Manh Choh Project
Reclamation and Closure Plan

Prepared for
Peak Gold, LLC

Prepared by
SRK Consulting (U.S.), Inc.
503000.070
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Appendix A – Basis of Estimation
List of Abbreviations

2D Two-dimensional
3D Three-dimensional
AAC Alaska Administrative Code
ACOE Army Corps of Engineers
ac-ft acre-feet
ADEC Alaska Department of Environmental Conservation
ADF&G Alaska Division of Fish and Game
ADNR Alaska Department of Natural Resources
amsl above mean sea level
ARD acid rock drainage
ALPM Assembly Line Preventive Maintenance
AS Alaska Statute
BMP Best Management Practice
CAT Caterpillar (equipment)
cy Cubic Yard
F Fahrenheit
FA Financial Assurance
FGMI Fairbanks Gold Mining, Inc.
ft feet
GM Growth Media
HDPE High Density Polyethylene
KG Kinross Gold
LCRS Leachate Collection and Recovery System
LLC Limited Liability Corporation
LLDPE Linear Low-Density Polyethylene
LOM Life of Mine
ML Metal Leaching
MSHA Mining Safety & Health Administration
NAG Non-acid Generating
PAG Potentially-acid Generating
QMS Quartz Muscovite Schist
QA/QC Quality Assurance/Quality Control
RO Reverse Osmosis
RCP Reclamation and Closure Plan
SRCE Standardized Reclamation and Closure Estimator
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>TDS</td>
<td>Total Dissolved Solids</td>
</tr>
<tr>
<td>tpd</td>
<td>tons per day</td>
</tr>
<tr>
<td>USGS</td>
<td>United States Geologic Survey</td>
</tr>
<tr>
<td>WRD</td>
<td>Waste Rock Dump</td>
</tr>
<tr>
<td>WSE</td>
<td>Water Surface Elevation</td>
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1 Introduction

Peak Gold, LLC (Peak Gold)\(^1\) is proposing the development of the Manh Choh Project (Project), an open pit, hardrock gold mine in east-central Alaska, approximately 10 miles south of Tok, and 15 miles west of the village of Tetlin (Figure 1). This document was prepared in accordance with state regulations governing the reclamation of mined lands and describes reclamation goals and techniques for the mine site and ancillary facilities.

The purpose of this Reclamation and Closure Plan (Plan) is to provide guidelines for implementing stabilization and reclamation procedures for the various facilities associated with the proposed Manh Choh Project. These guidelines are based on the best available reclamation technologies. Peak Gold is committed to concurrent reclamation of portions of the site during operations, these guidelines may be modified as actual reclamation data are gathered during field reclamation of individual facilities or reclamation test plots. Revisions to this Plan will be made to address changes in the design, construction, operations, and concurrent stabilization and reclamation of the facilities.

This approach will:

A. reflect changes in the operating plans and mining schedule;
B. account for the stabilization and reclamation of previous phases or specific components of the facility;
C. incorporate information and actual operating experience developed during the initial phases of the project;
D. allow the incorporation of new design information if subsequent phases of the project are developed; and
E. allow for the utilization of new, reasonable and practical reclamation techniques as they are developed.

Peak Gold is committed to protecting the environment and the people around the Project area. Part of that commitment includes developing plans for orderly closure of the Project and reclamation of disturbed areas.

The Project is scheduled to begin production in 2024 with an expected mine life of approximately four years. Ore mined from the Project will be trucked to Fort Knox for processing, further reducing the environmental footprint at the Project location by eliminating milling, tailings management and storage.

The name ‘Manh Choh’ was chosen by the Native Village of Tetlin Chief, Michael Sam, and the tribal Council and can be translated from the Upper Tanana Athabascan language to ‘Big Lake,’ referring to the nearby Tetlin Lake, a site of high cultural significance in the community.

\(^1\) Peak Gold, LLC is the entity that owns the Manh Choh Project. KG Mining Alaska is a manager of Peak Gold, LLC.
1.1 Alaska Reclamation and Closure Requirements

Reclamation and closure of the proposed Mahn Choh Project falls under the jurisdiction of the Alaska Department of Natural Resources (ADNR), Division of Mining, Land, and Water and the Alaska Department of Environmental Conservation (ADEC).

1.1.1 Alaska Department of Natural Resources

Alaska Statute (AS) 27.19, the Reclamation Act, applies to state, federal, municipal, and private land and water subject to mining operations. This statute is administered by the commissioner of ADNR. The Reclamation Act states that "a mining operation shall be conducted in a manner that prevents unnecessary and undue degradation of land and water resources and the mining operation shall be reclaimed as contemporaneously as practicable with the mining operation to leave the site in a stable condition" and Alaska Administrative Code 11 AAC 97.240 further states "a miner shall reclaim a mined area that has potential to generate acid rock drainage (acid mine drainage) in a manner that prevents the generation of acid rock drainage or prevents the offsite discharge of acid rock drainage."

An approved reclamation plan is required by the State mining regulations (11 AAC 97.300 – 97.350). The reclamation plan does not become effective until a performance bond is in place, except for certain small operations. The performance bond amount shall be set at a level not more than an amount reasonably necessary to ensure the faithful performance of the requirements of the reclamation plan. Alaska Administrative Code 11 AAC 97 Mining Reclamation applies to the approval of reclamation plans, reclamation bonding, and enforcement of reclamation requirements under AS 27.19 for locatable mineral, leasable mineral, and material mining operations on state, federal, municipal, and private land. Nothing in the Reclamation Act precludes a federal or state agency (including ADNR), acting under its own regulatory or proprietary authority, from establishing and enforcing additional requirements or higher standards for reclamation. The Reclamation Performance Standards are defined in 11 AAC 97.200.

1.1.2 Alaska Department of Environmental Conservation

ADEC Solid Waste Permit regulations (18 AAC 60.265) have comprehensive requirements for closure and reclamation planning, including provision for funding for long-term water treatment. Specifically, 18 AAC 60.265 states:

"...(ADEC) will require proof of financial responsibility to cover the cost of closing a landfill and, if monitoring is required, the cost of post closure monitoring, if the department determines proof of financial responsibility is necessary to protect the public health, safety, welfare, or the environment. Proof of financial responsibility under this section may be demonstrated by self-insurance, insurance, surety, or other guarantee approved by the department to assure compliance applicable closure standards and post closure monitoring requirements."
1.2 **Purpose**

This document presents a comprehensive Reclamation Plan for the Project. The Plan describes the procedures and processes used to return land disturbed by mining operations to a stabilized condition providing long-term protection of land and water resources. The Plan describes the schedule for reclamation activities, general reclamation procedures, and the methods for achieving the final closure requirements and objectives. In addition, the Plan serves as a basis for calculating reclamation costs and the amount of the financial assurance.

1.3 **Scope**

Reclamation will include permanent stabilization of the following major facilities: North and South Pits, Main and North Waste Rock Dumps, site facilities and buildings, haul roads and other disturbances generated throughout mining activities. Reclamation will begin prior to cessation of mining operations and will be completed as expeditiously as feasible. Notification, in writing, of final closure will be provided to the ADNR, ADEC, and Army Corp of Engineers (ACOE) within 90 days after cessation of mining.

Access requests to the Manh Choh Project by Federal and State regulatory personnel for routine inspections will be honored by Peak Gold. All visitors are requested to contact mine security to ensure their safety. Mining is regulated under the Mine Safety and Health Administration (MSHA) and their regulations require minimum training for employees and visitors for Hazard Recognition and Safety. Visitors, as well as employees, must wear safety equipment approved by MSHA. Peak Gold requests that routine inspections be conducted during weekdays when administration and process managers are available to answer questions and, if necessary, accompany visitors to various process components.
2 Applicant Information

2.1 Applicant

Name: Peak Gold, LLC
Address: PO Box 73726
Fairbanks, AK 99707-3726
Telephone: (907) 490-2207

2.2 Corporation Officer Completing Application

Name: Martin Litt
Title: President and General Counsel, (KG Mining (Alaska), Inc., Manager)
Telephone: (303) 802-1445

2.3 Designated Contact Person

Name: Bartly Kleven
Title: Environmental Manager
Telephone: (907) 490-2207

2.4 Corporate Information

Business Name: Peak Gold, LLC, (KG Mining (Alaska), Inc., Manager)
Address: 5075 Syracuse St., Suite 800
Denver CO, 80237
Telephone: (303) 802-1445
President & General Council: Martin Litt
Vice President: Dennis McHarness
Treasurer: Carolyn Wild

2.5 Alaska Registered Agent

Name: United Agent Group, Inc
Address: 3085 Mountainwood Circle
Juneau, AK 99801
Telephone:
3 Project Description

The Project will require approximately two years of construction, followed by an active mine life of approximately four years. The mine will be a conventional truck and shovel operation, operating year-round, twenty-four hours a day. Ore will be mined from the pits and processed at Fort Knox Mine. A detailed description of the process can be found in the Plan of Operations (Peak Gold 2021a). Detailed management plans have been prepared for the Project, including:

- Manh Choh Project Water Management Plan (Piteau 2021a)
- Manh Choh Project Monitoring Plan (Peak Gold 2021c)
- Manh Choh Project Waste Rock Management Plan (SRK 2021a)
- Manh Choh Project Plan of Operations (Peak Gold 2021a)

Project infrastructure development is anticipated to begin in 2022, and mining is expected to start in 2023 and ore production in 2024. The current mine plan is based on the reserve estimate of approximately 1M oz of gold, with an average production rate of approximately 36,000 tons per day (tpd) of both ore and waste rock. Approximately 4,000 tpd of ore will be mined and hauled from the mine site area to the ore loadout area located near the base of the Tetlin Hills approximately 11 miles north of the mine area. From there, ore will be transferred into highway capable tractor-trailer trucks, and shipped to Fort Knox Mine approximately 240 miles north, for milling and refining.

The project consists of three major components:

- Mining area;
- Camp facility, and;
- Haul road corridor including the Manh Choh Twin Road, Manh Choh Site Road material borrow sites and the ore loadout area.

The camp facility may not be constructed but is included as part of this plan to provide flexibility as the mine plan is finalized. The camp would be located near the intersection of the Alaska Highway and Tetlin Village Access Road. This Plan assumes the camp is constructed and reclaimed at the end of mining.

A new road (Manh Choh Twin Road) will be constructed parallel to the Tetlin Village road to improve safety and separate non-mining related traffic from the mine traffic. Additionally, the existing project access road will be re-routed and improved (Manh Choh Site Road) connecting the Manh Choh Twin Road with the mine site area. An ore loadout area will provide temporary storage of ore prior to highway transit. Lastly the mine site consisting of the pits, waste rock dumps (WRD), haul roads, stockpiles, and support facilities such as water treatment plant and surface water diversions.

The Project will employ approximately 200 miners including support staff. The mine will operate two shifts, 24 hours per day, 365 days per year. A personnel camp (if developed) will house employees on a temporary rotational basis.
Power requirements for the mine will be limited to support day-to-day operations including maintenance shops, lighting, ore loadout and administration activities and will be supplied by generators. Alaska Power and Telephone substation at Tok may supply power to the camp or other ancillary structures near the highway, but the remainder of power on site will be provided by diesel generators.

3.1 Location

The Project is located at an elevation of approximately 3,300 feet, along the apex of the Tetlin hills which bisect the Tok River Valley and Tetlin Lake Valley. The Tok River valley is located approximately six miles to the west of the Project and Tetlin Lake is located approximately 10 miles to the east. Figure 1 illustrates the general vicinity of the Manh Choh Project and surrounding areas. Small unnamed (by USGS) ephemeral streams are located within the development footprint. Local names have been given to streams within the immediate area including: Thunder, Hillside and South Day Creeks located to the west, and Tors Creek located to the east. The upper reaches of these streams flow only during high precipitation events and during spring freshet. Year-round flowing streams are not located within the development footprint but can be found downstream of the site.
3.2 Land Status

The Project is located entirely within Native Village of Tetlin (Tetlin) owned lands, including the ore body, and all supporting mining facilities. Both surface and subsurface mineral rights are owned by Tetlin and leased for development. The mining area is located in Sections 1, 2, 11 and 12 of T016NR013E of the Copper River Meridian.

