FACT SHEET

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

Permittee Name: **Newmont USA Limited dba Newmont Mining Corporation**

Project Name: **South Area Leach Project**

Permit Number: **NEV0088011**
Review Type/Year/Revision: Renewal 2016, Fact Sheet Revision 00

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A. Location and General Description

Location: The **South Area Leach Project** is located within the Maggie Creek Basin of the Tuscarora Mountains, in north-central Eureka County, approximately 6 miles northwest of the town of Carlin. The facilities are located in portions of Sections 1, 12, and 13, Township 33 North (T33N), Range 51 East (R51E); and Sections 6, 7, and 18, T33N, R52E, Mount Diablo Baseline and Meridian. To access the Project site, travel 23 miles west from Elko (the nearest controlled airport facility) on Interstate Highway 80 to the Carlin exit and proceed north 6 miles on State Highway 766.

General Description: The Project consists of open pit mining of both 'oxide' and 'refractory' low-grade gold ores. Oxide ore is processed by conventional heap leach cyanidation on either the Property or Non-Property pad and precious metal is recovered from the leach solution via carbon adsorption and electrowinning. The refractory ore was previously treated at the Phase I Refractory Leach Project (Commercial Facility). Depending on the mineralogy, refractory ore was bio-oxidized on three specially designed leach pads and then removed for recovery of precious metals by either conventional cyanide heap leaching on South Area leach pads or by processing at either Mill 5 (oxide) or Mill 6 (refractory). A Phase II Refractory Leach Project design was permitted but the components will not be constructed. The Phase I components were permanently closed prior to construction of the Non-Property Phase VIII Heap Leach Pad. The permitted facilities are 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 24-hour, 100-year design storm event. The Project covers approximately 1,510 acres, of which 1,290 acres are private land, and 220 acres are public land administered by the U.S. Bureau of Land Management (BLM), Tuscarora Field Office, in Elko, Nevada.

B. Synopsis

General: Water Pollution Control Permit (WPCP) NEV0088011 was first issued by the Nevada Division of Environmental Protection (the Division) to Newmont

Mining Corporation (Newmont) on 13 April 1989. The facilities are situated to the south of the main access road for the Mill 5/6 Complex (WPCP NEV0090056), in the area between the Mill 5/6 Central Tailings Storage Facility (TSF) eastside embankment and State Highway 766.

Originally the permitted facility processed only low-grade oxide ore from the Gold Quarry open pit mine using conventional heap leach cyanidation at two separate heap leach pads and a shared carbon adsorption plant. The Non-Property Pad and the Property Pad are both owned by Newmont but the latter was constructed and identified separately to address production royalty obligations. The original Non-Property Pad was expanded in a series of six phases between 1988 and 1998. The original Property Pad was constructed in two phases in 1988 and 1991.

A minor modification was approved by the Division in December 2005, which authorized construction of an additional three Non-Property Pad phases and an additional two Property Pad phases. The Non-Property Phase VI was constructed in 2006, Phase VII was constructed in 2008, and Phase VIII was constructed in 2012. The Property Phase III was constructed in 2006; the approved Phase IV is not yet constructed.

Designs for a Non-Property Phase IX Pad design, to be constructed as Phase IXA and Phase IXB, were submitted as part of the 2010 Permit renewal package. The designs were approved by the Division and construction was authorized as part of the 2010 renewal process in August 2010. As of 2016, the Non-Property Phase IXA and Phase IXB expansions have not been constructed.

Although designs have been reviewed and approved by the Division for phases yet to be constructed, Schedule of Compliance (SOC) items in the Permit require advance written notice and authorization from the Division to initiate construction. This should ensure adherence to approved designs, keep the Division apprised of major construction activities, and allow additional review if regulatory requirements have changed.

In November 1998, the Division approved a Notice of Decision authorizing construction of the Gold Quarry Refractory Leach Project, now identified as the Refractory Leach Project (RLP), as a major modification to the Permit. The RLP facility was designed specifically to treat refractory ores using either bio-oxidation or ammonium thiosulfate (ATS) technology. As designed and approved, the facility leach pad is divided into twelve individual bio-oxidation cells and four individual ATS cells. However, at the time of the 2010 Permit renewal, only Phase I, completed in October 1999 and comprised of Bio-Oxidation Cells 6, 7, and 8, the Bio-Solution Pond and the Bio-Solution Inoculum Tank, had been constructed and was closed and removed prior to construction of the Non-Property Phase VIII Heap Leach Pad in 2012.

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Property Leach Pad and Associated Components: The Property Leach Pad is the 'northern' leach pad and was originally constructed in two phases. Phase I was completed in 1988 and Phase II was completed in 1991. The combined Phase I and Phase II pad covers approximately 10.8 million square feet (ft^2). Based on the results of tests on liner system samples completed in mid-1991, approval was given in November 1991 to place ore to a height of 300 feet on the pad. The maximum design solution application rate for the loaded pad is 0.005 gallons per minute per square foot (gpm/ft^2). Associated major components include a lined solution transfer channel, a pregnant solution pond, two stormwater ponds, a carbon adsorption plant that also processes solution from the Non-Property facilities, and a barren solution pumping station.

In December 2005, a minor modification was approved by the Division authorizing construction of the additional Property Pad Phase III, with a footprint of 1.6 million ft^2, and Property Pad Phase IV, with a footprint of 1.5 million ft^2. The approved phases, located on the north and east sides of the existing pad, will each respectively accommodate approximately 15 million and 16 million tons of leach ore. Phase III construction was completed during 2006 and Phase IV is anticipated to be constructed in 2015. Both pad expansions can be loaded to a maximum permitted height of 300 feet and solution will report to the existing pond and processing infrastructure.

<u>Property Phase I Pad:</u> The Phase I pad area is approximately 7 million ft^2. The liner system is comprised of an 80-mil high-density polyethylene (HDPE) liner placed on an 8-inch thick layer of in-situ and imported clayey soil compacted to a measured permeability of less than 1×10^{-6} centimeters per second (cm/sec). The compacted clay layer was constructed on a prepared and compacted 8-inch thick native subbase.

Pregnant leach solution reports to a network of 4-inch diameter perforated corrugated polyethylene (CPE) solution collection pipes, arranged in a herringbone pattern on 30-foot centers that are placed directly on the HDPE primary liner and within a minimum 18-inch thick layer of drainage overliner material. The solution collection pipes convey pregnant solution either directly to the main collector drain or to the main collector drain via the secondary collector drain. The main and secondary collector drains are located within the heap and each is constructed along a natural drainage pathway in the original topography. The secondary collector drain is constructed with two 24-inch diameter HDPE perforated corrugated pipelines and the main collector drain is comprised of three to seven 24-inch diameter HDPE perforated corrugated pipelines that convey solution to the Property Pad Solution Transfer Channel.

A secondary solution collection system, i.e., a leakage collection and recovery system (LCRS) identified in later Phase designs as a Process Component

Monitoring System (PCMS), is located directly beneath the primary solution collection channel, under the pad liner. The secondary solution collection system is intended to collect and convey process solution that may escape primary containment. The secondary system is comprised of a series of three to five 4-inch diameter perforated HDPE pipes placed on a strip of 80-mil HDPE liner ranging from 66- to 88-feet in width along a shallow trapezoidal trench. The trench bottom grades from each side to the longitudinal centerline at less than 0.5 percent (%) (Note: The number of pipes depends upon the location along the gradient of the pad with the downgradient portions receiving more pipes to handle more potential collective flow. The width of the synthetic liner strip depends on the number of pipes and the liner is placed and welded in full roll widths of 22-feet.). The base of the liner trench was constructed on an 8-inch thick layer of in-situ and imported clayey material compacted to a permeability of less than 1 x 10^{-6} cm/sec. The 4-inch diameter pipes and liner strip were covered with a 12-inch thick layer of compacted cement sand. Fugitive solution collected in the system is conveyed to a manifold constructed of 8-inch diameter HDPE pipe, which in turn connects to an 8-inch diameter HDPE pipeline that conveys solution to the collection sump identified as PLP. There have been issues with the PLP as described below.

<u>Property Phase I Pad Secondary Solution Collection System PCMS (PLP):</u> Elevated average annual flow of 350 gallons per day for the Property Phase I PCMS leakage collection sump identified as PLP (and also identified as PLP-5 in some reports and correspondence and on some maps) was first addressed by the Permittee in correspondence dated 22 September 1995. It was stated in the letter that flow to the PLP had also been elevated during the second and third quarters for the previous three (3) years and was, therefore, thought to be related to an elevated water table resulting from seasonal Spring runoff.

Water chemistry studies were performed by various entities during 1996. Based on the earlier work and results of its own work in February 1997, Knight Piesold LLC (KP) provided conclusions and recommendations. The primary KP conclusion is that the solution reporting to the PLP has a major process solution component (determined by gold and nitrate content), which suggests the HDPE liner of the leach pad is breached.

KP also concluded that the 8 inches of compacted clay and 8 inches of compacted subbase, which underlie the synthetic liner and exhibit a measured permeability of less than 1 x 10^{-6} cm/sec, qualify as a leach pad "liner" system that does not require leak detection in accordance with NAC 445A.434. KP further concluded that the PCMS leakage collection system is operating to design as a leak detection and collection system and because the engineered liner system meets the referenced NAC requirements for a synthetic-lined leach pad liner system, waters of the State are not being degraded, provided the collection sump is evacuated in a timely manner to minimize development of hydraulic head on the soil liner.

Based on its conclusions, KP recommended the Permit be modified to require flow monitoring, timely sump dewatering, and reporting of the secondary solution collection system. However, KP also recommended that references to maximum daily solution accumulations averaged for the quarter and the year should be deleted because the original secondary liner meets NAC requirements for a liner system without leak detection.

In May 1997, at the request of the Division, calculations of the maximum flow rates for the eight 4-inch diameter perforated CPE collection pipes, which convey solution collected in the PCMS to the PLP, were made by the Permittee using Manning's Equation. Based on this information, a Permit Limit for a maximum daily flow of 375,000 gallons, averaged over the quarter, was added to the Permit.

In September 2003, at the request of the Division, the Permittee presented an additional review of the PLP design and results of an investigation into the origin of the permitted PLP flow limits and whether the PLP is functioning as an LCRS. The primary conclusions of the 2003 investigation are: 1) the chemistry for solution reporting to the PLP has a process signature but is highly variable in constituent concentration; 2) the compacted clay soil layer meets regulatory design requirements for a prepared subbase beneath a synthetic liner without leak detection; 3) downgradient monitoring wells have never reported constituent reference value exceedances suggesting the soil liner is providing containment; and 4) historic data indicate solution flow to the PLP is at rates far below those calculated to generate hydraulic head on the soil layer.

One key observation made during the 2003 investigation is that the PCMS has only three 4-inch diameter perforated CPE pipelines at its upgradient limit and that eight pipelines are present at the lower downgradient discharge manifold location. As a consequence, the 1997 maximum flow calculation, based on eight pipelines, would not be correct to minimize the potential for development of hydraulic head on the clay soil liner system, especially at the upgradient areas of the pad. For this reason the Permit limit, effective with the 2005 Permit renewal, was reduced to 142,000 gallons per day, based on conservative calculations for the maximum flow through three 4-inch diameter perforated CPE pipelines that will not generate hydraulic head. The PLP has also been added to the Permit monitoring requirements for routine monitoring and analysis of solution. It should be noted that PLP flow averaged 741.1 gallons per day in 2004, and that the historic flow rate has never exceeded 2,500 gallons per day.

Property Phase II Pad: The Phase II pad has a footprint of approximately 3.8 million ft^2 in area. The pad was constructed to the same design and specification as that used for Phase I with two exceptions. First, a 2-inch thick "clayey gravel" friction layer was placed beneath the HDPE liner and on top of the compacted low permeability layer (Note this "friction layer" construction feature is no longer acceptable per NAC 445A.434.4 interpretation unless a collection sump is provided). Second, because the design and construction of the Phase II pad was determined to meet the minimum design criteria for leach pads without an LCRS (NAC 445A.434), a secondary solution collection system was not installed for the Phase II pad. Additionally, the pad solution collection systems for each subsequent phase are hydraulically isolated by phase divider berms and solutions do not mix until they enter the solution transfer channel.

