



800 West Pender Street, Suite 320
Vancouver, British Columbia
V6C 2V6 Canada

February 7, 2014

Bureau of Land Management
Anchorage Field office
4700 BLM Road
Anchorage, Alaska 99507-2546

SENT BY EMAIL & MAIL

**Re: 2014 Notice of Mineral Exploration Operations w/ Reclamation Plan
Skagway (B4) NW Quadrangle**

Proposed under the 43 CFR 3809 regulations (five acres or less of disturbance)

Project Name: Palmer

A. Operator information

[REDACTED]

B. Claimant Information (other than operator):

[REDACTED]

C. Lessee:

Constantine Metal Resources Ltd.
800 West Pender St., Suite 320, Vancouver, BC, V6C 2V6

D. Claim Names and Serial Numbers:

The property consists of 340 federal unpatented lode mining claims, which cover an area of approximately 6765 acres and 63 state mineral claims that cover an area of approximately 9200 acres. See attached table for list of BLM claim names and serial numbers with proposed activity.

E. Location of Proposed Activities (see attached map):

The Palmer property is located in the Porcupine Mining area, 55 km northwest of Haines, Alaska. Geographic co-ordinates of the centre of the property are approximately 136°25'N and 59°20'W. Access to the property is via the paved Haines Highway to the Klehini river bridge crossing and then by gravel road to Glacier Creek. Drill support to date has been provided by helicopter.

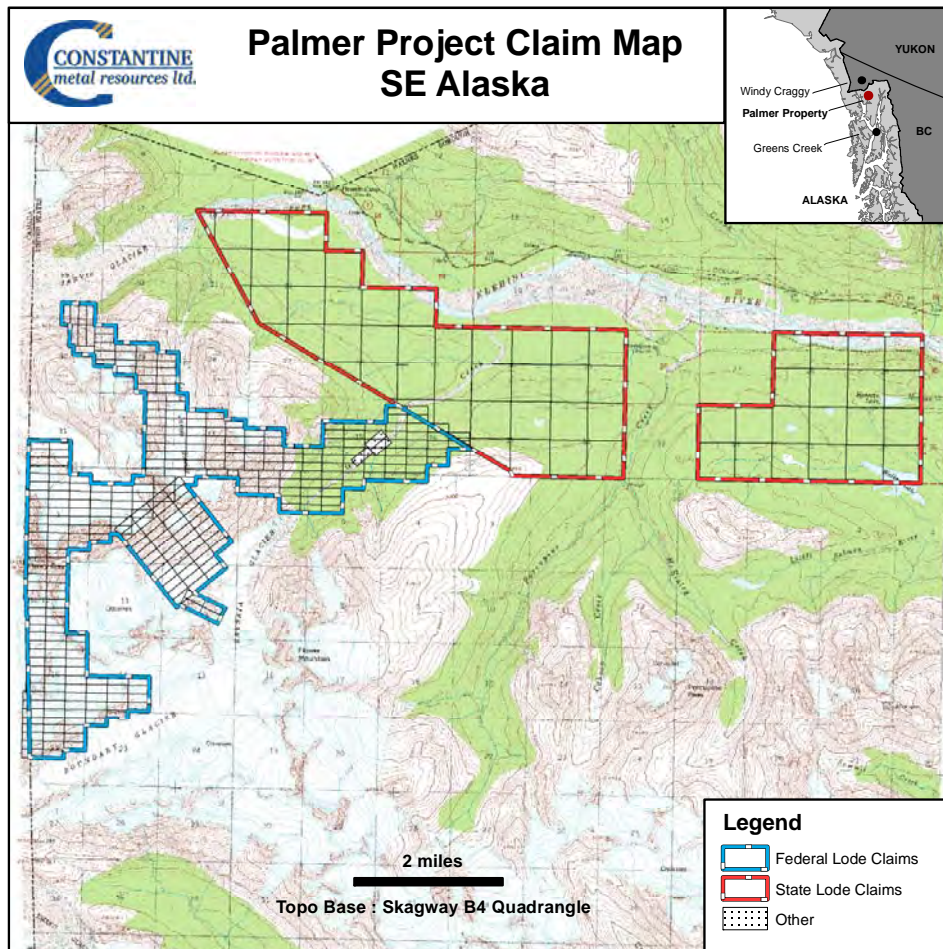


Figure 1. Location and property map.

F. Activity Description:

Constantine Metal Resources Ltd., through our wholly-owned US subsidiary Constantine North Inc., has a 100% interest in the Palmer Property which consists of 340 federal unpatented lode mining claims and 63 state mineral claims located approximately 35 miles northwest of Haines, Alaska (Figure 1). The Property is host to a volcanogenic massive sulphide deposit discovery with an NI 43-101 compliant 4.12 million tonne inferred resource grading 2.01% copper, 4.79% zinc, 0.30 g/t gold and 31 g/t silver (using an NSR cut-off of US\$75/t) that is open to expansion. Constantine is planning a multi-year exploration campaign focused on expansion drilling in an effort to define a deposit meeting economic threshold.

A drill program is planned for 2014 with 2 to 4 drills starting mid-May. The program will be similar to that described by Constantine in the Notice submitted for the 2013 field season. The only significant changes in scope from the 2013 Notice are the intent to re-establish road access closer to the core of exploration operations in the vicinity of the Glacier Creek prospect, and changing the base of operations from 33 Mile on the Haines

Highway to a lodge at Big Nugget located on the opposite side of the Klehini River. A major advantage of moving the base of operations is a reduction in helicopter noise disturbance to residents living in the vicinity of 33 Mile, and avoiding flying/slinging over the Haines Highway. The move to Big Nugget took place in 2013, and equipment and supplies are now stored on site at this location.

DRILL PROGRAM DETAILS

The base of operations for the work program will be at the Big Nugget lodge/camp, located on Porcupine Creek and accessed by 13 km (8 miles) of gravel road connecting to the Haines highway. A helicopter will be based at Big Nugget for the duration of the program to provide daily crew access and supplies to drill sites. Big Nugget is a privately owned facility rented by Constantine, which along with other houses in the region rented by Constantine, is used to house crews and support operations. No sanitary facilities are established at the exploration sites because crews are housed and supported at the various rental sites located off the property, and travel back and forth on a daily basis. All solid waste from the drill sites is contained in barrels or nets and flown on a regular schedule to the base of operations where it is transferred to trucks for disposal at the local municipal landfill. Recycling of materials is done when practical. Only approved non-toxic drill fluid additives will be utilized. MSDS sheets for potential additives used during the 2014 program will be provided upon request. Due to the fractured nature of the near surface bedrock in the areas drilled and low groundwater table, there is almost no surface return of drill water and cuttings.

Fuel storage on the project site is limited to 55 gallon barrels and custom designed 130 gallon fly tanks at each drill and pump site (designed for safer, more efficient transport of fuel). Each drill will typically have three 55 gallon barrels or one 130 gallon fly tank with secondary containment sufficient to hold 110% capacity. Each pump site will typically have two 55 gallon barrels with secondary containment. Where logistically feasible, pump stations are contained entirely within a synthetic impermeable containment structure so that pumps, fuel barrels and re-fueling equipment are all entirely contained. The amount of fuel at each drill site and pump site allows for some extra storage in the event the weather is too bad to helicopter sling fuel on any particular day. Total fuel stored at any given site is not expected to exceed 200 gallons. Project site fuel needs are resupplied from Big Nugget, where tanks with secondary containment are regularly topped up by local fuel service providers. Personnel are trained in spill prevention and spill response procedures, with spill kits located in key areas.

