximate herringbone pattern at approximately 45 degrees to the 18-inch HDPE corrugated-perforated header pipes to transmit solution to the solid walled header pipes. The maximum solution application rate shall not exceed 0.004 gpm/ft^2. the maximum head on the liner will be less that one foot based on the maximum application rate, a 24-foot pipe spacing, and an average overliner hydraulic conductivity of 4 x 10^{-2} cm/sec.

Leak detection is placed under areas of concentrated flow, which includes the 18-inch header pipe for leachate collection and the solution conveyance channel between the pad and the pond. The leak detection consists of an excavated trench with a 2-inch perforated pipe covered in drainage medium that is wrapped in a nonwoven geotextile.

An EDC was approved by the Division on 01 December 2016, which authorized modifications to the previously permitted South Area Expansion. Modifications to the existing leak detection system would allow Permittee to identify potential leakage flow from four different zones of the Phase 1 pad. The leak detection zones were sized based on natural topography of the pad foundation and each zone would have a separate leak detection pipe which reports to the modified leak detection sump. The leak detection sump provides the ability to separate leak detection zones and convey collected process solution to the South Process Pond via a 4-inch diameter leak detection pipe with a flow meter. The placement of approximately 800-feet of single-side textured 80-mil Micro-spike geomembrane liner at the downgradient toe of the pad, opposed to the original 80-mil smooth HDPE liner, would increasing the overall stability. The liner cover material was increased from a permitted depth of 3 feet to a depth of 5 feet. Changes to the height of the pond interior berm elevations are discussed in the Process Pond section of this Factsheet. Changes to the containment of the Carbon-in-Column facility are discussed in the Strip Plant section of this Factsheet.

The diameter of the collection pipes was increased to optimize the operation of the Phase 1 solution collection system. The increase to a 24-inch solution collection header pipeline on the western perimeter toe of the pad allows for more efficient flow at a lower elevation grade. The remaining perforated 18-inch HDPE solution collection pipelines terminate into a singular non-perforated 18-inch HDPE header pipeline. A 6-inch perforated HDPE solution collection pipeline was added to the western perimeter toe of the pad for additional conveyance capacity.

The solution conveyance channel was modified from a v-ditch, containing open channel solution flow, to a trapezoidal channel with primary solution conveyance through the 24-inch and 18-inch non-perforated HDPE header solution conveyance pipelines. The trapezoidal channel has a floor width of 5 feet and has a continuous depth of 2.5 feet. The trapezoidal channel is double lined, with 80-mil smooth HDPE, and double leak detected, with one leak detection pipe in-between the 80-mil liners and one outside of the liners. The trapezoidal channel is extrusion welded to the leach pad liner and to the primary pond liner. A minimum 10-foot section of the Phase 2 and Phase 3 solution conveyance channel were stubbed into the South Process Pond and tied into the liner system during initial construction. These channels have the same dimensions as the trapezoidal channel mentioned above.

To facilitate the goal of leaching a subphase of the Phase 1 pad, an EDC approved by the Division on 12 December 2016, divided the Phase into three subphases during construction: Phase 1A, Phase1B, and Phase 1C, which would be separated by a septum/interim perimeter berm. The septum/interim perimeter berms would provide complete containment of the heap leach pad until the subsequent subphase is constructed. The placement of the Phase 1A/1B septum/interim perimeter berm was anticipated to be between 300 to 1,200 feet from the western toe of the Phase 1 pad. The Phase 1B/1C interim perimeter berm would be placed between 500 to 2,200 feet from the western toe of Phase 1. However, only the Phase 1-A/I-B septum/interim perimeter berm was constructed.

The septum/interim perimeter berm is constructed of LHCSL material with 3H:1V slopes and a minimum height of 3 feet. The geometry of the berm runs parallel with the 4-inch HDPE solution collection pipes so the original design of the solution collection system remains unchanged. The 18-inch HDPE header transitions, at the berm outlet, utilized an HDPE sandbag berm placed directly on the primary 80-mil HDPE liner and overlain with an 80-mil HDPE geomembrane liner. The overlain 80-mil HDPE geomembrane liner was extrusion welded to the primary liner on both sides of the berm ensuring that no solution would migrate into the completed phase. When a subsequent phase was completed, the overlain 80-mil HDPE liner was peeled back and the sandbags removed allowing the 18-inch header pipelines from both subphases to be connected. A v-ditch with a minimum depth of 12-inches was cut with a blade and graded to divert stormwater around the north and south perimeters of the subphase.

The constructed Phase 1-A subphase encompassed an area of approximately 1.3 million sq/ft and the Phase 1-B subphase encompassed an area of approximately 3.14 million square feet. The Phase 1-A liner system consists of an Agru 80-mil smooth HDPE liner and 80-mil Single-Side HDPE Microspike liner. The Microspike liner extends approximately 800 feet from the down gradient toe of the Phase 1 pad where the liner transitions to 80-mil smooth HDPE liner which is utilized for the remainder of the Phase 1-A to the septum/interior berm. The Phase 1-B liner system consisted of 80-mil smooth HDPE liner that extends from the interior Phase 1A/1B berm to the eastern edge of the leach pad.

In July of 2017, the Division gave approval for a modified stacking plan for Phase 1-B that would allow the ability to have adequate storage at the crusher for reject overliner material while allowing portions of the Phase 1-B to be loaded with ore. Overliner material was placed in 6 sub-areas within the Phase 1-B pad with each area measuring approximate 540,000 ft^2. Once these areas were proven to meet design specifications, the reject material (ore) from the production of overliner could be dry stacked in these areas. However, during the placement and subsequent testing of the overliner material, it was determined that the testing frequency was excessive and the specification was not obtainable with the crusher configurations. Therefore, a revised testing frequency and specification was proposed and submitted for Division review and approval. This revised specification and testing frequency was approved by the Division on 14 February 2018.