State lands are located to the west of the project site. No development will occur on state lands, nor will surface waters be diverted. Figure 2 depicts the landownership boundaries near the Project.
3.3 Proposed Project Disturbance

The project consists of two open pits, two WRDs, two backfilled pit WRDs, access and haul roads, support facilities, borrow sites, and temporary stockpiles. The anticipated mine life includes: two years of construction, followed by approximately four years of production, and two years of reclamation. Concurrent reclamation will occur during mining operations including backfilling pits and recontouring or other reclamation activities when facilities mature or are no longer required for operations. Ore will be stockpiled in limited quantities within the North WRD footprint and subsequently trucked to the Fort Knox Mine for processing.

Footprints for each facility have been developed using the best available information. The final configuration may deviate slightly due to unknowns such as varying density of blasted waste rock and stacking height in WRDs but will remain within the disturbance footprints. Any deviations or increases in facility footprints will be captured in amendments to the Reclamation and Closure Plan (RCP) should they be required. Development of facilities may require additional equipment maneuvering space, allowances for minor variations in terrain, clearing vegetation or construction of stormwater management best management practice (BMP) structures. This plan refers to these areas as buffers. The buffers are included around all facilities to account for these minor construction activities. For instance, a 25-foot buffer has been included to along all roads to allow for vegetation clearing and construction of stormwater and erosion control measures. In addition, areas where facilities do not create continuous disturbance boundaries, creating small, isolated islands of undisturbed ground; those isolated areas are assumed to be disturbed and will be reclaimed and revegetated as needed. While these buffer areas may not be developed, a cost to reclaim them has been included and reclamation practices developed for each facility will be applied accordingly as needed to each buffer area.

The surface disturbances associated with the Project is detailed by facility in Table 3.1 and depicted on Figure 3, Figure 4, Figure 5, and Figure 6. All items identified in Table 3.1 with exception of the Mine Roads (not reclaimed) will be reclaimed and left in a stable condition.

### Table 3.1: Proposed Surface Disturbances

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<tr>
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<td>37.7</td>
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<tr>
<td>Yards/Pads (mine)</td>
<td>23.1</td>
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<tr>
<td>Roads</td>
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<td>WRDs</td>
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<td>Pits</td>
<td>89.1</td>
</tr>
<tr>
<td>Growth Media</td>
<td>9.9</td>
</tr>
<tr>
<td>Stockpiles</td>
<td>9.8</td>
</tr>
<tr>
<td>Diversions</td>
<td>19.2</td>
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<tr>
<td>Material Sites</td>
<td>128.8</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>915.3</td>
</tr>
</tbody>
</table>
3.4 General Environment

The Project site is located within the Tanana-Kuskokwim Lowlands ecoregion at an elevation between 2,000 ft and 3,300 ft amsl. The moderate relief of the Tetlin Hills are surrounded by Tetlin Lake to the east and the Tok River Valley to the West (see Figure 3). Local ridges trend northwest to southeast in the area immediately surrounding the pits and facilities, resulting in northeast and southwest facing slopes. The slopes in this area are characterized by deciduous birch and aspen, alder and willow, with more isolated areas of spruce. Vegetation mapping including delineation of wetlands and the extent of recent forest fires has been completed by ABR (2013; 2016).

The Tok River Valley to the west is characterized by a broad, low-relief floodplain occupied by the northward flowing Tok River, sporadic ponds, and cut-off channels. A dense riparian zone of spruce is present immediately adjacent to the present-day Tok River channel and dense willow and birch are found along the road corridors on the valley floor.

3.5 Climate

The Manh Choh Project area has a dry-winter continental subarctic climate. Summer daytime temperature highs are typically around 60° to 70°F and summertime lows are around 40° to 50°F. Winter daytime temperatures range from highs in the -10 to 20°F, while lows range down to -40°F range. Thermal inversions are common in the winter months, resulting in cool temperatures in the lower valleys and warmer temperature near the summits of mountains. Average annual precipitation at the Manh Choh Project area is 10 to 12 inches, with approximately 40% of total precipitation being snow (Piteau 2021c).

The nearest weather station is located in the town of Tok (weather station Tok-2), Alaska, about 11 miles from the Manh Choh Project site, which was recorded weather from 1954.

Peak Gold LLC installed a meteorologic station at site near the proposed North WRD and began collecting data in November 2020. The collected data from the new meteorologic station indicates a correlation to Tok-2 weather station and suggests slightly higher precipitation can be expected at the mine site, which is expected due to the elevation difference between the stations (Piteau 2021c).

3.6 Vegetation and Soils

Terrain and vegetation characteristics were based on review of IFSAR digital surface models, previous vegetation mapping data products (ABR 2013; 2016), and field observations were made by SRK in September 2019 (SRK 2021b).

The area immediately surrounding the planned pits and facilities was most recently burned by forest fires in 1990. Visible evidence of the forest fire include deadfall and standing burnt spruce in this area. The surface ground cover in this area likely shifted from pre-burn upland spruce to post-burn recovery vegetation dominated by alder, aspen, birch, and willow. This shift in surface vegetation cover has altered the surface energy balance when compared to pre-burn conditions. Over time,
the change in surface conditions can be expected to impact the deeper thermal condition of permafrost at the site.

Near surface soils at the mine site consist of colluvium and aeolian silts with a depth ranging from outcropping of bedrock to more than 20 feet deep in the valleys near the mine area. The soils near the ore loadout area and camp site consist of alluvial sand, silts and gravels among paleo river channels.

### 3.7 Permafrost

The ground temperature thermal regime is strongly controlled by terrain and vegetation which influence the surface energy balance and the amount of heat annually going in and out of the ground. Permafrost is locally inferred to be discontinuous across a large portion of the project site based on the site climate and past change in surface condition. The North Pit, South Pit, North WRD and Main WRD are inferred to be within locally continuous permafrost with a suprapermafrost talik above the permafrost table (SRK 2021b). Permafrost is present within isolated areas within the project disturbance. Effort will be made to minimize disturbances during construction and stabilize those areas during reclamation when permafrost soils are encountered.

### 3.8 Geology

The majority of the Manh Choh Project is hosted within the Yukon-Tanana Terrane, a regionally extensive package of greenschist to amphibolite facies metamorphic rocks of Mississippian or older age. Most of the project area escaped Pleistocene continental glaciation and is covered by a variable thickness of aeolian silt ranging up to 35 ft thick with extensive oxidation occurring some 200 to 300 ft below surface. The majority of the bedrock in the area is a quartz muscovite ± biotite schist unit (QMS) containing conformable layers of amphibolite schist / greenstone. The QMS unit is primarily comprised of quartz, muscovite, biotite and local garnet with minor actinolite and epidote (Piteau 2021).

Waste rock from the open pits is currently categorized as Potentially Acid Generating (PAG) and Non-Acid Generating (NAG) or Oxide Metal Leaching (ML) material. Further each category is classified as either oxidized or unoxidized and low-sulfur PAG. The Waste Rock Management Plan (SRK 2021a) details the specific volumes of each category and in situ location and ultimate final placement location. Waste rock will be sorted during mining and either placed in stockpiles for relocation prior to final closure or placed in a permeant WRD that will be regraded and reseeded for closure. The proposed Waste Rock Management Plan (SRK 2021a) includes stockpiling PAG and ML material in a stockpile located on the Main WRD during operations. The stockpiled WR will be rehandled near the end of mining or immediately following the end of mining. North Pit will be backfilled primarily with ML material and some PAG, while South Pit will be backfilled with PAG and low-sulfur PAG. The North Pit will be backfilled above the pit rim, while the South Pit will be partially backfilled leaving a depression but covering all highwalls. North Pit will be covered with an impervious cover liner system, growth media and revegetated. A summary of waste backfill can be found in Table 3.2.
### Table 3.2: Waste Rock Classification by Facility

<table>
<thead>
<tr>
<th></th>
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<td>1,405,718</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Transition NAG Low Metals</td>
<td>0</td>
<td>0</td>
<td>2,728,755</td>
<td>803,076</td>
<td>0</td>
<td>0</td>
<td>597,031</td>
<td>446,436</td>
<td>1,058,397</td>
<td>44,960</td>
</tr>
<tr>
<td>Oxide PAG</td>
<td>1,334,842</td>
<td>0</td>
<td>1,779,014</td>
<td>660,412</td>
<td>0</td>
<td>3,190,544</td>
<td>0</td>
<td>0</td>
<td>533,145</td>
<td>0</td>
</tr>
<tr>
<td>Oxide Rapid Onset PAG</td>
<td>363,868</td>
<td>0</td>
<td>3,941,391</td>
<td>1,064,151</td>
<td>0</td>
<td>681,158</td>
<td>0</td>
<td>0</td>
<td>1,174,265</td>
<td>0</td>
</tr>
<tr>
<td>Oxide NAG High Metals</td>
<td>1,377,154</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,743,687</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Oxide NAG Low Metals</td>
<td>0</td>
<td>0</td>
<td>6,849,597</td>
<td>2,555,153</td>
<td>0</td>
<td>1,226,921</td>
<td>1,041,683</td>
<td>2,920,037</td>
<td>2,613,508</td>
<td>0</td>
</tr>
<tr>
<td>Overburden</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>611,646</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Kinross (Waste Rock Management Plan SRK 2021a)

1 - Approximately 1.5 Mt of waste rock from Main WRD is rehandled into the Manh Choh South Pit buffer zone at closure. The material will comprise Transition NAG Low Metals and Oxide NAG Low Metals.

2 - An additional 5.9 Mt of waste rock from Main WRD is rehandled to the Manh Choh South Pit to slope down the exposed pit walls for closure.
3.9 Water Management

During operations, all contact water sources will be collected in the North Pit. The water will be collected via perimeter ditches (perimeter trench) surrounding the mine infrastructure and redirected to retention basins (Figure 4). Infiltration testing in shallow test pits around Manh Choh indicates the shallow soils have low permeability and will form a good foundation for perimeter trenching to capture and convey contact water around site. In contrast, the underlying weathered bedrock is very permeable and would readily accept infiltration of water after removal of the fine-grained soil cover (Piteau, 2021a).

3.9.1 Surface and Ground Water

Groundwater flow at the site is extremely low because of the dry conditions and limited recharge area. Any groundwater flow that does occur is localized and will percolate mostly through fractures, faults, and related small-scale structures. The limited overburden thickness and low bedrock hydraulic conductivity further reduces recharge; most precipitation runs off the site.

Although no active permafrost is identified at the site, zones of discontinuous relict bedrock permafrost do occur, and act to further interrupt the movement of groundwater. The small amount of recharge that does occur is related to spring snowmelt. This causes seasonal increases in piezometric levels of 5 to 30 ft. The relatively large seasonal fluctuation of groundwater levels is indicative of a low storage groundwater system.

Seasonal intermittent stream flow occurs in the catchment headwaters on both sides of the drainage divide. Perennial stream segments start downgradient of the project area, at locations of year-round groundwater discharge which are delineated by ice buildup (aufeis) in winter (Piteau, 2021a).

