

Appendix A – Proposed Plans of Operations

A.1 DULUTH METALS PROPOSED PLAN OF OPERATIONS

Ten sites have been identified for exploratory core drilling on lands covered by Bureau of Land Management prospecting permits MNES-050652 and MNES-050846. All are located in Lake County in T61N, R11W, Sections 4 and 8, and T62N, R11W, Sections 33, 34 and 35. See enclosed *Federal Drill Sites Proposal for 2007 CE* map. The UTM coordinates and access road construction distance for each drill site are identified in *Table 1*.

Drilling would commence upon completion of the EA, federal approval of the Operation Plan, and continue through program completion. Occupation of the sites will be on a temporary basis. Drilling sequence and timing is dependant on location, results from drilling elsewhere in the project area and the appropriate season of operation for each site. All sites are suitable for operations during any season and some would be drilled during frozen ground conditions. A total of about 1.15 miles of road would be needed; 0.82 miles would be constructed and 0.33 miles of old roadbeds would be used. The total area occupied by the ten sites would be less than one acre.

Table A.1: Proposed drill hole locations and access routes.

HOLE ID	EASTING UTM	NORTHING UTM	Activity Season	Access Origin	Access Type	Site Area (sq.ft.)	Access metres	Access feet
F1	594804	5294100	all season	FR 1901	on existing FS road	4000	0	0
F2	593300	5293700	all season	WR 5	new construction-all season	4000	450	1476
F3	595000	5295300	all season	FR 1900	new construction- all season	4000	90	294
F4	595010	5295791	all season	Hwy1	decom FS rd - all season	4000	157	516
F5	595288	5295973	all season	FR 181 Spruce Rd	old logging rd- all season	4000	81	264
F6	595600	5296150	all season	FR 181 Spruce Rd	on existing FS road	4000	0	0
F7	597400	5296000	all season	WR4	new construction – all season	4000	280	918
F8	596200	5296000	all season	WR 1	new construction – all season	4000	420	1378
F9	596600	5296400	all season	WR 1	new construction – all season	4000	80	262
F10	597000	5296400	all season	WR 1	old logging rd – all season	4000	300	984
Total drill site acreage								
Sum of access distances						0.92 ac.	1858	6092

Access

Local access to sites includes existing roads 1) maintained Forest Service and County roads FR1900, FR 1901, FR 186, FR 181, and FR 181B 2) State Highway 1 and 3) non-maintained woods roads WR1, WR4, WR5, and trails. Additional access routes would be constructed.

Access roads have been located to minimize disturbance where possible. Existing roads would be used to access five of the sites while the remaining sites would require new construction. Sites F1 is located adjacent to FR 1901, and F6 is adjacent to FR 181. F4, F5 and F10 utilize old roadbeds. All of these roads/roadbeds would require brushing to be useable by vehicles and would be useable during any season. Sites F2, F3, F7, F8, and F9 would require construction of a road that could be used during any season.

One site would require authorization for access from State agencies. Authorization to construct a side entrance off of Highway 1 to access F4 would be requested from the State of MN Department of Transportation.

General Methods

An area of roughly 50 by 80 feet would be utilized at each drill site. A sump would be excavated to contain return water and cuttings. The cuttings would remain in the sump and be buried at completion of operations. Each site would be restored through surface grading, as needed.

The roads would be constructed to roughly a 12-foot width and except for spot clearing and grubbing would remain at a minimal standard. Scraping /removal of surface soil would be kept to a minimum. Rutted areas would be back-bladed at completion of the project. Any windrows of debris or soil resulting from construction activities would be spread. All season roads would be closed with boulders and/or an earthen berm at completion of operations.

Access routes and drill sites would be located to minimize removal of trees; however an undetermined number would be cut. The cleared trees would be lopped and scattered. The number, species and diameter of merchantable trees would be reported to the Forest Service.

Local surface water sources would be used. Water holes may be excavated in area swamps. Water would be pumped or hauled by truck.