<u>Property Phase III Pad (constructed 2006):</u> Phase III is a north expansion of the existing Property Pad with a footprint of approximately 1.6 million ft^2. The base of the pad is comprised of a 12-inch thick soil layer compacted to 1 x 10^{-6} cm/sec overlain by a thin 'dusting' of sand that will act as a friction layer and an 80-mil HDPE textured liner (Note this "friction layer" construction feature is no longer acceptable per NAC 445A.434.4 interpretation unless a collection sump is provided). Subgrade fill is limited to a maximum 10-foot thickness to minimize differential settling. The synthetic liner is covered with a 12-inch thick protective layer comprised of minus-1-inch diameter gravel and a 12-inch thick drainage layer comprised of coarse aggregate with a maximum 6-inch diameter particle size and a maximum of 5% minus-200 mesh material content specification. A network of 4-inch diameter perforated CPE pipelines, placed on 30-foot centers in a herringbone pattern within the drainage layer collect leach solution, which is conveyed to 12-inch and 18-inch diameter perforated CPE intermediate collection header pipelines that feed to 24-inch diameter perforated CPE main collection header pipelines. Collected leach solution is conveyed to the existing Property Pad Solution Transfer Channel, which reports to the Property Pregnant Solution Pond.

A PCMS, similar in design to that used is previous phases, is located beneath the main collection header pipeline. The PCMS is a perforated 4-inch diameter CPE pipeline placed in a shallow v-trench lined with 80-mil HDPE and backfilled with drainage aggregate covered with 10-ounce/yard non-woven geotextile. Any solution collected in the Phase III PCMS is conveyed through a solid 4-inch diameter HDPE pipeline to the vertical HDPE standpipe collection sump located adjacent to the Property Pad Solution Transfer Channel and identified as PLPCM-3.

<u>Property Phase IV Pad (not yet constructed as of 2016):</u> Phase IV is an eastward expansion of Phase III that joins the Phase I portion of the Property Pad and has a footprint of approximately 1.5 million ft^2. Construction of Phase IV is identical to that of Phase III. The Phase IV PCMS and collection sump construction is also identical to that of Phase III and is identified as PLPCM-4.

Truck Shop 5 Wash Bay Sump Water Disposal Pipeline (not yet constructed as of 2016): An engineering design change (EDC) Permit modification was approved by the Division in October 2008, for construction of a pipeline to

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convey clarified sump water from the Truck Shop 5 truck and equipment wash bay and the adjacent Gas Shop 2 light vehicle wash bay for disposal at the Property Pad. The modification was designed to reduce hazards associated with large water-truck traffic used to transport the clarified sump water from a congested area with a high volume of light vehicle traffic to and from the Mine Operations Time Shack and pedestrian traffic associated with a near-by employee bus stop. The volume of water conveyed averages 20,000 gallons per day.

The wash bays utilize three or four skimmer booms that are rotated 90 degrees weekly and changed out on a 4-week schedule to clarify vehicle wash water. The sump is equipped with a self-priming pump, rated at 50 gallons per minute (gpm), which is activated by automated level controls between a maximum fluid depth of 8 feet and a minimum fluid depth of 5 feet. The minimum will preclude inadvertent pumping of sump solids. The sump is also equipped with a high level (9-foot clear water depth) alarm that illuminates warning lights at control valves in both the Truck Shop 5 and Gas Shop 2 wash bays.

The conveyance pipeline measures 1,048 feet in length and is fitted with a pressure gauge, a totalizing flow meter, and an air relief valve at the wash bay sump. Flow meter readings are collected weekly and reported quarterly. The pipeline transect has a net elevation drop of 42 feet to allow the pipeline to drain to the leach pad. The primary conveyance pipeline consists of 2-inch diameter Standard Dimension Ratio (SDR) 17 HDPE and is buried from the wash bay sump over a distance of approximately 767 feet. The buried portion of the pipeline is located within a 4-inch diameter SDR 17 HDPE secondary pipeline until it daylights well onto the Property Pad liner system and becomes a single wall pipeline. The final 48 feet of the primary conveyance pipeline is perforated to allow discharge of clarified water into a rip-rapped channel that measures approximately 10- to 14-feet wide by 1- to 4-feet deep and is located on the leach pad side-slope.

Property Pad Solution Transfer Channel: Pregnant leach solution from the Property Leach Pad is transferred to the Property Pregnant Solution Pond via the Property Pad Solution Transfer Channel. The channel was constructed during Phase I as an inverted trapezoid with an average bottom width of 8 feet and minimum depth of 2 feet. The channel is approximately 1,700 feet in length and has been designed to control the combined volume of draindown and runoff generated by the 500-year, 24-hour storm event.

The channel is lined with an 80-mil HDPE liner. The liner was placed on a 2-inch thick cushion layer of bedding sand covering a minimum compacted 6-inch thick base of fill material compacted to 92% maximum dry density (Modified Proctor, ASTM Method D1557). The channel was constructed pre-regulation and measured permeability data are not available to supplement the Procter field data.

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An LCRS for the channel consists of a 4-inch diameter perforated CPE pipeline placed in an 8-inch deep trench cut along the longitudinal centerline of the transfer channel beneath the 2-inch sand layer. The LCRS pipeline is bedded within backfill material placed in the trench. Any solution collected reports to an HDPE standpipe that serves as a collection sump (PCS-1). Collected solution can be evacuated to the Property Pregnant Solution Pond with a submersible pump. Any sump overflow reports back to the lined channel.

Lime Addition Plant: A minor modification was approved by the Division in April 2013 to construct a Lime Addition Plant on the west side of the Property Pregnant Solution Pond just north of the Property Pad Solution Transfer Channel. The Plant is designed to add lime to pregnant solution from both the Property and Non-Property Pads to increase pH, decrease iron concentration, decrease the consumption rate of sodium cyanide, and improve gold recovery. An HDPE-faced reinforced concrete inlet weir constructed near the west end of the Property Pad Solution Transfer Channel conveys up to 16,000 gpm (the estimated maximum surge solution flow from the Property Pad, utilizing a safety factor of 2.0 and including the 100-year, 24-hour storm event) into a 36-inch diameter, SDR 26, HDPE Property Pad Pregnant Solution Pipeline located within the Property Pad Solution Transfer Channel. The Property Pad Pregnant Solution Pipeline conveys solution to the Lime Addition Plant and the Property Pregnant Solution Pond. This configuration effectively converts the Property Pad Solution Transfer Channel into secondary containment for the Property Pad Pregnant Solution Pipeline, except in the event of upset or pregnant solution flows in excess of 16,000 gpm, which will overflow the inlet weir and flow directly in the channel. When active, the Lime Addition Plant bypasses the Property Pregnant Solution Pond by conveying limed pregnant solution directly to the existing pregnant solution pumping station where it is pumped to the South Area Leach Project Carbon Adsorption Plant.

In the Lime Addition Plant, pregnant solution is fed to a 175,000 gallon four-chambered rectangular pre-conditioning reactor tank from a tee in the Property Pregnant Solution Pipeline and from a separate extension of the Non-Property Pregnant Solution Pipeline. Bulk lime delivered by truck is slaked in a Vertimill lime slaker and pumped to a 22,500 gallon slaked lime storage tank and into the pre-conditioning reactor tank. The final chamber of the pre-conditioning reactor tank overflows into a raked, 115-foot diameter, 1,000,000-gallon clarifier tank. The pregnant solution from the clarifier overflow is piped to the existing pregnant solution pumping station via a 36-inch diameter steel effluent pipe that is underlain with 80-mil HDPE liner secondary containment around the west and north crests of the Property Pregnant Solution Pond. The clarifier underflow slurry is split into two streams, one (200 gpm) being recycled back to the pre-conditioning reactor tank, and the other (10 gpm) being pumped to the Property Leach Pad via a 2-inch diameter HDPE pipeline located within the lined Property Pad Solution Transfer Channel.

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All process components of the Lime Addition Plant are housed within secondary containment. The lime building (lime slaker) and outdoor tank containment (slaked lime storage tank, pre-conditioning reactor tank, and clarifier) represent two separate, but hydraulically linked, reinforced concrete secondary containment structures, each of which has waterstops installed in all concrete seams. Expandable bentonite waterstops were used in some seams without Division approval. A special sealant (REMA^{TM}) was approved by the Division to mitigate for the substandard waterstops. The required 110% secondary containment for the clarifier tank is provided by interconnecting the outdoor tank containment and the Property Pregnant Solution Pond via a 20-foot wide overflow weir at a height of approximately 6 feet in the eastern stemwall of the outdoor tank containment and an 80-mil HDPE-lined spillway channel sloped to the pond.

The clarifier tank is supported by a reinforced-concrete ringwall surrounding an earthen and synthetic inner base. From bottom up, the inner base is constructed of: structural fill compacted to 95% maximum dry density (Modified Proctor, ASTM Method D1557) and graded to drain toward two small openings in the southwest side of the concrete ringwall; an 80-mil HDPE liner; a leak detection system consisting of two branched 6-inch diameter perforated CPE pipes wrapped in geotextile and connected to visually monitored leak detection ports (LAP-CTa and LAP-CTb) that penetrate the ringwall via the above-mentioned openings; compacted bedding sand; and the steel clarifier base. The 14-inch diameter clarifier underflow pipe also penetrates the ringwall above the HDPE liner level.

Property Pregnant Solution Pond: The Property Leach Pad facility has a single process solution pond. The Property Pregnant Solution Pond was completed during Property Phase 1 Pad construction. Pregnant leach solution from the Property Leach Pad reports to the pond via the Property Pad Solution Transfer Channel. Pregnant leach solution is also pumped to the Property Pregnant Pond from the Non-Property Pad through a pair of 20-inch diameter steel pipelines, located within a V-ditch, at a maximum rate of 14,000 gpm. The pond has a maximum capacity, with a minimum 2-foot freeboard, of approximately 16.3 million gallons, and can accommodate the 100-year, 24-hour storm event runoff reporting to the Property Pad plus a six-hour Property Pad draindown due to power loss.

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The Property Pregnant Solution Pond is constructed with 60-mil HDPE primary and secondary liners. The secondary liner was placed on a prepared 8-inch thick subbase compacted to 95% maximum dry density (Standard Proctor, ASTM Method D698). A layer of geonet between the synthetic liners serves as an LCRS that reports to a 6-foot by 6-foot by 1-foot deep, gravel-filled sump (PPS-P). The sump may be evacuated through a 6-inch diameter HDPE riser pipe with a portable submersible pump.

Pregnant solution is conveyed from the pond through a 36-inch diameter HDPE pipeline, placed inside a 42-inch diameter HDPE secondary containment pipeline that penetrates the pond liner system. The conveyance pipeline connects to the pregnant solution pumping station from which the solution is pumped at a maximum rate of 10,500 gpm to the nearby carbon adsorption columns for gold recovery. The pumping station consists of three (3) vertical turbine pumps located within a reinforced poured concrete sump. The concrete sump is constructed below grade within an 80-mil HDPE-lined excavation. The lined excavation around the concrete sump is filled with coarse drainage material to a depth of 13.5 feet and equipped with a vertical 12-inch diameter perforated HDPE pipe that serves as an observation port as well as a leak detection and evacuation sump.

The Lime Addition Plant minor modification approved by the Division in April 2013, includes a 36-inch diameter steel effluent pipe to convey limed pregnant solution directly from the Lime Addition Plant to the pregnant solution pumping station. Also included is a reinforced concrete overflow weir to convey solution from the pregnant solution pumping station to the Property Pregnant Solution Pond in the event of an upset condition in which the Lime Addition Plant fails to shut down when the pumps in the pregnant solution pumping station are not operating. Flexible waterstops are embedded in all concrete seams of the overflow weir to provide effective containment.

Property Stormwater Ponds: The Property Leach Pad has two associated stormwater ponds identified as the Property Primary Stormwater Pond (PSP-1) and the Property Secondary Stormwater Pond (PSP-2). PSP-1, constructed during Phase I, has a capacity of approximately 11.3 million gallons with a 2-foot freeboard. PSP-2, constructed during Phase II, has a capacity of approximately 12.1 million gallons with a 2-foot freeboard. The ponds are located downgradient of the Property Pregnant Solution Pond and provide temporary storage of solution generated in excess of the design storm event.

Both ponds are constructed with a single 60-mil HDPE liner placed on a prepared 8-inch thick subbase compacted to 95% maximum dry density (Standard Proctor, ASTM Method D698). The ponds are connected by gravity-flow spillways lined with a single layer of 60-mil HDPE. Leak detection is not provided for the stormwater ponds.