Topographic maps showing the location of fifty-eight potential drill sites are attached (Figures 2, 3 & 4). The location of all existing drill pads (built in previous years) is also shown on the attached maps. Details of both historic and new proposed sites are listed in Table 1. We anticipate that some or all of the remaining un-reclaimed pads will be re-used in the 2014 drilling seasons, either as heli-pads or drill sites. It is anticipated that **twenty or fewer** of the new drill sites identified for 2014 will be utilized. Individual sites are typically utilized for multiple drill holes, therefore the total number of pads used in 2014 will be less than the total number of holes drilled. The total number of pads, holes drilled, and density of sites utilized within a given area is dictated by results generated during the

program, and budget considerations. The location of pad sites provided are subject to modification and field fit due to topographic and safety considerations.

Drilling will be performed by heli-portable drill rigs. Drills, crew and all supplies are transported to and from drill pad site by helicopter. Drills will be in operation 24 hours a day 7 days a week during the course of the field program.

This Notice contemplates multi-year activity and potential for drilling on any of the fifty-eight proposed sites in subsequent years. Concurrent reclamation of drill and helipad sites, and re-use of timbers will take place, resulting in no more than 20 new unreclaimed drill pads and associated helipads at any given time.

Although never yet required, some 2014 drill pads on the very steep South Wall area of the Glacier Creek prospect may require minor blasting for safety reasons. If blasting is required we will contract a local road building contractor. Constantine has discussed this work with a local contractor that has safe explosive storage and experienced people nearby the project area to do this work. All new drill pads and existing drill pads that we do not expect to re-use will be reclaimed as exploration proceeds. Plans to re-use a pad depend on drilling results. Any drill pads that we determine to be exposed to snow avalanches are removed upon completion of drilling.

Drill water for the South Wall and RW zone drilling was provided from one source in 2013 and this same source plus some additional sources will be used in the 2014 program and are shown on the attached maps (Figures 2, 3 & 4). A figure depicting the water system, including typical hoseline and pumping station locations is also provided for reference (Figure 5). Water sources are covered under a five year temporary water use permit - TWUP J2009-4, and listed in Table 2. A request to amend TWUP J2009-04 to include two additional water source options was approved in 2012 (included in attachments). The two new water sources, do not increase our total water usage which is currently permitted up to 29,000 gallons per day. The current temporary water use permits expire in August 2014; new permit applications will be submitted well in advance of the expiration date to ensure Constantine maintains authorization to withdraw water for drilling.

A map at nominal 1" = 1 mile shows the helicopter access routes to the project area from our base at Big Nugget (Figure 2). These routes are the regular routes unless weather forces us to use alternatives access. To minimize potential noise disturbance to residents located along the Haines Highway near the border station, helicopters will attempt to restrict use of the northerly route to the MHC prospect to only those times when required by weather or other factors. Helicopter pilots are advised to avoid flying over wildlife and if goats are sighted they are given a wide berth (note: none were sighted in the areas worked during the 2013 exploration field season).

The 2014 program is likely to continue until at least the end of September and possibly into October. In previous years, concern has been raised by regulators that our activities after September 15 may impact goat hunters in the area. A local hunting guide has advised us that our exploration is not in a goat hunting area because of relatively few goats and difficulty of access. He also advised us that there is a database that documents the location of all goats that have been shot in the Haines area and this can be used to demonstrate the general lack of hunting in the project area.

ACCESS ROAD DETAILS

Road Purpose:

Constantine is proposing establishing a 4 km (2.5 mile) basic, single-lane supply/access road (Figure 2). The road provides cost effective access to the property in support of exploration work and other related environmental and geotechnical baseline surveys, and also significantly enhances worker safety by providing an alternate point of ingress/egress when weather prohibits helicopter flight. Once complete, the road will provide an important staging area for drill supplies (extra rods, muds, core boxes, fuel, etc.), which greatly reduces cost, heli-fuel consumption, and travel time involved in supplying the drill program. A staging area immediately below the area of active drilling allows the helicopter to better take advantage of weather windows during times of fog and cloud cover that commonly occur on the property. The road will also provide a means to hike out of, or into, work sites, which in addition to enabling practical access by foot, is also considered very important for emergency response in times of heavy fog and cloud cover.

Road Description:

A total of 2.1 kilometers of the road occur on adjoining State mining claims with the remaining 1.9 kilometers located on Federal mining claims. The access route has been designed, and will be constructed, to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable. Unnecessary or undue degradation has been avoided by having the majority of the road follow a pre-existing road bed that was permitted and built in 1977 (Figure 6). The original road was constructed with a D8 Cat and at one time supported 2 ½ ton truck traffic. The road has become overgrown with vegetation that will require clearing out, and stream crossings are washed out, but the road bed itself remains largely intact.

Following review of environmental and engineering studies in 2013, approximately 1229 meters of new road is proposed. The new sections of road are designed with a safer and more efficient road alignment in mind, and has been designed to avoid new impacts to wetland. A total of 702 meters of new road is located on State land and 527 meters is located on Federal claims administered by BLM. The majority of the new road route is designed to follow a proposed access route through the Haines State Forest that was previously surveyed and flagged by Haines State Forest for timber sale access. An attachment is provided with figures detailing the access road, including typical culvert and bridge construction. Road constructed within the Haines State Forest will meet minimum Coastal Region Forestry Road Standards (see attached). Twelve creeks were mapped along the 4 km length of road during aquatic survey work by Tetra Tech (see attached) averaging 3 feet (1 meter) or less in width, with a maximum stream width of 10 feet (3 meters).

A description of the entire project, including work on both State and Federal claims and upgrades of the pre-existing road, is provided below.

- The road would be constructed by cuts and fills utilizing best management practices (BMPs) for the road type and local conditions present. The road surface would be 4.3m wide. Slash would be windrowed at the toe of fill slopes.
- Turnouts for passing approaching vehicles would be 30m long by 4.3m wide in addition to the road surface. Turnouts would be intervisible, not to exceed 300m apart.
- Bridges will span as many as five stream crossings. Bridges would be 4.3m wide timber or modular bridges placed on abutments constructed from timber. Bridges would be between 6.0 m and 9.1 m in length. Large culverts may be used instead of bridges based on field conditions encountered during construction.
- Culverts would be placed at a minimum of 18 stream and rivulet crossings including two 900mm culverts, four 600mm culverts, and fourteen 450mm culverts.
- A ditch would be constructed along the uphill side of the road. Proper BMPs including energy dissipators, relief culverts, and sediment basins would channel run-on water away from the road surface and reduce sedimentation.
- Prior to beginning construction, proper storm water control BMPs will be installed. BMPs will be maintained throughout the construction period and until permanent soil stabilization measures are in place.
- All excavations and fills, except the actual road surface, would be seeded upon completion of construction utilizing seed mix approved for application in the State of Alaska.

Construction will primarily be completed with excavators, supported by trucks and loader for road fill and surfacing as required. Road surfacing material is anticipated to be sourced from cut banks and local borrow pits along the road route, and/or from established nearby sources. Construction is scheduled to commence as soon as practical following snow melt and drying (tentatively estimated for mid-June). Construction is estimated to take two months or less to complete.

