FACT SHEET

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

Permittee: **Standard Gold Mining, Inc.**

Project: **Standard Mine Project**

Permit Number: **NEV2003103 (Renewal 2014)**

A. Location and General Description of Facility

Location: The Standard Mine Project is located on public and private land in Pershing County, Nevada, approximately 31 miles northeast of Lovelock and approximately 42 miles southwest of Winnemucca, Nevada. Activity covered by this Permit occurs within portions of Sections 34, 35, and 36, Township 31 North, Range 33 East, and Sections 1, 2, and 6, Township 30 North, Range 33 East, Mount Diablo Baseline and Meridian (MDB&M).

General Description: The Standard Mine Project consists of open pit mining with associated waste rock dumps. The expansion permitted in 2009 no longer uses the existing waste rock dumps (Cordex and North) as all material produced is now used as backfill in either the Cordex Pit, Intermediate Pit, North Pit, or the South Pit. Ore is processed by conventional cyanide heap leaching technology with precious metal recovery via carbon adsorption. The loaded carbon is transported by truck to the carbon strip plant at the Florida Canyon Mine for further processing and carbon regeneration. The facility is required to be operated and closed without any discharge or release in excess of those standards established in regulation except for meteorological events which exceed the design storm event.

B. Synopsis

Geology

The Standard Mine lies approximately four miles south of the Florida Canyon Mine and is located in the foothills along the northwest flank of the northern end of the Humboldt Range (Imlay Mining District). The oldest rocks in the vicinity comprise a small window of Triassic Rochester Rhyolite exposed in an unnamed drainage approximately 3,000 feet northeast of the Standard Mine and consisting of volcanic flows, tuffs, and tuffaceous sedimentary rocks that have been generally tilted to the south and regionally modified by major block faulting. Unconformably overlying the Rochester Rhyolite is the Star Peak Group composed of the Middle Triassic Prida Formation, which in turn is overlain by the

Lower-Upper Triassic Natchez Pass Limestone. The Prida rocks grade upward from coarse clastics to cherty, carbonaceous limestone and limy siltstone and sandstone and are believed to have been formed in a shallow marine environment (Elison and Speed, 1988).

The Natchez Pass Limestone forms conspicuous bold outcrops in the vicinity of the Standard Mine site and consists mainly of massive, medium-grained, medium gray limestone which interfingers with and locally overlays buff-colored, laminated, silty limestone and dolomite units. The massive gray limestone member forms prominent outcrops immediately adjacent to and beneath mineralized zones. These limestone units are very pure in chemical composition and are interpreted to be paleo-reefs in origin. Pelitic rock of the Upper Triassic Grass Valley Formation unconformably overlays the Natchez Pass Limestone in the Standard Mine area and forms the subdued foothills to the west, which disappear beneath valley fill.

Three zones of mineralization have been identified at the Standard Mine. From north to south they are the Cordex Zone (previously referred to as the North Grass Valley deposit by Cordilleran Exploration), the North Pit Zone, and the South Pit Zone (Lally Pit). Also noted are several peripheral exploration targets including the Star Mine to the north and the High Standard Target to the east.

Two geologic features appear to be especially important with respect to localization of mineralization at the identified zones. The first is the contact between Grass Valley Formation argillite and underlying Natchez Pass Limestone footwall. This contact hosts mineralization at the Cordex and North Pit zones. The second is the presence of structurally prepared, favorable silty limestone units adjacent to the reef facies in the Natchez Pass Limestone that hosts mineralization at the South Pit Zone.

As suggested, the Natchez Pass Limestone can be interpreted as a barrier reef complex with a facies transition moving eastward from a reef core, which forms the bold outcrops on the west side of the mineralized zones, to a backreef evaporite sequence now locally present as a thinly laminated, buff-colored, silty limestone and/or dolomite. This backreef sequence is concealed by the reef core in most places but is prominent in the highwall of the South Pit as intensely contorted beds which host mineralization. The structural preparation for mineralization in this area was also facilitated by development of the Standard Reverse Fault which placed Natchez Pass Limestone over Grass Valley Formation argillite and folds the favorable laminated silty units into a sylcline. Axial plane fracturing, which accompanied this folding, again appears to have facilitated introduction of mineralizing fluids into the favorable host beds.