Road use permits for snowplowing Forest Service roads would be obtained. Roads would be plowed from ditch to ditch and snowplows would have 2-inch shoes. To minimize damage to the roads during winter thaws or spring breakup, vehicle traffic would be limited as much as possible to nighttime or early in the morning when road surfaces are frozen.

Licensed drill contractors (Idea International and FORACO Corp) would complete the drilling. Truck and skid-mounted rigs would be utilized. The rigs would be operated 24 hours per day using two 12-hour shifts. Each hole would require about two to three weeks to complete. Drilling depth would range from 2000 to 4500 feet. Support equipment includes a D-5 or comparable dozer, a skid or trailer mounted dory for storing pipe, a skid or trailer mounted equipment shed, and one or more trucks for transport of fuel, water, pipe and supplies. Four-wheel drive pickups would be used to transport personnel, service the drill rig and remove core. Two or more drill rigs may be used to accomplish this program in the allotted timeframe. More than one hole could be drilled at each site; one vertical and others directionally at an angle.

During drilling, trash would be stored in suitable containers and removed from the site for disposal. Precautions would be taken to protect against fuel and lubricant spills. If an oil spill were to occur, it would be promptly reported and cleaned per State procedures. No firearms would be allowed on the project.

All operations will be monitored by the State. On completion, the drill hole may be temporarily abandoned in conformity with applicable Minnesota State rules to allow for later geophysical surveys or reoccupation. If temporarily abandoned, it will be necessary to bring the contractor back to the site to complete permanent abandonment procedures. When permanently abandoned, the hole will be sealed pursuant to applicable Minnesota Statutes.

State licenses are in effect for Duluth Metals and the geologists involved with the project. Duluth Metals is covered by Explorer Company License 2345. Paul Albers Project Geologist (License #2335), Duluth Metals Corp., Maturi Extension Project, is a registered explorer "Responsible Individual" with the Minnesota Department of Health, Well Management Section.

Site Specific Comments

F1 is located adjacent to FR 1901. The road would need to be brushed from the intersection with FR 1436 to F1. The primary water source would be a small stream that crosses the road near F1 but if dry conditions persist, water would be hauled. This site could be operated during any season.

F2 would require all season road construction from WR 5 to the south. Water would be sourced from a nearby pond.