Road Disturbance (BLM lands):

A total of 527 meters (1.06 acres) of new road are being constructed. Combined with new pullouts (0.19 acres), laydown (0.11 acres), and potential borrow pits (0.07 acres), total new disturbance on BLM land is estimated to be 1.43 acres. Potential exists for new surfacing to take place over the length of the pre-existing road and other new disturbance associated with clearing out and/or widening and ditching of the road. It is therefore assumed that for reclamation bond calculation purposes it is advisable to include the entire footprint of the road (both old and new). Total area of the 1.9 km of road located on BLM land is 3.83 acres, with rehabilitated sections of the old road totaling 2.77 acres and new sections of road totaling 1.06 acres. Inclusive of pullouts, laydowns and potential borrow sites the total area equals 4.20 acres.

New Road Related Disturbance - BLM Lands

Item	Quantity	Width	Length	Acres
New Road Sections		variable	527	1.06
Pullouts	6	4.3	30	0.19
Laydown	1	8.6	50	0.11
borrow pits	3	10	10	0.07
Total				1.43

Road disturbance calculations are based on a 4.3m (14 foot) road surface with ditching, and slope angle adjusted cut & fill (Tables 3 & 4). The access route has been planned with the minimum width required to support operations and has, to the extent possible, followed natural contours to minimize cut and fill. The portion of the road constructed in Haines State Forest may be built to wider widths and include deeper surfacing to meet Forestry Road Standards.

G. Measures taken to Prevent Unnecessary or Undue Degradation:

Several measures have been taken to prevent unnecessary and undue degradation to the natural environment. The single largest means of preventing unnecessary impact and degradation was designing the majority of the road to follow a pre-existing road bed that was permitted and built in 1977.

Haines State Forest has proposed roads to access timber sales in the area. Constantine made an effort to keep the majority of new State land disturbance to a route previously surveyed by Haines State Forest. This was done with multipurpose/multiuse in mind, and to reduce the need and impacts of multiple roads. Constantine has been in communication with Haines State Forest personnel and have been informed that road construction along their previously surveyed route is viewed favorably as it enhances timber harvest opportunities within the forest management area.

HDR Alaska Inc. (Anchorage) was contracted to perform a wetland delineation survey for the proposed access road corridor adjacent to Glacier Creek. The purpose of this Jurisdictional Determination Report (JDR) was to identify locations within the project area that are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under authority of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act of 1899. Prior to fieldwork, scientists reviewed publically available data, including topography, wetland mapping, soil surveys, and aerial imagery, to help in determining the presence of wetlands in the study area. Initial delineation of wetland and waterbody boundaries in the vicinity of the project area was conducted by interpreting aerial imagery and GIS data. The National Wetland Inventory wetland mapping did not identify wetlands or waters of the U.S. within the project area except for Glacier Creek.

A field survey was conducted by Zachary Halstead (Professional Wetland Scientist #2046), and Doug Jewell (Environmental Scientist) on July 1-3, 2013 to verify preliminary desktop mapping. Baseline wetland mapping was completed for an approximate 5.4 mile linear corridor that ranged from approximately 300 feet to 950 feet wide. Characteristic wetland and upland areas were studied using the three-parameter method of determining an area's wetland status outlined in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Alaska Region (USACE 2007). Standard USACE data forms were completed at sampling points and photographs were taken to document the vegetation, soil profile, and hydrology.

The work indicates that of the total 233.01 acres in the project survey area, there are approximately 7.69 acres (or ~3.3%) of wetlands or water bodies (including Glacier Creek), with an additional 17,940 linear feet of small streams - the remainder of the area is

categorized as upland. Maps provided in the road design attachment depict wetland delineated within the road corridor.

Total wetland along the proposed access route is 0.18 acres, all of which is previously disturbed and located along the pre-existing access road constructed in 1977. New sections of proposed road were designed to avoid disturbing any new wetland. Upgrades to be made at stream crossings along the old road are designed to minimize and reduce pre-existing in-stream/wetland disturbance with the installation of appropriately sized culverts and stream spanning bridges.

A pre-construction notice is in preparation for submittal to the Army Corps of Engineers. Based on significantly less than 0.5 acres of wetland disturbance, it is assumed that ACOE will provide approval for Nationwide general permit 14, and the project will not require a Section 404 permit (disturbance of >0.5 acres is the typical trigger for a 404).

Aquatic surveys were conducted July 7-10, 2013 by Tetra Tech staff scientists Katie Goodwin and David Cox, with report provided October, 2013 (Preliminary Aquatic Investigation). Field surveys were limited to Glacier Creek and its tributaries that could be affected by the road. Surveys were conducted by traversing the Glacier Creek road corridor to identify and characterize unmapped streams. Fish species and the fork length of each fish captured were recorded before returning the fish to the stream. Fifteen eastern tributaries to Glacier Creek were mapped from the proposed Glacier Creek alignment (twelve within the current 4 km road proposal). Six of the Glacier Creek tributaries were sampled for fish. Minnow traps were set in multiple locations along these six tributaries. No fish were recovered from five of these tributaries. Ten Dolly Varden were captured 50 feet above the confluence of Glacier Creek Glacier Creek Tributary 3; however, fish passage barriers were noted farther upstream. **No fish presence was noted along the extent of the Glacier Creek road alignment.** A high gradient bench exists for most of the road alignment that likely precludes fish presence. No species of salmon were recorded during sampling efforts on Glacier Creek or any of the 15 Glacier Creek tributaries mapped.

The aquatic survey information will be provided to Alaska Dept. of Fish & Game to determine if a Title 16 fish habitat permit is required. Based on the absence of fish in streams crossed by the road, and the BMP's that will be employed during construction, no negative impacts to aquatic life are anticipated.

H. Existing Disturbance and Structures Present in the Project Area:

ROADS

Preexisting disturbance in the project area includes existing variably open to overgrown logging roads (State claims only) and overgrown cat trails/roads developed in the 1970s (State and Federal claims). The cat trails/roads located on BM lands have not been previously utilized for vehicle traffic by the current Operator.

DRILL SITES AND OTHER

The most recent exploration activity on the property was during the summer of 2013 during which ten drill holes were completed from six drill sites. An annual reclamation statement was submitted December 27, 2013 for the 2013 work program. The total disturbance that exists on the property from intermittent drilling activities that first commenced in 1979 is ~0.20 acres. The total disturbance is significantly less than the 3 acres that the Operator is currently bonded for. Based on an average drill pad size of 20 ft x 20 ft, the total disturbance of the 16 existing un-reclaimed/partially reclaimed drill pads is 0.15 acres. Accounting for 0.05 acres for all other disturbances, including heli-pads, water system support, etc., total disturbance is estimated at 0.20 acres. This total includes pads built prior to acquisition of the property by Constantine in 2006.

I. Reclamation Plan:

DRILL SITE RECLAMATION

A list of all claims with potential disturbance in 2014 are provide in Table 5.