South Area Leach Project Carbon Adsorption Plant (aka Carbon Columns): The South Area Leach Project has a single shared carbon adsorption plant located northeast of the Property Phase I Pregnant Pond. The plant consists of three trains of six carbon columns (18 in total) arranged in series. Each column measures 10.5 feet in diameter and 12 feet tall. Maximum design throughput for the plant is 15,500 gpm and pregnant solution is pumped from the Property Phase I Pregnant Solution Pond pumping station. The columns are located within a concrete containment area that was constructed over a 60-mil HDPE liner placed below grade to drain to an 80-mil HDPE lined perimeter ditch that reports to the Property Phase I Pregnant Solution Pond.

An EDC modification was approved by the Division in January 2007, authorizing installation of a mobile three-tank carbon column (CIC) train to supplement the existing plant capacity. Each steel CIC tank measures approximately 11 feet in diameter and 9 feet high. The three-tank train can accommodate 2,400 gpm flow. However, the total flow throughput for the combined plant (21 columns total) will not exceed the design and permitted 15,500 gpm maximum. The additional tanks effectively increase the solution retention time to improve gold recovery. The mobile, pre-fabricated steel plant structure is attached to a reinforced concrete foundation. A steel containment pan, coated with a thermoplastic polyvinyl chloride (PVC) liner and equipped with 2-foot high sides, is an integral part of the mobile structure fabricated beneath the tanks and the vibrating carbon screen. The containment pan is hydraulically linked by launders to the existing plant containment area, which ultimately reports to the Property Phase I Pregnant Solution Pond. All additional solution pipelines and pumps are located within secondary containment.

Barren solution from the carbon columns reports to the barren solution pumping station sump, which is located within the Carbon Adsorption Plant containment. The barren solution pumping station sump is constructed above grade of reinforced poured concrete with an epoxy resin-sealed interior surface. Two of the three installed vertical turbine pumps are used to pump barren solution at a maximum rate of 15,500 gpm to either the Property or Non-Property pads.

An EDC was approved by the Division in March 2010, to relocate the existing carbon fines collection system to reduce the potential for spills outside the concrete containment. The EDC includes installation of a 5-foot wide by approximately 14-foot long concrete pad with a 2-foot high containment stemwall along the south side of the original containment pad, adjacent to the barren solution tanks. By repositioning the carbon fines conveyance pipeline to flow to the fines collection bag located in the new pad area, full containment of solution will be achieved in the event of an upset condition by directing solution and fines overflow into the adjacent concrete process solution return trench and to the hydraulically linked Property Pregnant Solution Pond. All new containment concrete is dowelled and connected with imbedded waterstops to the existing containment concrete.

An EDC was approved by the Division in July 2016 for replacement of approximately 7,900 linear feet of the steel barren solution pipelines due to corrosion that resulted primarily from burial without secondary containment. The largest section of replacement pipeline is between the Property Pregnant Solution Pond and the Non-Property Phase 1 Pregnant Solution Pond, where the existing

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twin 16-inch diameter steel pipelines will be replaced with twin 16-inch diameter steel pipelines sleeved within 24-inch diameter HDPE secondary pipelines. The new pipelines are graded to drain to the existing pregnant ponds in the event of leaks from the primary pipes. At the north end of the new pipeline alignment, near the southwest corner of the Property Pregnant Solution Pond, a small area will be covered with new 80-mil HDPE liner to expand the existing pipeline channel to provide additional secondary containment where the new barren pipelines diverge from the existing barren pipeline corridor. A 12-inch thick liner bedding layer installed under the new liner is compacted to 90% maximum dry density, Modified Proctor (ASTM Method D1557). The new 24-inch diameter HDPE secondary pipeline begins before the new pipelines leave the existing HDPE-lined secondary containment pipeline channel. At the south end of the new barren solution pipeline alignment, approximately 250 feet north of the Non-Property Phase I Pregnant Solution Pond, the new double-contained pipelines rejoin the existing HDPE-lined barren solution pipeline channel and the new 24-inch diameter HDPE secondary pipeline terminates. The existing twin 16-inch diameter steel barren solution pipelines will be removed in the section that is replaced by the new pipelines. All new pipeline sections are installed within pipe bedding/backfill material, with minus 4-inch maximum particle size, compacted to 90% maximum dry density, Modified Proctor (ASTM Method D1557).

Another short section of buried 16-inch diameter steel barren solution pipeline near the northwest corner of the carbon columns containment will be replaced as part of the July 2016 EDC approval. The new barren solution pipeline consists of a single 16-inch diameter steel pipeline sleeved within a 24-inch diameter HDPE secondary pipeline buried adjacent to the existing barren solution pipeline. The replaced section of existing barren solution pipeline will be removed. The new 16-inch diameter steel barren solution pipeline ties into the existing overhead barren solution pipeline at the northwest corner of the carbon column facility, and descends vertically into a new subgrade concrete vault. The new buried section of barren solution pipeline penetrates the west wall of the concrete vault and the 24-inch diameter HDPE secondary pipeline terminates inside the vault. A Link-Seal® expansion seal installed where the 24-inch diameter HDPE secondary pipe penetrates the vault wall is constructed with rubber, linked nylon pressure plates, and stainless steel bolts. If the buried HDPE liner under the carbon columns facility is encountered during installation of the concrete vault and/or buried barren pipeline, the integrity of the buried liner containment will be maintained.

Non-Property Leach Pad and Associated Components: The Non-Property Leach Pad is the 'southern' leach pad and was constructed in nine phases. Completion times of the various phases of the overall pad were Phase I in 1988, Phase II in 1990, Phase IIIA in 1991, Phase IIIB in 1993, Phase IV in 1994, Phase V in 1998, Phase VI in 2006, Phase VII in 2008, and Phase VIII in 2012. The combined phases of the Non-Property Leach Pad cover approximately 16.56 million ft^2. Based on the results of tests on liner system samples completed in

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mid-1991, approval was given in November 1991 to place ore to a height of 300 feet on the earlier phases of the pad. Subsequent phases were approved by the Division for ore placement to a height of 300 feet. The maximum design solution application rate for the loaded pad is 0.005 gpm/ft^2. Associated major components include three lined and leak detected solution transfer channels, two pregnant solution ponds, two stormwater ponds, and a facility process pond.

In December 2005, a minor modification was approved by the Division authorizing construction of the additional Non-Property Pad Phase VI, with a footprint of 1.7 million ft^2, Non-Property Pad Phase VII, with a footprint of 1.4 million ft^2, and Non-Property Pad Phase VIII, with a footprint of 0.7 million ft^2. The Division-approved phases, located on the western side of the existing pad, will be constructed consecutively and each phase will respectively accommodate approximately 16.6 million, 11.6 million, and 18.3 million tons of leach ore. Phase VI construction was completed during 2006, Phase VII was constructed in 2008, and Phase VIII was constructed in 2012. Construction of Phase VIII required the prior closure of the Refractory Leach Bio-Solution Pond and Processing Plant, which were completed in early 2012.

The Phase IX Pad design, reviewed and approved by the Division as part of the 2010 Permit renewal package, will be constructed as Phase IXA and Phase IXB. Each phase will have a footprint of approximately 2.35 million ft^2 and accommodate a combined 53 million tons of ore on the completed Phase IX Pad. As of 2016, the Non-Property Phase IX expansion has not yet been constructed.

All pad expansions can be loaded to a maximum design height of 300 feet and solution will report to the existing pond and processing infrastructure.

<u>Non-Property Phase I, Phase II, and Phase IIIa Pads:</u> The three initial phases of the Non-Property Leach Pad, Phase I, Phase II, and Phase IIIA cover approximate surface areas of 1.36 million ft^2, 3.3 million ft^2, and 0.84 million ft^2, respectively. The liner system for each phase is comprised of an 80-mil HDPE primary liner that overlies a minimum 8-inch thick layer of in-situ and imported clayey soil compacted to a permeability of less than 1 x 10^{-6} cm/sec. The compacted clay layer was constructed on a prepared 8-inch thick native soil subbase compacted to 92% maximum dry density (Modified Proctor, ASTM Method D1557).

Pregnant leach solution reports to a network of 4-inch diameter perforated CPE solution collection pipes that are arranged in a herringbone pattern on 30-foot centers and placed directly on the HDPE liner within a minimum 18-inch thick layer of drainage overliner material. The solution collection pipes convey pregnant solution to main collector drains, which are located within the heap underdrain material and are constructed with two 24-inch diameter perforated HDPE pipelines. The main collector drains convey solution to a solution header pipeline that discharges to the Non-Property Solution Transfer Channel.

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The Non-Property Phase I Pad is constructed with a secondary solution collection system (i.e., a PCMS) identical to that constructed for the Property Phase I Pad (see construction details above). The Phase II and Phase IIIA pads are partially leak detected with a PCMS system that was constructed for the Phase V pad. The PCMS is located directly beneath the primary solution collection channel, below the pad liner, and is intended to collect and convey process solution that may escape lined containment. Fugitive solution collected in the system is conveyed to a manifold that discharges to a vertical HDPE standpipe located adjacent to the solution transfer channel. The standpipe is equipped with an automated submersible pump to evacuate collected solution to the transfer channel. An overflow pipe on the standpipe will also direct solution to the transfer channel. For monitoring purposes, the Non-Property Phase I PCMS is designated NPLP-1.

<u>Non-Property Phase I Pad Leached Ore Relocation:</u> An EDC was approved by the Division in August 2011, authorizing relocation of previously leached ore from the Phase I Pad in order to recover remaining inventory ounces by stacking and re-leaching the material on other active Non-Property leach pad phases. Between October 2011 and August 2012 approximately 4.8 million tons of the previously leached 6.3 million tons of oxide ore on the pad were removed and relocated to Non-Property Phase III and Phase VII leach pads. Approximately 500,000 tons of waste rock from the Phase I haul truck access ramp, which had not been exposed to leach solution, was removed and placed as random fill to construct a ready line for equipment.

Although the Phase I pad liner and solution collection systems are not hydraulically linked to the adjacent heap leach pads, the Phase II and Phase V pad constructions are buttressed by the loaded Phase I pad. In accordance with a stability analysis performed in conjunction with the EDC, a minimum 25-foot thick layer of ore that increases to over 50-feet thick against the adjacent pads was left on the Phase I pad geomembrane to meet minimum static and pseudostatic factor of safety requirements for the buttressed pads. The remnant Phase I ore layer also helped prevent damage to the liner and solution collection systems during off-loading of the leached material.

Future use of the off-loaded area is being evaluated but could include additional tailings dry stacking, growth media storage, or alluvium stockpiling. The Permittee is aware that future use of the area will require approval by the Division of an amended final plan for permanent closure and evaluation of how a proposed future use will mitigate leakage of solution to the secondary collection sump that was noted shortly after the pad was originally commissioned.

<u>Non-Property Phase IIIB and Phase IV Pads:</u> The Phase IIIB and Phase IV pads have footprint areas of approximately 4.76 million ft^2 and 5.1 million ft^2, respectively. The liner systems for the Phase IIIB and Phase IV pads consist of an

80-mil HDPE liner placed on 18 inches of clay compacted to a maximum permeability of no more than 1 x 10^{-6} cm/sec. The clay was placed on an 8-inch thick layer of native subgrade that was grubbed, scarified, and compacted to 92% maximum dry density (Modified Proctor, ASTM Method D1557).

Pregnant leach solution is collected by a network of 4-inch diameter perforated CPE solution collection pipes arranged in a herringbone pattern on 30-foot centers. The 4-inch diameter CPE pipes are located on a 12-inch thick sandy cushion layer overlying the HDPE liner. The perforated CPE pipes are covered with a 12-inch thick layer of coarse underdrain material. The solution collection pipes convey pregnant solution to 24-inch diameter perforated HDPE pipelines within primary solution collection channels formed in the heap underdrain material. The 24-inch diameter pipelines convey collected solution to the Non-Property solution transfer channels.

The Non-Property Phase IIIB and Phase IV pads are constructed with a PCMS identical to that constructed for the Property Phase I and Non-Property Phase I pads (see construction details above). Each PCMS reports to an automated sump designated as NPLPCM-1 for Phase IIIB and NPLPCM-2 for Phase IV. Solution collected in the sumps can be evacuated to the adjacent transfer channel.

In addition to the primary solution collection channels, the Phase IIIB and Phase IV pads are constructed with a perimeter solution collection channel system. The perimeter channels are constructed within the heap with primary and secondary 80-mil HDPE liners and a geonet drainage layer between them that serves as an LCRS. Except for the south-side channel, leach solution reports to a 15-inch diameter perforated CPE pipe located within the channel. The south-side channel is constructed with two 8-inch diameter perforated CPE pipes. The solution collection pipes convey solution to the Non-Property solution transfer channel. The LCRS for each phase discharges to a vertical HDPE standpipes located adjacent to the Phase III Transfer Channel. The standpipes are equipped with automated submersible pumps that overflow to the Phase III Transfer Channel. The perimeter channel LCRS systems for Phase IIIB and Phase IV are identified as NPLP-4 and NPLP-5 respectively.