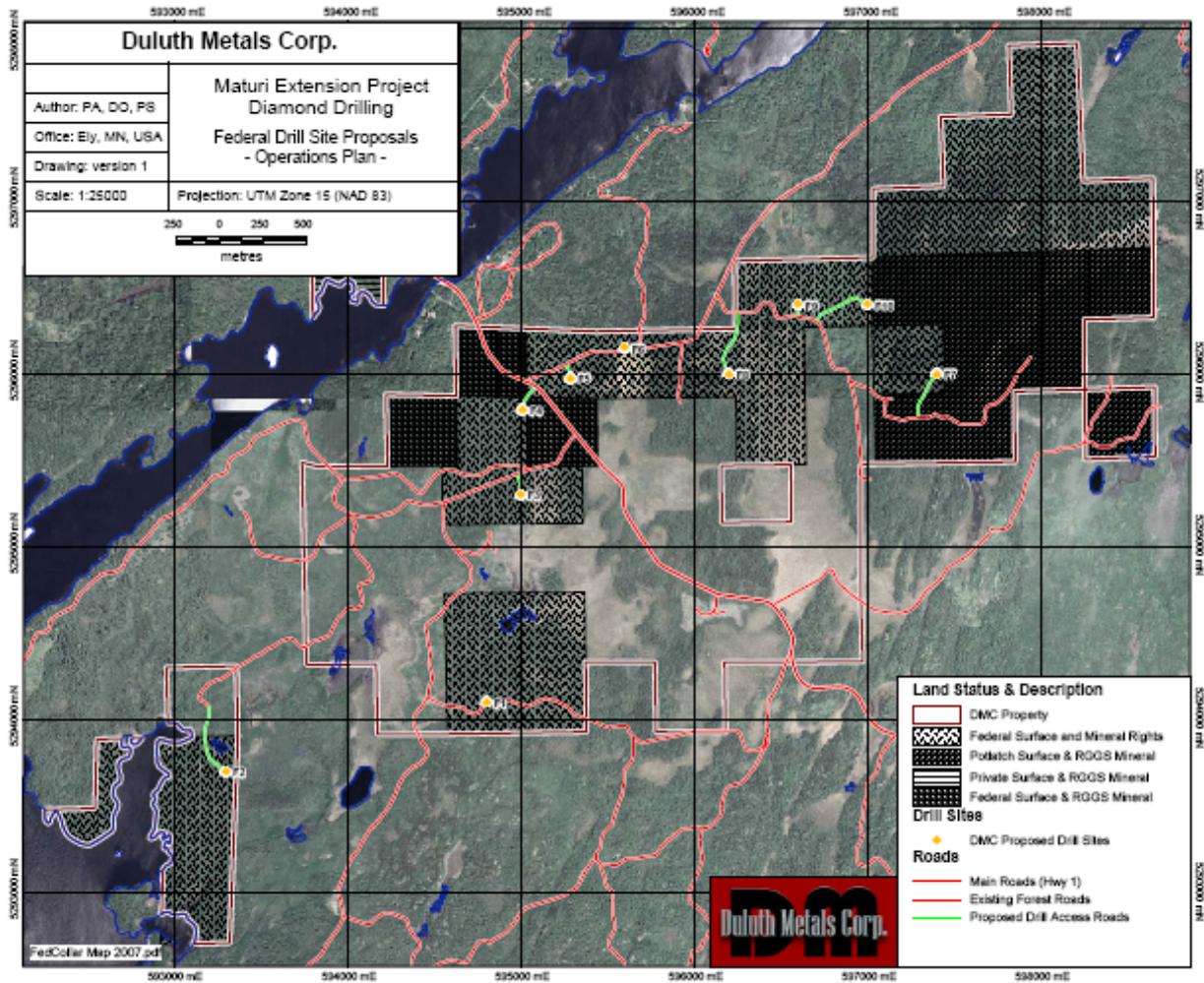
F3, F7, F8 and F9 would require new all season road construction. Water would be hauled. These constructed all season roads would be closed at the completion of operations with boulders and/or a berm.

F4 is located on a decommissioned roadbed. A minor amount of brushing and a small amount of fill at the Highway 1 intersection would be needed to use the roadbed. Water would be hauled. This site could be operated during any season. At completion of the project the ditch would be restored to Minnesota Department of Transportation requirements.

F5 is located on an upland site in a small clearing. Access is over an old logging road that would require brushing. Water would be pumped from the nearby wetland. This site could be operated during any season. The road would be closed at the completion of operations with boulders and/or a berm.

F6 is located on the north side and adjacent to FR 181. Operations here would be attempted during the low traffic winter months.

F10 is located on an upland site and is accessed by an old logging road that would require brushing. Water would be hauled. This site could be operated during any season. The road would be closed at the completion of operations with boulders and/or a berm.



A.2 ENCAMPMENT RESOURCES INC. PROPOSED PLAN OF OPERATIONS

Per U.S. Forest Service (USFS) requirements outlined in WO Amendment 2800-90-2, Encampment Resources Inc. respectfully submits the following plan of operations for mineral exploration within the area of Prospecting Permit ES50817, Lake County Minnesota.

1) The principal offices of Encampment are at:

P.O. Box 1186
Golden, CO 80402
Att: Harry Noyes, President
Phone: (303) 619-0311

Local management of the exploration program will be under the supervision of Theodore DeMatties, Geological Consultant at:

34,898 University Ave.
Cambridge, Minnesota 55008
Phone: (763) 689-4574
Fax: (763) 689-3066
Cell: (612) 689-4574

to whom all notices and orders are to be delivered.