The Facility is located in a seismically active region and therefore a pseudo-static slope stability analysis of the proposed design was warranted. The design Peak Horizontal Ground Acceleration (PHGA) was determined utilizing the United States Geological Survey (USGS) Earthquake Hazards Program (2008 Interactive Deaggregations - Beta). The PHGA for a l0% probability of exceedance in 50-years is 0.098879, for a Magnitude 6.33, at a distance of 32.6 kilometers from the mine site. As a conservative approach, the PHGA of 0.09887 was used as the horizontal ground acceleration design coefficient for the Project site. The calculated return period for this earthquake event is approximately 475 years. The original stability analysis displayed that Phase 1 would remain stable in both static and pseudo-static conditions in excess of the Division requirements of 1.3 and 1.05, respectively

With the revised specification and testing frequency for overliner material discussed above (permitted 2017), a revised slope stability analysis of the Phase 1 pad was performed to determine if the overliner material used in the construction of the leach pad could cause negative effects on the overall stability of the pad. The laboratory testing data was input into Slide6 software (Rocscience, 2012) that was utilized to perform a deterministic and probabilistic limit equilibrium slope stability analysis using Spencer's method of slices. The stability analysis were conducted under both static and seismic loading conditions. The same peak horizontal ground acceleration, with a 10% probability of exceedance in 50-years (reoccurrence interval of 475-years), used in the previously performed stability analysis was also utilized for this analysis. The event has a reported ground acceleration of 0.09887 times the acceleration of gravity. Two cross sections were utilized and several cases were analyzed for each section. These cases included the design build out of the Phase I with 4 feet of head on the liner, 10 feet of head on the liner, and 10 feet of solution head on the liner with the heap stacked to a point where there was 100 feet of flat surface remaining at the top of the heap. These performed analysis are considered conservative due to the average calculated head on the liner being 1.2 feet with the maximum calculated head being 3.4 feet. The results of the stability analysis display that Phase 1 will remain stable in both static and pseudo-static conditions, in excess of the Division requirements of 1.3 and 1.05, respectively.

To provide additional capacity to the completed Phase 1 and 2 (discussed below), the Permittee proposed to increase the maximum permitted height of the SHLP from 200 feet to 300. An additional slope stability analysis was performed in January of 2021 and determined that the 300-foot-tall pad would remain stable in both static and pseudo-static conditions and exceeded the Divisions minimum factor of safety requirements of 1.3 and 1.05, respectively. Liner puncture testing was performed with each permitted phase and displayed that no damage the liner would occur when ore was stacked in excess of 380 vertical feet above the liner. The increased application rate of 5,200 gpm will increase the active leach area but will maintaining the current application rate of 0.004 gpm/ft^2 which is not anticipated to increase hydraulic head on the liner significantly or exceed the leachate collection systems capacity, which was designed to handle the maximum application rate of 5,000 gpm while only utilizing 50% of the pipelines carrying capacity.

In June of 2021, three cells on Phase I of the SHLP began showing signs of seepage and channeling from the side of the heap at the bottom of the newest placed 20-foot lift. An area approximately 2.75 acres in area and 3-feet in depth was determined to have a larger clay content (referenced as "clay lens" below) than other placed ore material and was impeding the vertical movement of leach solutions. The Permittee minimized solution application to decrease these effects but has the desire to continue leaching the ore materials on the pad both above and below the determined clay lens.

To facilitate the continued leaching of ore both above and below the clay lens, the Permittee proposed that 425 boreholes be drilled through the clay lens to a depth of approximately 40 feet below the current ore surface. The holes will be spaced 20-

feet apart and be drilled by a blasthole drill rig that has physical limitations and cannot come within 50-feet of the liner surface due to the approximate 200-foot elevation of the ore materials above the liner. Once drilled, a 3-inch diameter perforated pipe will be installed in the borehole to allow for solution to drain through the clay layer.

A stability assessment was performed to ensure that the high plasticity properties of the layer would not affect the ability of the heap to remain stable and meet minimum required Factors of Safety (FOS) when stacked to its ultimate height of 300 feet. The model was based on the ultimate design topography, cross-section layer geometry shown in design reports, and materials properties established from previous reports and from samples of the collected clay lens. These parameters were input into SLOPE/W, a computer modeling program developed by GEO-SLPOE International Ltd. The conservative case modeled that the vertical drains were not installed and that a phreatic surface had developed above the clay lens. The results of the model predicted that the minimum static and pseudo-static (reoccurrence interval of 475 years) FOS exceeded the Divisions requirements of 1.3 and 1.05, respectively.

<u>South Heap Leach Pad – Phase 2</u>: A Minor Modification was submitted in April of 2019 for the Phase 2 construction of the South Area Expansion that was approved as part of a Major Modification in March of 2015. The expansion encompasses an area of approximately 104 acres directly to the south side of the Phase 1 pad. As with the Phase 1 design, the general Phase 2 design elements for the heap leach facility include a lined system with leak detection with a compacted LHCSL overlain by an 80-mil double sided textured HDEP liner, leachate collection recovery system, and protective overliner. Leak detection is placed above the LHCSL and under the synthetic liner in areas where hydraulic head could develop due to concentrated flow. The maximum height of the Phase 2 pad is 300 feet measured vertically from the 80-mil HDPE liner, which is identical to the Phase 1 pad. The cumulative solution application rate to both Phase 1 and Phase 2 leach pads will not exceed 5,200 gpm or a surface application rate of 0.004 gpm/ft^2.