Only minor surface disturbance occurs from establishing drill pads since access to the drill sites is by helicopter, and all drill moves will be made by helicopter. Pads are constructed of wood cribbing, generally resulting in minimal soil disturbance. To construct the drill pads, wood supports are placed on the ground or ice, to support and level the diamond drill, or in steeper areas may be rock bolted to the ground. A layer of sawdust is laid down to provide insulation for pads built on snow and ice. Photos of typical pad construction are included for reference. The footprint for a typical drill pad is 20 feet x 20 feet (400 sq ft). Accordingly 20 drill pads is equivalent to 8,000 sq ft or 0.18 acres. With the inclusion of small pads for helicopter access and water system platforms, the maximum disturbance for new drilling sites in 2014 is estimated at 0.25 acres. Combined with previously unreclaimed/partially reclaimed sites (0.20 acres), the maximum **total of all drilling related disturbance for 2014 is estimated to be 0.45 acres**. This Notice contemplates a multi-year program. Ongoing reclamation and re-use of drill timbers will ensure drill site related disturbance will remain at 0.45 acres or less from year-to-year (unless otherwise approved).

Reclamation of drill sites will include salvaging all timber, and removal of all associated materials (scrap, etc.), including associated heli-pads. Partially reclaimed pads included removal of all but the main support timbers, and in some places complete removal of the associated heli-pad. All pads will be constructed either on rocky alpine outcrop or snow/ice, and no re-seeding will be required. Constantine plans to utilize all un-reclaimed sites in future exploration programs, both for drilling additional holes and as a safety measure to provide secure, safe helicopter access to different areas of the property – which is otherwise extremely challenged due to the steep terrain. Human safety is of paramount importance and is an important consideration in establishing several semi-permanent landing pads. For pads not reclaimed in 2014, all refuse and scrap will be removed and sites will be left in a tidy state with only the secure timbered frame of the drill pads and associated heli-pads left in place. No fuel, drill additive or other material besides the wood timbers and steel casing of the hole will be left on site.

Holes may be lined with PVC piping to allow surveying with geophysical instrumentation and for future environmental and geotechnical monitoring purposes. Environmental work in these holes includes depth to ground water measurements for hydrologic modeling, and potential future ground water sampling. For these reasons Constantine does not anticipate plugging holes until a later date when this environmental and geotechnical information is no longer required. As an interim measure it is recommended that removable steel caps be placed on all hole casings.

ACCESS ROAD RECLAMATION

Road reclamation will include both ‘concurrent reclamation’ focused on immediate stabilization measures during and immediately following construction, and ‘final reclamation’ to be performed at such time that the road is no longer needed for exploration access. Only concurrent stabilization reclamation is planned for the 2.1 km portion of the road located within the Haines State Forest as it will provide long term access for timber harvest and other recreation purposes.

Concurrent Reclamation:

Most of the road work will be an upgrade to an existing overgrown road. Top soil in new excavations is expected to be 0.3m to 0.5m deep. Topsoil recovered in these areas will be placed on the surface of completed cut slopes and fill slopes to facilitate rapid revegetation. Soil will be seeded upon completion of construction work. The seed mix is planned to include:

- 30% Boreal red fescue (*Festuca rubra*)
- 60% Norton tufted hairgrass (*Deschampsia caespitosa*)
- 10% Blue joint (*Calamagrostis Canadensis*)

or such other seed mix as befits the local ecosystem and approved by regulatory agencies.

Final Reclamation:

The road is anticipated to provide long term access in support of continued exploration and other related environmental and geotechnical baseline surveys in the advancement of the property. Final reclamation will occur on closure of all exploration activities or such other time as deemed appropriate. Reclamation will include re-contouring, ripping and revegetating the full length of the road on BLM lands, as well as removal of bridges and culverts. The reclamation will include areas of pre-existing road disturbance utilized by the Operator.

J. Bonding and Reclamation Cost Estimate:

The Operator intends to utilize the State of Alaska Mining Reclamation Bond Pool as a financial guarantee for reclamation. Total area bonded, including both drill and road related disturbance is 4.65 acres. Because bonding payments with the Alaska Statewide Bond Pool are based on acreage of disturbance, a detailed reclamation cost estimate has not been

prepared. Financial assurance provided by the Statewide Bond Pool is well in excess of the cost to fully reclaim disturbances on the project.

Any additional information that is required will be provided on request.

Sincerely,



Darwin Green, VP Exploration
Constantine Metal Resources Ltd.

Attachments:

- 1) Road design drawings
- 2) Coastal Region Forestry Road Standards
- 3) Preliminary Aquatic Investigations Report - Tetra Tech
- 4) Wetland and Waterbody Jurisdictional Determination Report – HDR Alaska

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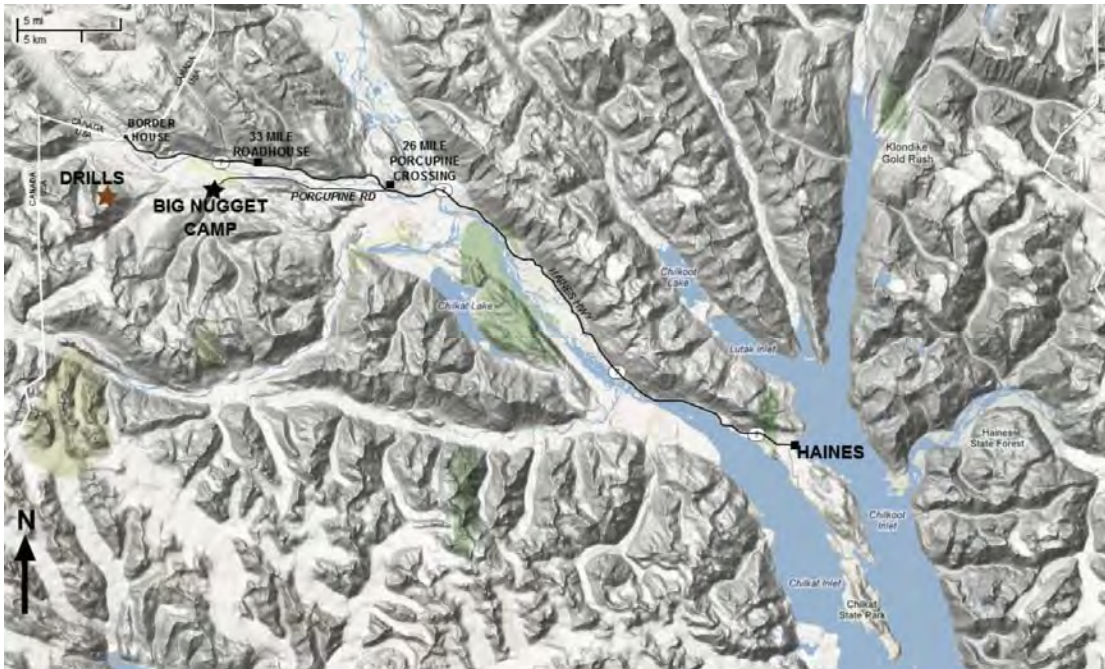


Figure 1. Project location map.