2) Exploration will be concentrated on three blocks of ground which include those portions of Section 25 (S1/2, T62N, R11W) Section 35 (SE1/4, T62, R11W) and Section 2 (NW1/4, T61N, R11W) that lie within the permit area. Location maps showing proposed access routes, geophysical surveys and new drill sites in both sections are attached as Figures 1, 2, 3. Previous drill sites and access roads constructed in 2004 by Encampment are shown in Figure 2. These sites have been reclaimed and were inspected by U.S. Forest Service personal. The drillholes at the sites have been temporarily abandoned (all drill casings are covered with threaded metal caps). Permanent abandonment of all these holes is planned during the next round of drilling in the Section 25.

3) Geophysical surveys are proposed in the Section 25 portion of the permit area (Figs 1 and 2). Assuming this plan is approved by the USFS, they would commence sometime in the fall of 2007; similar surveys (magnetics and induced polarization) were conducted by Encampment in 2003 (Fig.2). The purpose of the surveys is to define further ground targets that will be tested by diamond drilling. Specifications for the surveys require establishing a series of east-west oriented grid lines spaced 400 feet apart. Underbrush along each line is cut and cleared by hand to make a 2 to 3-foot wide path that will allow access during the surveys. UTM / grid coordinates would be measured along each line at 100-foot intervals and recorded on flagged wooden stakes. Geophysical surveys which include magnetics, inducted polarization and electromagnetic profiling, consist of recording various readings from hand-held instruments at each station along the line. Wires connecting some instruments are moved up and down the cut survey lines. Results compiled from the survey help direct the final location and orientation of drillholes.

4) The proposed drilling operation would commence after the geophysical surveys or as soon as ground freeze-up occurs, possibly in late December 2007. It is likely that operations would start in Section 25 (27 proposed sites). Winter access to the drill sites in Section 25 is via Forest Road

181F and a snowmobile trail. Drill sites in Section 2 (15 proposed sites) and Section 35 (2 proposed sites) are accessed via Forest Road 181B and a winter road. Helicopter support may be required during initial stages of the drilling operation (access before freeze-up) and/or for continuing operations beyond breakup and possibly into the summer and fall. The company and USFS may need to jointly review access to the ground in Section 35 as drilling time approaches because of mixed ownership and surface uses that appear to be generating additional access in this area.

5) Each proposed new drill site would affect an area approximately 50 by 50 feet of surface unless otherwise specified. Ground conditions and/or new geophysical results may result in drill sites being adjusted in the field by 100 to 500 feet from their original location. The same site will generally be used for more than one drillhole in order to minimize surface disturbance. Drilling results will determine whether all the proposed sites are utilized during the exploration program and in some cases the number of holes that will be drilled at a specific site. Maximum disturbance would be approximately 2.5 acres.

Within each site, all or part of the area will be cleared of vegetation to accommodate the drill rig (with sump pit). Small trees and shrubs cut during construction of the sites and new access roads will be lopped and scattered to lie within 30" of the ground. Any uprooted stumps will be scattered and not be visible from any major roads. Any timber cutting that may be required will be done in accordance with U.S. Forest Service regulations and any salvageable timber will be stacked at the side of the site.

Disturbance at drill sites will be limited to the cleared area and will include a 5' x 15' by 10' - deep pit to contain returned water and drill cuttings. The sump pit would be constructed by a tract-mounted backhoe. However, if the area is swamp, above-surface stock tanks will be used instead of the sump pit. Tanks would be regularly cleaned of cuttings and hauled to an approved sump pit constructed on higher ground. No structures or facilities will be built on the site.

All access roads to the drill sites will be constructed and maintained by Encampment, or by its contractors, in compliance with Forest Service engineering and design specifications. Access is by upgraded trail, approximately 10 feet wide, from which trees and underbrush have been cleared. When required, water bars or culverts will be used to control surface runoff and erosion. Gravel will not be added to the drill sites or access roads without the express consent of the Forest Service. It is estimated that approximately 2 acres may be disturbed by new access roads.

Areas constructed as drill sites will be open to state and federal officials, hired contractors and their employees, and employees of Encampment. In the interest of public safety, unauthorized personnel will be restricted from entering operation areas.