Foundation construction consisted of clearing, grubbing, cutting, and the placement and compaction (90% of the maximum dry density) of random fill. The final surface of the subgrade was scarified to a depth of 6-inches and moisture conditioned (as needed for dust suppression) and compacted to 90% of the maximum dry density. Site grading achieved positive drainage to the west by utilizing a minimum grade of 1%. A minimum 12-inch thick LHCSL or geosynthetic clay liner (GCL) was placed in the footprint of the Phase 2 pad directly on the prepared subgrade. Quality assurance/quality control testing of the LHCSL materials confirmed an in-place hydraulic conductivity of less than 1 x 10^{-5} cm/sec. The GCL materials (approved for use in May of 2022) display a hydraulic conductivity equivalent to 12-inches of material with a hydraulic conductivity of 2.98×10^{-7} cm/sec.

The leachate collection and recovery system consists of 4-inch diameter HDPE corrugated-perforated pipe placed directly on top of the 80-mil HDPE primary liner at 15-foot centers. The 4-inch collection pipes are oriented in an approximate herringbone pattern at approximately 45 degrees to the perforated 12-, 18-, and 24-inch HDPE corrugated main collector pipelines. After installation of the leachate collection pipe network, a minimum of 2 feet of overliner material was placed to provide protection of the HDEP liner from equipment and vehicle traffic during the stacking of ore. The protective overliner material was placed in a single lift using haul trucks and pushed onto the exposed liner with a dozer. The overliner functions as a component of the leachate collection and recovery system by allowing solution to flow through the material on the HDPE liner toward the collection piping. Based on the maximum application rate (0.004 gpm/ft^2), a 15-foot pipe spacing, and collection layer average hydraulic conductivity of 1.53 $x10^{-2}$ cm/sec, the maximum midpoint hydraulic head on the liner will be approximately 1 foot.

The main collector pipelines consist of 12-, 18-, and 24-inch diameter perforated and solid walled American Drainage System N-12 HDPE pipelines. The 4-inch perforated pipelines transfer pregnant solution to the 12-, 18-, and 24-inch perforated collection pipes, which are located throughout four primary “cells” determined by topography. Transition locations between pipelines were calculated based on the maximum design flow rates, pipeline slopes, and assumption that these pipelines flow at 50% capacity at maximum design leeching rates. The perforated 24-inch diameter corrugated polyethylene tubing N-12 pipelines connect to the 24-inch diameter N-12 solid walled pipeline and are booted through a 5-foot tall HDEP-lined perimeter berm. The berm, which is constructed on top of the 80-mil HDPE liner, forces solution from the perforated pipeline to the solid-walled pipeline. The solid walled 24-inch solution collection pipeline then travels in a synthetically lined trapezoidal channel, underlain by a LHCSL, which connects to the existing Phase 1 solution conveyance pipeline.

In the event solution is not collected by the four primary collection pipelines, an additional 24-inch perforated pipeline travels along the western toe of the leach pad and will promote flow to one of the primary 24-inch perforated leachate collection pipelines.

Leak detection is placed under areas of concentrated flow, which consist of the 12-, 18-, and 24-inch main leachate collection pipelines. The leak detection consists of an excavated trench lined with 80-mil double-sided textured HDPE with a 4-inch perforated pipe covered in drainage medium and overlain by the primary leach pad liner. The leak-detection pipelines daylight in the solution conveyance channel on the south side of the main collector pipelines. These leak detection ports are monitored weekly for the presence of solution, and if present, will be measured and flow rates report quarterly.

Provided calculations display that the existing South Barren Pond, South Pregnant Pond, and South Contingency Pond have the ability to contain maximum operational volumes, resulting stormwater flows from the 100-year, 24-hour storm event, and draindown for 24-hours with no recirculation, while maintaining approximately 7 million gallons of additional capacity. These calculations display that Phase 1 and 2 and associated ponds will exceed the minimum design criteria required by Nevada Administrative Code 445A.433.

Slope stability analysis were performed using the limit equilibrium computer program UTEXAS, which uses Spencer's method of slices to define the critical shear surface through a cross-section in terms of the factor of safety. The horizontal seismic coefficients used in pseudo-static loading conditions were developed based on peak ground acceleration (PGA) values obtained from the United States Geologic Survey Unified Hazard Tool. The calculated PGA values were determined to be 0.091 times the acceleration of gravity. Material properties from testing previously performed and performed during the 2019 site investigation were incorporated into the model to accurately represent site conditions. The final pad design, with overall 2.8 H:1V side slopes and ultimate 200-foot elevation, resulted in worst-case FOSs of 1.6 (static) and 1.2 (pseudostatic).

As discussed above, an additional stability analysis was performed in 2021 and displayed that Phases 1 and 2 would exceed the Divisions minimum FOS when stacked to an ultimate height of 300 feet.

In March of 2022, the Division approved of an EDC that proposed the backfilling of the SHLP Phase 2 solution conveyance channel in order to prevent damage from the expansion and contraction of the 1,400 foot long, 24-inch diameter HDPE conveyance pipeline. This backfill will consist of material that meets the project specification for overliner material and was placed in a way that will not damage the conveyance channel liner. The overliner material insulates the pipeline from large temperature fluxes and will provide some lateral restraint as well.