Mineralization at the Cordex and North Pit targets involves introduction of hydrothermal fluids into the karsted, brecciated contact between limestone

basement and overlying argillite, which then facilitated lateral movement of the mineralizing fluids. Within the mineralized horizon, a cap of impervious silicified argillite overlies a jasperoid breccia representing the silicified karst horizon, which in turn grades downward into argillized limestone basement. Gold appears to have been introduced during a later episode of quartz veining which invaded the brittle, but still permeable, silicified karst horizon. These quartz veinlets, cutting pervasive silicification, appear to follow the dominant northeast- and northwest-trending fracture patterns common in the district.

Mineralization at the South Pit target occurs in the laminated carbonate package and is more structurally complex. Sectional modeling appears to confirm a concept that mineralization in this area is concentrated at the intersection of the Standard Fault, a detachment fault, and a west-dipping low- to high-angle structure. The massive, gray Natchez Pass reef limestone, which forms bold outcrops here and elsewhere in the Humboldt Range, appears to have acted as a buttress, and silty limestone units, which appear to have moved basinward along a detachment fault, are folded into a contorted synform where the detachment overrides the buttress. Low- to high-angle structures appear to have introduced mineralizing fluids into this structurally prepared zone. The overall process of mineralizing fluid generation and movement may involve a hydrothermal cell scavenging metals from basinal sedimentary rocks and depositing these metals at boiling zones in areas of structural preparation.

Mining

Mining is accomplished through conventional open pit mining methods at an authorized rate of up to 7.5 million tons of ore per year. The Cordex Pit has been mined out and is not expected to be mined in the future. The expansion begun in 2009 includes additional mining to be conducted sequentially starting in the Intermediate Pit, then moving to the North Pit, and finally in the South Pit.

Blast holes are drilled, with three (3) feet of sub-grade, to either a depth of 23 feet which will allow mining to occur on twenty (20) foot benches, or to a depth of 13 feet, which will allow mining to occur on ten (10) foot benches. The holes are spaced on 14 to 15-foot centers. Drill hole blasting is adjusted to control fragmentation as needed. Depending on fuel oil prices, either an ammonium nitrate and fuel oil mixture (ANFO) or ammonium nitrate and polyglycol ether (ULTRAN) mixture are used as blasting agents. The holes are charged with the blasting agent and a booster. A shot averages between 170 to 300 holes.

Conventional loader truck methods are used to load the blasted material into the haulage trucks. The ore is transported either directly to the heap leach pad for processing as run-of-mine ore, or to the primary ore stockpile where it is stored prior to crushing. Ore that is crushed is then stacked on the heap using either belt conveyors or trucks.

Waste rock from the mining operation will be used as backfill in the previously mined pits. An estimated 298,000 tons of waste rock from mining of the Intermediate Pit will be deposited in the Cordex Pit. From the North Pit, approximately 479,000 tons will be deposited in the Intermediate Pit. Waste Rock from the South Pit will be deposited in all three previously mined pits, with approximately 3 million tons going to the Intermediate Pit and the North Pit, and another 11 million tons being placed in the Cordex Pit. Waste rock remaining after the Cordex, Intermediate and North Pits are completely backfilled will be placed in the north end of the South Pit (approximately 750,000 tons). In this way, the Cordex, Intermediate, and North Pits will be returned to pre-mining topography, while the South Pit will be partially backfilled.

The waste rock is required by the Permit to be characterized (Meteoric Water Mobility Procedure [MWMP] and Acid Neutralizing Potential/Acid Generating Potential [ANP/AGP]) quarterly. With respect to acid generation potential of the waste, the rocks in both the Grass Valley and Natchez Pass Formations exhibit low potential for acid generation. Based on analytical results, a waste rock management plan is required to be maintained and was updated as part of the application for Permit renewal in July 2008.

Process Solution Flow

Solution flowrate for the Phase I leach pad is approximately 3,300 gallons per minute (gpm) resulting in a net aerial rate of 0.001 gpm/ft^2, and for the Phase II leach pad approximately 1,650 gpm (0.001 gpm/ft^2) including the combination of primary and secondary leaching, a total of 4,950 gpm for the two phases combined. The ratio of primary to secondary leaching depends on ore grades, leach pad and lift geometry, and leach kinetics. Fresh water additions to the system to make up for evaporation and ore moisture retention are added to the barren tank depending on make-up requirements.

The circuit begins with barren sodium cyanide solution fed from the carbon plants and applied to the heaped ore. Pregnant solution is recovered via 18-inch high density polyethylene (HDPE) pipes that lie in a V-channel that is 3 feet deep with 2H:1V side slopes and has a design flow capacity of 4,800 gpm in addition to the pipe flow. The channel and 18-inch pipes extend to the pregnant pond.