Experienced contractors will conduct drilling operations. Standard skid-mounted diamond-bit core rig will be used to do the drilling. Support equipment will include a skid-mounted rod drey, a D-4 or comparable dozer, and a two-or three-axle flatbed truck for transporting water, pipe, and other equipment. Four-wheel-drive pickups will be used to transport personnel and service the drill rigs. Vehicles and drills will be equipped with the required fire-fighting equipment.

The proposed source of drill water will be South Filson Creek, if approved by the Minnesota DNR. Water will be pumped to most drill sites, although it may be advantageous to truck the water to drill sites that are close to established roads. In either case, water will be obtained only from a site previously approved by both the Minnesota DNR and the U.S. Forest Service. Approximately 1,000 gallons per day will be required under normal drilling conditions; though as

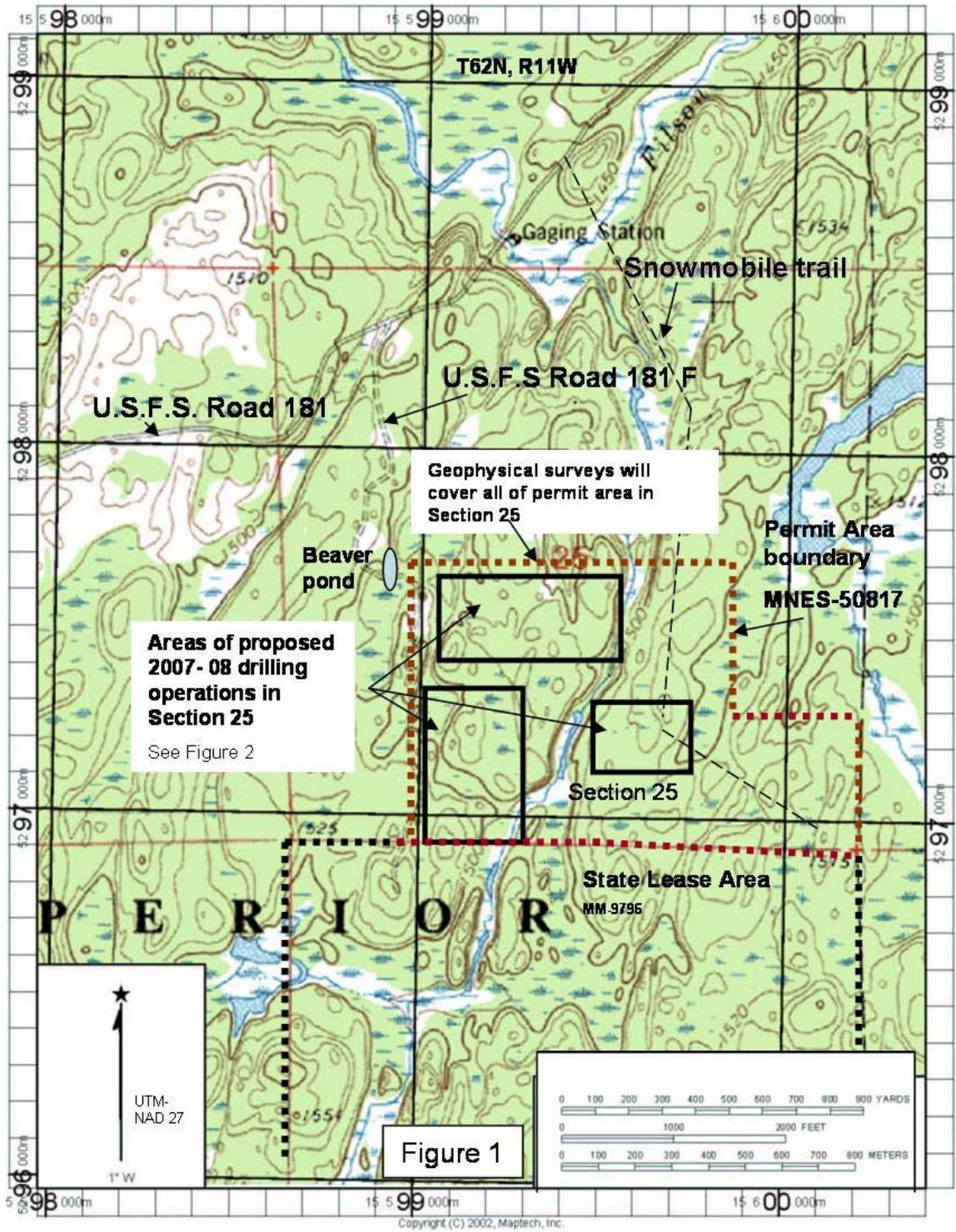
much as 2,000 gallons per day may be required if intensely fractured rock is encountered. The only additives to the drilling water will be those permitted by the State of Minnesota DNR. Generally only bentonite (drilling mud) is allowed, which is used during drilling through the overburden. There is no danger of water pollution because all drilling fluids are collected in the sump pit and recirculated.