The pipe boots at each of the four tie-in locations experienced damage due to the expansion and contraction of the pipeline and it is proposed that they be modified. The Permittee removed the existing solution collection berm at each tie in location and replaced the non-perorated CPE pipeline with a non-perforated 24-inch diameter HDPE pipeline. The berm was then re-constructed in-like with the original design so that it can direct solutions into the perforated collection pipelines. To manage solutions during construction, temporary berms were constructed, and pumps placed to pump solution downgradient.

While the solution collection berms and pipelines were modified/repaired, the Permittee planned to excavate the existing leak detection pipelines, removed the 4-inch to 1-inch reducers, and extended the 4-inch leak detection pipes so they daylight in the solution collection channel and can be monitored. The leak detection pipeline modifications were completed for Cells 1 and 2. Cells 3 and 4 were intended to be modified, but difficulties encountered during construction deterred their modification.

In addition to the above modifications, a new HDPE lined outlet channel was also approved and would be constructed from the conveyance channel to the pregnant pond. This new channel was not constructed, and the existing conveyance channel continues to be utilized.

Crusher Pad: In November of 2016, an EDC was approved by the Division that authorized the construction of a lined crushed ore stockpile and haul road area to the northeast corner of the previously permitted Phase I heap leach pad. FCMI will have the ability add cyanide at the discharge of the crusher prior to placing the ore on the heap leach pad, in an effort to optimize gold recovery. The Crusher Stockpile Pad is designed to extend at least 50 feet from the discharge point of the radial stacker. The Crusher Pad is constructed, from the bottom up, of a prepared subgrade overlain by a 1-foot thick LHCSL, moisture conditioned and compacted to 92% of the maximum dry density, overlain by an 80-mil HDPE primary liner which is then overlain by a 16-ounce geotextile liner. The lined surface of the crusher pad is a minimum 7 feet below the surface of the crusher pad. A buried perimeter containment berm is constructed to a minimum height of 3-feet and has a 2H:1V slope, with the liner system laid over and then anchored into the outer side of the berm. On the surface of the Crusher Stockpile Pad, a minimum 2-foot high diversion/safety berm was constructed along the western edge. The crushed ore stockpile containment area is connected to the pad by a 100 foot wide and approximately 290-foot long haul road. At the tie in of the haul road to the Phase I liner, the liner is approximately 7 to17 feet below the surface of the haul road. A minimum 6-foot high diversion/safety berm is constructed along the western edge of the haul road and is able to divert meteoric flow from the crusher pad down onto the heap leach pad. The entire Crusher Stockpile Pad and haul road is graded toward the pad and precautions will be taken to ensure that no haul trucks carrying cyanide laden ore can leave containment.

Structural fill, under non-load bearing areas, consists of crusher pad structural fill placed in uncompacted loose lifts to a depth of 2 feet with random structural fill placed above to the ground surface of the Crusher Stockpile Pad and haul road area. Structural fill, under load bearing areas, consist of a 2-foot thick layer of crusher pad structural fill placed extending out a minimum horizontal distance of 20 feet and continuing down to the geomembrane surface at a minimum slope of 2H:1V. The crusher pad structural fill was moisture conditioned and compacted in two 12-inch lifts. Structural fill, placed under load bearing areas, extends out a minimum horizontal distance of 20 feet, down to the crusher pad structural fill surface at a minimum slope of 2H:1V. The structural fill was moisture conditioned and compacted, in maximum 12-inch loose lifts, to 90% of the maximum dry density as determined by ASTM method D1557.

Cyanide will be added to the crusher at a target application rate of 0.0028 gpm/ft^2, but this application rate could vary up to the Phase 1 Permit application rate of 0.004 gpm/ft^2.

An EDC, approved by the Division in April of 2021, proposed to construct a reclaim tunnel and overland conveyance system that will improve haul truck cycle times. The 90 foot long, 12-foot square steel reclaim tunnel will be constructed south of the existing secondary crusher and will be partially buried but remain a minimum of 2 feet above the existing lined containment in the area of the crusher. This tunnel will feed crushed ore to an overland conveyor that will parallel the west side of the SHLP to a series of grasshoppers which will deposit the crushed ore in retreating arcs from east to west. This overland and grasshopper system will not affect existing containment or the operational or closure configurations of the SHLP.

Due to the proposed location of the overland conveyance system, the access road that parallels the west side of the SHLP needs to be widened and new temporary road crossings constructed through the existing non-contact stormwater diversions. To ensure that stormwater is routed away from the SHLP, an analysis of the runoff produced from a 25-year storm event with a 5-minute duration was performed. While Nevada Administrative Code 445A.433 requires that process components be designed to withstand the runoff from a 24-hour storm event with a 100-year recurrence interval during operations, the short intensity (more representative of high intensity thunderstorms seen in the western United States) utilized in the calculations produced a higher peak discharge (101.2 cubic feet per second) than the 24-hour, 100 year event and is justified due to the relatively small areas contributing to stormwater flows. Based on these calculations, the two road crossings to the west of the SHLP will utilize 36-inch diameter pipe culverts and the road crossing to the north of the SHLP will utilize a single 18-inch diameter pipe culvert.

As of the 2023 renewal of the Permit, the conveyor, reclaim tunnel, and stormwater culverts have not yet been constructed or installed.

Process Ponds: There are six process ponds that comprise the original process fluid management system. The six ponds include the pregnant (PS1) and barren (BS1) ponds, the two contingency ponds (CP1 and CP2), the utility pond (S2), and the expansion pond (S3). These ponds are lined with 80-mil HDPE primary and 60-mil HDPE secondary geomembrane liners, with leak detection and recovery systems which are required to be routinely monitored and evacuated back into the ponds. In accordance with NAC 445A.433, the fluid management system has been designed to remain fully functional and fully contain all process fluids including all accumulations resulting from a 25-year, 24-hour storm event.

