

FACT SHEET

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

Permittee Name: **KG Mining (Bald Mountain) Inc.**
Project Name: **Yankee Mine**
Permit Number: **NEV0089008**
Review Type/Year/Revision: **Renewal 2024, Fact Sheet Revision 00**

A. Location and General Description

Location:

The Yankee Mine is located in White Pine County, along the eastern flank of Buck Mountain, on the west side of Long Valley. The facility is located in Sections 10 through 15 and Sections 22 through 27, Township 21 North, Range 57 East, Mount Diablo Baseline and Meridian, approximately 30 miles northeast of Eureka, 80 miles south of Elko and 5 miles south of the Permittee's South Operation Area Vantage Complex Project, formerly the Alligator Ridge Mine.

General Description:

The Yankee Mine is in post-closure monitoring per NAC 445A.446. The mine operated from 1989 to 2000 and processed approximately 3.4 million tons of gold ore by conventional heap leaching.

The mine facility currently consists of one heap leach pad, constructed in four phases, an evapotranspiration (ET) basin, and an infiltration field. The facility also included two pregnant solution ponds, a storm water retention pond, process buildings, and support facilities. All process buildings and support facilities have been removed from the site. Long-term heap draindown reports to an evapotranspiration basin and infiltration field. The leach pad has been recontoured, and topsoil applied and seeded.

The mine property encompasses approximately 362 acres located on unpatented mining claims within the South Operation Area Yankee Plan of Operations Boundary owned by KG Mining (Bald Mountain) Inc. and administered by the U.S. Bureau of Land Management (BLM), Ely District, Bristlecone Field Office.

B. Synopsis

Water Pollution Control Permit (Permit) NEV0089008 was first issued by the Nevada Division of Environmental Protection (Division) to Kennecott – NERCO in 1989 for the Yankee Mine project. In 1989 the mine was placed into production by Kennecott and USMX. Ore from this phase of mining was hauled to the Alligator Ridge Mine (NEV0080022) heap facility for beneficiation. In 1990 USMX purchased total ownership of the operation. USMX continued to operate the mine until August 1993 when Placer Dome - Bald Mountain Mine purchased the facility. Loaded carbon was transported to the Alligator Ridge (NEV0080022) facility for stripping of gold and regeneration of the carbon. Cyanide application to the heap leach pad ceased on 1 April 1999 and leaching was terminated at the end of 2000. The site entered into post-closure monitoring status in June 2002. In March 2006, Placer Dome merged with Barrick Gold Corporation and became Barrick Gold U.S. Inc. In conjunction with a purchase agreement between Barrick and the KG Mining (Bald Mountain) Inc.

(Permittee), effective 11 January 2016, Permit NEV0089008 was transferred to the Permittee effective 25 April 2016. In November 2020, the Permittee requested the transfer of all pits and RDAs from the Yankee Mine post-closure monitoring Permit to the new Permit NEV2020103 South Operations Area - Yankee Mine Project and was completed with Permit Revision 02 on 5 January 2021.

The Permit was first renewed in January 2000 and expired in January 2004. The Permit was last renewed in January 2019. The 2024 renewed Permit shall remain in effect until 16 January 2029.

Figure 1 below provides a site map including all components and monitoring locations specific to the Yankee Mine.



Figure 1 – Yankee Mine Permit components, monitoring locations, and site map.

Geology:

The Yankee Mine is situated in the Basin and Range physiographic region. The region is characterized by parallel, north-south trending mountain ranges separated by alluvium-filled valleys.

The Yankee area consists of Paleozoic sediments covered by Tertiary volcanic rocks and Quaternary alluvium. The oldest formation is the Devil's Gate Limestone. This is a gray, micritic, thick-bedded limestone. The top of the unit contains interbedded siltstones which grade into the overlying Pilot Shale. This transitional unit is usually altered to massive ore-bearing jasperoid 40 to 60 feet thick.