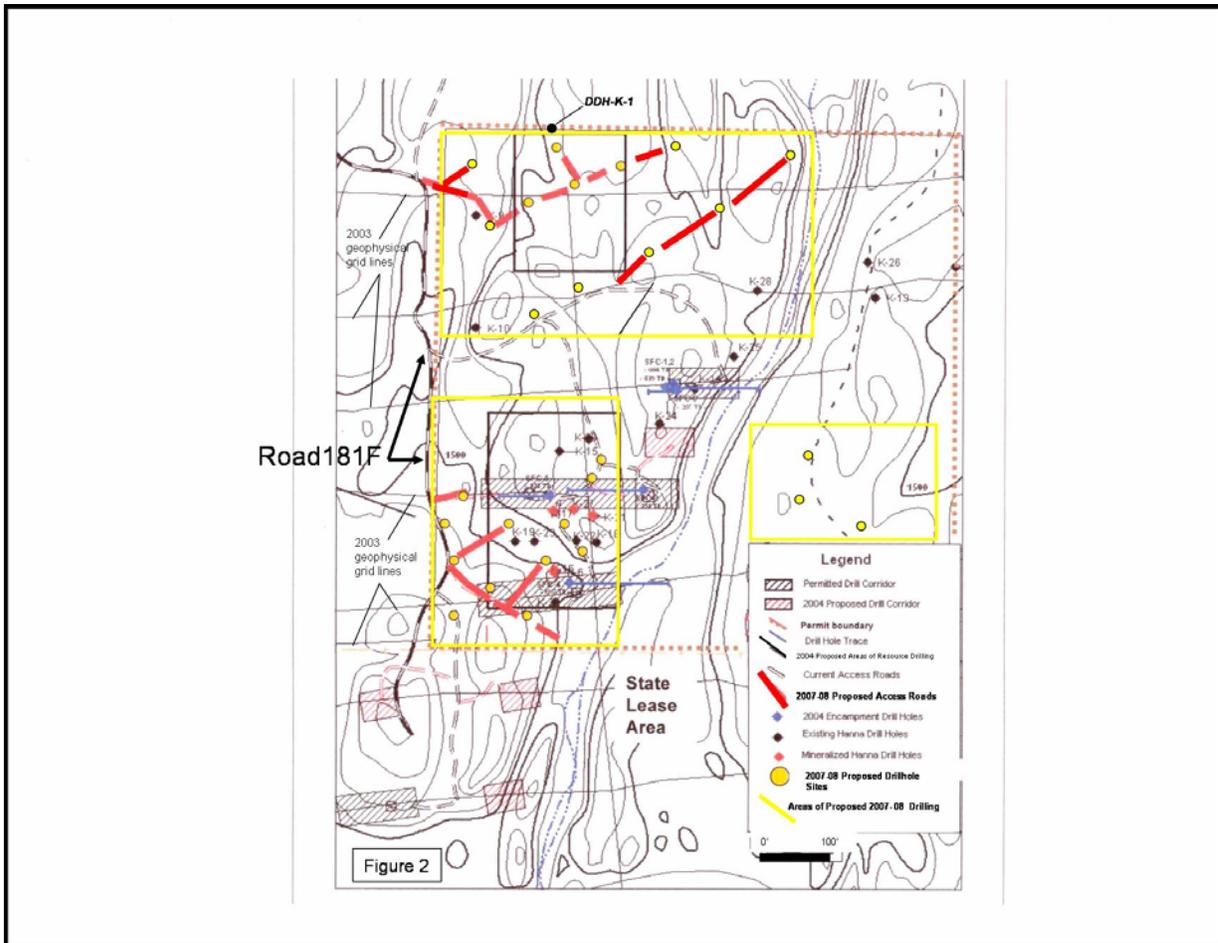
During drilling, trash will be stored in suitable containers and removed from the site for disposal. No explosives or firearms will be permitted on the project. Fires will be permitted only in specific heating devices (salamanders, cook stoves, etc.) and all state and federal fire laws and regulations will be observed to prevent and suppress fires in the areas of operation.