During the first quarter of 2011, the rate of fluid reporting to the leak detection sump of the Barren Pond began to rise, reaching as high as 1,652 gallons per day. The Permittee proposed, and received approval from the Division, to construct a temporary piping system using Contingency Pond 1 and bypassing the Barren Pond. After draining and cleaning the Barren Pond, it was discovered that the secondary liner only covered the flat, horizontal portion of the pond bottom, not extending up the sides. The Permittee submitted an EDC in September 2011 to rebuild the Barren Pond liner and leak detection systems using 60-mil HDPE secondary and 80-mil HDPE “drainliner” primary liners. The EDC was approved by the Division in October 2011 and rebuild of the pond was completed in November 2011.

Due to the installation of piping and other equipment at the crest of the Barren Pond, access to the existing liner anchor trenches was limited. The Permittee proposed that the new primary and secondary liners be welded to the crest of the existing primary liner since constructing a new anchor trench was not possible. The Permittee submitted results of material tests for the existing liner, as well as peel and shear tests of samples welded to new liner. All of these tests showed equal or better strength compared to current quality standards and the proposal was approved by the Division. However, the Permittee is required by the Permit to install a new primary liner with a conventional anchor trench prior to converting the pond to an evapotranspiration cell at closure.

The S-1 Pregnant Pond was constructed in a similar manner as the Barren Pond with a secondary liner on only the floor of the pond depression and poorly constructed anchor trenches at the crest. It was decommissioned in 2006; in 2013 the primary and secondary liners were removed. In October of 2018, an EDC was submitted to the Division for the conversion of the S-1 Pond into a dual-compartment test evaporation cell (E-cell). Each compartment of the E-cell would be constructed slightly differently, with differing amounts of storage media, and each basin monitored for a sufficient period of time to determine the best design for future evaporation cells during post-closure. The Final Plan for Permanent Closure requires that all process ponds from the original heap leach pad be used for draindown management. Refer to *Test Evaporative Cell* for design specification. The EDC was approved following several revisions on 3 June 2019.

The South Area Expansion, permitted in the 2014 Major Modification, includes a set of new process ponds west of the future heap leach pad. A single set of 3 ponds designed to management stormwater run-off, pregnant solution drain-down, and barren solution from all three phases of the proposed heap leach pad. An EDC approved by the Division on 01 December 2016 authorized the modification of each pond to utilize an additional 5 feet of freeboard in order to accommodate post mining evaporative cell (E-cell) conversion and have an overall pond system perimeter crest elevation of 4,355 feet amsl and interior berm elevations of the 4,350 feet amsl. The storage capacity of all three constructed ponds to the freeboard elevation of 4,353 feet amsl is approximately 44.76 million gallons. For operational purposes, the South Barren Pond (SBP-1) and South Pregnant Pond (SPP-1) have storage volumes, to an elevation of 4,349 feet amsl, of 4.56 million gallons and 19.44 million gallons respectively, with total operational storage volume of 24 million gallons. The South Contingency Pond (SCP-1) has a total storage volume, to an elevation of 4,349 feet amsl, of 7.70 million gallons.

Due to a Permit Limitation, the SPP-1 and SPB-1 cannot store volumes in excess of 12.61 million gallons (10-foot depth) and 3.5 million gallons (10-foot depth), respectively, for longer than 20-days per storm event to allow for adequate capacity during design events.

All three ponds are double-lined for leak detection with an 80-mil smooth HDPE primary liner and a 60-mil HDPE secondary drainliner to allow for transmission of leaking fluid to the leak detection sumps each with a capacity of 2,700 gallons.

In accordance with NAC 445A.433, the fluid management system for the Phase 1 and 2 pads has been designed to remain fully functional and to fully contain all process fluids including all accumulations resulting from a 25-year, 24-hour storm event and a 100-year, 24hour event.

On 02 August 2017, the Division received notification that several parameters had increased in monitoring wells MW-7 and MW-C (within the plume capture zone) above their respective Profile I reference values and were determined to be associated with a process solution release. Upon investigation of the S2 Pond, FCMI identified monitoring inaccuracies associated with the leak detection sump (LDS) due to an installed bladder system which appeared to limit the amount of solution that could be pumped. Once the pumping system was reconfigured, solution began being pumped from the sump at a rate of approximately 12 – 15 gallons per minute, which is in excess of the Permit Limitation of 150 gallons per day. It was at this point that the S2 Pond was determined to be compromised and needed to be removed from operation until repairs or relining of the pond could be performed.

On 01 December 2017, FCMI provided the Division with an update to the status of the S2 pond. The barge pumps had been removed from the S2 pond and were placed within the containment of the NHLP. The process solution within the S2 pond was being pumped to the barren pond at the maximum rate that the processing facilities and evaporation allowed. During the 13 December 2017 inspection, it was verified that the barge had been removed and that solution was being pumped from the S2 pond to the barren pond. However, evaporation was significantly reduced during the winter months and was not allowing solution in the S2 pond to be removed quickly.