The Pilot Shale is approximately 500 feet thick and almost completely oxidized. The ore-bearing bases of the formation are marked by a distinct clay-rich limestone unit 10 to 40 feet thick. This unit thins as the jasperoid below thickens. Occasionally, the lower limestone is un-oxidized and contains iron and arsenic sulfide minerals. Above the limestone is a thin-bedded siltstone 20 to 40 feet thick which is usually silicified and hematite rich near the ore deposits. The upper 400 feet of siltstone is calcareous, thick-bedded, rarely altered, and contains little ore.

The Joana Limestone overlies the Pilot Shale and forms a rim around the west and south edges of the Yankee basin. It is a gray, sparry, fossil-rich limestone unit approximately 200 feet thick. It is exposed only in the Monitor Pit. Locally the upper and lower contacts are silicified, but no direct links to gold occurrences in the Pilot Shale have been made at Yankee.

The Chainman Shale crops out on the western margin of the basin and east of the Yankee ridge.

Pits:

Ore was mined from 20 pits located at the Project site. Six of the pits were completely backfilled – East Davis, Saddle, East Spur, West Spur, East Crusher, and Southwest Expansion. Of the remaining 14 pits, the Lee, Lincoln, Grant, East Monitor, Olustee and the 2, 3, 4, and 5 Extensions, West Davis, and Vicksburg pits were partially backfilled. Backfill was not placed in the West Crusher Pit, Vicksburg, and Monitor Pits. None of the pits intersected the groundwater table nor has meteoric water accumulated in any of the dozer-ripped pit floors.

Rock Disposal Areas:

There are three rock disposal areas (RDAs) (Blue/Gray, North, and Yankee) at the mine site encompassing a total of 73.4 acres and containing approximately 15 million tons of waste rock. All RDAs have been reclaimed. Waste rock characterization results indicate a high net neutralization potential and a relatively low potential to mobilize metals. No stability issues or seepage from any of the RDAs have been observed to date.

With issuance of Permit NEV2020103 South Operations Area - Yankee Mine Project, all pits and RDAs have been transferred from the Yankee Mine post-closure monitoring Permit. The information is included in this fact sheet for completeness of the Permit only. Pits and waste rock dumps are not monitored by this Permit.

Heap Leach Pad:

The facility consisted of one heap leach pad constructed in four phases: Phase I, Phase II, Phase II expansion, and Phase IV; it encompassed a total area of 36 acres. The leach pad was regraded and a soil cover, consisting of 24 inches of topsoil, was placed and seeded in 2001. The pad was not known to have leaked.

The Phase I leach pad (11 acres) contains approximately 1.0 million tons of ore. The pad has a 60-mil High Density Polyethylene (HDPE) liner on a 12-inch thick compacted clay subbase having a permeability of 5×10^{-6} centimeter/second (cm/sec). It was constructed in five cells, each 150 feet by 800 feet.

The Phase II leach pad (11 acres) was sized to contain approximately 1.5 million tons of ore. The pad was constructed in two cells and utilized 60-mil HDPE liner overlaying 12 inches of compacted clay. The subbase has a minimum permeability of 1×10^{-6} cm/sec.

The Phase II Expansion and Phase IV Leach Pad (14 acres) had a design capacity of 1.0 million tons of ore. The pad consists of two cells with a divider berm and was connected to the west edge of the Phase II leach pad. The pad was lined with a 60-mil HDPE liner over a 12-inch compacted clay subbase. The subbase has a permeability of less than 1×10^{-5} cm/sec and was constructed with leak detection. Ore was stacked in 20-foot lifts to a total height of 80 feet.

There are three heap leach pad leak detection ports: YLD1, YLD2, and YLD4, which represent the construction of leach pad Phases I, II, and IV respectively. All ports are and have been dry since at least 2013.

