

Burntlog Route Geophysical Investigation

Boise National Forest
Cascade Ranger District

Project Proposal

Midas Gold Idaho, Inc (MGII) is in the process of conducting an environmental review for the Stibnite Mine. Connected to this action is the need to develop a transportation route from the mine site to Highway 55. The current proposal is to use the existing Burntlog road and develop a new alignment between Trapper Creek and Stibnite. The purpose of the investigation is to collect crucial geophysical data at proposed rock quarries, bridge abutments, cut slopes, and soil nail/ mechanically stabilized earth wall locations. MGII plans to investigate 24 locations by drilling or excavating. On these sites 39 borings/test pits will be investigated. Investigations will occur between June and October 2020.

MGII proposes to use four methods to complete the proposed Burntlog Route geophysical investigation. The methods include a Dynamic Cone Penetrometer Test (DCPT), a track mounted excavator, a truck/track mounted hollow stem auger/core rig, and a helicopter assisted casing advancer/core drill rig. MGII plans to investigate 24 locations by drilling or excavating 39 borings/test pits along the proposed Burntlog Route between June and October 2020. MGII anticipates the investigation will last approximately 40 days. Nearly half of the locations are situated along the existing Burntlog Road and the remaining sites will be located along the proposed new alignment of the Burntlog Route between Trapper Creek and Stibnite (Figure 1). Of the 39 investigation sites, four are DCPT sites, 14 are test pits sites, seven are truck/track mounted hollow stem auger/core rig sites, and 14 are helicopter assisted casing advancer/core rig sites.

Access

MGII proposes to access the southern investigation sites via the existing Burntlog Road (Forest Service Road 447 [FS 447]). The sites near Trapper Creek will be accessed using National Forest System (NFS) roads 440 & 440A. Sites near Stibnite will utilize NFS road 375 & 640. Personnel will access the sites on foot, ATV/UTV, or pickup truck (where existing roads exist) or by helicopter. MGII will use ground pressure reducing mats when crossing areas delineated as having wetland characteristics.

Mobilization

MGII will mobilize drill rods, casing, drill rigs, and non-perishable supplies to the site staging area adjacent to MGII's core shack on private property via a flatbed or short-bed trucks, high clearance, low-boy trailer. Generally, MGII transports equipment in early June once load limits are lifted and road conditions permit. The drill rig, drill rods, stock tanks for mud mixing, and ancillary tools and equipment will be set up on the drill pad using the helicopter, truck, or carried and stored on the truck/track-mounted drill rig and support vehicle. No fuel would be stored at the investigation sites and will be transported in slip tanks or jerry cans to the investigation sites. MGII doesn't anticipate the need for very much water during auger drilling but will need water during core drilling activities. MGII will use the Gestrin Well (water right 77-7285) at Stibnite to support drilling activities in the northern portion of the investigation area. MGII will seek a temporary water appropriation to withdraw water from Johnson Creek south of the bridge at the same location the county withdraws water for road maintenance actions. A 3/32-inch diameter screen would be placed on water pump intake hoses for water withdrawals to reduce the risk of entrapment to aquatic species that might be present at the withdrawal location per recommendations from the National Marine Fisheries Service aquatics biologist. Pumps would use velocity-reducing devices to eliminate the risk of entrapment of aquatic species. The diversion rate will not exceed 10 percent of the total creek flow for the source stream. Water will be stored in poly tanks which will be transported to sites in the bed of support trucks or flown in by helicopter.

Investigation Methods

DCPT is used to determine underlying soil strength by measuring the penetration of the device into the soil after each hammer blow. The DCPT consists of two 1/2-inch diameter shafts coupled near the midpoint. The lower shaft contains an anvil and a 0.787-inch cone which is driven into the soil by dropping a 17.6-pound sliding hammer contained on the upper shaft onto the anvil. The test involves raising and dropping the hammer to the drive cone on the lower shaft and recording the amount of penetration observed. Each test takes approximately 30 minutes to complete and is typically performed by a crew of two people (Office of Minnesota Road Research, User Guide to the Dynamic Cone Penetrometer). MGII is proposing four DCPT tests at the proposed Trapper Creek bridge abutments. This method was chosen to minimize disturbance within wetlands and riparian conservation area (RCA) associated with the Trapper Creek drainage.