An EDC was approved by the Division in December 2012 authorizing a leach ore agglomeration pilot test on the Non-Property Phase III and Phase IV leach pads. The pilot test was approved by the Division for no longer than six months and for processing a total of approximately 600,000 tons of ore. The entire pilot test system is located on existing leach pad containment. The ore is agglomerated with cement in an effort to increase permeability and thereby increase the efficiency of gold extraction. Ore is transported to the leach pad from existing stockpiles and run through a grizzly to remove material greater than eight inches in diameter. The minus 8-inch material is loaded on a series of seven conveyors for mixing and tumbling while transferring it to a final placement area on the leach pad. Cement is metered directly onto the conveyor belts from a silo and process solution is added at the transfer points from existing barren solution lines. Once the ore is agglomerated and placed on the leach pad, it is leached according to conventional leaching practices. At the conclusion of the pilot test, all equipment, including conveyors and silo, were removed from the leach pad.

<u>Non-Property Phase V Pad:</u> The Phase V pad covers an area of approximately 1.2 million ft^2. The liner system consists of an 80-mil double-sided textured HDPE liner placed on a minimum 12-inch thick clay layer compacted to a maximum measured permeability of less than 1 x 10^{-6} cm/sec. The clay layer was constructed on a minimum 12-inch thick low permeability soil layer (LPSL) prepared by grubbing, scarifying, and compacting native soils to 92% maximum dry density (Modified Proctor, ASTM Method D1557). A 12-inch thick layer of 1-inch minus material was placed as a protective layer on the HDPE liner.

Pregnant solution is collected by a network of 4-inch diameter perforated smooth core interior ("Type SP") CPE pipes placed on the 12-inch protective layer at 30-foot intervals in a herringbone pattern. The 4-inch collectors convey solution to either 15-inch or 24-inch diameter perforated "Type SP" CPE pipelines located in solution collection channels. The entire solution collection system is covered with 18 inches of drainage material. A layer of 6-ounce geotextile is placed over the solution collection channel overliner material to minimize the migration of fines into the pipelines. Collected solution discharges to the Non-Property Transfer channels with approximately 70% reporting to the Phase I Non-Property Pregnant Solution Pond and the remaining 30% reporting to the Phase III Non-Property Pregnant Solution Pond.

Three PCMSs were constructed beneath solution channels within the Phase V pad limits with a design that eliminates the HDPE secondary liner in earlier phases. The new design incorporates a single 4-inch diameter perforated "Type SP" CPE pipe placed on the LPSL directly beneath the solution collection pipeline channel. The CPE pipe is covered with 9 inches of Type 2 drain material, a layer of 6-ounce geotextile to prevent migration of fines, and a 12-inch thick compacted soil layer directly over the CPE pipe and up the edges of the solution channel that merges with the LPSL for the pad. Collected solution is conveyed via a solid 6-inch diameter HDPE pipeline to 12-inch diameter HDPE vertical risers equipped with automated submersible pumps and totalizing flow meters. The three risers are identified as NPLPCM-3, NPLPCM-4, and NPLPCM-5. NPLPCM-3 monitors solution from Non-Property Pad phases III and V; NPLPCM-4 monitors solution from the portion of Non-Property Pad V that reports to the Non-Property Phase III Pregnant Pond; and NPLPCM-5 monitors solution from Non-Property Pad phases II and V.

<u>Non-Property Phase VI (constructed 2006), Phase VII (constructed 2008), Phase VIII (constructed 2012) and Phase IXA and IXB (to be constructed) Pads:</u>

Additional Non-Property Pad Phase VI, Non-Property Phase VII, and Non-Property Phase VIII pad expansions were approved by the Division as a minor modification in December 2005, for construction along the western edge of the existing Non-Property Pad phases. The pad expansions will have respective footprints of 1.7 million ft^2, 1.4 million ft^2, and 0.7 million ft^2, and can each respectively accommodate approximately 16.6 million, 11.6 million, and 18.3 million tons of leach ore.

The Phase IX Pad, to be constructed as a two-phased expansion (IXA and IXB), was reviewed and approved by the Division as part of the 2010 Permit renewal. Phase IXA will be constructed along the west side of the Phase VII and Phase VIII pads but will not be hydraulically linked to those phases. Phase IXB will be constructed to the west of Phase IXA and will be hydraulically linked to that phase. The Phase IXA and IXB pads will each measure approximately 850 feet wide by 2,770 feet long and, when constructed, each will comprise a footprint of approximately 2.35 million ft^2. Each phase will accommodate approximately 26.5 million tons of leach ore, when loaded to the maximum 300-foot design height, for a Phase IX combined total of 53 million tons.

The Division-approved pad Phase VI and Phase VII construction design is the same as that approved as part of the same minor modification for the Property Pad Phase III and Phase IV expansions. The base of the pad is comprised of a 12-inch thick soil layer compacted to 1 x 10^{-6} cm/sec overlain by a thin 'dusting' of sand that will act as a friction layer, which has a technical specification for placement and approval, and an 80-mil HDPE textured liner. The Division-approved Phase VIII and IX pad design is the same except for the use of a double-textured 80-mil HDPE liner.

The synthetic liner for all phases is covered with a 12-inch thick protective layer comprised of minus-1-inch diameter gravel and a 12-inch thick drainage layer comprised of coarse aggregate with a maximum 6-inch diameter particle size and a maximum of 5% minus-200 mesh material content specification. Leach solution is collected by a collection network comprised of 4-inch diameter perforated CPE pipelines placed in a herringbone pattern within the drainage layer on 30-foot centers in phases VI and VII and 20-foot centers in phases VIII and IX. The Phase VIII liner extends up the regraded south slope of the Phase VI leach pad to prevent Phase VIII pregnant solution from reporting to the Phase VI pad. Further solution application to Phase VI is prohibited due to the Division-approved abandonment of the Phase VI PCMS port NPLPCM-6 during construction of the Phase VIII leach pad in 2012, as described below.

For Phases VI and VII, the collection network conveys leach solution to 12-inch and 18-inch diameter perforated CPE intermediate collection header pipelines that feed to 24-inch diameter perforated CPE main collection header pipelines. The Phase VI pad expansion grades to the southeast corner of the pad. Prior to the

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2012 cessation of solution application to Phase VI, leach solution was conveyed to existing 24-inch diameter solution collection pipelines located within the existing Phase IIIB pad that report to the existing Non-Property Pregnant Solution Transfer Channel, and ultimately to the existing Non-Property Phase III Pregnant Solution Pond.

Due to pipeline obstructions that curtailed solution flow from the Phase VI pad through the Phase III pad intermediate solution collection pipeline system, an EDC was approved by the Division in May 2008, for a redesign of the Non-Property Phase VII and Phase VIII pad subgrade grading plan and pipeline layouts in order to bypass the older conveyance pipeline system. The new design allows the Phase VII and VIII pads to drain southwest and southeast, respectively, to the Phase VII Pipe Corridor Solution Transfer Channel located in the slot between the Phase VII pad on the west and the Phase IV pad on the east. Solution is then conveyed along the south edge of the Phase IV pad in the Non-Property Phase VI/VII/VIII Perimeter Solution Transfer Channel. These channels and pipelines transmit solution from Phases VI, VII, and VIII to the existing Non-Property Phase III Pregnant Solution Pond.

The Division-approved Phase VIII intermediate solution collection pipeline system design was further modified (prior to construction) as part of the 2010 Permit renewal and accompanying Phase IX Pad design. The modified design adds two secondary collection channels constructed as diagonals from northwest to southeast across the north and south half of the pad footprint. The northern channel contains a 15-inch diameter perforated CPE pipeline and the southern channel is equipped with an 18-inch diameter perforated CPE pipeline. Solution reporting to the secondary collection channels from the collection network pipelines is conveyed southeast into the Phase VII Pipe Corridor Solution Transfer Channel.

The Phase IX pad grading plan will direct solution flow toward the southeast. Collected leach solution is conveyed to single 15-inch, 18-inch, and 24-inch diameter perforated CPE pipelines located within secondary collection channels. These pipeline dimensions and numbers placed were significantly increased over earlier designs to create redundancy and avoid the solution conveyance problems experienced with Phase VI and the earlier Phase III pipeline design described above. The secondary solution collection channels and pipelines report to one of three internal solution collection channels: 1) a north-south channel located along the east limit of the Phase IXA Pad, equipped with two 30-inch diameter perforated CPE pipelines; 2) a northwest-southeast diagonal channel located along the north edge of the southwest ⅓ of the Phase IX Pad, equipped with four 18-inch diameter perforated CPE pipelines; and 3) an east-west channel located in the north half of the IX Pad, equipped with four 24-inch diameter perforated CPE pipelines.

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The Phase IX east-west internal solution collection channel intersects the north-south channel on the east boundary of Phase IXA where the 24-inch diameter pipelines of the east-west channel tie into the 30-inch diameter pipelines of the north-south channel. The east-west channel continues east, between the Phase VII Pad on the south and the Phase VIII Pad on the north, with four 30-inch diameter perforated CPE pipelines to a tie-in with the Phase VII Pipe Corridor Solution Transfer Channel (description below) and its existing 30-inch diameter perforated CPE pipelines. The Phase IX northwest-southeast diagonal internal solution collection channel pipelines exit the southeast corner of the pad and the four 18-inch diameter perforated CPE pipelines tie into two 18-inch diameter SDR 9 solid HDPE pipelines that convey solution along the south berm of the Phase VII Pad to the Solution Conveyance Transition Sump (see description below) and on to the Non-Property Phase III Pregnant Solution Pond.

Each pad expansion phase has a dedicated PCMS beneath the internal solution collection channel pipelines within the pad. Each PCMS is comprised of a 4-inch or 6-inch diameter perforated CPE pipe placed in a shallow trench constructed beneath the channel subgrade and directly below the solution conveyance pipelines. The base of the PCMS trench is constructed with a 12-inch thick prepared subgrade, lined with a single layer of 80-mil double-textured HDPE, and backfilled with select drainage gravel encased in 10 oz/yd^2 geotextile. Solution collected in each PCMS is conveyed by gravity to a downgradient 10-inch diameter HDPE pipe vertical collection sump standpipe.

Prior to their abandonment during the 2012 construction of Phase VIII, the PCMS collection sump standpipe for Phase VI (NPLPCM-6) and the obsolete PCMS collection sump standpipe for the original design configuration of the Phase VII pipe corridor transfer channel (NPLR-8) were both located at the southeast corner of the Phase VI expansion. During construction of the Phase VII pad expansion, the PCMS conveyance pipelines for both Phase VII (NPLPCM-7) and the future Phase VIII (NPLPCM-8) expansions were extended along the east perimeter of the Phase VII pad expansion beneath the Non-Property Phase VII Pipe Corridor Solution Transfer Channel to a location adjacent to the SCSCT Sump and the southeast corner of the Phase VII pad. The Phase IX PCMS sump (NPLPCM-9) will be located at the southeast corner of the Phase IXA portion of the pad. All of these PCMS collection sumps are equipped with automatic submersible pumps to evacuate collected solution into adjacent lined containment channels.

Construction of the Phase IXA and Phase IXB heap leach pads will modify the tributary areas that could potentially contribute solution to the NPLPCM-7, NPLPCM-8, and NPLPCM-9 PCMS collection ports, due to the locations of the PCMS collection pipelines. A previously conceptually planned Non-Property Phase X leach pad would have further modified this PCMS system, but construction of the James Creek Tailings Dry Stack Facility consumed the area originally planned for Phase X. Following the Division-approved construction, the PCMS ports will monitor the acreages identified in the following table:

NPLPCM-Port	Phase Contribution in Acres				Total Acres
	VII	VIII	IXA	IXB	
7	30	9.5	0	0	39.5
8	0	2.8	42.8	32.4	78
9	0	0	10.3	19.7	30
Totals	30	12.3	53.1	52.1	147.5

Construction of the Phase VIII Pad in 2012 required abandonment of the Phase VI PCMS port NPLPCM-6 and the obsolete Phase VII pipe corridor solution transfer channel PCMS port NPLP-8. In accordance with a Permit schedule of compliance requirement, the application of solution to the Phase VI Pad ceased on 23 February 2011, well in advance of the 6-month timeframe required prior to the February 2012 commencement of construction of the Phase VIII Pad. In addition, construction of the Phase VIII pad required decommissioning and closure of most of the remaining portions of the Phase I Refractory Leach Project (Commercial Facility), as described below. In February 2012, the Division approved the completion of closure and remedial activities associated with the Phase I Bio-Solution Pond and associated tanks, pumps, and piping, and the commencement of construction of the Non-Property Phase VIII leach pad in the same footprint.