5) Upon completion of drilling operations, all equipment will be removed, the sump pit immediately backfilled, and the sites restored as soon as weather conditions permit. In accordance with restoration procedures outlined by the District Ranger, drill sites and access roads will be restored through surface grading and reseeded. Seeding and fertilizing will be used where deemed necessary by the District Ranger. All of the 2004 and most new drillholes will be cemented as soon as possible and abandoned pursuant to rules adopted by the Minnesota Department of Health and DNR. Some holes may be temporarily abandoned (capped) and left open in order to conduct down-hole geophysical surveys at a later time.

Because of the location of the proposed exploration activity, minimal contact with the public is anticipated. However, the District Ranger will be given advance notification of any activity that could involve hazards to public safety and suitable action will be taken to protect the public as agreed to by Encampment and the District Ranger.

Although cultural resource surveys were conducted over the areas where the surface is likely to be disturbed by prospecting activities, no guarantee can be made that all sites will be identified by standard survey techniques. If, during the course of surface disturbance, any artifacts, cultural features, or other archaeological remains are discovered, representatives of, or contractors for, Encampment will immediately cease operations and notify the U.S. Forest Service so the potential significance of the material can be assessed and a possible plan for mitigation prepared.





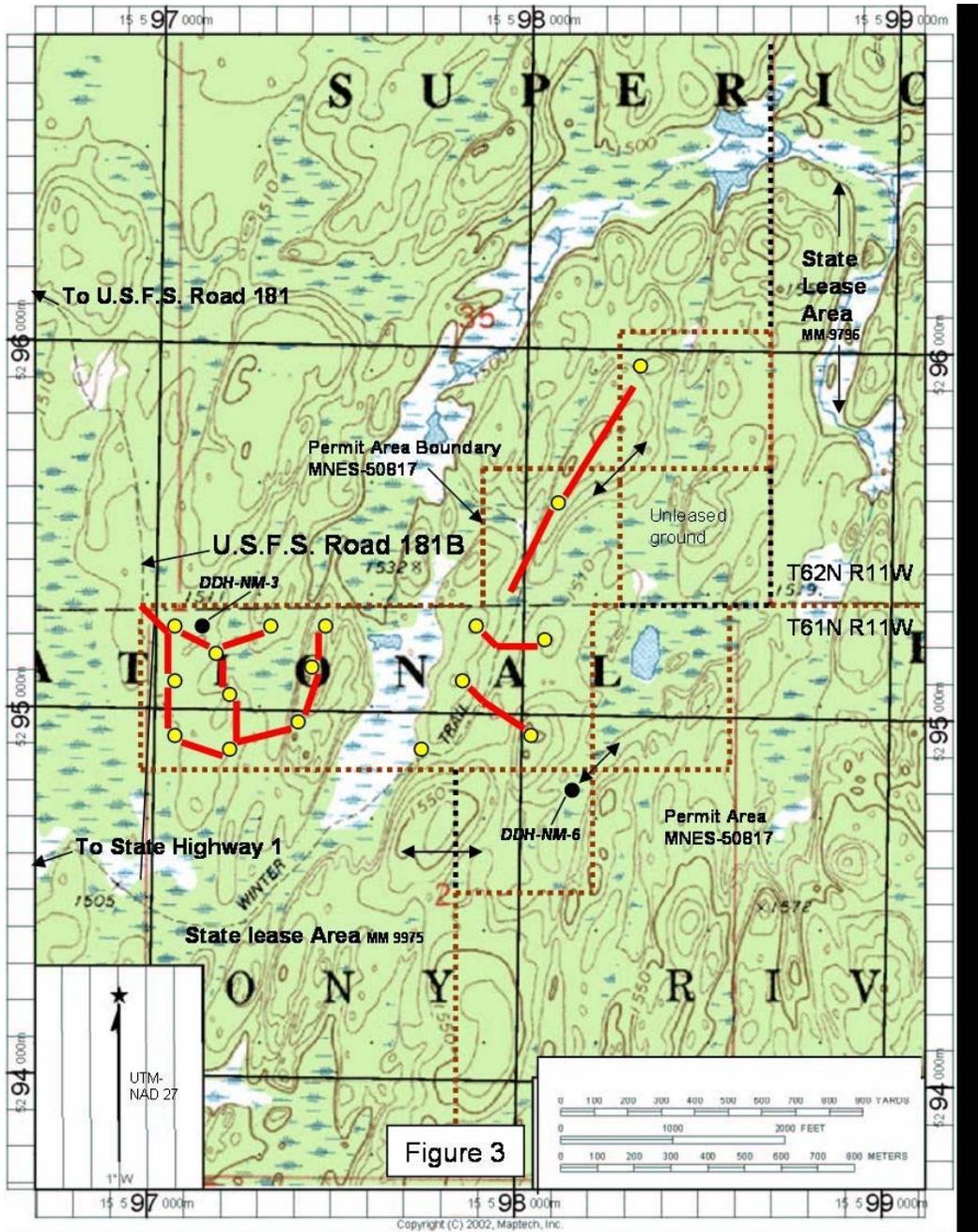


Figure 3

A.3 FRANCONIA PROPOSED PLAN OF OPERATIONS

**PLAN OF OPERATIONS ON MINERAL LEASE
MNES 1352
IN THE KAWISHIWI RANGER DISTRICT