3.9.2 Background Water Quality

Water quality in the headwater streams that drain the project area is generally good. Constituent concentrations downgradient of the site are generally low, but higher concentrations are reported in samples taken from the Tok River and Tetlin Lake. Baseline iron, arsenic and manganese concentrations in Tors Creek exceed ADEC guideline values due to the proximity of the mineralized orebody. Baseline sulfate, metals, and total dissolved solids (TDS) concentrations are consistently higher in groundwater than surface water, particularly in the vicinity of the orebody. Downgradient of Manh Choh, water quality of streams reflects the mixing of the mineralized groundwater discharge with runoff from the stream headwaters (Piteau, 2021b).

3.9.3 Mine Water Management

The mine site runoff water will be treated using microfiltration followed by reverse osmosis. A headwater tank will be used to inject chemicals for pre-treatment to aid in removing iron, manganese, arsenic and heavy metals. Water quality will vary depending on the stockpiles and the size of the storm so treatment requirements will vary. Upon initial review of water quality, RO may not be needed. However, it is being provided so that it is available should the need arise. The treatment system will be sized to handle peak flows at 350 gpm. Treated water will be used to supply the
wash bay or discharged to surface. Brine and filter wash water will be stored in small ponds located near the WTP. (Piteau, 2021a).

4 Wetlands

Wetlands have been identified and mapped in a 6,024-acre study area, which includes the development footprint. The proposed development avoids and minimizes fill in wetlands to the maximum extent practical. The Project will impact approximately 5.17 acres of wetlands and 80 ft of an intermittent stream which seeps back into the ground (no downstream surface connection). Impacts to wetlands will be from mine access road fill, open pits, and water management diversion trenches. Wetland impacts in the mine pits are unavoidable, but minor. Approximately 5,000 cubic yards of clean gravel will be placed in wetlands for construction of roads and infrastructure pads. The majority of wetland impacts are due to fill placement for the construction of the Manh Choh Twin Road, which is being constructed to provide a separate, buffered roadway from the local traffic. Internal mine roads also include temporary work areas. Activity in temporary work areas consists of vegetation clearing to manage stormwater runoff to meet State Water Quality Standards. During reclamation internal mine roads will be regraded to establish surface drainage, scarified, and seeded. Figure 7 illustrates the wetland locations and disturbance and fill limits, further detail can be found in the Wetlands Report (Stantec 2021). Peak Gold is currently working with the U.S. Army Corps of Engineers (ACOE) on permitting and mitigation measures. A mitigation plan for the unavoidable impacts to wetlands is being developed with input from the local community. Mitigation will likely be done concurrent with mine construction and operations.
5  Reclamation Practices

5.1  General

Peak Gold and the landowners’ long-term reclamation goals during and after mining and beneficiation process operations are to shape, revegetate, or otherwise stabilize the land to meet the objectives of the designated post-mining land use. The current designated post-mining uses for the proposed Manh Choh project area are for wildlife habitat and dispersed recreation, as prescribed by:

AS 27.19.020 Reclamation Standard:

“A mining operation shall be conducted in a manner that prevents unnecessary and undue degradation of land and water resources, and the mining operation shall be reclaimed as contemporaneously as practicable with the mining operation to leave the site in a stable condition.”

AS 27.19.030 (b)

“In reviewing a reclamation plan for state, federal, or municipal land under (a) of this section, the commissioner may consider, after consultation with the commissioners of environmental conservation and fish and game and with the concurrence of the miner and landowner, uses to which the land may be put after mining has been completed, including trails, lakes, recreation sites, fish and wildlife enhancement, commercial, and agriculture uses.” and,

11 AAC 97.200 (b)

“A miner shall reclaim an area disturbed by a mining operation so that the surface contours after reclamation is complete are conducive to natural revegetation or are consistent with an alternate post-mining land use approved under AS 27.19.030(b) on state, federal, or municipal land, or with the post-mining land use intended by the landowner on private land.”

Peak Gold will incorporate practices that include contouring and stabilizing disturbed areas using best engineering practices to create seedbeds that invite and promote hardy revegetation of available native plant species, using soil amendments or other proven methods of revegetation.

Peak Gold will work with ADNR, Division of Agriculture/Plant Materials Center, and Alaska Department of Fish & Game (ADF&G) in the implementation and evaluation of both concurrent and long-term reclamation activities at the site.
The design and implementation of the mine reclamation and closure plans are important for the surrounding communities during mine closure. Measures to mitigate the potential socioeconomic effects associated with mine closure will be reviewed and discussed every five years during permit renewals throughout the mine life should the mine life extend beyond the anticipated 5-year schedule.

Best management practices for reclamation require that the final configuration be developed throughout the mining process and is tied directly to the design, construction, operation, and closure of the project. These practices are discussed in the following sections.

5.2 Schedule of Reclamation Activities

5.2.1 Reclamation Schedule

Construction of the Manh Choh Twin Road and Mahn Choh Site Road will commence in mid-2022, development associated with the Pits and WRD will begin mid-year 2023 and mining will end in the North Pit in 2025 followed by the South Pit in mid-year 2027. Construction of the WRDs and back fill of the pits will be concurrent with perspective pit developments. Concurrent reclamation will begin in 2025 in the North Pit. Reclamation of the South Pit, WRDs and other facilities will be complete within two years following completion of mining in 2028. The anticipated reclamation schedule is summarized in Table 5.1.
<table>
<thead>
<tr>
<th>Table 5.1: DRAFT Reclamation Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Const. Manh Choh Twin and Project Roads</strong></td>
</tr>
<tr>
<td><strong>Const. Support Facilities</strong></td>
</tr>
<tr>
<td><strong>Development of North Pit</strong></td>
</tr>
<tr>
<td><strong>Construction of the North WRD</strong></td>
</tr>
<tr>
<td><strong>Development of the South Pit</strong></td>
</tr>
<tr>
<td><strong>Construction of the Main (south) WRD</strong></td>
</tr>
<tr>
<td><strong>Backfill North Pit (North Pit WRD)</strong></td>
</tr>
<tr>
<td><strong>Backfill South Pit (South Pit WRD)</strong></td>
</tr>
<tr>
<td><strong>Reclaim North Pit</strong></td>
</tr>
<tr>
<td><strong>Reclaim South Pit</strong></td>
</tr>
<tr>
<td><strong>Reclamation of North and Main WRDs</strong></td>
</tr>
<tr>
<td><strong>Reclaim Yards, Facilities and Roads</strong></td>
</tr>
<tr>
<td><strong>Reclaim Water Management Structures, WTP and BMPs</strong></td>
</tr>
<tr>
<td><strong>Cover Maintenance and Post-Closure Monitoring</strong></td>
</tr>
<tr>
<td><strong>Construction Phase</strong></td>
</tr>
<tr>
<td><strong>Mining</strong></td>
</tr>
<tr>
<td><strong>Concurrent Reclamation</strong></td>
</tr>
<tr>
<td><strong>Reclamation and Monitoring</strong></td>
</tr>
</tbody>
</table>
5.3 Concurrent Reclamation

Concurrent reclamation will be implemented throughout the project timeline including, relocation of waste rock, soil stabilization and erosion control measures on all disturbed and unprotected areas prior to the end of a normal operating season. Opportunities for concurrent reclamation of waste rock dumps and pit backfills will be performed as part of the mine plan. For instance, backfilling pits with waste rock during mining operations to achieve final reclamation configuration while the mine is still active. Trial plots for revegetation will be conducted to maximize seeding and fertilizer rates. The low annual rainfall volumes could hinder revegetation attempts and seed mixes may need to be modified to achieve the desired outcome.

5.4 Temporary Closure

Temporary closure means the cessation of the mining operations for a period of not more than three years. If conditions require temporary closure to extend beyond three years, final reclamation will begin, unless an extension is requested by Peak Gold and approved by ADNR. Temporary closure scenarios that require modifications to the plan of operations, reclamation plan or 404 Permit will be coordinated with the appropriate Federal and State agencies for approval.

Peak Gold shall notify the Authorized Officer (ADNR, the Director of the Division of Mining, Land and Water or a designee) in writing at least 30 days prior to any planned temporary closure of 90 days or longer. Peak Gold shall notify the Authorized Officer of any unanticipated temporary closure expected to last 90 days or more within 10 days of the first day of the temporary closure. The notice shall state the nature and reason for the temporary closure, the anticipated duration of the temporary closure, what actions will be taken to maintain compliance with project permits and plan approvals, and any event which would reasonably be anticipated to result in the resumption of mining or the permanent cessation of mining. Mining operations must resume for not less than 90 consecutive days in order to terminate the temporary closure status.

5.4.1 Planned Temporary Closures.

Planned Temporary closure could have specific conditions defining their beginning and end, include, but are not limited to, the following:

- Interruptions in the active Fort Knox Mine beneficiation processes to provide planned periods of inactivity for metallurgical or operating reasons.
- Any other planned condition that would interrupt the active Fort Knox Mine beneficiation process including modification to process components or suppressed metal market conditions.
- Change in ownership requiring the temporary cessation of operations while operating permits are transferred to the new owner/operator.
5.4.2 Unplanned Temporary Closure

Unplanned temporary closures may include, but are not limited to, the following:

- Closure because of unforeseen weather events.
- A failure in a major system component or a process failure that causes the fluid management system, or a portion of it, to shut down.
- The cessation of operations due to litigation.
- Economic reasons.

6 General Reclamation Procedures

The primary components in reclamation include earthwork, growth media placement, seedbed preparation, fertilizing, seeding, and monitoring. Peak Gold will manage these components keeping in mind that the goal is to achieve a stable, revegetated post-mining land surface that will promote natural invasion by native plants. Peak Gold will continue to work in coordination with Tetlin and ADF&G, Division of Habitat to develop and enhance the fish and wildlife potential throughout the project area.

6.1 Earthwork

Waste rock dumps will require major grading, contouring, and revegetation. Other disturbed areas will be revegetated; some may require regrading to promote drainage and or reduce erosion potential. Growth media will be applied if revegetation efforts are not successful to regraded native soils. Generally, slopes will be graded to 2.5H:1V (horizontal:vertical), or flatter. For the purposes of the Financial Assurance (FA) calculations, a slope of 3H:1V are considered resulting in a more conservative estimate of earthwork volumes.

Earthwork will utilize the equipment fleet used for mining. The equipment list will include: dozers, rubber-tired scraper, water truck, motor graders, front-end loaders, track and tire mounted backhoes, compactors and haul trucks. Equipment needed for reclamation and operations will remain dynamic, as specific conditions require different equipment during implementation of the plan.

6.2 Control of Sedimentation

Implementation of BMPs to control erosion during active mining will be designed to minimize re-disturbance during reclamation. The BMPs will be consistent with those measures and practices identified in Alaska Department of Transportation and Public Facilities, Alaska Storm Water Guide, December 2011 (ADEC 2011).

Temporary sediment and erosion control devices will be maintained until site-specific potential for erosion has been minimized through earthwork or revegetation. Removal of devices will be determined by field conditions.
6.3 Growth Media

Growth media is defined herein as all material with the physical and chemical properties capable of germinating and sustaining vegetation growth with or without amendments. Growth media may consist of topsoil, or other material defined as overburden near the surface of excavations. Overburden is the unconsolidated material that lies between the topsoil horizons (where present) and bedrock and exhibits no chemical characteristics that will inhibit vegetation development.

Growth media will be stockpiled prior to construction of facilities or development of pits in anticipation of future reclamation needs. Growth media will be applied in areas where needed to support revegetation. Revegetation and cover studies will be performed to determine the optimal growth media application depth. The financial assurance (FA) assumes 24-inches of growth media placement. The depth of growth media required for successful reclamation may be reduced pending field trials and revegetation test plot information. Growth media will be hauled and placed by dump truck and spread by a dozer. Highly compacted areas such as equipment lots and roads will be ripped in a linear fashion prior to growth media placement if it is required.