Non-Property Leach Pad Solution Transfer Channels: There are three solution transfer channels associated with the Non-Property components. They are formally identified as the Phase I Non-Property Solution Transfer Channel, the Non-Property Phase II/IIIA/V Solution Transfer Channel, and the Non-Property Phase IIIB/IV/V Solution Transfer Channel. All the channels are constructed with synthetic liners and all have a PCMS.

The Phase I channel is approximately 45 feet long and conveys solution from the Non-Property Phase I pad to the Phase I Non-Property Pregnant Solution Pond. The channel liner system consists of a 60-mil HDPE liner placed on a 2-inch thick cushion layer that was placed over 6 inches of backfill. The LCRS consists of a 4-inch diameter perforated HDPE pipeline placed beneath and along the length of the channel in a trench filled with backfill. Fugitive solution reports to a 12-inch diameter HDPE standpipe that serves as the LCRS sump identified as NPCS-1. The sump is equipped with an automated submersible pump, a totalizing flow meter, and an overflow pipe that reports to the adjacent solution channel.

The Phase II/IIIA/V channel is approximately 100 feet long and conveys solution from the Phase II/IIIA/V pads to the Phase I Non-Property Pregnant Solution Pond. The channel liner system is constructed of an 80-mil primary liner and an 80-mil secondary liner with a geonet layer between the liners to act as an LCRS.

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Fugitive solution is conveyed through a 4-inch diameter HDPE pipeline to a 10-inch diameter vertical standpipe designated NPCS-2. The standpipe is equipped with an automatic pump that evacuates collected solution through a ¾-inch diameter PVC pipeline and a flow meter into the Phase I Non-Property Pregnant Solution Pond. Flows reporting to the standpipe in excess of pump capacity will gravity drain through a 4-inch diameter HDPE overflow pipe into the Non-Property Phase I Pregnant Solution Pond.

The Phase IIIB/IV/V channel is approximately 80 feet long and conveys solution from the Phase IIIB/IV/V pad to the Phase III Non-Property Pregnant Solution Pond. The channel liner system construction is identical to that employed for the Phase II/IIIA/V channel. The LCRS is also identical to the Phase II/IIIA/V channel system and is designated NPCS-3.

An EDC modification was approved by the Division in October 2007 to add the leak-detected Non-Property Phase III Pregnant Pond Bypass Channel. As of 2016, the bypass channel has not yet been constructed. The bypass channel will provide an alternate method of transferring solution from the heap leach pad to the solution pond and allows for access to the main channel for repair and maintenance. Solution could be diverted to either the main or the bypass channel with HDPE flaps supported on the downstream side by sandbags.

The bypass channel exits the main channel approximately 150 feet west of the Non-Property Phase III Pregnant Pond western crest and parallels the main channel to discharge into the pond. The bypass channel is trapezoidal in shape with a bottom width of 12 feet, a depth of approximately 2.5 feet, and side slopes of 2H:1V (horizontal to vertical), similar to the existing channel. The channel bottom slopes at approximately 3.1% toward the point of discharge to the pond, which is protected by an 80-mil smooth-textured HDPE wear sheet.

The composite liner system for the bypass channel is comprised, from the bottom upward, of: a 12-inch thick LPSL compacted to 92% maximum dry density (Modified Proctor, ASTM Method D1557) with a measured coefficient of permeability (k) less than 1×10^{-6} cm/sec; an 80-mil smooth-textured HDPE secondary liner; a layer of geonet to serve as an LCRS; and an 80-mil smooth-textured HDPE primary liner. The bypass channel LCRS reports to a 4-foot square by 1-foot deep trapezoidal-shaped leak detection sump located at the downgradient limit of the channel adjacent to the pond. The primary liner passes over the top of the sump and the secondary liner lines the sides and base of the sump. The void is filled with ¾-inch drain gravel enveloped by a layer of 8-ounce geotextile. A 4-inch diameter HDPE outlet pipeline allows collected solution to discharge into the pond by gravity. The pipeline is booted through the sump and pond liner system and is of pipe-in-pipe construction for secondary containment between the channel and the pond. Discharge to the pond may be quantified at monitoring location NPCS-4. The leak detection systems for both

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channels and the pond are designed and constructed to segregate any flow by source and minimize any potential for communication between any two systems.

Non-Property Phase VII Pipe Corridor Solution Transfer Channel and Non-Property Phase VI/VII/VIII Perimeter Solution Transfer Channel: The Non-Property Phase VII Pipe Corridor Solution Transfer Channel consists of a trapezoidal-shaped channel approximately 52.5 feet wide by 5 feet deep. The channel is constructed over a 12-inch thick prepared subgrade and is lined with a single layer of double-textured, 80-mil HDPE covered with a double-textured, 80-mil HDPE wear sheet. Solution is collected and conveyed from the Non-Property Phase VII, Phase VIII, and Phase IX pads in two pairs of 30-inch diameter perforated CPE pipelines. One pair of pipelines is located directly on the channel liner and the other pair, which serves as a redundant collection and conveyance system in the event the lower system becomes non-functional, is elevated approximately 2.5 feet above the channel base in drainage material. The pipelines within each pair are linked with a fabricated wye immediately upgradient of each pad sub-header tie-in to balance draindown flow.

The Non-Property Phase VI/VII/VIII Perimeter Solution Transfer Channel is constructed to the same design as the Non-Property Phase VII Pipe Corridor Solution Transfer Channel. However, the conveyance pipeline system is comprised of only two 30-inch diameter solid HDPE pipelines with outfall at the head of the Phase IIB/IV/V Solution Transfer Channel, which conveys the solution to the Non-Property Phase III Pregnant Solution Pond.

Both channels are individually leak detected with a dedicated PCMS. Each PCMS is comprised of a 4-inch diameter perforated CPE pipe placed in a shallow trench constructed beneath the channel subgrade and directly below the trace of the solution conveyance pipelines. The base of the PCMS trench is constructed with a 12-inch thick prepared subgrade, lined with a single layer of 80-mil double-textured HDPE, and backfilled with select drainage gravel encased in 10 oz/yd^2 geotextile. Solution collected in each PCMS is conveyed by gravity to a downgradient 10-inch diameter HDPE pipe vertical collection sump. The sumps are equipped with submersible pumps and can be evacuated to the adjacent solution channel containment as necessary.

Solution Collection to Solution Conveyance Transition (SCSCT) Sump: The Non-Property Phase VII Pipe Corridor Solution Transfer Channel is also constructed with a Solution Collection to Solution Conveyance Transition (SCSCT) Sump. The SCSCT Sump is located between the southeast corner of the Phase VII pad and the southwest corner of the Phase IV pad, where the channel alignment changes from a north-south to an east-west orientation. The SCSCT Sump provides a transition from 30-inch diameter perforated CPE solution collection and conveyance pipelines in the Non-Property Phase VII Pipe Corridor Solution Transfer Channel to perforated 30-inch diameter HDPE pipelines and vertical vent risers within the sump containment area to a pair of solid 30-inch diameter HDPE conveyance pipelines. The 30-inch diameter pipelines are booted through the downgradient SCSCT Sump containment berm and continue in the Non-Property Phase VI/VII/VIII Perimeter Solution Transfer Channel to convey solution to the Non-Property Phase III Pregnant Solution Pond.

The SCSCT Sump measures approximately 100 feet long and has a 6-foot high solution containment berm on the downgradient end. The SCSCT Sump is lined with a single layer of double-textured 80-mil HDPE placed on a 12-inch thick layer of prepared subgrade. The liner is protected with an 80-mil double-textured HDPE wear sheet covered with a 12-inch thick protective sand layer upon which the pipelines rest. Within the sump, all pipelines are ballasted with gabion mats and a 6- to 7-foot thick layer of clean drainage rock. The PCMS for the Non-Property Phase VII Pipe Corridor Solution Transfer Channel also monitors the SCSCT Sump to its containment berm and is blinded off with welds from the separate PCMS (NPLP-9) for the lower Non-Property Phase VI/VII/VIII Perimeter Solution Transfer Channel.

Non-Property Phase I and Phase III Pregnant Solution Ponds: The Non-Property Leach Pad facility employs two pregnant solution ponds. The Non-Property Phase I Pregnant Solution Pond receives solution from the Phase I, Phase II, Phase IIIA, and 70% of the Phase V pad flows. The pond has a capacity, with a 2-foot freeboard, of approximately 3.7 million gallons. The Non-Property Phase III Pregnant Solution Pond receives all solution from the Phase IIIB and Phase IV pads, 30% of the Phase V flows, and all flows from the Phase VI, Phase VII, Phase VIII, and Phase IX (future) pads. The pond has a capacity of approximately 7.9 million gallons with a 2-foot freeboard. Both ponds are designed to contain the combined volume of solution resulting from the 100-year, 24-hour storm event and a 6-hour power loss solution draindown for the respective pad sources.

The Phase I pond is constructed with primary and secondary 60-mil HDPE liners and an intermediate geonet layer that serves as an LCRS. To address leakage issues, the 60-mil primary liner was removed and replaced with an 80-mil textured HDPE liner and the key trenches were re-compacted in September 2009 to Division-approved design specifications as part of a non-fee authorization. The secondary liner rests on a minimum 8-inch thick clay layer compacted to a permeability no greater than 1×10^{-6} cm/sec. The LCRS reports to a 6-foot by 6-foot by 1-foot deep sump, designated PPS-NP1, which is filled with pea gravel. The sump may be evacuated through an inclined 6-inch diameter HDPE riser pipe with a portable submersible pump. The Phase I pond is equipped with a pregnant solution pumping station similar to the design located at the Property Pregnant Solution Pond (see above for description) except that only two vertical turbine pumps are installed, the maximum pumping rate is 5,250 gpm, and solution is pumped along the surface through a 20-inch diameter steel pipeline to the Property Pregnant Solution Pond instead of the carbon adsorption plant.

An EDC was approved by the Division in July 2016 for construction of a new concrete off-load pad for cyanide trucks at an existing cyanide tank containment (two existing cyanide tanks within a concrete secondary containment structure) adjacent to the Non-Property Phase I Pregnant Solution Pond and Phase I pregnant solution pumping station. Flexible retrofit waterstops are used to seal the seam between the existing concrete secondary containment and the new off-load pad. Waterstops are also used to seal around several vertical steel bollards installed in the concrete pad to prevent trucks from damaging the existing stemwall of the tank containment, and to seal around an HDPE drain pipe that will drain any stormwater or spillage of cyanide solution on the off-load pad to the adjacent Non-Property Phase I Pregnant Solution Pond. The double-walled drain pipe is constructed of a 6-inch diameter HDPE primary pipe within a 10-inch diameter HDPE secondary pipe.

During Non-Property Phase V Heap Leach Pad construction, the existing solution channel to the Phase I pond was realigned beyond the Phase V pad footprint. The new channel is constructed with primary, secondary, and tertiary (three in total) 80-mil HDPE liners. A layer of geonet between the primary and secondary liners and another between the secondary and tertiary liners serve to convey fluids escaping to those layers to respective LCRS sumps identified as NPLP-6 ("operational") and NPLP-7 ("compliance"). NPLP-7, which monitors the primary and secondary liner (upper-most) leak detection, is considered the compliance point for Permit monitoring. The pre-existing LCRS sumps NPLP-2 and NPLP-3 were abandoned. Each new LCRS sump is constructed as an 80-mil HDPE-lined depression filled with clean granular drain material that envelopes a 4-inch diameter slotted HDPE evacuation pipe. The evacuation pipe is connected to a 12-inch diameter HDPE vertical riser equipped with a dedicated pump and totalizer flow meter. Evacuated fluid is pumped to the solution channel or the Phase I pond.