A track mounted 320 excavator or equivalent will be used to dig 14 test pits at four different locations along the existing Burntlog Road. The excavator will be transported using a low boy tractor trailer to the test pit locations. The typical test pit dimensions will be approximately three feet wide by 10-15 feet deep by 10 feet long or conservatively estimated to be approximately 625 square feet. Excavated material will be temporarily placed adjacent to the test pit. After completion of the test pit, the excavated material will be placed back into the pit and tamped down using the excavator bucket. The site will re-planted, where possible and practical, with certified weed-free seed mixes and native plant species suitable for each site's elevation, moisture, and climatic setting as per IDAPA 20.03.02.060.06 (a) and (b) and in accordance with 36 CFR 228.10.

MGII will use a track/truck mounted auger drilling rig with core drilling capabilities at seven locations. Auger drill holes are approximately eight inches in diameter and use a drill bit with a rotating helical screw blade (a flighting) to remove material. These methods use little to no water. Standard Penetration Tests (SPT) will be collected every two and a half feet and consist of driving a thick-walled sampling tube approximately 18 inches into the bottom of the borehole using a slide hammer. The in-situ density of the material is determined by the number of blows used to drive the sampler into the soil. Once bedrock is encountered, core holes will be drilled to total depth. The core holes will be approximately four inches in diameter and use a conventional rotary drill rig with a high frequency vibratory drill head. The drill rig assembly will consist of auger flights, drill rods, water trough, water line, water pumps, tools, and ancillary equipment. Additional supplies will include drilling mud, bentonite (clay) hole plug material, and small amounts of lubricants (rod grease). Drilling muds (if needed) will be re-circulated using pumps and above ground troughs. To prevent migration of water or drilling fluids from the drill pad, MGII will install silt fences, weed-free waddles, and other sediment and water management control procedures as described in the State of Idaho's Best Management Practices for Mining in Idaho (IDL 1992).

To minimize disturbance, MGII will utilize a helicopter assisted casing advancer/core rig to access 14 remote locations. The drilling contractor will drill from helicopter platforms, which are elevated from the existing ground surface on four adjustable legs; each leg is approximately one square foot in area. The helicopter would set a platform and the drill rig would be componentized and flown to the platform for assembly. The estimated temporary disturbance area is approximately 400 square feet. Minor brush clearing and minimal tree cutting may be required to clear areas for the drill platforms and to provide a safety zone around the drill rig and ancillary equipment. The casing advancer drill holes are approximately five inches in diameter and allow for a one step method of drilling and casing off overburden down to bedrock. SPT will be collected every five feet. Once refusal is encountered, core holes will be drilled to total depth. The core holes will be approximately four inches in diameter. A typical helicopter-supported drill pad is comprised of a portable deck, drill rig, drill rods, water trough, water line, water pumps, fly fuel tank, water storage tank, tools, and ancillary equipment. The estimated disturbance area is approximately 400 square feet. Additional supplies will include drilling mud, bentonite (clay) hole plug material, and small amounts of lubricants (rod grease). Drilling muds (if needed) will be re-circulated using pumps and above

ground troughs. To prevent migration of water or drilling fluids from the drill pad, MGII will install silt fences, weed-free waddles, and other sediment and water management control procedures as described in the State of Idaho's Best Management Practices for Mining in Idaho (IDL 1992). Drilling mud will be drummed and transported via helicopter to Stibnite. MGII will manage drum disposal.

Reclamation

MGII will remove all drilling-related structures, trash, debris, equipment, and other related materials from each investigation site once completed. Upon completion of each boring, MGII will backfill the drill hole with a mixture of drill cuttings and bentonite hole plug from the bottom of the hole to within 2 feet of the ground surface. Native material will be placed between two feet and surface. MGII will mulch sites by applying certified weed-free hay mulch. Sites will be re-planted, where possible and practical, with certified weed-free seed mixes and native plant species suitable for each site's elevation, moisture, and climatic setting as per IDAPA 20 .03.02.060.0 6 (a) and (b) and in accordance with 36 CFR 228.10.