Evapotranspiration Basin (ET Basin):

All leach pad draindown is currently captured in the former 2,250,000 gallon capacity Pregnant Pond II which was converted into an evapotranspiration basin in 2001. This system allows for buried storage of draindown and depletion via evapotranspiration. Based on an estimated 30% backfill porosity, the ET Basin capacity is approximately 675,000 gallons.

This pond is double-lined with a 60-mil HDPE primary liner overlying a 60-mil HDPE secondary liner. The pond also contains a leak detection system between the liners. The completed ET Basin measures 160 feet by 245 feet (39,200 square feet or 0.90 acres).

A 3-foot layer of select drain/gravel material was initially backfilled over the existing pond primary liner. Following the drain/gravel material, local soil completed the pond backfill. An 18-inch diameter vertical piezometer, the bottom of which is located approximately 1-foot above the primary liner, was also installed.

The basin is an up-flow design, introducing fluids through a manifold system in the bottom of the pond. An infiltration system was constructed to handle the excess draindown that the ET Basin cannot evapotranspire seasonally. An outflow manifold resides near the crest of the ET Basin and directs fluids to the infiltration system by way of a dosing siphon. The system discharges approximately 150 gpm per dose to the infiltration field. A redundant overflow bypass system was installed on the inflow

pipe to ensure that back-pressure could not form outside of the cell footprint within the inflow pipe.

The ET Basin vegetation, as of summer 2018, remains robust and provides a contrast to the very limited surrounding native vegetation. The ET Basin is expected to completely store and evapotranspire an annual average heap draindown of 2 gallons per minute (gpm). Therefore, future ET Basin discharge to the infiltration field is expected to be minimal.

The Permittee will also inspect the ET Basin leak detection sump, YLD3, for solution. If solution is present in the sump, the Permittee will evacuate the sump (returning any leakage solution to the ET Basin), record the volume and continue to inspect the sump to establish flow to the sump. To date, YLD3 has been dry.

The 2-acre sized infiltration field is similar to a septic leach field, comprised of perforated pipe buried in trenches and located adjacent to the ET Basin. The dosing siphon is equipped with an automatic dose counter. Access is also provided at this dosing siphon for solution sampling if needed (YKEOUT).

Heap Draindown Flows:

Long-term heap draindown flow was modeled to be 1 to 2 gpm for approximately the first 50 years as the heap releases residual operational pore space water. At that point, flows are expected to decrease to less than 0.4 gpm in the long term. Draindown flow rate, as of August 2018, was zero. The heap draindown chemistry is predicted to slowly improve with decreasing concentration levels for most constituents.

Table 1 below provides empirical data for the heap draindown, based on the average of 29 sampling events (May 2002 through April 2013) and includes only those parameters, with the exception of pH and alkalinity, that may be considered elevated or of interest with respect to Division Profile I reference values. There has been no flow observed since approximately September 2013. However, total volumes recorded as discharging to the infiltration field suggest that heap draindown solution is flowing. The term 'Stable' in the table does not recognize seasonal variation (which may be significant for some parameters) but reflects only annual average comparisons. The table format is the same for Tables 1 and 2.

Table 1 – Heap Leach Pad Draindown Constituents (YKETIN)*

Constituent	Division Profile I Reference Values (mg/L)	Heap Leach Pad Average Concentration & (Range) (mg/L)	Trend
Alkalinity	---	94 (74 – 119)	Increasing
Antimony	0.006	0.017 (0.011 – 0.023)	Stable
Arsenic	0.005	0.750 (0.072 – 1.06)	Decreasing
Cadmium	0.004	0.003 (0.001 – 0.012)	Decreasing
Iron	0.6	0.9 (0.4 – 1.2)	Decreasing
Mercury	0.002	0.027 (0.007 – 0.042)	Increasing
Nitrate + Nitrite (as N)	10	239 (171 - 279)	Stable
pH (in Standard Units)	6.5 – 8.5	7.9 (6.9 – 8.2)	Decreasing
Selenium	0.05	0.13 (0.07 – 0.18)	Increasing
Sulfate	500	1,720 (1,420 – 2,000)	Increasing
Thallium	0.002	0.017 (0.012 – 0.023)	Increasing
Total Dissolved Solids	1,000	4,460 (3,650 – 4,980)	Increasing
WAD Cyanide	0.2	0.397 (0.02 – 1.81)	Increasing

*No observed flow since 2013.