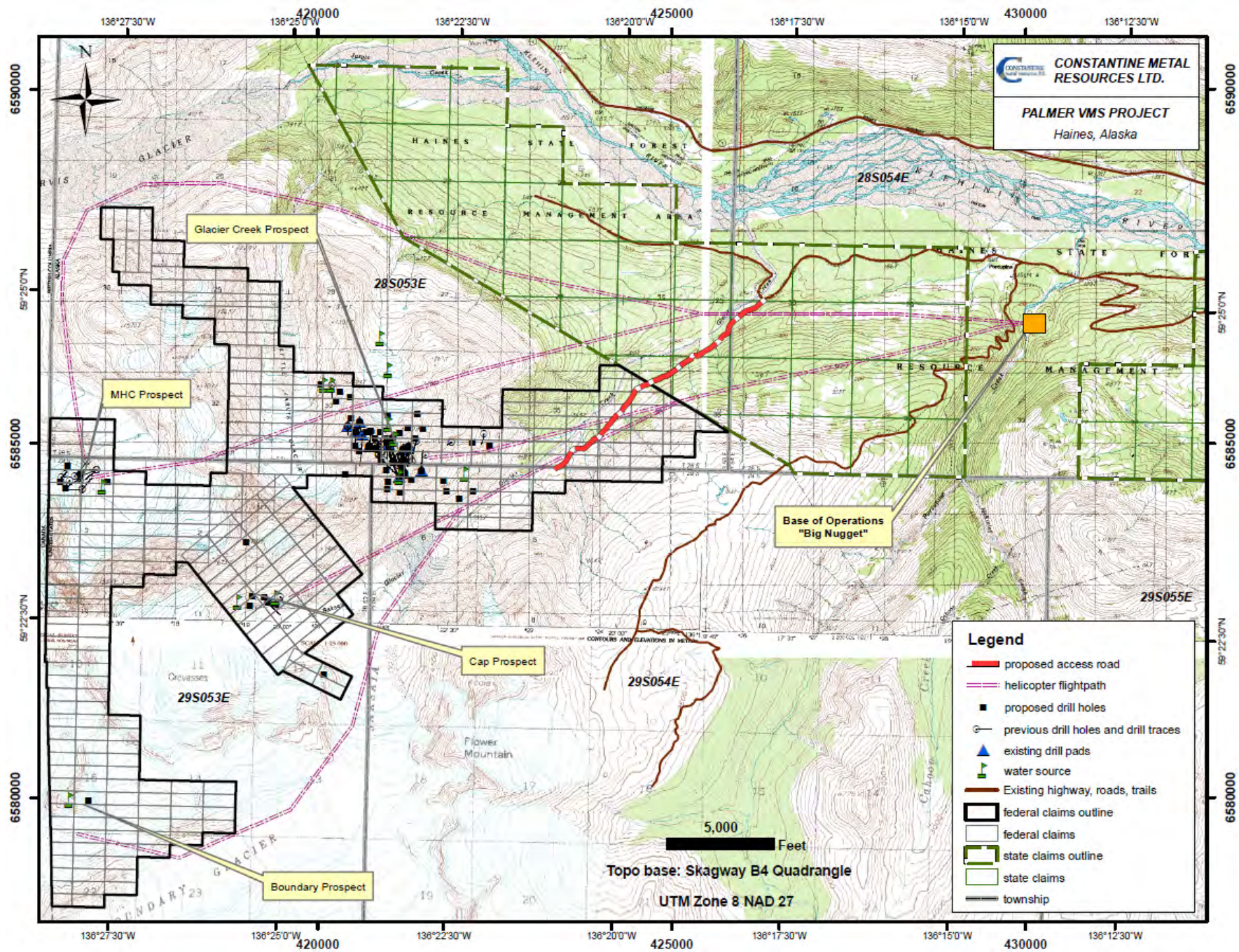


Figure 2. Location map for drill sites, access road and helicopter flight paths.

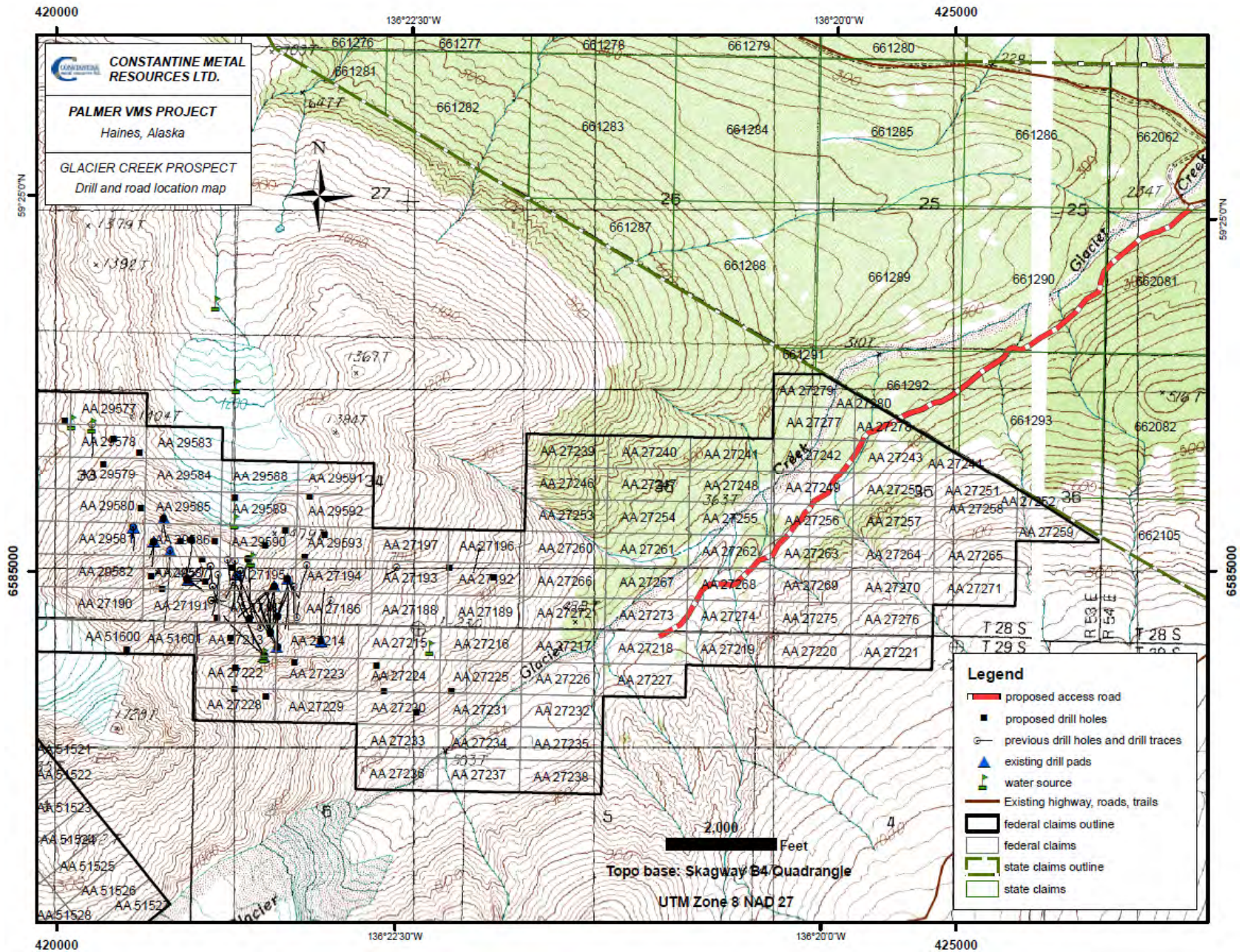


Figure 3. Proposed drill sites and water sources within the Glacier Creek prospect area