From the pregnant ponds, the pregnant solution is pumped to one set of four (4) carbon columns (D Plant) which are located adjacent to the pregnant pond within a lined area consisting of a primary 80-mil HDPE liner over a secondary 40-mil HDPE liner with a geonet between. Flow from the surface is diverted to the pregnant pond, while leakage through the primary liner reports to the pregnant pond leak detection sump. Pregnant solution pumped to the columns flows countercurrent to the activated carbon. Activated carbon loaded with precious

metals is transferred by gravity to the carbon adsorption truck and hauled to the Florida Canyon Mine (NEV0086001) for processing and carbon regeneration.

In May 2013, the Permittee submitted an Engineering Design Change (EDC) proposing the construction of a second carbon column train of five (5) tanks in the plant area (E Plant). The carbon columns were located on existing HDPE-lined containment which drains to the Phase I Pregnant Pond in the event of an upset. The EDC was approved by the Division in June 2013.

Process Facilities – Design

Process components consist of an approximately 100 acre heap leach pad, one stormwater pond, one pregnant solution pond for each leach pad Phase, two (2) sets of carbon adsorption columns (one train of four [4] and one train of five[5]), and associated pumps and piping.

The leach pad was constructed in two phases and has the capacity to store up to 25 million tons of ore. The Phase I leach pad covers approximately 66 acres and Phase II covers an additional 34 acres. The leach pad has been strategically located to take advantage of the original topography of the site, which tends to naturally carry storm runoff around each side, while minimizing the amount of grading required.

The leach pad liner system consists of, from bottom to top, an engineered soil subbase, a leak detection system, a synthetic liner, a solution collection and recovery system, and overliner material. Site preparation consists of clearing, grubbing, and cut and moisture-conditioned/compacted fill. The subbase consists of a twelve-inch thick, low-permeability, moisture-conditioned and re-compacted soil with a maximum permeability of 1×10^{-5} cm/sec or less. The subbase is overlain with an 80-mil HDPE primary liner. In addition, a 40-mil HDPE secondary liner underlies the leak detection and collection system in areas that have a greater potential (i.e. significant hydraulic head) for leakage through the primary liner. This design applies to areas such as incised drainages and sub-cell solution ditches and channels, generally following the solution recovery piping above the synthetic primary liner.

The solution collection and recovery system consists of a network of collection pipes, ditches and channels designed to collect and transport pregnant solution to the two (2) pregnant ponds. The network is constructed of 4-inch and 18-inch diameter perforated and solid HDPE pipe. The 4-inch perforated pipes have been placed across the gradient along sub-cell boundaries in a rough herringbone configuration with a minimum gradient of 2 percent. The pipes connect to 18" perforated collection pipes, all of which are covered with two (2) feet of clean overliner material. The 18-inch perforated pipes are connected to the 18-inch

solid pipes which run in the solution collection ditches to the two (2) pregnant ponds.

The leach pad leak detection and collection system consists of 2-inch diameter perforated HDPE pipe laid on top of a 40-mil HDPE liner and surrounded by gravel drainage media and covered with a 2-foot wide strip of geotextile overlain by the primary liner. All detection ports for the leach pad and solution channels daylight in the pregnant ponds (Phase I Preg. – four outfalls, Phase II Preg. – two outfalls).

Based on static and psuedostatic stability analyses (horizontal seismic acceleration 0.15g for design) and deformation analysis, the 80-mil HDPE primary liner selected is textured on the bottom and smooth on the top from directly below the western heap crest to the western footprint boundary. The HDPE primary liner of the eastern portion of the leach pad, directly below the western heap crest, is smooth on both sides. In addition, the design heap height (5,380 feet amsl or max 300 feet vertically above top of liner), engineered setbacks, bench widths and lift heights are specified in the design report to achieve an overall slope of 3H:1V. Other engineering considerations such as settlement analyses were conducted to ascertain positive gradients on the fluid management system. The final pad design resulted in worst-case factors of safety of 1.86 (static) and 1.15 (pseudostatic).

The facility was designed and has been constructed to divert runoff resulting from the 100-year, 24-hour storm event around the process components into natural drainages. Based on engineering calculations, diversion channels were rip-rapped where supercritical flow velocities would be greater than 4 feet per second to preclude scouring and erosion at critical channel segments and intersections.

The ponds and fluid management system have been located and sized to accommodate all accumulations of process solution, including 5.46 million gallons (gal) of run-off resulting from the 25-year, 24-hour storm event, while still maintaining two feet of freeboard. Specifically, the Pregnant and Storm Event Ponds combined capacity is approximately 19 million gal. Pond sideslopes are 3H:1V and approximately 22 feet deep.