The Standard Reclamation Cost Estimator (SRCE) Model calculates the true volume of cover and topsoil required based on the three-dimensional slope area and generally results in slightly higher volume calculated vs a planar two-dimensional (2D) plan area. The quantities listed in Table 6.1 represent a summary of probable stripped volumes of growth media. A detailed overburden model does not exist for the entire project area, however depth of overburden with the footprints of the pits are well defined. The volume of stripped overburn in the pit footprints is determined from the subsurface investigation, while the volumes stripped within the footprints of WRDs is estimated at a probable 24-inches of overburn stripped within the 2D area. Probable, meaning that depth of native soils varies across the disturbance area, but is assumed that an average of 24-inches of growth media material can be salvaged across the site because overburden depts range from one to ten feet based on current subsurface investigations. A geotechnical evaluation will be done prior to development of waste rock dumps to determine the optimum depth of overburden stripping required for stability. A detailed volume break-down for available growth media is listed in Table 6.1, while Table 6.2 represent a summary of growth media volumes calculated by the SRCE model.

At a minimum, select quality or organic overburden soils within the disturbance footprints will be stripped for reuse in reclamation. The estimated stockpile inventory and required volume for reclamation are similar. No bulking factors have been included in the estimated quantity stripped, and an assumption that 24 inches of growth media, on average, is available for salvage. Should additional growth media be required stripped material from yards or borrow sites could be salvaged and applied to waste rock dumps. An estimated 612,000 tons (556,000 cy assuming specific gravity of 1.1) of overburden is expected to be salvaged from stripping the North and South Pits.
Table 6.1: Growth Media Stockpiled Inventory – Stripped Prior to Construction

<table>
<thead>
<tr>
<th>Facility</th>
<th>Acres</th>
<th>CY</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Pit</td>
<td>39.6</td>
<td>324,000</td>
</tr>
<tr>
<td>South Pit</td>
<td>29.0</td>
<td>232,000</td>
</tr>
<tr>
<td>North WRD</td>
<td>110.3</td>
<td>356,000</td>
</tr>
<tr>
<td>Main WRD</td>
<td>197.9</td>
<td>639,000</td>
</tr>
<tr>
<td>Marginal Ore Stockpile</td>
<td>9.8</td>
<td>32,000</td>
</tr>
<tr>
<td><strong>Total Estimated Salvage</strong></td>
<td><strong>386.6</strong></td>
<td><strong>1,583,000</strong></td>
</tr>
</tbody>
</table>

1. The areas listed includes a 25-foot construction buffer

Table 6.2: Growth Media Requirements (SRCE Model Values)

<table>
<thead>
<tr>
<th>Facility</th>
<th>Acres</th>
<th>CY</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Pit WRD</td>
<td>39.62</td>
<td>129,067</td>
</tr>
<tr>
<td>South Pit WRD (excludes highwall area)</td>
<td>6.52</td>
<td>22,857</td>
</tr>
<tr>
<td>South Pit Highwall Backfill</td>
<td>42.95</td>
<td>138,585</td>
</tr>
<tr>
<td>North WRD</td>
<td>108.15</td>
<td>366,777</td>
</tr>
<tr>
<td>Main WRD</td>
<td>195.91</td>
<td>505,135</td>
</tr>
<tr>
<td>Marginal Ore Stockpile Pad</td>
<td>9.80</td>
<td>32,267</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>402.95</td>
<td><strong>1,198,687</strong></td>
</tr>
<tr>
<td><strong>Estimated Growth Media Available</strong></td>
<td><strong>1,583,000</strong></td>
<td></td>
</tr>
</tbody>
</table>

Volumes are calculated assuming three-dimensional surfaces and slope volumes. Areas differ from Table 6.1 because a buffer area is included in the stripping table. An estimate surplus of growth media is expected, assuming 24 inches is available for stripping.

6.4 Seedbed Preparation

Mine and mine related disturbances can result in compacted surfaces unsuitable for revegetation. Thus, preparation of a seedbed suitable for plant germination and growth can be a critical task in any successful land reclamation project.

The general method of seedbed preparation will be ripping or scarifying on the contour 12 to 18 inches deep using a CAT D8, D9, or D10 CAT (or equivalent) equipped with a 2 or 3-shank ripper.

Ripping will occur along contours of sloped areas to promote erosion control in addition to creating a suitable seedbed. The specific site will be prepared for seeding by ripping on the contour to roughen the surface. A broken, roughened surface will serve to trap moisture, reduce wind shear, minimize surface erosion by increasing infiltration, and create micro-habitats conducive to seed germination and development.
6.5 **Fertilizer and Fertilization**

Prepared seedbeds may be fertilized prior to, after, or during the seeding operation. Specific fertilization requirements will depend on the quality of growth media used and presence of organic material in the soil. Growth media will be tested for standard soil agricultural constituents including nitrogen, phosphorus and potassium. Field testing has not been conducted but will be performed prior to reclamation. At this time, an anticipated fertilizer application rate will range from 100 to 300 pounds per acre of 20N-20P-10K for a spring seeding or 10N-20P-10K for a fall seeding. The Financial Assurance (FA) accounts for 300 pounds per acre and the spring fertilizer ratio. Final fertilizer and application rates will consider information acquired from concurrent reclamation on site, soil tests and vegetation studies.

6.6 **Seed and Seeding**

A proposed grass seed mix is listed in Table 6.3 (current mix proposed for use at Fort Knox) is proposed for reclamation. This seed mix is consistent with the recommendation in *A Revegetation Manual for Alaska* (ADNR 2008). The primary purpose of this seed mix is to achieve quick vegetative cover that will help minimize soil erosion. Forb species that may be considered in the future for revegetation include: Silverberry, Lupin, Oxytropis, Wild Sweet Pea, Sweetbroom, Burnet, Siberian Aster, Goldenrod, Alpine Milk Vetch, Wild Sage, Dragonshead Mint and Wild Rhubarb. However, these varieties are not currently available commercially, and a commercial source must be located if they are to be incorporated in the seeding mix. The seed mix may change over time in response to such factors as internal and external research results, changes in technology, changes in land management philosophy, and commercial availability. Native species will be the preferred mix. However, other species may be used in some years due to availability or if deemed to better meet the post-mining land use criteria and approved by ADNR. Peak Gold will work with the Alaska Plant Materials Center to refine a mix representative and conducive to climate. Experience at True North Mine and highway construction has demonstrated that native woody vegetation such as willow, aspen, dwarf birch, etc., readily and quickly reinvade newly constructed areas. No additional woody vegetation is anticipated to be planted.

**Table 6.3: Seed Mix**

<table>
<thead>
<tr>
<th>Seed Type</th>
<th>Mix %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arctared Fescue</td>
<td>50%</td>
</tr>
<tr>
<td>Gruening Alpine Bluegrass</td>
<td>20%</td>
</tr>
<tr>
<td>Tundra Glaucous Bluegrass</td>
<td>20%</td>
</tr>
<tr>
<td>Nortran Tufted Hairgrass</td>
<td>10%</td>
</tr>
</tbody>
</table>

Seeding will be accomplished using broadcast methods that may include but not be limited to hydroseeding, hand broadcasting, dozer or off-road vehicle mounted broadcasting, and aerial broadcast application. The application rate for broadcast seeding using the presently proposed grass seed mix will be 40 pounds of pure live seed per acre. The rate may be reduced based field trials and revegetation success using native soils and consultation with the Alaska Plant Materials Center.
Center. The need for mulch application will be evaluated if seed germination becomes a limiting factor in the reestablishment of vegetation.

6.7 Revegetation Timing

Seeding will be conducted as soon as possible following seedbed preparation. Ground conditions suitable for large scale earthwork occur primarily during the spring and summer months. Research and experience with concurrent reclamation will be used to evaluate the potential of dormant seeding. Generally, seeding is implemented after spring break up until mid-July. Such seeding allows the seed to take advantage of the summer moisture period. However, actual experience has shown that all seedbed preparation on large-scale mine reclamation projects cannot and does not occur at one point in time. Thus, while every effort will be made to conduct the majority of seeding after spring breakup and before mid-July, seeding actually may occur during spring, summer or fall. If a seeding is unsuccessful for any reason, the area will be reseeded the following year.

6.8 Vegetative Restoration Studies

Peak Gold will use a native grass seed mix ratio, seed application rate and fertilizer rate recommended by the Plant Materials Center with approval from ADNR. Planting of dormant willow cuttings and encouraging the natural invasion of adjacent native species are methods used in the past to promote species diversity in wetland areas. Opportunities to increase species diversity in all areas of the mine site will be pursued through studies on site.

6.9 Revegetation Cover Criteria

A vegetative cover criterion of 70% will be achieved prior to requesting final release of FA for each reclaimed area. The 70% vegetative cover criteria shall be determined a minimum of three years after the last application of topsoil, seed, fertilizer, or any water in addition to natural precipitation. A method approved by ADNR will be used to determine percent cover. The 70% cover criteria may be waived upon the concurrence of ADNR or the landowner for specific areas that are deemed stable, have minimal potential to adversely impact surface water quality, and are consistent with the post mining land use.

7 Facility Specific Reclamation

Reclamation for the Project will include a goal of returning the disturbed areas to near pre-disturbance condition. This will include reshaping WRDs, road prisms, and laydown yards to provide positive drainage, and recontour landforms into shapes that blend with the existing landscapes. Figure 8 depicts the proposed final reclaimed configuration of the entire project, Figure 9 illustrates the mine area reclamation detail. The sections below detail specific reclamation for individual facilities.
7.1 Pits

Both the North and South Pits will be backfilled at the end of mining or soon there after. Haul roads in and around the pit will be smoothed of all berms except those necessary for erosion control and public safety. Road cuts and fills in close proximity of the pits will be recontoured as much as feasible, and the roadbeds would be ripped and scarified where necessary and seeded.

Both pits will be backfilled with waste rock to reduce the disturbance footprint at closure, increase safety and reduce the visual impacts of an open pit. Backfill material will consist of low-sulfur PAG, PAG and ML waste rock (SRK 2021a). The Waste rock will be covered with NAG waste rock, or impervious liner cover to further limit exposure to air. The following sections and Figure 10 illustrates the proposed configuration of the pits showing the extent of mining and proposed backfill.
7.1.1 Pit Water Management

During operations, water collected by the perimeter channels will be pumped (from the west perimeter retention pond) or discharged from the perimeter channels into the north pit sump. The north pit sump will act to both attenuate stormwater during operations, and also an operational sump during mining. Once the North Pit is backfilled and mining is complete in the South Pit, water will be diverted to the South Pit to reduce filling times and limit PAG exposure prior to inundation.

Water collected in the pits during operations is expected to be minimal and will either be reused for dust control or sent to the water treatment plant for treatment and discharge into the environment. Nearing the end of mining operations, the water level will be allowed to rise in the pits. The South Pit is expected to reach equalization approximately two years after cessation of mining. To increase the water surface level in the South Pit in a shorter timeframe, water may be pumped from wells and/or surface water will be diverted to reduce the natural rebound time required to inundate the PAG waste rock. The Manh Choh Water Management Plan (Piteau 2021a) includes a schedule of operations and more detail on the management of water during operations and after mining has ceased.

7.2 Waste Rock Dumps

Four WRDs will be constructed as part of the project, including two in-pit WRDs and two surface WRDs. Construction of all WRDs is similar and generally involves end dumping truck loads in a benched configuration. The benches are developed to allow for regrading at closure and provide a consistently sloped surface from top to bottom of the dump. Figure 4 depicts the configuration of the post mining WRDs.

Waste will be segregated into potentially-acid generating (PAG), metal leaching (ML) and blended low-sulfur PAG and non-acid generating (NAG) rock types. PAG and ML waste rock will be temporarily stockpiled in strategic locations on the WRDs for relocation into one of the pits as mining is completed.