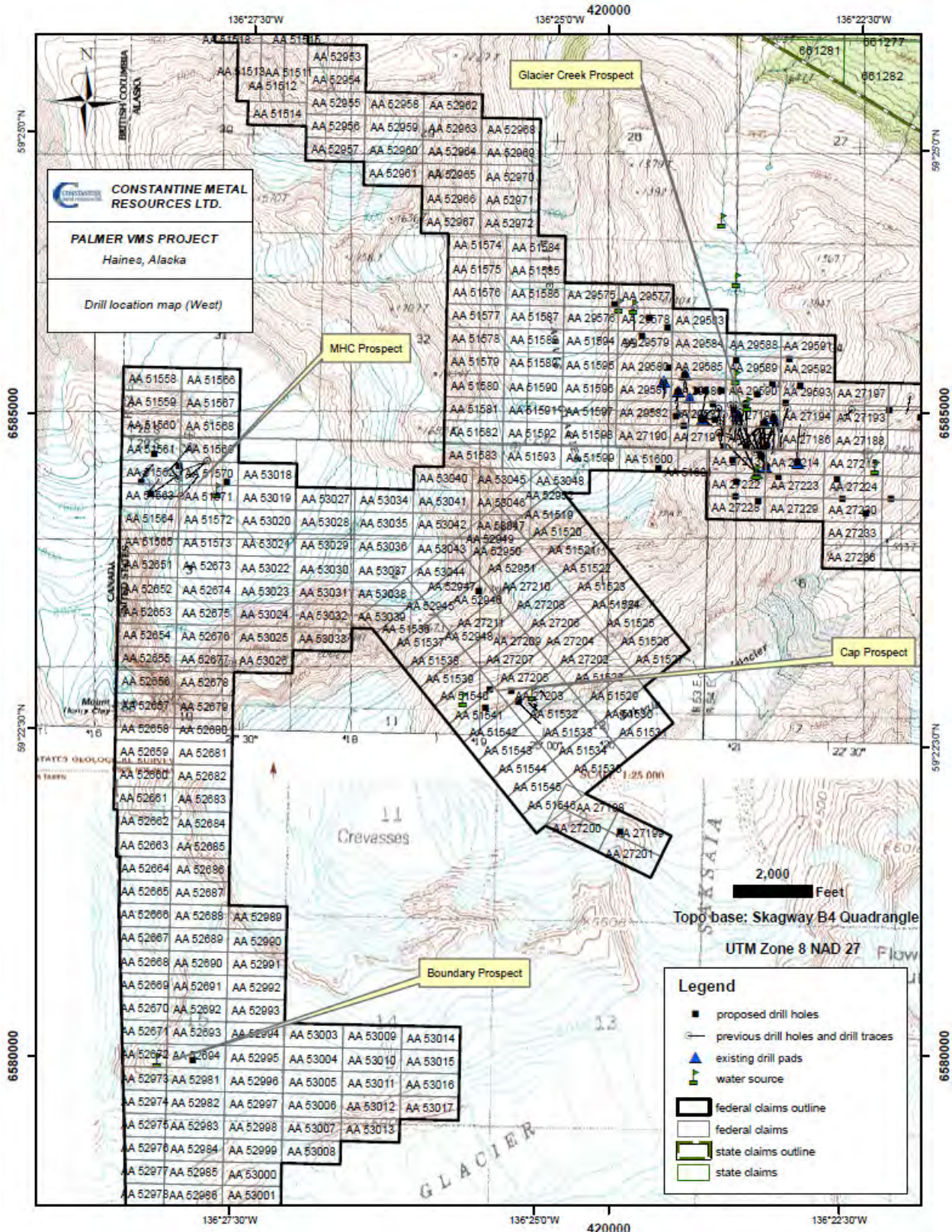


Figure 4. Proposed drill sites and water sources located on the west half of the property (MHC, Cap, Boundary, Nunatak).

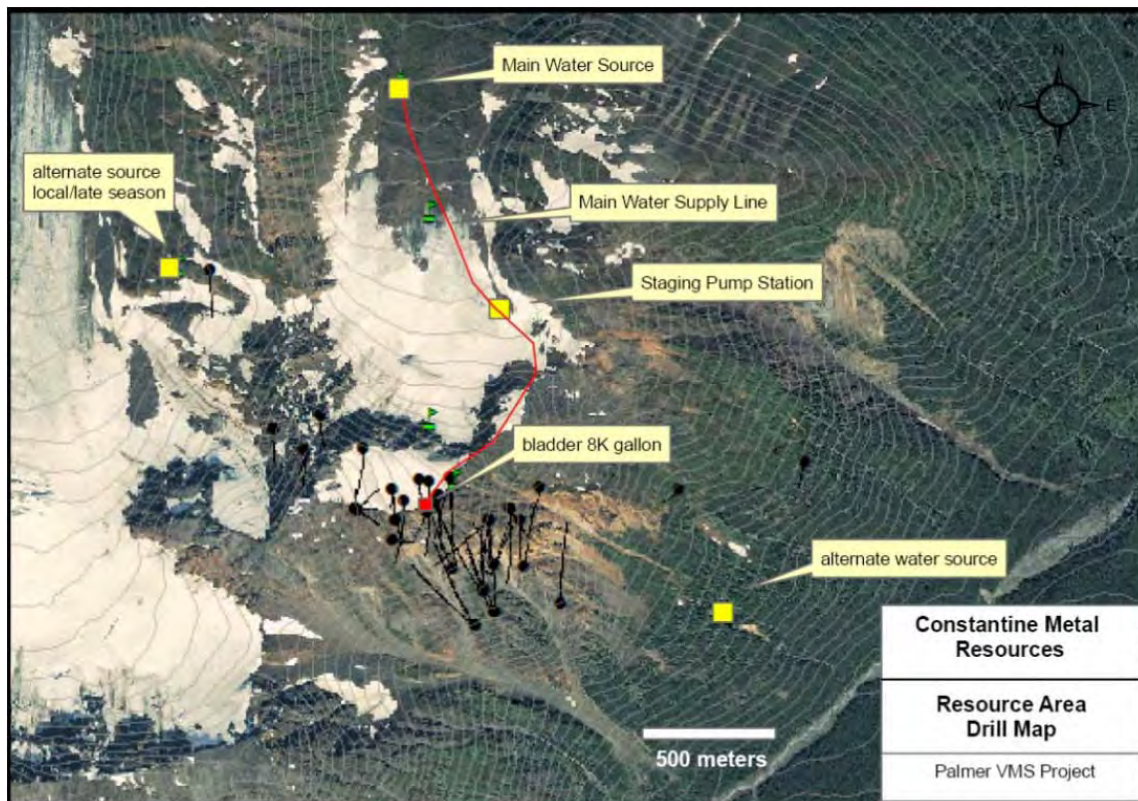


Figure 5. Typical water supply setup for Glacier Creek prospect area.