The Phase III pond is constructed with primary and secondary 80-mil HDPE liners and an intermediate geonet layer that serves as an LCRS. The secondary liner rests on a minimum 12-inch thick clay layer compacted to a permeability no greater than 1 x 10^{-6} cm/sec. The LCRS reports to an 8-foot, by 8-foot, by 1.2-foot deep sump, designated PPS-NP2, which is filled with pea gravel. The sump is evacuated through an inclined 10-inch diameter HDPE riser pipe with an automated submersible pump. The Phase III pond is equipped with a pregnant solution pumping station identical to the design located at the Property Pregnant Solution Pond (see above for description). Pregnant leachate from the Phase III pond can be pumped to the Property Pregnant Solution Pond through a 20-inch diameter steel surface-run pipeline at a maximum rate of 9,000 gpm using two of the three installed vertical turbine pumps.

Non-Property Stormwater Ponds: The Non-Property Leach Pad has two associated stormwater ponds identified as the Non-Property Phase I Stormwater Pond (NPSP1) and the Non-Property Phase III Stormwater Pond (NPSP2). NPSP1, constructed during Phase I, has a capacity of approximately 6.7 million gallons with a 2-foot freeboard and is located downgradient of the Non-Property Phase I Pregnant Solution Pond. NPSP2, constructed during Phase IIIB, has a capacity of approximately 17.1 million gallons with a 2-foot freeboard and is located downgradient of the Non-Property Phase III Pregnant Solution Pond.

NPSP1 is constructed with a single 60-mil HDPE liner placed on a prepared subgrade of native soil scarified to a depth of 8 inches and compacted to 95% maximum dry density (Modified Proctor, ASTM Method D1557) dry density. The NPSP1 liner was thoroughly inspected and all damage repaired and tested as part of a non-fee authorization completed in September 2009. NPSP2 is constructed with a single 80-mil HDPE liner placed on a prepared subgrade of native soil scarified to a depth of 8 inches and compacted to 95% maximum dry density (Modified Proctor, ASTM Method D1557). Each stormwater pond is hydraulically linked to its respective solution pond by a gravity-flow spillway lined with the same thickness HDPE used for the pond liner.

South Area Leach Project Process Pond: The South Area Leach Project Process Pond (SAL Process Pond), also referred to as the "30-Million Gallon Pond", was completed in August 1998. The SAL Process Pond has capacity, with 3 feet of freeboard, for approximately 30 million gallons and was constructed to provide overflow volume for existing process ponds and to provide an alternative to pumping leach solution to other facilities particularly during seasonal solution operating volume increases. The SAL Process Pond is located east of the Phase I Non-Property Stormwater Pond.

The SAL Process Pond measures approximately 320 feet wide by 760 feet long at the interior of the 20-foot-wide crest. The pond is a maximum 39 feet deep at the bottom of the reclaim sump located in the northwest corner. The SAL Process Pond is constructed with primary and secondary 80-mil HDPE liners and an LCRS comprised of a geonet layer between the liners. The area of the reclaim sump was relined with new 80-mil textured HDPE as part of a non-fee authorization completed in September 2009. The secondary liner was placed on a layer of geosynthetic clay liner material with a certified permeability of less than 5×10^{-9} cm/sec. The LCRS reports to a gravel-filled sump, designated as PPS-NP3, which is equipped with an 8-inch diameter HDPE evacuation tube.

An 8-inch diameter HDPE surface pipeline can be used to convey stored solution from the SAL Process Pond to the Non-Property Phase I Pregnant Solution Pond and a 12-inch diameter steel surface pipeline can be used to convey excess process solution from the Non-Property Phase I Pregnant Solution Pond to the

SAL Process Pond. Overflow can pass in either direction between the SAL Process Pond and the Non-Property Phase I Stormwater Pond via two 24-inch diameter HDPE pipelines booted through the liner at the SAL Process Pond crest.

Hydro-Jex Application: Use of the Hydro-Jex Application technology was approved by the Division as an EDC modification in March 2009. The new technology, for applying solution to heap leach pads, was developed and patented by Newmont (Thom Seal, P.E., Ph.D.) and called Hydro-Jex for water chemistry (**Hydro**)-lixiviant solution injection and metal extraction. The technology is principally directed at heap leach pads that have been leached previously using conventional methods and are progressing toward reclamation and closure. Hydro-Jex is used to recover residual gold and other metals not recovered during conventional heap leaching. The technology may also provide heap leach pad chemical stabilization benefits for closure. Hydro-Jex Application, at some point in the life of the operation, is approved by the Division for Non-Property Pad phases IIIA, IIIB, IV, V, VI, VII, VIII, and IX, and for Property Pad phases I, II, III, and IV. Based on stability models, Hydro-Jex Application to the Non-Property Pad Phase II is restricted to areas outside an 'exclusion zone' located in the north-central portion of the pad that straddles an east-west oriented 'ridgeline' in the liner base topography. Also, Hydro-Jex Application is not authorized on the Non-Property Phase VI pad six months prior to abandonment of the Non-Property Phase VI PCMS sump (NPLPCM-6) in preparation for construction of the Non-Property Phase VIII heap leach pad.

Hydro-Jex holes are drilled using standard dual-rotary methods and 6-inch diameter steel casing, which is advanced as the hole progresses. The holes are located a minimum 100 feet from the edge of the pad and are spaced approximately 100 feet apart. Hydro-Jex hole depths vary based on the height of the heap leach pad, but all holes are bottomed a minimum 50 feet above the pad liner system. Once in place, the casing is perforated at 2-foot intervals to create screened zones spaced approximately 30 feet apart. A cement plug or inflatable packer is placed in the bottom of the casing to prevent fluid flow from the bottom of the well. The top of the casing extends approximately 4 feet above the surface of the pad and is equipped with a bolted flange for attachment of the stimulation or rinsing solution piping.

Hydro-Jex wells are initially stimulated by pumping barren solution or barren solution mixed with reagents to benefit the leaching process, such as ammonium hydroxide or a mixture of milk of lime and sand as examples, into selected screened zones. The selected zones are isolated with inflatable casing packers and stimulated at pressures up to 500 pounds per square inch for approximately three hours per zone. The stimulation creates micro-fractures that radiate up to 50 feet horizontally from the well. Once the well has been stimulated, a removable plug is raised and lowered within the casing to direct leach solution by gravity flow to specific screened fracture zones. Solution may be applied to a specific

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zone for a period ranging from days to months, depending on the material type, depth to liner, etc. The application rate to any Hydro-Jex well may not exceed the modeled 0.006 gpm/ft^2 application rate per area or a maximum system pumping rate of 500 gpm used in the stability analysis models.

Stability analysis indicates that the permitted Hydro-Jex Application does not reduce the heap leach pad static or pseudo-static factor of safety below that calculated for non-Hydro-Jex Application models. Based on the design parameters, potential for slope failure is further reduced by requiring that no two adjacent wells be operated simultaneously, that solution not be applied if standing solution is observed in a well at an elevation above the lowest screen zone, and that the wells be operated in a random pattern rather than, for example, a sequential north-to-south or east-to-west pattern.

Refractory Leach Project (Commercial Facility) (Permanently closed in 2012 prior to construction of the Non-Property Phase VIII Pad): The Refractory Leach Project (RLP), also referred to as the Commercial Facility, was approved by the Division as a major modification to the Permit in late 1998. The RLP facility was located between the Mill 5/6 Central TSF on the west and the Non-Property Leach Pad on the east and covered an area of approximately 14 million ft^2. Only a portion of the Division-approved facility, Phase I, was constructed by October 1999. The Phase I facility was comprised of primary, secondary, and tertiary crushing located at the South Area Leach crushing plant, a Bio-Solution Inoculum Tank and truck load out facility, Refractory Leach Pad Bio-Oxidation Cells 6, 7, and 8, and the Phase I Bio-Solution Pond.

Three types of low-grade refractory ore could be processed at the RLP as designed: siliceous sulfidic refractory ore that is bio-oxidized, neutralized, and moved to the cyanide leach circuit; carbonaceous sulfidic refractory ore that is bio-oxidized and moved to the ammonia thiosulfate (ATS) leach circuit; and carbonaceous sulfidic refractory ore that is directly leached with ATS without bio-oxidation. Spent ATS material, which has been characterized as potentially acid generating (PAG), is to be placed within the Mill 5/6 Central TSF embankment in accordance with the Newmont Spent CSR Material Disposal Area Design, Construction and Monitoring Guidelines.

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Construction of the previously approved (by the Division) Phase II RLP is no longer possible without Division review and approval of a modified design, because of the subsequent approval to construct the Non-Property Phase VIII and Phase IX heap leach pads in the same area, and because of the permanent closure or decommissioning of most of the Phase I RLP. The formerly approved Phase II designs that will not be constructed include ATS Cells 1 through 4, Bio-Oxidation Cells 1 through 5 and 9 through 12, the Ammonium Thiosulfate Tank, the Ammonium Thiosulfate Pregnant Solution Tank, the Ammonium Thiosulfate Barren Solution Tank, the ATS Overflow Pond, and the Bio Stormwater Pond.

A minor modification, approved by the Division in December 2005, authorized construction of additional phases for the Non-Property Pad and Property Pad and relocation and reconstruction of the Bio-Solution Pond. However, plans to relocate and reconstruct the Bio-Solution Pond were subsequently abandoned to make room for construction of the Non-Property Phase VIII and Phase IX heap leach pads.

<u>Bio-Oxidation and ATS Leach Pad Cells (Phase I and II):</u> The leach pad design is divided into 12 individual cells for bio-oxidation and four individual cells for ATS leaching. Only Bio-Oxidation Cells 6, 7, and 8 were constructed. These cells were subsequently converted for use as part of the James Creek Dry Stack Facility approvals in January and April 2010 (see below). Cells 6 and 8 measure approximately 480 feet wide, Cell 7 measures approximately 509 feet wide, and all cells measure approximately 1000 feet long at the crest with a 30-foot separation berm between cells.

The leach cells and the inner cell access-ways and ramps are constructed with a liner system comprised of, from bottom to top, a 12-inch thick prepared subgrade with a maximum permeability of 1×10^{-6} cm/sec and sloped generally to the southeast corner of the cell; a minimum 6-inch thick LPSL compacted to a maximum permeability of 1×10^{-6} cm/sec; a 2-inch thick friction layer; and a layer of 60-mil textured HDPE as a primary liner. (Note: The 60-mil HDPE liner for Bio-Oxidation Cell 7 was replaced with 80-mil HDPE during repair operations completed in December 2004, and for Bio-Oxidation Cell 8 in August 2005.) The synthetic liner is covered with a 3-foot thick protective drainage layer of ore screened to plus ½-inch, minus 2-inch nominal diameter.

Light vehicle access corridors between the leach pad cells are constructed with the same subgrade, LPSL, and synthetic liner specification. The main, central north/south access corridor is constructed with the same subgrade and LPSL specification but does not have a synthetic liner. The LPSL is covered with a minimum 24-inch thick wearing coarse layer composed of waste rock. Areas of truck access from the central corridor must have a minimum 5-foot cover over solution collection header pipelines.

The solution collection system consists of a network of 4-inch diameter perforated CPE pipelines placed on the synthetic liner at 30-foot spacing for the bio-oxidation cells. The 4-inch diameter collector pipelines feed to 12-inch diameter perforated CPE main solution collector pipelines placed along the downgradient side and end of each cell. The process solution and any stormwater reporting directly to a cell are conveyed to a pond or tank through the collection header network pipeworks system. The entire collection system is designed to collect and convey 100% of the process solution flow and 100% of the runoff from the 100-year, 24-hour storm event from each cell.

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The bio-oxidation pipeworks system consisted of a series of solid CPE and HDPE pipelines, ranging from 30 inches to 48 inches in diameter, which conveyed the fluid to the Bio-Solution Inoculum Tank prior to discharge into the Bio-Solution Pond. Only Bio-Oxidation Cells 6, 7, and 8 were constructed and shared a common pipeline system.

A PCMS was constructed beneath the main solution collector header pipelines within each cell. These systems consist of a 4-inch diameter perforated CPE pipeline placed in a shallow v-trench lined with a keyed 40-mil HDPE liner placed on a 6-inch LPSL and backfilled with drainage aggregate. The PCMS for each cell terminates at a sump constructed with a 12-inch diameter HDPE standpipe located at the low corner of the cell. The sumps are designated BIO-6, BIO-7, and BIO-8. BIO-6 and BIO-7 were abandoned during construction of the James Creek Dry Stack Facility but all leakage will now report to BIO-8 (see below).