Groundwater is expected to rebound in each of the pits to pre-mining elevations (Piteau 2021a). PAG material will be submerged in the South Pit below the anticipated ground water level thus reducing the potential acid generation of the waste rock (Figure 10). NAG waste rock will be placed over the top of the PAG material. Waste rock segregation criteria and detailed information can be found in the Waste Rock Management Plan (SRK, 2021a).

7.2.1 Main Waste Rock Dump

The Main WRD will be located south of the South Pit. Approximately 15,900,000 tons (SRK 2021a) of blended NAG and blended Low-sulfur waste rock will be placed in one of two lobes constructed. The west lobe will be temporary and consist of both NAG with stockpiles of ML and PAG waste rock, all of which will be relocated to the South Pit at the end of Mining. The remaining east lobe of the Main WRD consisting of blended low-sulfur PAG and NAG will either be relocated to the south pit to encase the highwalls or regraded to slopes of approximately 3H:1V (horizontal:vertical), covered with 12 to 24 inches of growth media, scarified and seeded.
Slope diversions will be installed on grade on long regraded slopes to reduce runoff velocity, and erosion of soils.

7.2.2 North Waste Rock Dump

The North WRD will be located east of the North Pit. Approximately 5,600,000 tons (SRK 2021a) of waste rock will be placed on the apex of the ridge. Temporary stockpiles of ore will be located within the North WRD footprint and will either be relocated to the north pit WRD or hauled to Fort Knox for processing. The remaining waste rock will consist of NAG or blended low-sulfur PAG rock and is not expected to generate acid rock drainage (ARD) or leach metals. The North WRD will be regraded to slopes of approximately 3H:1V, covered with two feet of growth media, scarified and seeded. Slope diversions will be installed on grade on long regraded slopes to reduce runoff velocity, and erosion of soils.

7.2.3 North Pit Waste Rock Dump

The North Pit will be backfilled with approximately 7.3M tons of waste rock during mining operations approximately three years after mining activity begins. Approximately 3.7M tons (2,100,000 cy) of ML waste rock (SRK 2021a) previously stockpiled will be placed in the pit above the anticipated ground water surface elevation. NAG waste rock will be backfilled in the bottom of the pit prior to placement of ML waste rock to limit interaction with ground water. The anticipated water surface elevation in the north pit is expected to be approximately 30 ft above the maximum excavated pit floor or an elevation of approximately 2930 amsl. The pit will be backfilled to provide positive drainage to the perimeter to reduce infiltration potential and head over the impervious liner system. The liner system will reduce the potential for oxygen and water infiltration into the waste rock, further reducing metal leaching and ARD potential. A drainage layer (gravel or geogrid) and drainage system (perforated pipes) will be constructed above the impervious liner cover system to improve stability of soils over the impervious layer. Due to the presence of an impious layer, a minimum of 24 inches of growth media will be placed on the surface, scarified and seeded. The depth may increase upon further study and revegetation test plots. Generally woody plants require a minimum depth of growth media to prevent compromise of the imperious layer by root penetration. Figure 10 illustrates the proposed liner system and in-pit WRD configuration.

7.2.4 South Pit Waste Rock Dump

Once mining is complete in the South pit, groundwater is expected to rebound to a maximum elevation of 2,965 ft amsl resulting in a water depth approximately 250 above the final pit floor. The South Pit will be backfilled with approximately 7,075,000 tons (4,000,000 cy) of previously stockpiled PAG waste rock (SRK 2021a). The PAG material will be placed to a maximum elevation of 2955 ft amsl, or approximately 10 feet below the expected ground water rebound water surface elevation within the pit. Storing PAG waste in a low oxygen environment (under water) will reduce ARD generation potential.

NAG waste rock will be placed over the PAG waste rock within the groundwater fluctuation zone to an elevation of approximately 2,992 ft amsl. The NAG layer will further limit oxygen infiltration
into the PAG waste rock. The pit bottom will be covered with 12 to 24 inches of growth media, scarified and seeded.

7.2.5 South Pit Highwall Backfill

NAG or blended low-sulfur PAG waste rock from either the North or Main WRD will be relocated to the South Pit at end of mining and used to encapsulate the exposed highwall. Covering the pit highwall will reduce visual impacts and reduce safety concerns. The backfill will be regraded at 2:1 slope or flatter, scarified and seeded. Slope diversion berms will be installed on grade on long regraded slopes to reduce runoff velocity, and erosion of soils.

7.3 Roads

The access road surface will be recontoured as needed to provide for positive drainage, ripped or scarified, covered with growth media (if available) and seeded. In areas where road fill may impound water, the embankment may be removed to facilitate drainage. In addition, any disturbance causing destabilizing of slopes (either soil erosion, spring seeps, or thawing permafrost) adjacent to the road embankment will be filled or stabilized with rock to prevent further degradation of underlying soils to the extent practicable. Efforts will be made to identify any areas of thermal instability as they develop during the exploration project so they can be mitigated as soon as practical in advance of reclamation activities.

Pull-outs along the extent of the roadway and other cleared areas will be recontoured for drainage, ripped or scarified, covered with growth media (if available), and seeded following final equipment removal.

Culverts will be removed and disposed of properly off site. Water courses and flood plains will be re-established. Areas will be recontoured, ripped or scarified and seeded as necessary following removal off all conveyance structures.

All geotextile fabric exposed during reclamation grading will be excavated back two feet from the surface, cut and disposed of at an approved landfill location.

Cut and fill slopes will be reduced to 2H:1V (or flatter) placing fill material on the road surface to fill in cut slopes. Berms and any water diverting structures and ditches will be removed to re-established existing drainage patterns. A single lane access road will remain along the alignment of the Manh Choh Project for monitoring and maintenance activities.

7.4 Stockpiles

Stockpiles required for the project are temporary and will be reclaimed or removed once mining has ceased. Stockpiles consist of temporary storage of waste rock for future relocation to one of the in-pit WRD, ore stockpiles, or overburden (growth media) stockpiles. The sections below detail reclamation for each of the stockpiles.
7.4.1 Ore Stockpiles

Ore stockpiles are located on the North WRD, these stockpiles are temporary and dynamic throughout the life of the mine. Once mining is complete, any remaining ore will be hauled to Fort Knox Mine for processing. Any remaining or residual ore will be placed in either the North Pit or South Pit WRD depending on material type (PAG or ML).

7.4.2 Overburden Stockpile

The overburden stockpile contains all spoil material stripped during development of the mine site area. All organic stripped for the construction of the WRDs and development of the pits will be stockpiled for cover application during reclamation. All material will be removed and placed on appropriate facilities. The footprint of the stockpile will be scarified and seeded.

7.4.3 Marginal Ore Stockpile

Material stored in the Marginal Ore Stockpile will either be hauled to Fort Knox during operation for processing, or rehandled and placed in the North Pit WRD. The footprint of the stockpile will be covered with 12 to 24 inches of growth media, scarified and seeded.

7.4.4 Dry Waste Rock Stockpile

The dry waste rock stockpile is located on the Main Waste Rock dump. This material consists of waste rock that is mostly metal leaching (ML) and some PAG. The waste will be relocated to the North Pit once mining is complete in the North Pit.

7.4.5 Wet Waste Rock Stockpile

The wet waste rock stockpile consists of potentially acid generating (PAG) waste rock. This waste rock will be temporarily stockpiled on the Main WRD and relocated to the South pit once mining is complete.

7.5 Material Borrow Sites

Six material sites will be developed to construct roads, pads and other infrastructure requiring structural fill. The development of each material site is not well defined, but anticipated footprints for each material borrow site has been illustrated on Figure 3. Once the material sites are no longer required as a source for construction materials, reclamation will be conducted. During development, growth media and organics will be stripped and stockpiled around the perimeter of the proposed development footprint. Reclamation for each of the material sites includes, grading to promote drainage, replacing stripped growth and organics, scarifying and seeding.

7.6 Mine Support Infrastructure

Laydown yards, building facilities and other infrastructure footprints will be regraded and reclaimed at the end of mining. All yards/pads will be designed to promote positive drainage, and once no longer needed to support operations, they will be recontoured to blend into the surrounding areas, scarified and seeded. Erosion and sediment control structures such as temporary diversion
channels and sediment collection ponds will be breached, regraded scarified and seeded once all upstream surfaces have been stabilized with vegetation.

7.6.1 Camp Area

A gravel access road and pad will be constructed to allow assembly and operation of a 300 bed camp. The camp pad was designed with space for parking and headbolts for 150 cars, a well, septic tanks and a leach field, transformer/backup generator, and a 5,000 gallon above-ground gasoline storage tank/fueling point. Tetlin may retain all facilities and infrastructure. In the event they do not wish to retain ownership, all facilities will be removed and either salvaged or disposed offsite in an approved landfill. The gravel pad will be regraded to promote drainage, scarified and seeded. Figure 11 depicts the reclaimed campsite area.
7.6.2 Ore Loadout Area

The loadout facility consists primarily of a gravel pad that allows for the mine trucks to dump the ore onto a lined stockpile for loadout into the highway ore hauling trucks. At a minimum it is anticipated that there will be a scale/scale house for weighing the loaded highway ore trucks and room for at least six highway ore haul trucks to park. Depending on the highway ore hauling contractors needs, there may also be office modules, parts laydown/conexes, maintenance bay, and a three 20,000-gallon lined diesel fuel storage/fueling point. There will also be a mining area laydown pad with room for four mine trucks to park, conexes and parts laydown and a washroom module or trailer. The conceptual design of the Ore Loadout Area is depicted on Figure 12. All facilities will be salvaged or demolished and disposed off-site in an approved location. The gravel pad will be regraded to promote drainage as needed, scarified and seeded.
7.6.3 Mine Infrastructure and Explosive Storage Pad

The mine infrastructure pad is a gravel pad constructed to provide a location for support infrastructure including parking for maintenance and mine trucks, mine drills, and support equipment. The storage/warehouse, four maintenance bays, wash bay, emergency response, and mine fleet workers meeting space are all enclosed in one large fabric/frame structure. A separate fabric/frame structure will allow for maintenance of the mine drills. A storage/laydown area and a 777 tire maintenance shop is also included in this area. **Figure 13** depicts the mine infrastructure area after reclamation.

Berms separate the access and mine operations area from the maintenance area. The operations area includes the mine generators, communications tower, the mining contractor’s admin/office building, the Kinross admin/office building, crew bus parking, and the water treatment plant/storage/operations area.

Berms also separate the third area, the mine fueling area consisting of three 20,000-gallon diesel fuel tanks and one 5,000-gallon gasoline fuel tank and associated fueling points inside of a lined containment area.

All infrastructure, equipment and structures will be salvaged or demolished and disposed of in an approved off-site location. The gravel pad will be regraded to promote drainage as needed, scarified and seeded. All lined facilities including water treatment storage pond, and fuel containment areas, will be decommissioned, liners removed, and impacted soils will be disposed of properly.

The explosives pad provides the required separation and working area around/between the four magazines. The gravel pad will be regraded to promote drainage as needed, scarified and seeded.
7.7 Structures and Buildings

Support infrastructure (buildings) will all be temporary tent type structures. Some will have concrete pads, but most will be constructed on temporary foundations or have gravel interior flooring. All structures, foundations, fuel tanks, lined ponds, and any other equipment will be removed from the project area, salvaged or retained by Tetlin, or disposed of in an off-site approved landfill. The construction detail for buildings is not available at this time, and exact specifications are unknown until the building designs and selections are complete. The buildings and facilities shown in the figures above represent anticipated basic needs to support the operation. Actual dimensions and structure type may vary upon construction. Once facilities are constructed, an updated structure list and demolition estimate will be provided if requested. The FA model includes the following structures with approximate construction parameters and specifications.