The Permittee is required to sample heap draindown and flow rate annually at the ET Basin inflow sampling port (YKETIN). Draindown from the heap (flow in gpm/Division Profile I) will continue to be monitored on an annual basis.

Table 2 below provides empirical data for the dosing siphon solution prior to discharge to the infiltration field, based on the averages of the sampling of 10 discreet discharge events (May 2002 and April 2011) and includes only those parameters, with the exception of pH and alkalinity, that may be considered elevated or of interest with respect to Division Profile I reference values. There has been no flow observed since approximately February 2013

Table 2 – Dosing Siphon Constituents (YKEOUT)*

Constituent	Division Profile I Reference Values (mg/L)	Dosing Siphon Average Concentration & (Range) (mg/L)	Trend
Alkalinity	---	99 (78 – 140)	Stable
Antimony	0.006	0.015 (0.013 – 0.018)	Stable
Arsenic	0.005	0.709 (0.515 – 0.810)	Decreasing
Cadmium	0.004	0.002 (0.001 – 0.005)	Stable
Iron	0.6	1.0 (0.7 – 1.2)	Decreasing
Mercury	0.002	0.017 (0.005 – 0.030)	Increasing
Nitrate + Nitrite (as N)	10	250 (203 - 283)	Decreasing
pH (in Standard Units)	6.5 – 8.5	7.9 (7.7 – 8.1)	Stable
Selenium	0.05	0.122 (0.070 – 0.181)	Increasing
Sulfate	500	1,690 (1,460 – 2,030)	Increasing
Thallium	0.002	0.012 (0.001 – 0.024)	Increasing
Total Dissolved Solids	1,000	4,160 (3,300 – 5,400)	Increasing
WAD Cyanide	0.2	0.178 (0.030 – 0. 526)	Decreasing**

*No observed flow since 2011.

**Since 2003, WAD cyanide has been below 0.2 mg/L.

Although sulfidic material was apparently introduced into the heap, as evidenced by the elevated sulfate concentration, the alkalinity of the heap draindown is actually increasing over time and now was last recorded at approximately 100 mg/L. This is to be expected as much of the host rock is limestone. Acidic conditions are not anticipated within the site.

The Permittee is required to sample the ET Basin solution (Division Profile I) and measure the depth to solution in the ET Basin via the ET Basin piezometer. The Permittee will record infiltration field doses to determine the total solution volume discharged to the infiltration field (YKEOUT). However, if discharge is occurring, a sample of solution will be collected for analysis (Division Profile I).

Process Ponds:

There were three process ponds: Pregnant solution Ponds I and II and a stormwater retention pond. The stormwater pond and the Pregnant solution Pond I were closed in-place after removing the solids from the ponds (shipped to refinery for gold recovery), folding and burying the liner in place. Solids remaining in Pregnant Pond II were removed in a similar manner prior to conversion to an ET Basin as described above.

Following the 2024 renewal of the Permit, the Permittee is planning to submit a request to permanently close the HLP and ET Basin area and terminate the Permit.

C. Receiving Water Characteristics

The facility is located in the Long Valley water basin on the eastern slopes of Buck Mountain, south of Alligator Ridge, on alluvial deposits. The heap leach pad is located at an elevation of approximately 5,600 feet above mean sea level (AMSL). Annual precipitation in the area is approximately 12 inches with the annual lake evaporation average of approximately 60 inches. No permitted drinking water wells exist within a 5-mile range of the Yankee Mine. Surface drainages in the area are ephemeral with no surface water bodies or springs near the site.