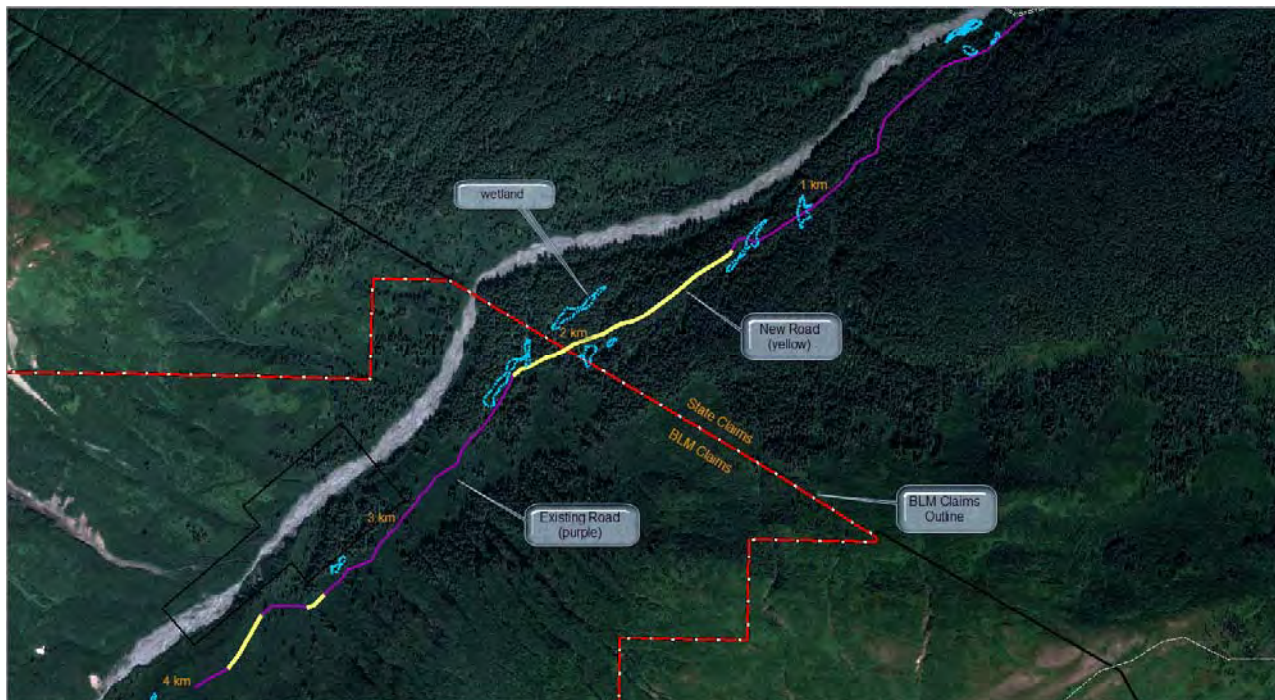


Figure 6. Satellite Image of proposed road route.

Table 1. List of proposed drill sites.

SITE	AREA	Easting (NAD 27)	Northing (NAD 27)	Easting (NAD83)	Northing (NAD 83)	Claim	Claim Number
2	Glacier Ck	420047	6585841	420047	6585841	RAT DAWG #43	AA 29575
3	Glacier Ck	420317	6585739	420317	6585739	RAT DAWG #54	AA 29578
4	Glacier Ck	420461	6585662	420461	6585662	RAT DAWG #54	AA 29578
5	Glacier Ck	420261	6585599	420261	6585599	RAT DAWG #55	AA 29579
6	Glacier Ck	421408	6585418	421408	6585418	RAT DAWG #86	AA 29592
7	Glacier Ck	420992	6585408	420992	6585408	RAT DAWG #76	AA 29589
8	Glacier Ck	420470	6585351	420470	6585351	RAT DAWG #56	AA 29580
9	Glacier Ck	420595	6585292	420595	6585292	RAT DAWG #66	AA 29585
10	Glacier Ck	421272	6585229	421272	6585229	RAT DAWG #77	AA 29590
11	Glacier Ck	421490	6585206	421490	6585206	RAT DAWG #87	AA 29593
12	Glacier Ck	420751	6585173	420751	6585173	RAT DAWG #67	AA 29586
13	Glacier Ck	420689	6585167	420689	6585167	RAT DAWG #67	AA 29586
14	Glacier Ck	420881	6585167	420881	6585167	RAT DAWG #67	AA 29586
15	Glacier Ck	420542	6585162	420542	6585162	RAT DAWG #67	AA 29586
16	Glacier Ck	421159	6585141	421159	6585141	RAT DAWG #77	AA 29590
18	Glacier Ck	421379	6585076	421379	6585076	RAT DAWG #87	AA 29593
19	Glacier Ck	421066	6585067	421066	6585067	MARMOT #8	AA 27195
20	Glacier Ck	420810	6585067	420810	6585067	RAT DAWG #68	AA 29587
21	Glacier Ck	420974	6585019	420974	6585019	MARMOT #8	AA 27195
22	Glacier Ck	420527	6584972	420527	6584972	RAT DAWG #68	AA 29587
23	Glacier Ck	422427	6584964	422427	6584964	MARMOT #5	AA 27192
24	Glacier Ck	421284	6584955	421284	6584955	MARMOT #8	AA 27195
25	Glacier Ck	420730	6584948	420730	6584948	RAT DAWG #68	AA 29587
26	Glacier Ck	420827	6584941	420827	6584941	RAT DAWG #68	AA 29587
27	Glacier Ck	421209	6584914	421209	6584914	MARMOT #8	AA 27195
28	Glacier Ck	420587	6584901	420587	6584901	RAT DAWG #68	AA 29587
29	Glacier Ck	421230	6584749	421230	6584749	#2 OF MARMOT MINE	AA 27187
30	Glacier Ck	420893	6584741	420893	6584741	M.V.P. MINING CLAIMS #1	AA 27191
31	Glacier Ck	421073	6584735	421073	6584735	#2 OF MARMOT MINE	AA 27187
32	Glacier Ck	421189	6584656	421189	6584656	MARMOT #101	AA 27213
33	Glacier Ck	420967	6584629	420967	6584629	MARMOT #101	AA 27213
34	Glacier Ck	421469	6584610	421469	6584610	MARMOT #102	AA 27214
35	Glacier Ck	421228	6584579	421228	6584579	MARMOT #102	AA 27214
36	Glacier Ck	420391	6584569	420391	6584569	HOTDAWG 27	AA 51600
37	Glacier Ck	421154	6584530	421154	6584530	MARMOT #101	AA 27213
38	Glacier Ck	421322	6584495	421322	6584495	MARMOT #111	AA 27223
39	Glacier Ck	420995	6584463	420995	6584463	MARMOT #110	AA 27222
40	Glacier Ck	421701	6584426	421701	6584426	MARMOT #112	AA 27224
41	Glacier Ck	420987	6584347	420987	6584347	MARMOT #116	AA 27228
42	Glacier Ck	421821	6584335	421821	6584335	MARMOT #112	AA 27224
43	Glacier Ck	422197	6584334	422197	6584334	MARMOT #113	AA 27225
44	Glacier Ck	421164	6584309	421164	6584309	MARMOT #116	AA 27228
45	Glacier Ck	422001	6584215	422001	6584215	MARMOT #118	AA 27230
46	Glacier Ck	422160	6585009	422160	6585009	MARMOT #5	AA 27192
47	MHC	416466	6584682	416466	6584682	KIC 4	AA 51561
48	MHC	416658	6584586	416658	6584586	KIC 5	AA 51562
49	MHC	417029	6584462	417029	6584462	KIC 13	AA 51570

50	MCH	416365	6584459	416365	6584459	KIC 5	AA 51562
51	MHC	416440	6584363	416440	6584363	KIC 6	AA 51563
52	CAP	419077	6582842	419077	6582842	ICE 68	AA 51540
53	CAP	419245	6582837	419245	6582837	MARMOT CLAIM #27	AA 27205
54	CAP	419300	6582750	419300	6582750	MARMOT CLAIM #25	AA 27203
55	CAP	419041	6582710	419041	6582710	ICE 69	AA 51541
56	CAP	418990	6583624	418990	6583624	MARMOT HOLE 4	AA 52948
57	Nunatak	420090	6581743	420090	6581743	MARMOT CLAIM #21	AA 27199
58	BOUNDARY	416763	6579963	416763	6579963	CLAY 60	AA 52694

Table 2. Water sources.