<u>Bio-Solution Pond (Phase I):</u> Before being permanently closed, excavated, remediated, and backfilled in 2012 for construction of the Non-Property Phase VIII leach pad, the Bio-Solution Pond was located at the east-central edge of the RLP facility adjacent to the planned ATS Overflow Pond. The Bio-Solution Pond measured approximately 325 feet wide, 625 feet long, and 35 feet deep. The pond had a capacity of approximately 31.0 million gallons and was sized to contain the maximum seasonal operational volume, the 24-hour emergency draindown volume, the 100-year, 24-hour storm event runoff volume, and maintain a 3-foot freeboard.

The Bio-Solution Pond liner system consisted of an 80-mil HDPE primary liner and a 40-mil HDPE secondary liner with a geonet sandwiched between the liners to function as an LCRS. The secondary liner was placed on a 12-inch thick LPSL with a maximum measured permeability of less than 1 x 10^{-6} cm/sec that was constructed over 8 inches of prepared subgrade with a maximum permeability of 1 x 10^{-6} cm/sec. The LCRS reported to a gravel-filled sump located on the west side of the pond. The LCRS sump (BIOP) was evacuated through an 8-inch diameter inclined riser pipe equipped with an automatic submersible pump and totalizer flow meter.

The bio-solution reclaim sump was located on the north side of the pond and was equipped with two 18-inch diameter stainless steel and one 24-inch diameter HDPE pipe sleeves that may be equipped with pumps to convey bio-solution to the 9,500 gallon stainless steel mixing tank, the bio-oxidation cells, or the holding tank at the truck load-out (TLO) facility.

An EDC was approved by the Division in October 2005, for construction of a temporary pipeline (bleed line) to transfer excess solution from the Bio-Solution

Pond to the Mill 5/6 Central TSF. The bleed line allowed management of biosolution chemistry that may be affected by seasonal precipitation events and ore types, especially high iron ores, and facilitated evacuation and closure of the components prior to construction of the Non-Property Phase VIII leach pad.

The bleed line consists of a 4-inch diameter HDPE pipeline tied into the existing 8-inch diameter HDPE pipeline that conveyed solution from the Bio-Solution Pond to the truck load-out. The pipeline connections and valves are located within a 6-foot diameter prefabricated "Spirolite" manhole. The bleed line pipeline is located within a 10-inch diameter HDPE secondary containment pipeline. The secondary containment will drain by gravity into the self-contained manhole and then to the Bio-Solution Pond. The manhole cannot overtop. From the manhole, the bleed line surfaces and connects to the existing 4-inch diameter HDPE conveyance pipeline, also within 10-inch diameter HDPE pipeline secondary containment that conveys solution to the Mill 5/6 TSF Booster Pump House (aka Booster Pump House #1) for discharge to the impoundment.

When operated, the bleed line conveyed solution at approximately 150 gallons per minute. The volume of biosolution discharged was small in proportion to the total Mill 5/6 discharge stream to the impoundment. The low pH of the solution also aided the cyanide detoxification of the tailings material.

An EDC was approved by the Division on 24 July 2006, to 1) allow the temporary bleed line to remain as a pipeline for conveyance of low pH solution from the Gold Quarry Refractory Ore Stockpile Collection Pond to the Mill 5/6 TSF Booster Pump House, and 2) authorize construction of a dedicated, permanent, leak detected Bio-Solution Pond excess (bleed) solution collection and conveyance pipeline system that discharges to the Mill 5/6 Central TSF. No changes were made to the temporary bleed line or its monitoring. New monitoring was added for the new permanent system.

The permanent Bio-Solution Pond system was comprised of a vertical stainless steel excess solution collection tank, located adjacent to the pond and equipped with primary and secondary vertical turbine pumps, and an HDPE conveyance pipeline, constructed pipe-in-pipe to provide secondary containment, that discharged to the Mill 5/6 Central TSF. The system was be used to maintain the Bio-Solution Pond operating level during required rinsing of each bio-oxidation pad with approximately 9 million gallons of fresh water. The system could convey approximately 1,000 gallons per minute to the Mill 5/6 Central TSF, but the resultant solution pH in the Mill 5/6 Central TSF had to be monitored regularly and appropriate adjustments made to the bleed line flow to maintain desired pH in the TSF. The low-pH rinse solution aids cyanide destruction in the tailings material.

The vertical stainless steel Collection Tank is a cylindrical tank that measures 8-feet high by 8-feet in diameter. Solution reported by gravity from the bio-oxidation pads to the tank. The tank is placed within a bermed concrete containment pad lined with 80-mil HDPE. A layer of geonet placed between the base of the tank and the underlying HDPE liner serves as leak detection for the tank. A 14-inch diameter SDR 17 HDPE pipeline placed in the existing HDPE-lined conveyance ditch served as a gravity overflow pipe from the tank directly to the Bio-Solution Pond. The overflow pipe was designed to convey up to 3,000 gpm. A vertical turbine pump mounted on top of the tank pumps solution to the Mill 5/6 Central TSF. The tank is equipped with a second pump as a backup. Flow from the tank is controlled with a stainless steel header equipped with check valves and block valves.

The stainless steel header transitions to a 10-inch diameter SDR 7 HDPE pipeline placed in the existing HDPE-lined containment ditch and passes through an electronic flowmeter. At the road embankment the conveyance pipeline is tied into a 14-inch diameter SDR 17 HDPE secondary pipeline. A leakage collection and detection sump is located at the tie-in, which is also the low point of the pipeline design. The leak detection sump is electronically monitored with alarms located in the South Area Leach control room. The pipe-in-pipe system is bedded and covered with compacted sand approximately 3 feet below surface. The trace of the buried pipeline is marked with treated 2" x 4" lumber fitted with metallic marking tape. Where the pipeline crosses beneath roads, the double-contained pipeline is encased in a 2-foot thick layer of lean concrete buried a minimum 2-feet below ground surface. The double-walled pipeline is anchored with concrete thrust blocks at the crest of the Mill 5/6 Central TSF and solution discharges into the pond area through a section of 10-inch pipeline perforated with 1-inch diameter holes drilled 12-inches on center and 90 degrees apart.

<u>Truck Load-Out Bio-Solution Addition System (TLO facility) (Phase I):</u> The addition of bio-solution at the truck load-out (TLO) facility is required to achieve adequate and rapid bio-oxidation of the sulfidic refractory ore. The TLO facility is located adjacent to the South Area Leach secondary crusher and consists of a 9,500 gallon stainless steel horizontal storage tank placed within an epoxy-coated concrete containment stem wall and the haul truck load-out pad area, which has a liner system comprised of a 12-inch thick LPSL compacted to 1 x 10^{-6} cm/sec, a layer of 40-mil PVC, a layer of geotextile, and a layer of protective overliner material. The liner beneath the haul truck load-out pad area is constructed to slope toward a buried collection sump equipped with a high level alarm that will automatically shut down transfer pumps to the holding tank. Bio-solution is conveyed to the TLO facility via an 8-inch diameter HDPE pipeline within a 12-inch diameter HDPE containment pipe from the commercial pads and transferred to the haul truck load-out pad via a 6-inch diameter HDPE pipeline. All pipelines are placed either on the surface or within secondary pipe containment.

Refractory Leach Project Tank Farm (Phase I): Prior to being permanently closed in 2012 to make room for construction of the Non-Property Phase VIII leach pad, the Refractory Leach Project Tank Farm consisted of a 22,500-gallon sulfuric acid tank and a 9,500-gallon stainless steel bio-solution mixing tank on the north side of the Bio-Solution Pond. The primary tank farm containment was constructed of 12 inches of LPSL compacted to a permeability of 1 x 10^{-6} cm/sec and sloped at a 2% grade toward the Bio-Solution Pond. A 2-foot layer of wearing coarse material was placed on the LPSL. The sulfuric acid tank rested on a layer of 80-mil HDPE liner placed on the wearing course. An upgrade in 2002 included placement of a minimum 12 inches of LPSL on the wearing coarse over which 80-mil textured HDPE was placed beneath the stainless steel bio-solution mixing tank.

James Creek Tailings Dry Stack Facility: The James Creek Tailings Dry Stack Facility (JC Dry Stack) is designed to accommodate storage of tailings material from the James Creek Tailings Storage Facility (JC-TSF), permitted under WPCP NEV0090056, and mixed tailings waste rock material from the JC-TSF and high wall of the Gold Quarry Pit. The ultimate JC Dry Stack design was reviewed and approved by the Division in three separate actions and is comprised of the North Section, South Section, and Non-Property Phase VIII Leach Pad Top Lift. All three sections are hydraulically linked based on a final design approved by the Division as an EDC in April 2010. The final design modification, which was originally approved by the Division to allow external relocation of JC-TSF tailings material in advance of a southeastward expansion of the Gold Quarry Pit, was necessary to accommodate additional JC-TSF tailings material and Gold Quarry waste rock generated by stabilization activities required at both facilities following a 24 December 2009 slope failure of the Gold Quarry Pit south high wall. As approved, the JC Dry Stack will have a maximum surface footprint of 5.6 million ft^2 and can accommodate approximately 35 million tons of material with a nominal dry density of 100 pounds per cubic foot.

JC Dry Stack Facility North Section (original Dry Stack Facility): A minor modification was approved by the Division in October 2009 for construction of the JC Dry Stack North Section (originally identified as the 'Dry Stack Facility'). The North Section was constructed adjacent to and buttressed against the north and west sides of the Non-Property Phase VI Leach Pad and, based on a revised design approved by the Division as an EDC in April 2010, is hydraulically linked with a continuous liner and solution conveyance system to the South Section located to the southwest. Based on the subgrade construction design and placement of a double textured 80-mil HDPE liner, material can be placed on the North Section to a design height limit of 200 feet above the synthetic liner.

The base of the pad, approximately 3.9 million ft^2, was cleared, grubbed, and graded to follow the existing topography, to tie into the north and west sides of the Phase VI Non-Property Leach Pad, and to drain to the south and the east. The

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constructed pad includes a prepared subgrade specified as a minimum 12-inch thick LPSL placed in two 6-inch thick lifts compacted to 92% maximum dry density (Modified Proctor, ASTM Method D1557), with a measured permeability of less that 1 x 10^{-6} cm/sec. The prepared subgrade was covered with a single layer of 80-mil, double textured HDPE liner. A 12-inch thick layer of silt or sand was placed over the HDPE as a protective layer. This base construction is consistent with that incorporated into the construction of the adjacent Non-Property Phase VI Leach Pad.

Although the relocated tailings and waste material is essentially dry, the design incorporates a solution collection system. The system consists of 4-inch diameter perforated CPE pipes placed on 500-foot centers over the HDPE liner protective layer and covered with a 2-foot thick protective layer of drainage gravel. The system is designed to convey collected solution into the existing Non-Property Phase VI Leach Pad solution collection system. The design also includes a 6-foot high perimeter containment berm lined on the upstream face with an extension of the 80-mil HDPE liner used over the pad base. External stormwater controls are in place to collect and convey the 100-year, 24-hour storm event volume.

Relocated tailings and waste rock will be placed in nominal 40-foot lifts. The outer 100 feet of the North Section will only receive mixed relocated tailings and coarse waste rock or solely coarse waste rock to create a buttress. The North Section will be loaded against the Non-Property Phase VI Leach Pad and will ultimately rise above the elevation of the leach pad ore. The design does not anticipate any communication of process solution from the leach pad to the JC Dry Stack Facility.

The area of the JC Dry Stack North Section was previously backfilled to a depth of up to 75 feet during 1996-1997 to prepare the site for future construction of components for the RLP, which are no longer planned for construction. The subsurface materials have been classified by drilling to depths of 50 to 100 feet below ground surface. Carlin Formation bedrock is located at depths of 2 to 8 feet below the original native ground (alluvium) surface. Settlement analysis indicates that a maximum of 4 feet of consolidation settlement may occur. Based on the facility design, a minimum 1.6% positive drainage slope will be maintained following maximum deformation.

<u>JC Dry Stack Facility South Section (original Converted Dry Stack Facility):</u> The JC Dry Stack South Section construction (originally identified as the Converted Dry Stack Facility) was approved by the Division as an EDC modification in January 2010, to address an accelerated need to relocate tailings material from the JC-TSF following a 24 December 2009 slope failure in the Gold Quarry Pit south high wall. The January 2010 EDC design modified the existing Bio-Oxidation Cells 6, 7, and 8 for permanent use as storage for dry JC-TSF tailings and mixed waste rock excavated from the Gold Quarry Pit high wall failure.