A number of borings have been drilled in the Project vicinity. A water well test hole drilled east of the leach pad indicated water at a depth of 400 feet (ft.) below ground surface (bgs), which subsequently rose to about 280 ft. Depth to groundwater in a condemnation hole near the leach pad was 420 ft. and subsequently decreased to 325 ft. bgs. These wells indicate that there are no perched or local aquifers at the Yankee Mine site and that the regional aquifer in this area is confined.

Water supply well (YWS-1) is located 1,500 feet east and topographically downgradient of the heap leach pad, ET Basin, and infiltration field. Water was first encountered at approximately 400 ft. bgs, and prior to any pumping, rose to a static water level of 345 ft. bgs and produced potable water. The well was sampled in June 2017 and background groundwater quality meets all Division Profile I reference values. Current static water level is approximately 278 ft. bgs. The Permittee is required to sample YWS-1 on an annual basis.

D. Procedures for Public Comment

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

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

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

E. Proposed Determination

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

F. Pathway to Final Closure and Permit Termination

In accordance with NAC 445A.409 and 445A.446, for final closure and Permit termination the Permittee must demonstrate to the Division that: 1) all sources at the facility have been stabilized, removed, or mitigated; 2) any applicable requirements in NAC 445A.429, 445A.430, and 445A.431 have been achieved; and 3) sufficient post-closure monitoring has occurred to verify the adequacy of these actions to ensure the long-term protection of waters of the State, human health, and wildlife under the physical, chemical, and climatic conditions reasonably expected to occur at the site. If the facility includes a long-term trust and/or requires perpetual treatment or maintenance, post-closure monitoring may never be reached and the Division may not be able to terminate the Permit.

The pathway to final closure and Permit termination at this facility includes the following specific actions:

- Complete approved permanent closure actions on the heap leach pad and ET Basin components;
- Submit a final closure report for the heap leach pad and ET Basin components;
- Monitor the facility through major storms and large winter/spring seasons to verify that closed components and the fluid management system remain functional with no potential for degradation of waters of the State;
- Discuss with the Division whether the facility is ready for final closure and Permit termination. If so, submit for review and approval a request for final closure and Permit termination including a demonstration of compliance with all applicable closure requirements (e.g., NAC 445A.379, 445A.409, 445A.424, 445A.429, 445A.430, 445A.431, 445A.446, 445A.447).

The Division may require additional actions if warranted in accordance with site conditions and applicable statutes, regulations, orders, and Permit conditions.

G. Rationale for Permit Requirements

The site has been in post-closure monitoring since 2002. The former pregnant pond was converted into an ET Basin and the Permit allows for a controlled discharge to the environment through a dosing system and engineered infiltration field.

Attenuation studies of background soils indicate that at an infiltration field discharge rate of 100,000 gallons per year, it would take 6,000 years to consume all of the attenuation capacity in the alluvium beneath the infiltration system. Based on the predicted annual discharges to the infiltration field, attenuation capacity in the alluvium should last indefinitely. Since inception in November 2001 through August 2018,

approximately 1.77 million gallons of ‘treated’ solution has been discharged from the ET Basin to the infiltration field.

Long-term heap draindown is predicted to be less than 2 gpm in the short-term and less than 0.4 gpm in the long-term (beginning in 50 years). As long as the annual average heap draindown is 2 gpm or less, which, since August 2018, has been zero, a discharge to the infiltration field should be rare.

Groundwater quality beneath the site has been historically monitored and no degradation from mining activities has been observed. Groundwater quality beneath the site has been monitored at YWS-1 since 1997 and continues to meet all Division Profile I reference values. This is an over-pressured confined aquifer, which makes degradation by the mine facility unlikely. Specific monitoring requirements can be found in the Water Pollution Control Permit.

H. Federal Migratory Bird Treaty Act

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

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

Prepared by: Karl W. McCrea
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