On 11 January 2018, the Division gave approval for FCMI to commission a process solution conveyance pipeline that travels from the barren pond to the SHLP barren pond. This allowed FCMI to use the barren pond water as make-up water at the SHLP and subsequently remove process water from the S2 pond. However, it had been a struggle until early 2020 to remove all solution in the pond due to pumping limitations, meteoric inputs, and the need to re-route open channel process solution flows to the barren pond

On 21 February 2020, a work plan proposing repairs to the S2 pond was received and subsequently approved by the Division on 04 March 2020. Repairs to the existing primary liner (to become secondary liner) began in March and were completed in May with a total of 31 repairs being made to the existing primary liner. Once repairs were completed, the LDS was reconstructed with new 80-mil double textured high-density polyethylene (HDEP) liner in general accordance with the original 1996 design by Vector Engineering, Inc. A new 80-mil HDPE Drain Liner® was deployed over the entire pond footprint with drainage studs placed facing down and in contact with the existing liner to provide for solution transfer to the LDS in accordance with Nevada Administrative Code (NAC) 445A.435.1(b). Non-destructive and destructive testing of the welded liner verified that all seams and patches meet or exceeded the specifications provided in the February 2020 work plan.

Strip Plant: Precious metals are stripped from the pregnant solution via activated carbon in column sets A, B, C, D, or E and the barren solution is re-introduced to the process circuit. The precious metals are then stripped from the carbon via an elution circuit using a hot solution of one percent sodium hydroxide (NaOH) caustic soda, which re-solubilizes the precious metals. The solution is then pumped into a pregnant solution tank and into two electrowinning cells in series.

In the electrowinning circuit, the metals in solution are electro-plated on cathodes. The barren solution is either recycled or returned to the barren pond. The cathodes are washed and the precipitate is collected via filtration.

The South Area Expansion included a set of carbon adsorption columns, to be constructed adjacent to the south process ponds and within lined containment. The enriched carbon will be trucked from the southern expansion to the existing process facility for stripping, electrowinning and refining. The primary containment for the carbon columns is an 18-inch concrete slab with 9-inch high stem walls. The concrete slab is underlain by three 8-inch lifts of structural fill compacted, from the bottom up, 90, 93, and 95% of the maximum dry density. Under the compacted structural fill, geotextile was placed over a layer of geonet, which was underlain by an 80-mil HDPE liner that extends to 2.5-foot tall containment berms that surround the column area. The pad will be set back from the edge of the SBP-1 approximately 23-feet. The 80-mil HDPE liner ties into the primary 80-mil HDPE liner utilized within the lined ponds at the crest of the pond. Solution leaving the last column in the circuit within the South Carbon Column system reports to the SBP-1 via an 8-inch diameter drain pipe, which also lies within lined containment for its entire alignment. Overflow or spilled process solution will be conveyed via open channel flow down a 9-foot wide by 23-foot long 80-mil HDPE lined, trapezoidal open channel with 1-foot high containment berms.

Refinery: In the refinery, the precipitate from the cathodes is first dried and retorted in one of two mercury retorts. The mercury is recovered and disposed of at a licensed facility. After retorting, the precipitate is blended with fluxing agents and introduced to a doré furnace. The doré is then shipped off-site for additional refining.

Containment within the strip plant, the containment areas for the carbon column sets, including the South Carbon Column, and the cyanide storage tank containment areas are designed in accordance with NAC 445A.436 to contain leaks or spills before they enter the environment. If process solution escapes primary containment, it will be contained within the dedicated secondary containment area or in an adjacent process pond. In the strip plant, secondary containment consists of concrete stem walls and a concrete pad sloped to recovery sumps where process solution is re-introduced into primary containment via pumps and piping. In all cases, the required 110% secondary containment is provided.

In September 2013, the Permittee submitted an EDC proposing the redesign of the sump system within the process building. The existing Tank Farm Sump, West Sump, East Sump, A-Plant Sump, Process East Wall Sump, Compressor Room Sump, Press Room Storage Room Sump, Retort Sump, and EW-Cell Sump were abandoned by filling with concrete up to the grade of the adjacent floor slab. New or retrofitted sumps were installed for the Tank Farm Sump, West Sump, East Sump, Acid Tank Sump, Met Lab Sump, A-Plant Sump, Process East Wall Sump, Retort Sump, and EW-Cell Sump. Each new sump was constructed as a concrete vault but with Agrusafe Sure Grip concrete protective liner. This liner system has a double-wall configuration which allows leakage through the primary wall to be monitored and evacuated if necessary through a HDPE standpipe. The EDC was approved by the Division in November 2013.

Compliance Monitoring: Groundwater monitoring wells have been installed downgradient of process components for routine monitoring in accordance with Permit conditions to ascertain compliance with regulatory requirements. Routine monitoring in the second quarter of 2000 revealed elevated concentrations of process-related constituents in the vicinity of monitoring well MW-16. The Permittee responded by performing inspections of the upgradient heap leach solution collection channel and initiated improvements to damaged areas of the channel where leakage was determined likely to occur.

Continued monitoring of the area has shown that the process-related constituents have been detected in monitoring wells MW-16B, MW-F, MW-G, MW-KA, MW-M, MW-O, and MW-N. Remediation (pump-back) wells were installed (MW-16, MW-16D, MW-GA, MW-I, and MW-K) to mitigate further migration. In April 2010, an EDC was submitted by the Permittee and approved by the Division to add another remediation well (MW-V) at a location approximately midway between MW-G and MW-M to provide additional pumping capacity.

Due to low production, wells MW-F and MW-G are no longer able to produce reliable samples for analysis. As of the 2011 Permit renewal, they have been removed from the Permit monitoring list for Profile I sampling but remain for measurement of depth to water. In addition, well MW-16C no longer produces enough to be useful as a pump-back well. However, it is retained in the Permit as a monitoring well for Profile I sampling and measurement of depth to water.