Construction of a revised design, approved by the Division as an EDC in April 2010, hydraulically linked the South Section to the North Section. As constructed, the South Section footprint measures approximately 1.67 million ft^2. Modifications needed to complete the hydraulic linkage included, but were not limited to, raising the base elevation in the southeast corner of Cell 8 approximately 4 feet and reconstructing the liner system, solution collection system and drainage layer to promote solution flow toward the Non-Property Phase VI Leach Pad solution collection system through a new 12-inch diameter perforated CPE pipeline placed in a 50-foot-wide lined corridor; backfilling and capping the Cell 6 and Cell 7 leak detection sumps (BIO-6, BIO-7), which will subsequently report all leakage to the Cell 8 sump (BIO-8); integrate the existing South Section subgrade into the new North Section subgrade to promote solution flow and weld the existing South Section 60-mil and 80-mil HDPE liners to the new North Section 80-mil HDPE liner. No other aspects of the original basic design and construction of the bio-oxidation cells were altered.

All bio-leach ore was removed to process or Division-approved containment prior to dry JC-TSF tailings material placement. The structural stability of placing tailings material was evaluated and an acceptable factor of safety was demonstrated for tailings placement in maximum 50-foot lifts to an elevation of 140 feet above the existing 60-mil and 80-mil HDPE liners and the 3-foot protective overliner gravel layer. The inter-cell access way located between the cells is also geosynthetic lined, which allows placement of material across inter-cell boundaries. However, tailings material must be placed a minimum 30 feet back from the pad perimeter berm and a minimum 50-foot thick (measured horizontally) structural zone, comprised of mixed tailings and coarse waste rock and overburden material, must be constructed for compliance with the parameters of the structural stability analysis.

Although no solution will be applied to the Dry Stack material and the bio-leach ore was removed, the potential for mixing of residual low pH solution from the South Section footprint with high pH solution in the Non-Property Phase VI Leach Pad solution collection system was evaluated. As modeled, seepage from material following placement on the South Section is estimated to range from 3 to 12 gpm. This flow will mix with flows reporting to the process ponds at rates of 7,000 to 8,000 gpm. Based on this large dilution factor, no chemical issues are anticipated.

<u>Incorporation of the Non-Property Phase VI Leach Pad Top Lift as a Dry Stack Component:</u> The April 2010 EDC design includes the top lift area of the adjacent Non-Property Phase VI Leach Pad for storage of JC-TSF tailings material and Gold Quarry slide waste rock. Based on stability analysis, the material may be placed to a height of 75 feet above the top of the leach pad, which has a design elevation of 5,275 feet above mean sea level (ft AMSL). The placement could be

by direct dumping onto the top surface of the heap or as overdumping from the adjacent, higher elevation JC Dry Stack North Section. The design calls for slope angles to be maintained at a maximum 3H:1V.

Placement of material as part of the JC Dry Stack Facility construction did not initially preclude the use of Hydro-Jex Application technology. However, the Permit required notification and possibly further site-specific evaluation prior to implementation, and no Hydro-Jex was ever authorized on Phase VI. Furthermore, the Permit required termination of all solution application to the Non-Property Phase VI pad six months prior to abandonment of the Non-Property Phase VI PCMS sump (NPLPCM-6) in preparation for construction of the Non-Property Phase VIII heap leach pad. Solution application ceased on the Phase VI pad on 23 February 2011, and construction of Phase VIII began in February 2012.

The JC Dry Stack Facility design was evaluated for seismic stability with the proposed material modeled for the 2,475-year return seismic event. The model included sections through various portions of the proposed facility including zones with the highest relief, the greatest backfill depth, and the steepest base slope angle. The calculated static factor of safety ranges from 1.2 to 1.6 for Block failure and 1.3 to 2.1 for Circular failure. The calculated pseudostatic factor of safety ranges from 1.0 to 1.8 for Block failure and 1.2 to 1.4 for Circular failure. Based on the analysis, the facility will be stable.

The JC Dry Stack Facility will be reclaimed by contouring and placement of a 3-foot thick growth media cover. The cover will be constructed to drain via stormwater ditches to two evaporation ponds constructed with prepared subgrade containment. The North Evaporation Pond, located on the northeast corner of the Dry Stack, will be a new construction. The South Evaporation Pond, located on the southeast corner of the Dry Stack, will be a reconstruction of the existing 'ATS' Pond that was constructed for the Refractory Leach Project (Commercial Facility). The design calls for the ponds to collect sediment migrating from the reclamation cover and be sized to contain twice the 100-year, 24-hour storm event volume reporting to the reclaimed surface with 3 feet of freeboard remaining.

Other Alluvium and Tailings Storage Facilities: To accommodate additional JC-TSF tailings material and Gold Quarry alluvium waste rock generated by stabilization activities required at both facilities following a 24 December 2009 slope failure of the Gold Quarry Pit south high wall, two EDCs were approved by the Division in August 2010, authorizing construction of two additional tailings and alluvium storage facilities. The facilities are the Property Pad Southeast Alluvium Storage Facility and the Non-Property Pad Phase I, II, and V Infill. Both facilities may receive alluvium waste rock but only the infill facility may receive tailings due to its construction over an existing leach pad liner. Existing barren solution pipelines will be removed or appropriately abandoned prior to construction of each facility.

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Property Pad Southeast Alluvium Storage Facility: The Property Pad Southeast Alluvium Storage Facility (Southeast Storage) is approved by the Division for construction in two phases. The Southeast Storage will abut the side slope of the Property Phase II Heap Leach Pad on the north and terminate approximately 100 feet away from the James Creek Diversion on the south. Stability analysis indicates the facility meets Division requirements for the design seismic event. The Southeast Storage is approved by the Division only for placement of alluvium waste rock.

The stand-alone Phase I Southeast Storage will accommodate between 6.2 and 6.9 million tons of material, depending on the material density, when loaded to the maximum design height of 130 feet (elevation 5,300 ft AMSL) above the native ground surface with 3H:1V side slopes. To maintain structural stability, the design requires the outer 175 feet (measured horizontally) of material be loaded in 20-foot lifts and be limited to a maximum plastic index of 15. The design includes a haul truck access ramp constructed across the James Creek Diversion, which includes a 240-foot extension of the existing 48-inch diameter corrugated metal pipe (CMP) drainage culvert placed through the ramp in the base of the diversion. Stability analysis indicates the facility meets Division requirements for the design seismic event.

The Phase II Southeast Storage is designed to abut the existing south slope of the Property Phase II Heap Leach Pad, from toe to crest, as a layer ranging between 100 and 200 feet thick. Phase II will accommodate approximately 2.1 to 2.4 million tons of material when loaded under the same stability requirements as Phase I to an elevation of approximately 5,470 ft AMSL. The Division-approved Phase II design includes a 10-foot high separation berm located along the spent leach ore/alluvium interface to prevent mixing of the placed alluvium with spent ore and/or process solution.

A 3-foot deep trapezoidal stormwater collection ditch with a 3-foot wide bottom, constructed between the diversion berm and the toe along the north, east, and south perimeter of the Phase II Southeast Storage, will convey stormwater runoff and sediment to North and South runoff collection/sediment detention basins. The stormwater ditch and the ponds are sized to convey or contain, respectively, the 100-year, 24-hour storm event volume reporting to the facility surface area. Both basins measure approximately 100 feet wide by 320 feet long at the design crest. The design requires a minimum 9.5-foot depth for the North Basin and an 8-foot minimum depth for the South Basin to retain sediment and the design stormwater volume with a 5-foot freeboard. Although the basins are designed to retain sediment and allow collected stormwater to evaporate and infiltrate, they are also designed to drain to the adjacent natural drainage. Stormwater collected in the North Basin can drain through a layer of drainage gravel into a 48-inch diameter perforated CMP riser into an existing 48-inch diameter CMP culvert to the drainage and stormwater collected in the South Basin can overtop the basin through a rip-rap armored, 30-foot wide by 1.5-foot deep spillway into the drainage. The Permittee is required to remove sediment as necessary to maintain the minimum storm event and freeboard volumes in the basins at all times.

Non-Property Pad Phases I, II, and V Infill: The Non-Property Pad Phases I, II, and V Infill Facility (Infill Storage) is approved by the Division for construction in a 'wedge' located between the Non-Property Phase I Heap Leach Pad on the northeast and the Phase II Heap Leach Pad on the southwest. The Infill Storage abuts the toe of the Phase V pad on the extreme southeast limit of the wedge. Placement of James Creek TSF tailings material, in addition to alluvium, is authorized, for placement in the Infill Storage only in areas of the facility underlain by the leach pad 80-mil HDPE liner.

The Infill Storage will accommodate between 5.5 and 6.2 million tons of material, depending on the material density, when loaded to the maximum design height of 180 feet (elevation 5,305 ft AMSL) above the liner surface with a 4H:1V eastern side slope and a 3H:1V western side slope. Any exposed geosynthetic liner is covered with an 18-inch thick protective layer of overliner material comprised of silty sands and gravel. To maintain structural stability, the design requires the outer 150 feet (measured horizontally) of material be loaded in 20-foot lifts and be limited to a maximum plastic index of 15. The Division-approved design includes a 10-foot high separation berm located along the northeast and southeast limit of the Infill to prevent mixing of the placed alluvium or tailings with spent ore and/or process solution. Stability analysis indicates the facility meets Division requirements for the design seismic event.

Construction with random fill of a new runoff collection/sediment detention basin is included in the design. The crest segments of the triangle-shaped basin measure approximately 275 feet, 275 feet, and 400 feet in length. The 10-foot deep basin design includes excess capacity to collect the 100-year, 24-hour storm event volume reporting to adjacent haul roads and watershed sources. A dedicated pump can be used to convey collected solution to the Phase VI Heap Leach Pad main solution collection header channel.

Waste Rock Management: Waste rock and overburden, if produced, are routinely characterized in accordance with the Permit and handled and disposed in accordance with the "*Newmont Mining Corporation, Refractory Ore Stockpile and Waste Rock Dump Design, Construction and Monitoring Plan, January 2003,*" or most recent version.

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C. Receiving Water Characteristics

The facilities are located on the east flank of the Tuscarora Mountains in the Maggie Creek drainage, approximately 1½ miles west of Maggie Creek, a perennial stream. James Creek, an intermittent tributary of Maggie Creek draining the Tuscarora Mountains, was previously diverted south of the Gold Quarry Mine and the Mill 5/6 complex, then redirected to an unnamed drainage further south around the permitted Project. Maggie Creek empties to the Humboldt River, approximately 6 miles southeast of the facility. Significant runoff occurs during April to June in response to snowmelt in the Tuscarora Mountains.

The Project is located on alluvial and colluvial deposits that overlie the Miocene Carlin Formation. The Carlin Formation varies between 350 and 1,000 feet thick in the Project area, and is comprised of lacustrine and fluvial/alluvial sedimentary and volcaniclastic sandstone, siltstone, and claystone. Groundwater occurs in the Project area at depths greater than 100 feet below ground surface (bgs), with depths greater than 200 feet bgs being common below the heap leach pads. Most groundwater production in the Project area is from the Carlin Formation, a locally confined aquifer. Except for possible isolated perched aquifers of limited extent, no groundwater is present in the alluvial or colluvial deposits. Abundant groundwater occurs in the deeper Paleozoic siltstones and limestones, but does not communicate with the overlying Carlin Formation and has been further depressed by regional dewatering associated with the mining operation.

Local Carlin Formation groundwater, which is a calcium-bicarbonate type, meets all Division Profile I reference values. The Carlin groundwater flow gradient trend is toward the east-southeast, opposite to that of the deeper Paleozoic aquifer. The Carlin aquifer flow gradient has not been affected by regional dewatering activities and ranges from as much as 150 feet per mile near the range front to as little as 20 feet per mile in the valley areas. Groundwater quality is monitored with seven downgradient wells located east of the heap leach pads.

D. <u>Procedures for Public Comment</u>

The Notice of intent of the Division to issue a renewal Permit authorizing the facility to construct, operate, and close, subject to the conditions within the Permit, is being sent to the **<u>Elko Daily Free Press</u>** for publication. The Notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed Permit can do so in writing within a period of 30 days following the date of public notice. 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, any affected 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 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 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.

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Methods which attempt to make uncovered ponds unattractive to wildlife are not always effective. Contact the U.S. Fish and Wildlife Service at 1340 Financial Boulevard, Suite 234, Reno, Nevada 89502-7147, (775) 861-6300, for additional information.

Prepared by: Matthew Schulenberg
Date: Day Month 2016

Revision 00: Renewal 2016; effective Day Month 2016; includes EDC approved July 2016 for barren solution pipeline replacement, and EDC approved July 2016 for truck off-load pad at the Non-Property Phase I Pregnant Solution Pond.

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