Permit Location

The project area is located along the proposed Burntlog Route in sections 12, Township 15 North, Range 7 East; sections 3, 4, 7, 9, 17, 18, Township 15 North, Range 8 East; sections 1, 2, 10, 11, 15, 22, 26, 27, 34, 35, Township 16 North, Range 8 East; sections 13, 23, 24, 26, 35, 36, Township 17 North, Range 8 East; sections 4, 5, 8, 17, 18, Township 17 North, Range 9 East; sections 13, 14, 24, 25, 26, 32, 33, 34 Township 18 North, Range 9 East, Boise Meridian, Valley County, Idaho.

Decision to be Made

The Decision will only authorize the geophysical investigation. The decision on the actual construction of the road is tied to the larger Stibnite analysis.

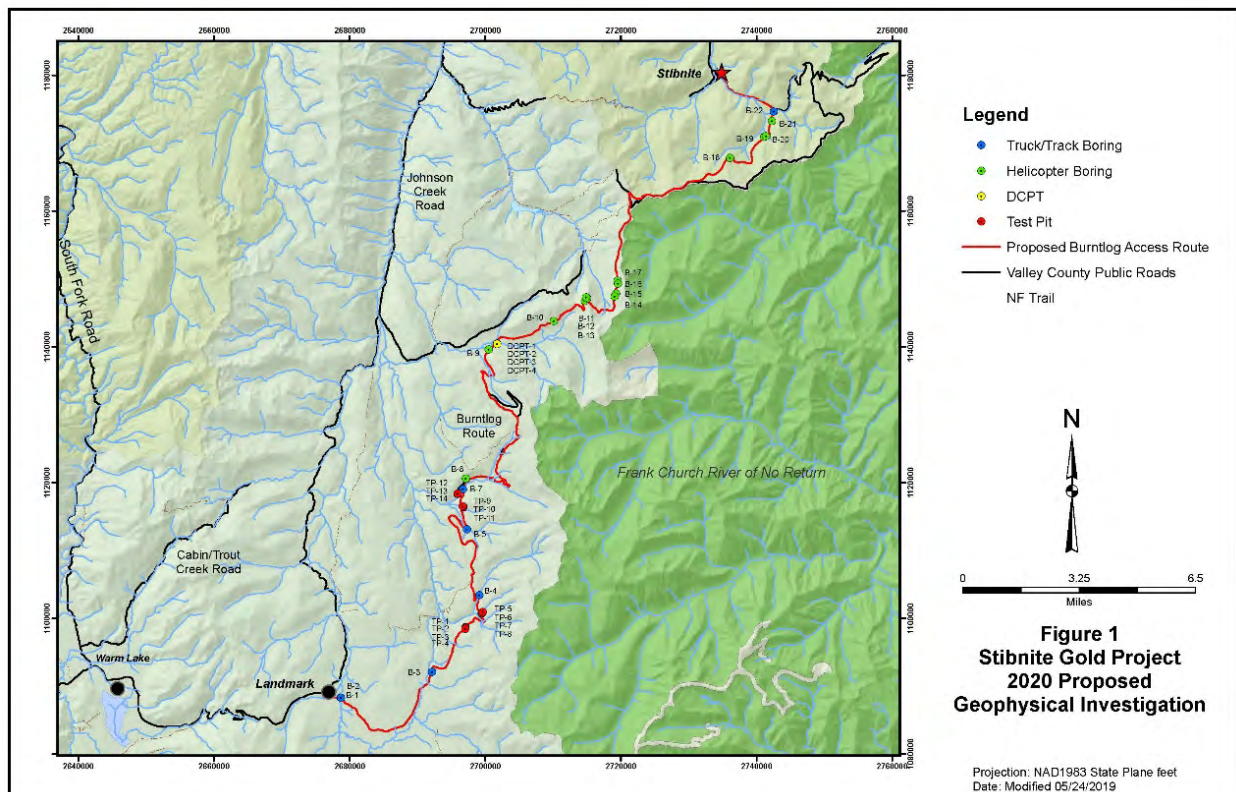


Figure 1 - Project Map

Figure 1
Stibnite Gold Project
2020 Proposed
Geophysical Investigation

Projection: NAD1983 State Plane feet
Date: Modified 05/24/2019