In September 2012, the Permittee submitted an EDC proposing to install four new wells as part of the ongoing remediation efforts. The EDC was approved by the Division in the same month. Two wells – MW-28 and MW-30 – were constructed as monitoring wells outside of the current plume area. The other two – MW-29 and MW-31 – were constructed as pumpback wells in the area of the administrative buildings northwest of the process building. Initial sampling results for all four wells confirms that MW-30 is outside of the impacted area, MW-28 is in an area of detectable WAD cyanide and total nitrogen (both below the Profile I reference values), with MW-29 and MW-31 within the plume.

In November 2012, the Permittee submitted an EDC proposing to install five new monitoring wells in the area planned for a future HLP southwest of the existing facility. These wells include MW-32 and MW-33 (downgradient of the future HLP and process ponds), MW-34 and MW-35 (upgradient of the future HLP but downgradient of the future waste rock facility), and MW-36 (upgradient of the future waste rock facility). The EDC was approved by the Division in November 2012 and well installation was completed in July 2013.

In May 2014, the Permittee requested the abandonment of monitoring well MW-14. This well has been replaced by the new well MW-32 installed in July 2013. MW-14 is in the footprint of the future HLP.

Due to backfilling of the Main (Phase 7) Pit, the casing for monitoring well MW-37 will need to be extended so that it can remain a viable monitoring location for water quality in the backfilled material. Based on the predicted backfill elevation of 4,700 feet AMSL, the well casing will need to be extended approximately 242 feet above its current elevation.

The proposed plan was approved as an EDC by the Division with the 2023 renewal of the Permit and by the Nevada Division or Water Resources – Well Program on

16 May 2022. The plan proposed to extend the well and monument casings gradually upward in 20-foot extensions. The 2.5-inch PVC pipe will be coupled together followed by an extension of the steel casing. The newly created annual space will be filled with fine grained material in order to support the PVC casing. After each 20-foot extension is secured, fine material will be placed around the steel casing by a loader, forming a supportive cone. Backfill will be placed carefully to prevent damage to the casing's extension. In the event that the well fails, the Division will require that the well be replaced so that monitoring of backfill water quality can continue.

Finding of Alleged Violation and Order: On 18 February 2015, a Finding of Alleged Violation (FOAV) and Order was issued, by the Division, to FCMI for the contamination of groundwater downgradient of the center section of the HLP. After other potential sources were investigated, the south and center sections of the HLP were determined to most likely be the source of the groundwater contamination. FCMI was ordered to cease all process solution application to the areas of the HLP that were thought to be leaking and disconnect all leach lines leading to these areas. FCMI was ordered to submit, for Division review and approval, a work plan and schedule for closure of the center portion of the HLP. The work plan would contain information on the closure of the center portion of the HLP, making sure that any leach solution applied to the northern portion of the facility would not migrate to the area under closure activities. One of the process ponds would be converted to an evaporation/transpiration test cell. Drain-down from the closed portions of the HLP would be managed per the Final Plan for Permanent Closure (FPPC), and the determination of the volume required for managing the drain-down from the closed portions of the leach pad was also required. A report was to be submitted to the Division with quality assurance that the center portion of the HLP had been closed in accordance with the FPPC.

The work plan submitted by FCMI contained measures for the reallocation of process fluid from the center section to the northern section of the HLP and closure of the southern and center sections of the HLP in accordance with the approved FPPC. The work plan included; Process fluid management through the calculation of water balances and process circuit capacity during drain down; Earthwork for regrading of the closed central portion of the pad to achieve FPPC grades that promote surface runoff; Filling of the solution collection channels at the central portion of the HLP in accordance with the FPCP; The E-plant carbon circuit will be relocated during the ore regrading work; All 23 Hydro-Jex™ injection wells will be abandoned; Soil cover material would be placed over the entire closed portion of the HLP surface and perimeter solution collection channels, with a minimum 2-foot depth. The cover material will be prepared and placed as required in the FPCP; A test E-cell will be constructed to optimize the design during the partial leach pad closure. The work plan submitted by FCMI was accepted by the Division after a show cause meeting on 21 May 2015.

On 9 June 2016, the Division conducted a compliance inspection of the Florida Canyon Mine to confirm that drain down solution was no longer being applied to the closed section of the pad. The Division concluded on 17 June 2016 that the FCMI FOAV and Order had been met and the case was closed. However ongoing monitoring and pumpback well operation will continue until the site remediation is completed. Pumpback system operation and reporting have been incorporated into the Permit.

With the 2023 renewal of the Permit, the Division incorporated a Permit Limitation prohibiting the addition of cyanide to the NHLP. The Division also incorporated a Schedule of Compliance Item requiring the submittal of an updated FPPC for the NHLP that includes a schedule for implementation.

Stormwater Management: Stormwater management channels for diverting run-on around mining facilities and directing run-off to associated sediment ponds will also be constructed. The Non-contact South Diversion Channel is designed to divert flows from the 100-year, 24-hour storm event. Stormwater is diverted around proposed facilities and flows are dissipated at the end of the diversion channel by facilitating a hydraulic jump with a nearly flat, wide apron of large diameter rip-rap and concrete blocks. Stormwater flows then enter into a Dispersion Ditch, which contains eight rip-rap weirs to allow it to enter back into natural drainages and through culverts already in place under the Frontage Road and Interstate 80.

As part of the 2014 Major Modification, a stormwater diversion was proposed that would route stormwater around the Phase 7 Pit, South WRDF, and South Heap Leach Pad Expansion, and would direct stormwater into sedimentation basins and into culverts downgradient of the facility. However, when implementation of this design was evaluated, it was determined that the design was not feasible to construct due to topographic divides. Due to this conclusion, the Permittee proposed a revised stormwater design in an EDC approved by the Division on 11 September 2019.