Water Source Name	Source Type	Easting (NAD83)	Northing (NAD83)
A	Glacial Melt/Creek	419306	6582991
G	Glacial Melt/Creek	420896	6586202
H	Glacial Melt/Creek	419983	6586001
D	Glacial Melt/Creek	420982	6585234
E	Glacial Melt/Creek	420892	6585447
F	Glacial Melt/Creek	421973	6584748
B	Glacial Melt/Creek	418768	6582938
C	Glacial Melt/Creek	416856	6584565
J	Glacial Melt/Creek	416386	6580131
I	Glacial Melt/Creek	420783	6586660
K	Drill Hole	420095	6585990
L	Drill Hole	421052	6584704

Estimated Amount of Drill Water:	We expect each diamond drill will on average use approximately 5-10 gpm when operating. Constantine will not exceed a cumulative water usage of 29,000 gpd for the project, as stated in TWUP J2009-04.
Pump Intake Diameter:	Our in-stream pumps use a 3-inch diameter intake hose. We may also test a downhole pump that we have successfully used on another project. This pump is designed to fit down NQ-size diamond drill holes.
Pump Rate in GPM:	We use the in-stream pumps to fill large water bladders which can then supply water to the drills at a consistent rate as needed. These pumps typically operate at 10-20 gpm when filling the bladders. The in-hole pumps may run at approximately 5-10 gpm.

Table 3. Slopes and calculated total disturbance widths for road (based on 4.3 m wide running surface)

Grd Slope	Width	
0	7.17	ditched on both sides
1	7.17	ditched on both sides
2	7.18	ditched on both sides
3	6.33	
4	6.48	
5	6.64	
6	6.81	
7	6.99	
8	7.18	
9	7.38	
10	7.59	
11	7.81	
12	8.05	
13	8.31	
14	8.59	
15	8.89	
16	9.21	
17	9.56	
18	9.95	
19	10.38	
20	10.86	

Table 4. Acreage calculation for road on federal mining claims (includes existing pre-1981 road)

Station (km)	ΔVt	ΔHz	Slope*	Width(m)	Area(m)	Acres
2.1	20	118	10 °	7.59	759	0.188
2.2	20	225	5 °	6.64	664	0.164
2.3	20	308	4 °	6.48	648	0.160
2.4	20	212	5 °	6.64	664	0.164
2.5	20	233	5 °	6.64	664	0.164
2.6	20	190	6 °	6.81	681	0.168
2.7	0	95	0 °	7.17	717	0.177
2.8	20	193	6 °	6.81	681	0.168
2.9	20	136	8 °	7.18	718	0.177
3.0	20	120	9 °	7.38	738	0.182
3.1	20	78	14 °	8.59	859	0.212
3.2	20	80	14 °	8.59	859	0.212
3.3	20	71	16 °	9.21	921	0.228
3.4	20	124	9 °	7.38	738	0.182
3.5	20	91	12 °	8.05	805	0.199
3.6	20	59	19 °	10.38	1038	0.256
3.7	20	72	16 °	9.21	921	0.228
3.8	0	67	0 °	7.17	717	0.177
3.9	20	77	15 °	8.89	889	0.220
4.0	20	88	13 °	8.31	831	0.205
TOTAL						3.83

* Ground slope measured 90° to road centerline

Table 5. List of federal mining claims with potential disturbance in 2014 (includes claims with existing unreclaimed pads).

Claim	Claim Number	Claim Type	Activity
#2 OF MARMOT MINE	AA 27187	BLM/Federal	Drill
M.V.P. MINING CLAIMS #1	AA 27191	BLM/Federal	Drill
MARMOT #5	AA 27192	BLM/Federal	Drill
MARMOT #8	AA 27195	BLM/Federal	Drill
MARMOT CLAIM #21	AA 27199	BLM/Federal	Drill
MARMOT CLAIM #25	AA 27203	BLM/Federal	Drill
MARMOT CLAIM #27	AA 27205	BLM/Federal	Drill
MARMOT #101	AA 27213	BLM/Federal	Drill
MARMOT #102	AA 27214	BLM/Federal	Drill
MARMOT #110	AA 27222	BLM/Federal	Drill
MARMOT #111	AA 27223	BLM/Federal	Drill
MARMOT #112	AA 27224	BLM/Federal	Drill
MARMOT #113	AA 27225	BLM/Federal	Drill
MARMOT #116	AA 27228	BLM/Federal	Drill
MARMOT #118	AA 27230	BLM/Federal	Drill
RAT DAWG #43	AA 29575	BLM/Federal	Drill
RAT DAWG #54	AA 29578	BLM/Federal	Drill
RAT DAWG #55	AA 29579	BLM/Federal	Drill
RAT DAWG #56	AA 29580	BLM/Federal	Drill
RAT DAWG #57	AA 29581	BLM/Federal	Unreclaimed Pad
RAT DAWG #66	AA 29585	BLM/Federal	Drill
RAT DAWG #67	AA 29586	BLM/Federal	Drill
RAT DAWG #68	AA 29587	BLM/Federal	Drill
RAT DAWG #76	AA 29589	BLM/Federal	Drill
RAT DAWG #77	AA 29590	BLM/Federal	Drill
RAT DAWG #86	AA 29592	BLM/Federal	Drill
RAT DAWG #87	AA 29593	BLM/Federal	Drill
ICE 68	AA 51540	BLM/Federal	Drill
ICE 69	AA 51541	BLM/Federal	Drill
KIC 4	AA 51561	BLM/Federal	Drill
KIC 5	AA 51562	BLM/Federal	Drill
KIC 5	AA 51562	BLM/Federal	Drill
KIC 6	AA 51563	BLM/Federal	Drill
KIC 13	AA 51570	BLM/Federal	Drill
HOTDAWG 27	AA 51600	BLM/Federal	Drill
CLAY 60	AA 52694	BLM/Federal	Drill
MARMOT HOLE 4	AA 52948	BLM/Federal	Drill
MARMOT #106	AA 27218	BLM/Federal	Access Road
MARMOT #114	AA 27226	BLM/Federal	Access Road
MARMOT #115	AA 27227	BLM/Federal	Access Road
MARMOT #119	AA 27231	BLM/Federal	Access Road
MARMOT #120	AA 27232	BLM/Federal	Access Road
MARMOT #130	AA 27242	BLM/Federal	Access Road
MARMOT #131	AA 27243	BLM/Federal	Access Road
MARMOT #137	AA 27249	BLM/Federal	Access Road
MARMOT #144	AA 27256	BLM/Federal	Access Road

MARMOT #150	AA 27262	BLM/Federal	Access Road
MARMOT #151	AA 27263	BLM/Federal	Access Road
MARMOT #156	AA 27268	BLM/Federal	Access Road
MARMOT #161	AA 27273	BLM/Federal	Access Road
MARMOT #162	AA 27274	BLM/Federal	Access Road
MARMOT #167	AA 27278	BLM/Federal	Access Road
MARMOT #172	AA 27280	BLM/Federal	Access Road