1. Permanent Dormitories (350 beds)
2. Temporary rooms (100 beds) (12x16 tents) 50ea
3. Camp Sewage Treatment (modular)
4. Potable Water Treatment
5. Camp Backup Power Generation
6. Security facilities
7. Diesel, gasoline storage tanks (pad only)
8. Diesel storage tanks (pad only)
9. Truck weigh scale (2)
10. Warehouse facility
11. Highway Haul - maintenance/thaw shed
12. Admin Offices
13. Bathroom Facilities - 10ea 12'x60'
14. Power Generation equipment (3 generators and pads)
15. Truck shop / wash bay
16. Drill Maintenance Shop
17. Owner/Contractor Admin Offices
18. Storage Warehouse
19. Reverse Osmosis Water Treatment Plant
20. Communications Tower
21. 4 Magazines storage areas (2 conex)
22. 4 Magazines storage areas (warm tent 4 bay)
23. 4 Magazines storage areas (2 conex)
24. 4 Magazines storage areas (silos)
7.8 Mine Water Management

7.8.1 Water management during closure

The Water Management Plan (Piteau 2021a) details water management for the project. The following is a summary of water management activities related to closure of the project.

The perimeter collection trench constructed for operations will be retained during early closure to continue collection of contact water. It will be progressively reclaimed after the waste rock is covered and the amount of contact water is reduced. Water quality from surface runoff will be monitored and once surface runoff meets ADEC standards and the upstream slopes are vegetated and stable, the perimeter collection trench will be reclaimed.

The pre-mining drainage patterns will progressively be re-established with recontouring of slopes allowing runoff to resume flow into natural drainages.

Both pits will be backfilled with geochemically reactive waste rock to minimize mobilization of constituents and potential changes in downgradient water quality.

The goal for mine closure is to keep potentially ML waste rock in North Pit dry and to keep PAG waste rock in South Pit submerged. Backfilling the pits serves to partially encapsulate the waste rock while limiting potential for seepage of impacted water emerging at surface.

NAG waste rock will be backfilled below the predicted post closure water table (2940 ft amsl) plus an additional 10-foot buffer to provide for the fluctuation of seasonal water table and prevent contact of ML waste rock with water. Material placed above the NAG waste rock will consist of potentially ML material which will be backfilled above the rim of the pit such that surface water will be directed to the perimeter of the backfilled pit. The North Pit WRD will be graded to encourage runoff during snowmelt and precipitation events and encourage snow accumulation on leeward slopes downslope to limit infiltration into the cover. An impervious cover system (yet to be designed) will consist of either an amended soil layer, or geomembrane to reduce infiltration. A minimum of 24 inches of growth media will be placed above the impervious liner to further reduce infiltration and provide an environment for vegetation and ultimately stabilization of surficial soils. Swales will be graded onto side slopes to encourage accumulation of surface runoff towards the perimeter and natural drainages. Lower reaches of these swales may be lined (in the absence of geomembrane type liner) below soil cover to further limit infiltration of concentrated water.

Post-closure water levels in South Pit are predicted to recover to 2965 ft-amsl, such that potentially acid generating backfill will be naturally submerged. South pit will only be partially filled creating a closed basin to provide storage of water and waste. Partial filling will limit rehandling of some waste rock while eliminating potential for the formation of a pit lake. NAG waste rock will be placed around the perimeter of the pit to reduce interaction of the environment with the face of the highwall, reduce visual impacts and provide a stabilized slope for revegetation.
7.8.2 Post-Closure Water Quality

Mass transport model simulations indicate that dissolved constituents that could percolate from the South Pit backfill will undergo downgradient mixing with other groundwater local to the pit. Concentrations of non-conservative constituents such as arsenic will reduce along the groundwater flow paths due to sorption and other natural attenuation processes identified in baseline water quality data. The model indicates that virtually all parameters in the downgradient headwaters will be below the ADEC guideline values. Manganese could exceed its guideline value in the Hillside Creek headwaters after 180 years during dry months when creek flows are fed by minor groundwater discharge, but much of this is likely to be lost to evapotranspiration around the margins of the creek during the summer months. Since groundwater flows at the headwaters make up a very small proportion (2%) of annual stream flows, significant changes in water quality are unlikely to be detectable in streams, except possibly in late summer when less runoff is available for mixing. (Piteau 2021b)

8 Monitoring

Once physical reclamation has begun, temporary diversions and sedimentation control systems will be monitored on a routine basis (weekly when weather conditions allow) by Peak Gold personnel. These systems will be cleaned, repaired, and modified as necessary.

Long-term or permanent diversions, berms, and signage will be monitored and maintained as needed until the reclamation bond has been released.

Success of reclamation would be monitored in two ways:

- Physical reclamation such as earthwork and growth media application would be checked for excess erosion problems periodically and immediately following major rain events. Remedial action to correct instability will be taken as soon as feasible following detection of substantial erosion or loss of growth media until revegetation is acceptable and bond has been released.

- Vegetation success will be monitored qualitatively by visual inspection on an ongoing basis by Peak Gold and ADNR personnel, and quantitatively once per year. A consulting professional will conduct quantitative analysis at the end of the growing season (end of August).

ADNR, ADF&G, and Peak Gold will determine performance criteria for vegetation success. Presently, revegetation cover criterion is outlined in Section 6.9. Peak Gold may seek release of the reclamation surety on a facility-by-facility basis (as per 11 AAC 97.435) as quantitative data indicate the established criteria have been met.

Site-wide monitoring systems would remain in place until Peak Gold demonstrates to ADNR and/or ADEC that they are no longer necessary. Details of reclamation and closure monitoring for the open pit, TSF, WRF, surface water, and groundwater are provided in the Manh Choh Monitoring Plan (Piteau 2021b)
8.1 Monitoring Schedule

Monitoring for the Manh Choh Project site will be done at intervals stated in the Monitoring Plan (Peak Gold, 2021c). Monitoring for the Project will include:

1. Water quality sampling procedures and analytical profiles and sampling schedules;
2. Characterization of acid rock drainage;
3. Potable water monitoring requirements;
4. Wildlife mortality reporting procedures;
5. Documentation, record keeping and reporting requirements; and

The closure monitoring plan will include water quality sampling, water level measurements, and observations of the success of revegetation. The frequency of sampling events will be adjusted as appropriate between the reclamation and closure, and post-closure phases based on observed improvements in water quality. **Table 8.1** summarizes the monitoring program for water during operations and estimated during reclamation and post-reclamation periods. Monitoring points are shown on **Figure 14**.

**Table 8.1: Monitoring Point Interval**

<table>
<thead>
<tr>
<th>Monitoring Point</th>
<th>Number of Sites/wells</th>
<th>Parameter</th>
<th>Constituent Analysis</th>
<th>Reclamation YR1-2</th>
<th>Post-Rec. YR3-4</th>
<th>Post-Rec. YR5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring Well</td>
<td>7</td>
<td>Indicator</td>
<td>Profile 3</td>
<td>Quarterly</td>
<td>Semi-annual</td>
<td>Annual</td>
</tr>
<tr>
<td>Surface Water</td>
<td>17</td>
<td>Indicator</td>
<td>Profile 2</td>
<td>Quarterly</td>
<td>Semi-annual</td>
<td>Annual</td>
</tr>
<tr>
<td>Ground Water</td>
<td>7</td>
<td>Depth</td>
<td>N/A</td>
<td>Quarterly</td>
<td>Semi-annual</td>
<td>Annual</td>
</tr>
</tbody>
</table>

**Table 8.1:** Monitoring Point Interval
8.2 Water Monitoring

Monitoring wells with piezometers will be constructed in the backfill as it is placed in both pits to allow monitoring of water levels and comparison to model predictions, and to facilitate accelerated filling of South Pit. Additional groundwater monitoring wells will be installed at compliance points determined by the water management plan, close to the downgradient stream headwaters to assess groundwater chemistry and confirm groundwater model predictions.

Sumps and holding ponds will continue to be sampled to assess the improving quality of the runoff water as reclamation proceeds and to develop criteria for eventual release of runoff from the site. Monitoring of the stations in Hillside Creek, Tors Creek, Tok River and Tetlin Lake will be continued until confidence is achieved in the post-closure solute transport model predictions and the data confirm that long-term downgradient impacts will be as predicted (Piteau, 2021c). Monitoring locations are shown on Figure 14 and detailed in the Monitoring Plan (Peak Gold, 2021c).

8.3 Post Reclamation Maintenance

Once physical reclamation has started, temporary diversions and sedimentation control systems will be monitored on a routine basis by Peak Gold personnel. These systems will be cleaned, repaired, and altered as necessary. Long term or permanent diversions and the signage will be monitored and maintained as needed until the FA is released.

Success of reclamation will be monitored by visual observation to identify erosion problems. Remedial action to correct instability will be taken as soon as feasible following detection of substantial erosion or loss of growth media. Vegetation success will be monitored qualitatively by visual inspection on an on-going basis by Peak Gold and ADNR personnel. When warranted, quantitative data will be collected. Quantitative analyses will be conducted late in the growing season (August).

9 Reclamation and Closure Cost Estimate

11 AAC 97.400 requires that an operation post a bond for largest probable liability. Like temporary closure noted above, if the mine should close prematurely due to unforeseen circumstances (operating costs, gold price, weather, etc.), closure practices and procedures would be implemented. Procedures for the reclamation of each facility are described in Section 6. In the event of a premature closure scenario, each facility would be reclaimed in the same manner described, however the reclaimed configuration would be slightly different than the life of mine (LOM) scenario due to varying stages of maturity of individual facilities.

9.1 Premature Closure

The FA calculation assumes a premature closure scenario occurring at the end of year 2026. The LOM plan includes relocating the stockpiled metal leaching (ML) waste rock (Dry Stockpile) into the North Pit starting in year 2025 and relocating stockpiled potentially acid-generating (PAG) waste rock (Wet Stockpile) into the South Pit at cessation of mining or when practical during operations. In year 2026 approximately 6,600,000 tons (3,800,000 cy) of combined ML and PAG
is stockpiled and sitting on the west lobe of the Main WRD and must be relocated to the North Pit to accommodate the proposed closure plan for the Pit. In 2026, the South Pit has not been excavated to a depth that allows for the relocation of the stockpiled PAG waste to be stored in a saturated condition, therefore the stockpiled PAG material will be relocated to the North Pit. The North Pit has the capacity to store both the ML and PAG stockpiles at end of year 2026, and after year 2026, capacity will be available in the South pit for relocation of the PAG waste rock. The North Pit WRD will be reclaimed as described in the RCP. The South Pit will be backfilled to prevent ponding of water, and the floor of the pit will be covered with 12 to 24 inches of growth media and revegetated. Figure 15 illustrates the mine configuration at the end of year 2026. Figure 16 represents the proposed reclamation of the Premature Closure Scenario, and Figure 17 details the pit backfill sequence.

Under a scenario of premature mine closure at the end of 2026, the estimated pit floor elevation in the South Pit is 2261 ft amsl, which is just below the predicted water surface elevation. Approximately six feet of NAG waste rock will be relocated from the Main WRD to avoid temporarily ponding at the base of the pit. Both the North and South pits and all WRDs will be reclaimed as per the design for full buildout.

In summary, throughout the life of mine sequence, capacity to store both the ML and PAG stockpiles exist in either the North or South pits at any point in the mine life sequence. No additional changes to the reclamation plan are required for closing the mine in a premature closure scenario, nor will the planned configuration change.
9.2 Reclamation Cost Estimate

The total estimated cost to reclaim the Mahn Choh Project is estimated at $71,297,797 based on the Premature Closure Scenario (Figure 15 and Figure 16) at end of year 2026. The cashflows for post closure years are undiscounted. Peak Gold reviewed the Life of Mine Plan and determined the largest liability is estimated to be end of year 2026, due to the volume of rehandle waste requiring relocation into the pit WRDs, and no concurrent reclamation activities performed. As mining activities continue following year 2026 and throughout the LOM plan, ML stockpiled quantities will decrease, and ML waste will be relocated to the North Pit WRD during the final year or operation. As closure actives are executed during operation and the North Pit WRD matures towards its final designed closure form, liabilities will be reduced; consequently, as the facilities mature, the cost of reclamation will decrease.