The Proposed Stormwater Diversions would route Florida Canyon and Wiley Gulch (northern watersheds) flows through an open channel along the existing haul road to the existing run-off stormwater diversion channel between the South Heap Leach Pad and the South WRDF. The channel would consist of series of Gabion baskets and mattresses designed to accommodate the 100-year, 24-hour event and withstand a 500-year, 24-hour event. The proposed stormwater diversions for Piedmont and Johnson Canyons (southern watershed) consisted of constructing basins incised into native materials above the South WRDF. The basins were designed to contain, within the basins, the 100-year 24-hour event and to convey flows from a 500-year, 24-hour event into armored spillways. Additional erosional controls consisted of armored inlet and interceptor channels and impact basins.

It was proposed in the submittal that the northern watershed design be bonded for and constructed in the future due to portions of the proposed design that could be impacted by future Phase-7 pit boundaries. In addition, a portion of the design would be routed over the South WRDF that has not been constructed to its final configuration. The Division could not accept this design and subsequently added a schedule of compliance item to the Permit requiring the submittal of a revised design by 01 July 2020. The design had been revised to avoid some of the issues with the original design but remains un-approved by the Division as of the 2023 renewal.

To avoid excessive back haulage of waste rock from the east face of the SWRSF associated with the Johnson and Piedmont stormwater basins, the Permittee provided a stability analysis and proposal to leave the final slopes of this eastern face at a 2.2H:1V to 2.5H:1V configuration. Material properties from previous stability analysis were input into a two-dimensional limit-equilibrium slope stability program SLIDE (Rocscience 2018). Spencer's Method of Slices was utilized for both block and circular failure evaluations on the critical stability sections in both a static and pseudo-static condition. The results of the stability analysis displayed that the minimum required FOS for static (1.3) and pseudo-static (1.05) were exceeded. This however, while meeting the Regulation Branches minimum stability requirements, will need to be approved by the Reclamation Branch prior to leaving the final slopes in this condition at closure.

C. <u>Receiving Water Characteristics</u>

The Facility is located on the western slope of the Humboldt Mountain Range. The Humboldt River and the Rye Patch Reservoir are located approximately miles to the west. Most of the groundwater recharge is from precipitation on the mountain ranges surrounding the area including the Humboldt Mountain Range. Groundwater generally flows from east to west through the facility area.

Groundwater quality deteriorates with depth. Good quality groundwater at the site was first encountered around 100 ft bgs. However, groundwater quality at depth is geothermal (190-212 degrees Fahrenheit (°F)), and concentrations exceed Profile I reference values for arsenic, manganese, and iron. Total dissolved solids concentrations increase from 400 mg/L to 4,000 mg/L within a few hundred feet below the surface.

Ephemeral drainage occurs at the facility in Florida Canyon, Wiley Gulch, Piedmont Canyon, and Johnson Canyon. These ephemeral flows, as discussed in the Stormwater Management section of this Fact Sheet, will be routed around the facility and managed in a way to ensure there is not impact to these ephemeral flows from process components.

D. Procedures for Public Comment

The Notice of the Division's intent to issue a Permit authorizing the facility to construct, operate and close, subject to the conditions within the Permit, is being published on the Division website: https://ndep.nv.gov/posts/category/land. The Notice is being mailed to interested persons on the Bureau of Mining Regulation and Reclamation mailing list. Anyone wishing to comment on the proposed Permit can do so in writing within a period of 30 days following the date the public notice is posted to the Division website. The comment period can be extended at the discretion of the Administrator. All written comments received during the comment period will be retained and considered in the final determination.

A public hearing on the proposed determination can be requested by the applicant, any affected State or intrastate agency, or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.403 through NAC 445A.406.

E. Proposed Determination

The Division has made the tentative determination to issue the renewed Permit.

F. Proposed Limitations, Schedule of Compliance, Monitoring, Special Conditions

See Section I of the Permit.

G. Rationale for Permit Requirements

The facility is located in an area where annual evaporation is greater than annual precipitation. Therefore, it must operate under a standard of performance which authorizes no discharge(s) except for those accumulations resulting from a storm event beyond that required by design for containment.

The primary method for identification of escaping process solution will be placed on required routine monitoring of leak detection systems as well as routinely sampling downgradient monitoring and pumpback system wells. Specific monitoring requirements can be found in the Water Pollution Control Permit.

H. Federal Migratory Bird Treaty Act

Under the Federal Migratory Bird Treaty Act, 16 U.S. Code 701-718, it is unlawful to kill migratory birds without license or permit, and no permits are issued to take migratory birds using toxic ponds. The Federal list of migratory birds (50 Code of Federal Regulations 10, 15 April 1985) includes nearly every bird species found in the State of Nevada. The U.S. Fish and Wildlife Service (the Service) is authorized to enforce the prevention of migratory bird mortalities at ponds and tailings impoundments. Compliance with State permits may not be adequate to ensure protection of migratory birds for compliance with provisions of Federal statutes to protect wildlife.

Open waters attract migratory waterfowl and other avian species. High mortality rates of birds have resulted from contact with toxic ponds at operations utilizing toxic substances. The Service is aware of two approaches that are available to prevent migratory bird mortality: 1) physical isolation of toxic water bodies through barriers (e.g., by covering with netting), and 2) chemical detoxification. These approaches may be facilitated by minimizing the extent of the toxic water. Methods which attempt to make uncovered ponds unattractive to wildlife are not always effective. Contact the U.S. Fish and Wildlife Service at 2800 Cottage Way, Room W-2606, Sacramento, California 95825, (916) 414-6464, for additional information.

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