The Phase I pregnant pond was completed in October of 2004 and is double-lined with 60-mil HDPE primary and 60-mil HDPE secondary liners with a geonet layer located in between as a Leakage Collection and Recovery System (LCRS). The Phase II pregnant pond was completed in 2011 and is double-lined with 80-mil studded (drainliner) primary liner and 60-mil smooth secondary liner. A one percent slope to the LCRS directs process solution escaping primary containment to a clean, drain-rock filled sump. The leak detection sumps are located beneath depressed sumps where barge pumps are located and are evacuated via 6-inch diameter machine slotted polyvinyl chloride pipes in the sumps. The riser pipes

are located between the synthetic liners and daylight at the pond crest. Effective sump capacity for each pond is 30 gal.

The Storm Event Pond is single-lined with 60-mil HDPE and has been designed to accommodate the accumulations resulting from the 25-year, 24-hour storm event. This single-lined pond is only used for storm events or system emergencies, and is evacuated via a trash pump to the Phase I pregnant pond.

Loading and storage of reagent (i.e. sodium cyanide) takes place in the carbon plant area adjacent to the ponds. This area is double lined with 80-mil primary and 40-mil secondary HDPE liners which report to the pregnant Pond if there is any spillage. The carbon columns are also located in this containment area.

The original fuel and lubrication facility was constructed with an 80-mil HDPE liner with berms around the perimeter to contain spills. Any meteoric water or hydrocarbon spillage reported to a sump where it could be periodically pumped out and disposed of according to the appropriate regulations for hydrocarbon waste handling. This facility was closed and removed in November 2011 and a new facility constructed at the southwest corner pad near the admin building using the same design. The closure report for this facility, including confirmatory sampling of soil beneath the old HDPE liner, was approved by the Division in January 2012.

In March 2013, the Permittee submitted a non-fee review proposing the construction of a new gasoline storage area. The facility consists of a 2,000 gal single-walled gasoline tank set within a bermed and 80-mil HDPE-lined secondary containment area. Access for light vehicles to refuel from the tank is on a concrete slab adjacent to the berm facing the tank. The proposal was approved by the Division in March 2013.

C. Site Hydrology/Hydrogeology and Background Groundwater Quality

According to the Permit application, there are no permanent or significant surface water flows within one and one-half miles of the Standard Mine site. A seasonal, ephemeral stream, called Cold Spring, is approximately one and one-half miles from the mine site and should not be affected by the proposed operation.

Groundwater flow at the proposed Standard Mine is in the west, north-westerly direction and ranges, based on drill logs, between 142 feet below ground surface at MW2-5 to 515 feet bgs at MW2-6 (removed September 2005). According to the Permit application, there are four water-bearing formations that occur at this site, depending on geographical location. The formations include the Prida (MW2-7, 8 and 9), the Natchez Pass (which was characterized by MW2-6), the Grass Valley (MW2-1, 3 and 5) and alluvium (MW2-2 and 4). Based on the results to determine baseline water quality, the water beneath the site generally

meets the Profile I reference standards except for aluminum (24.9 mg/l), iron (12 mg/l), manganese (4.97 mg/l) and lead (0.033 mg/l). In addition, the background groundwater quality for the Grass Valley formation exceeds the Profile I reference standard for mercury (0.004 mg/l). Continued characterization is ongoing.

Site monitoring of groundwater quality is presently carried out by sampling of monitoring wells MW2-1A and MW2-5A as well as production wells WS-1 and WS-3 (WS-2 was abandoned in December 2011). WS-3 was added in February 2012 upon Division approval of an Engineering Design Change submitted by the Permittee. Upgradient samples had been provided by monitoring well MW2-6, however, this well was taken out during mining of the Cordex Pit and was replaced by a new upgradient well, MW2-6A in April 2009.

Pit lakes are not anticipated since the elevation of the water table is at least 200 feet below the minimum elevation (maximum depth) of each pit floor (see Site Characterization Report of March 2003).

D. Procedures for Public Comment

The Notice of the Division's intent to issue a Permit authorizing the facility to construct, operate and close, subject to the conditions within the Permit, is being sent to the **Lovelock Review - Miner** for publication. The Notice is being mailed to interested persons on the Bureau of Mining Regulation and Reclamation mailing list. Anyone wishing to comment on the proposed Permit can do so in writing within a period of 30 days following the date 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 Permit.

F. Proposed Effluent Limitations, Schedule-of-Compliance and Special Conditions

See Part 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 well(s) and surface water. 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.C. 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 CFR 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. 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.

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