Table 9.1 provides a summary of activity costs from the SRCE model. As the planned closure period approaches the liabilities for some facilities will be reduced substantially. A detailed FA model can be found in Appendix A.

Table 9.1: Reclamation Estimate Table 9.2

<table>
<thead>
<tr>
<th>Facility</th>
<th>Reclamation Cost $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Rock Dumps</td>
<td>20,057,965</td>
</tr>
<tr>
<td>Solution Management</td>
<td>35,766</td>
</tr>
<tr>
<td>Yards</td>
<td>320,405</td>
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<td>Roads</td>
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<td>Borrow Area</td>
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<td>Buildings</td>
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<tr>
<td>Other Demo</td>
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<td>Sediment and Drainage Control</td>
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<td>Road Maintenance</td>
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<tr>
<td>Well Abandonment</td>
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<tr>
<td>Construction Management and OH</td>
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<td>Mobilization-demobilization</td>
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<td>Human Resources</td>
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<td>South Pit Highwall Backfill</td>
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<td>Solid Waste Disposal</td>
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<td>Reclamation Maintenance</td>
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<td><strong>Subtotal</strong></td>
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<td>Engineering, Design and Construction Plan</td>
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<td>Contingency</td>
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<td>Contractor OH and Profit</td>
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<td>Contract Administration</td>
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<tr>
<td><strong>TOTAL COST</strong></td>
<td><strong>60,405,274</strong></td>
</tr>
</tbody>
</table>

From SRCE Model
Direct costs were calculated using quotes from local contractors, RS Means tables, and Alaska Department of Labor Pamphlet 600 wage rates. These estimates include contractor profit and overhead, mobilization and demobilization fees, and contingencies. We will account for inflation by increasing our FA by the CPI-U for Anchorage of the previous year.

Peak Gold will reclaim affected land as contemporaneously as practicable. The plan and cost estimate provide the ADNR, ADEC and Peak Gold an opportunity to review and, if necessary, modify the reclamation plan as required.

Under the provisions of 11 AAC 97.0320.(a), Peak Gold will file an Annual Activity Report that includes the volume of material mined in that year, the total acreage reclaimed in that year, and a statement as to whether the reclamation plan is on schedule.

Reclamation plans typically are updated to account for the additional disturbance planned to occur during the next five years. Section 9.1 identifies the Premature Closure configuration and how it differs from the Life of Mine closure sequence. Reclamation activities are consistent between both the Life of Mine and Premature closure scenario, completion progress of various facilities differs. The cost estimates provided represent the Premature Closure scenario and the largest financial liability of proposed activity throughout the remainder of the Life of Mine plan. As mining advances liabilities will be reduced by completing reclamation obligations outlined above. In the case that obligations are deferred to a later time, the FA will be recalculated to account for changes and bonding adjusted accordingly. As permitted under 11 AAC 97.400 (3), the reclamation estimate, and FA amount can be adjusted each year, or be adjusted as needed within the five-year permit cycle. A review and update of the FA should be provided for each significant change in the Plan of Operations.

Since the various facilities such as the pits, the waste rock dumps, and the access roads different reclamation requirements, successful reclamation will be achieved much more rapidly for some facilities than others. Peak Gold will seek surety release as successful reclamation is completed as required in 11 AAC 97.435. In no event will the release of FA requested reduce the FA amount to less than the estimated cost of completing reclamation and closure responsibilities.
This report, Manh Choh Reclamation and Closure Plan, was prepared by

Ivan J Clark, P.E., Principal Consultant

and reviewed by

Jeff Parshley, P.G., C.P.G, Corporate Consultant (Mine Closure), Practice Leader

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

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The opinions expressed in this document have been based on the information available to SRK at the time of preparation. SRK has exercised all due care in reviewing information supplied by others for use on this project. While SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information, except to the extent that SRK was hired to verify the data.
10 Acknowledgements

A. It is understood that should the nature of the operation change, a modified or supplemental Plan of Operations and Reclamation and Closure Plan may be required.

B. It is understood that approval of this reclamation plan does not constitute:
   – Certification of ownership to any person named herein; and
   – Recognition of the validity of any mining claim herein.

C. It is understood that a Financial Assurance (FA) equivalent to the estimated cost of performing the agreed upon reclamation measures will be required before this plan can be approved. FA and any FA reduction amounts will be set on a site-specific basis by ADNR in coordination with the cooperating agencies.

D. It is understood that any information provided with this plan or provided in the future, that is marked Confidential will be treated as such by the agency in accordance with that agency’s laws, rules and regulations.

E. Peak Gold will fund the required Environmental Audit to determine if any environmental liabilities exist as a direct or indirect result of the Manh Choh Project.

Peak Gold, LLC. has reviewed and agrees to comply with all conditions in the plan of reclamation. Peak Gold, LLC. understands that the bond will not be released until ADNR gives written approval of the reclamation work.

Peak Gold, LLC.

By: ________________________________

Title: ______________________________

Signature: __________________________

Date: ______________________________
11 References


Peak Gold, 2021a, Manh Choh Project Plan of Operations, prepared by Peak Gold, LLC 2021

Peak Gold, 2021b, Manh Choh Project Solid Waste Management Plan, prepared by Peak Gold, LLC 2021

Peak Gold 2021c, Manh Choh Project, Monitoring Plan, prepared for Peak Gold, LLC. Piteau Associates, USA Ltd. 2021


Manh Choh Project
Reclamation Plan Basis of Estimate

Prepared for
Peak Gold, LLC.

Prepared by
SRK Consulting (U.S.), Inc.
503000.070
December 2021
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Appendices

Appendix A – Figures
1 Introduction and Scope of Report

SRK Consulting (U.S.) Inc. (SRK) has been retained by Peak Gold, LLC (Peak Gold) to compile cost for the largest probable financial liability (e.g. pre-mature closure scenario) cost estimate for the Manh Choh Project using Standardized Reclamation Cost Estimator (SRCE) Version 2.0. The below headings describe the estimation approach and source of data and costs as well as the assumptions for premature closure in how they may differ from the approach for the life of mine (LOM) for certain facilities. Refer to the provided SRCE cost model (Microsoft Excel Spreadsheet) for the estimate and Attachment A for figures documenting the model input.

This report is intended to accompany the Reclamation and Closure Plan (RCP) for the Manh Choh Project (SRK 2021a). Details for design, and reclamation practices are included in the RCP which are integral to estimating the Financial Assurance (FA). In addition, the total cost is for the Premature Closure Scenario as described below.

1.1 Premature Closure

The FA calculation assumes a premature closure scenario (PMC) occurring at the end of year 2026. The LOM plan includes relocating the stockpiled metal leaching (ML) waste rock (Dry Stockpile) into the North Pit starting in year 2025 and relocating stockpiled potentially acid-generating (PAG) waste rock (Wet Stockpile) into the South Pit at cessation of mining or when practical during operations. In year 2026 approximately 6,600,000 tons (3,800,000 cy) of combined ML and PAG is stockpiled and sitting on the west lobe of the Main WRD and must be relocated to the North Pit to accommodate the proposed closure plan for the Pit. In 2026, the South Pit has not been excavated to a depth that allows for the relocation of the stockpiled PAG waste to be stored in a saturated condition, therefore the stockpiled PAG material will be relocated to the North Pit. The North Pit has the capacity to store both the ML and PAG stockpiles at end of year 2026, and after year 2026, capacity will be available in the South Pit for relocation of the PAG waste rock. The North Pit WRD will be reclaimed as described in the RCP. The South Pit will be backfilled to prevent ponding of water, and the floor of the pit will be covered with 24 inches of growth media and revegetated. RCP Error! Reference source not found. illustrates the mine configuration at the end of year 2026. RCP Error! Reference source not found. represents the proposed reclamation of the Premature Closure Scenario, and RCP Error! Reference source not found. details the pit backfill sequence.

Under a scenario of premature mine closure at the end of 2026, the estimated pit floor elevation in the South Pit is 2261 ft amsl, which is just below the predicted water surface elevation. Approximately six feet of NAG waste rock will be relocated from the Main WRD to avoid temporarily ponding at the base of the pit. Both the North and South pits and all WRDs will be reclaimed as per the design for full buildout.

In summary, throughout the life of mine sequence, capacity to store both the ML and PAG stockpiles exist in either the North or South pits at any point in the mine life sequence. No additional changes to the reclamation plan are required for closing the mine in a premature closure scenario, nor will the planned configuration change.
2 Reclamation and Closure Actions and Estimate

2.1 Pits

Both pits will be backfilled at closure. The North Pit includes an impervious liner cover system, yet to be designed. At this time the FA assumes a 40mil LLDEP liner, with 12 inches of underliner and 12 inches of drain rock will be placed under/over an impervious liner. A drainpipe network is included as part of the liner system. SRCE does not have a specific module dedicated to construction of cover liner, however SRCE includes the construction of a lined evapotranspiration (ET) cell or pond with discharge lines. The construction of an impervious cover liner mirrors the construction of an ET pond, and estimated construction costs would be similar. The construction costs for the cover liner system are calculated in the Process Ponds module and include the over/under liner, the liner and drain network. The remaining cover material (growth media) is calculated in the Waste Rock Dumps module, and haulage of the wet and dry stockpiles to the north pit, and waste rock relocated to the South Pit is included in the Haul Materials module. Relevant pit information is shown on Figure 1.

Relevant SRCE Sheet(s): Waste Rock Dumps, Haul Material and Process Ponds

2.2 Waste Rock Dumps

The Manh Choh Project includes four waste rock dumps: North WRD, North Pit WRD, South Pit WRD, and Main WRD. Reclamation of the waste rock dumps will consist of regrading lift slopes to 3H:1V and placing growth media to promote successful revegetation. For the purposes of this estimate, the thickness of growth media is 24 inches.

When final sloping, contouring, and growth media placement have been completed, waste rock dumps will be ripped along the contour to reduce the erosion potential. This will be followed by revegetation (seeding and fertilization). SRCE inputs consist of mid-bench lengths for each lift, lift height, approximate ripping distance, and final (regraded) lift area to estimate regrading volumes and final revegetation area. Growth media and waste rock haul distances are documented on Figure 2.

The PMC scenario and the LOM both include rehandling of metal leaching (ML) and potentially acid generating (PAG) waste rock to one of the pits. Volumes of stockpiled material and haul distances are shown on Figure 2.

The final configuration of the North Pit WRD includes an engineered cover system with a low permeability barrier (e.g. geomembrane, geosynthetic or amended soils) and a drainage layer. An impervious cover barrier system has not been selected or engineered; however a concept design has been included and is assumed to 40mil HDPE liner, over 12 inches of underliner/cushion and 12 inches of drain rock with a drainage pipe network. Experience with impervious liner systems suggest that the costs for various types of cover systems are similar. The FA estimate and RCP will be updated once a final cover system has been selected and designed.

Relevant SRCE Sheet(s): Waste Rock Dumps; Haul Material and Process Ponds .
2.3 **Roads**

All roads will be reclaimed with exception of a single lane access road, assumed to be within the footprint of the main haul road. Costs include regrading scarification and seeding. It's assumed that growth media will be stripped and stockpiled adjacent to the roadway during construction and will be replaced during reclamation. Cost of placement is incidental to regrading the roadways. **Figure 3** details the lengths of the roadways to be reclaimed.

This estimate also includes removal of culverts along the Manh Choh Twin and Project roads where applicable.

Relevant SRCE Sheet(s): Roads; Misc. Costs\Culvert & Buried Pipe Removal.

2.4 **Yards**

Reclamation costs for miscellaneous disturbances are included in the “Yards” worksheet. These facilities include, but are not necessarily limited to, the camp area, the loadout area, mine infrastructure pad, explosives storage, material borrow sites and stockpile areas not located on WRDs. The costs assumes that growth media was stripped and stockpiled near the perimeter of the yards during construction, and that it would be replaced at final closure. Costs are included for nominal volumes of regrading to smooth the mostly flat areas and will be scarified and revegetated. All laydown areas are depicted on **Figure 4**.

Relevant SRCE Sheet(s): Yards.

2.5 **Buildings**

SRCE estimates time to demolish buildings through RSMeans productivities that focus on building volume, wall area, and slab volume. Fleet hours are estimated and multiplied by crew rates. Buildings have not been constructed, but a list of proposed facilities was provided by Peak Gold. All structures are assumed to be either modular or temporary tent type structures. Concrete foundations and slab floors are not required, however are assumed for some of the structures. The Foundations and Buildings Module does not specify "temporary" type structures, but the demolition of light steel frame construction is assumed to require similar equipment, such as cranes, excavators, and dump trucks. The cost to demolish the temporary tent structures verses a long-term type structure is likely lower than included in the estimate, however as noted, the buildings have not been constructed. An updated FA will be provided should the structure type or size deviate substantially from what is included in the estimate.

Hauling the demolished buildings off site is included in the Waste Disposal module. Waste is assumed to be hauled to the Tok Landfill. Building waste volume is assumed to be 33% of the total volume of the building prior to demolition. This is consistent with recommendations by FEMA for calculating the volume of building debris based on the total volume of a building.

In addition to the cost of demolishing buildings, removal of lined fuel islands is assumed to be similar to removal of a lined process pond.
2.6 **Miscellaneous**

2.6.1 **Surface Pipe Removal**

Culverts in the roads and pressure pipes installed to pump stormwater and contact water to the water treatment plant or to the north Pit will be demolished. These pipes will be removed and disposed offsite.

Relevant SRCE Sheet(s): Misc. Costs.

2.6.2 **Power Distribution**

This estimate assumes that all power distribution items (powerlines, transformers, etc.) will be removed. Power on site is limited to generator power, however a small allowance for minor utility removal and hauling off generators has been included.

Relevant SRCE Sheet(s): Misc. Costs.

2.7 **Monitoring**

2.7.1 **Water Quality**

Monitoring locations, frequencies, and durations have been provided by Peak Gold. These include surface water and well sampling. Monitoring is expected to be conducted for 10 years post-mining, or 8 years post reclamation.

Relevant SRCE Sheet(s): Monitoring\Water and Rock Sample Analysis.

2.7.2 **Inspection of Surface Stabilization and Maintenance**

Visual observation of revegetation success will be performed on an annual basis during the pre-stabilization phase. Inspection for erosion and formation of gullies will be completed quarterly. Costs are included for carrying out these activities for five years.

Relevant SRCE Sheet(s): Monitoring\Reclamation Monitoring, Recl. Maint.

2.8 **Road Maintenance**

Construction management is included for the duration of the closure period and includes a water truck and grader during reclamation, and a small allowance for post reclamation road for 8 years post reclamation.

Relevant SRCE Sheet(s): Construction Management.
2.9 **Well Abandonment**

Well closure assumes pit dewatering wells, piezometers, a production well and monitoring wells. Wells will be backfilled with a stemming/bentonite clay mixture and sealed at the surface with a bentonite clay surface seal.

All wells existing at the time of closure will be plugged and decommissioned when no longer required. The total number of decommissioned wells is unknown, but an allowance has been provided for probable well installed during operations.

Relevant SRCE Sheet(s): Well Abandonment.

2.10 **Channels**

Demolition of the perimeter collection channels are calculated in the Roads module. The channels include a parallel access road, and both will be reclaimed concurrently.

The cover design for the North Pit WRD assumes armored perimeter collection channels will be required. Hydrology and hydraulic calculations were not provided, however the location of the WRD, the proposed drainage design, other surface water collection and known climate variables, suggest that flows within the channels would be minimal. A cost for a lined trapezoidal channel with a three-foot bottom and three-foot deep is assumed in reclamation. A channel of this size can contain approximately 250 cubic feet per second (at a 5% slope). The channel design is conservative for the proposed drainage area. Assuming the channel is sized for in perpetuity, the probable maximum precipitation event is estimated 14 inches in a 24-hour period as noted in Technical Paper No. 47, Rainfall Frequencies for Alaska. The catchment area reporting to each channel is assume to be half of the total north pit waste rock dump (total = 39.6 ac, half ~ 20 ac.). Applying the Rational Method with conservative values of RC= 80, and I=6in/hr, the resulting discharge is approximately 120 cubic feet/second. The channel selected and costed is conservative and adequate for the concept design.

Relevant SRCE Sheet(s): Sediment & Drainage Control, Roads

2.11 **Mobilization/Demobilization**

Mobilization costs are based on the reclamation activities and their relative timing during the closure and post-closure periods. Mobilization and demobilization have been assumed to be carried out in one campaign.

Relevant SRCE Sheet(s): Mobilization
2.12 Indirect Costs

Indirect costs have been applied based on DOWL (2015). The categories are presented in Table 2-1.

Table 2-1 Categories of Indirect Costs in DOWL (2015) and in Fort Knox SRCE Estimate

<table>
<thead>
<tr>
<th>DOWL (2015) Indirect Category</th>
<th>SRCE “User 2” Worksheet (Indirects)</th>
<th>SRCE “FA Schedule” Worksheet Indirect Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor profit</td>
<td>Contractor profit</td>
<td>Contractor overhead and profit</td>
</tr>
<tr>
<td>Contractor overhead</td>
<td>Contractor overhead</td>
<td></td>
</tr>
<tr>
<td>Performance/payment bonds</td>
<td>Performance/payment bonds</td>
<td>Contract administration</td>
</tr>
<tr>
<td>Liability insurance</td>
<td>Liability insurance</td>
<td></td>
</tr>
<tr>
<td>Contract administration</td>
<td>Contract administration</td>
<td></td>
</tr>
<tr>
<td>Engineering redesign</td>
<td>Engineering, Design and Construction (ED&amp;C) Plan</td>
<td>Engineering, Design and Construction (ED&amp;C) Plan</td>
</tr>
<tr>
<td>Contingency: scope</td>
<td>Contingency</td>
<td>Contingency</td>
</tr>
<tr>
<td>Contingency: bid</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Liability insurance applies to labor rates only, in order to apply 1.5% liability insurance to labor costs, an assumption that 1/3 of all costs are labor related. Therefore, a rate of 0.5% (1.5% / 3) is applied to the entire cost. All other indirect percentages were selected based on the range of values provided in the DOWL (2015) report assuming the size and probable unknowns. The indirect rates were combined and linked to the FA Schedule.

Relevant SRCE Sheet(s): User 2; FA Schedule.

3 Cost Data File

The below headings provide information on the approach used in inputting rates and unit costs into the SRCE. Rates for labor, equipment and materials reference the most recent SRCE model calculated for Fort Knox Mine (FGMI 2020), and the most current rates from NVbond.org (SRCE model source). Rates for labor were updated as noted below. Material, and equipment rates were increased for either inflation of 7.7% (for the Fort Knox estimate) or were adjusted from 2021 Nevada rates by a factor of 1.15 to account for cost differences between Alaska and Nevada. This adjustment factor is based on the multipliers provided by RS Means for region specific estimating. Experience with estimating reclamation costs in both Nevada and Alaska suggests that the 1.15 premium applied between Alaska and Nevada is reasonable.

3.1 Labor Rates

Labor rates have been taken from Pamphlet 600, Issue 42, effective September 1, 2021.

Relevant CDF Sheet(s): Labor Rates.
3.2 **Equipment Rates**

Equipment rates for off-highway equipment have been obtained from NC Machinery. Others were provided by United Rentals or adjusted using rates from Nevada.

Relevant CDF Sheet(s): Equipment Costs.

3.3 **Material, Labor, and Equipment Unit Costs**

3.3.1 **Seed Material Unit Costs**

Seed costs are based on provided by Fort Knox and adjusted for inflation.

Relevant CDF Sheet(s): Seed Mixture.

3.3.2 **Diesel Price**

The diesel material unit cost has been estimated by using public data (GasBuddy December 2021) and subtracting on-road tax and surcharge (9.9cents per Alaska Dept. of Revenue Tax Division).

Relevant CDF Sheet(s): Reclamation Material Costs.

3.3.3 **Power Price**

Power price has been determined by public data (AP&T, 2021).

Relevant CDF Sheet(s): Reclamation Material Costs.

3.3.4 **Analysis Costs**

Laboratory analysis costs have been estimated from a quote from ACZ laboratories (Fort Knox rate in 2019 x 7.7% inflation).

Relevant CDF Sheet(s): Reclamation Material Costs.
4 Results

4.1 Undiscounted Costs

All costs are undiscounted, the majority of all costs occur as part of the physical earthmoving portion of reclamation. Few costs occur past the initial reclamation period, and no long-term costs are expected. Refer to Table 4-1 for breakdowns by activity and/or facility.

Table 4-1 Cost Summary for Premature Closure Scenario

<table>
<thead>
<tr>
<th>Facility</th>
<th>Total Cost $ (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste Rock Dumps</td>
<td>20,057,965</td>
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<tr>
<td>Solution Management</td>
<td>35,766</td>
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<tr>
<td>Yards</td>
<td>320,405</td>
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<tr>
<td>Roads</td>
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<tr>
<td>Borrow Area</td>
<td>519,035</td>
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<tr>
<td>Buildings</td>
<td>2,767,996</td>
</tr>
<tr>
<td>Other Demo</td>
<td>175,003</td>
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<tr>
<td>Sediment and Drainage Control</td>
<td>611,696</td>
</tr>
<tr>
<td>Monitoring</td>
<td>712,212</td>
</tr>
<tr>
<td>Road Maintenance</td>
<td>446,858</td>
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<tr>
<td>Well Abandonment</td>
<td>289,579</td>
</tr>
<tr>
<td>Construction Management and OH</td>
<td>3,076,813</td>
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<tr>
<td>Mobilization-demobilization</td>
<td>655,534</td>
</tr>
<tr>
<td>Human Resources</td>
<td>4,693,978</td>
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<tr>
<td>South Pit Highwall Backfill</td>
<td>8,788,839</td>
</tr>
<tr>
<td>Solid Waste Disposal</td>
<td>840,983</td>
</tr>
<tr>
<td>Reclamation Maintenance</td>
<td>561,347</td>
</tr>
</tbody>
</table>

**TOTALS**                                | **44,910,984**     |

| Engineering, Design and Construction Plan | 898,220            |
| Contingency                              | 5,389,318          |
| Contractor OH and Profit                 | 6,736,648          |
| Contract Administration                  | 2,470,104          |

**TOTAL COST**                             | **60,405,274**     |
Prepared by

[Signature]

Ivan Clark, P.E.
Principal Consultant

Reviewed by

[Signature]

Jeff Parsley P.G., CPG
Corporate Consultant (Mine Closure), Practice Leader

All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

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The opinions expressed in this document have been based on the information available to SRK at the time of preparation. SRK has exercised all due care in reviewing information supplied by others for use on this project. While SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information, except to the extent that SRK was hired to verify the data.
5 References


FGMI 2020, Fort Knox Reclamation and Closure Plan, Prepared by Fairbanks Gold Mining, Inc (FGMI), January 2020

SRK 2021a, Manh Choh Reclamation and Closure Plan, Prepared for Peak Gold LLC, by SRK Consulting Inc. (US) 2021
Appendix A – Figures