SUPERIOR NATIONAL FOREST
March 3, 2007**

Effective April 1, 2005, per letter dated March 30, 2005, the Deputy State Director of the Eastern States Office of the US Bureau of Land Management, approved the assignment of mineral leases MNES 1352 and 1353 from American Copper and Nickel Company Inc. (ACNC) to Beaver Bay Joint Venture.

Beaver Bay Joint Venture (Beaver Bay) is an entity organized under Minnesota law. Its principal office is at Suite 1140, 12 South Sixth Street, Minneapolis MN 55402. Lehmann Exploration Management Inc. is the Operator and Attorney-in-Fact for Beaver Bay Joint Venture.

Beaver Bay has entered into an agreement with Franconia Minerals Corporation (Franconia), an Alberta Corporation, whose office is at 111 East Magnesium Road, Suite A, Spokane, WA 99208 whereby Franconia can earn a controlling interest in Beaver Bay's mineral interests in St. Louis and Lake Counties, Minnesota.

Pursuant to the aforementioned agreement, Franconia and Lehmann Exploration Management, Inc. acting as Operator and Attorney-in-Fact for the Beaver Bay Joint Venture (hereinafter collectively referred to as "Franconia"), propose to conduct a core drilling program on lease MNES 1352 as described below for the purpose of verification of prior core drilling conducted by American Copper and Nickel Company (ACNC) and its parent, International Nickel Company (now known as INCO), and to provide adequate samples of the mineral deposit, commonly known as the "Maturi" deposit, for initial metallurgical testing and analysis, waste characterization and rock mechanics studies. Dependent on the results, additional core drilling and related work may be planned, leading to the development of an underground mine producing copper, nickel, cobalt, gold, platinum group metals and associated metals and minerals.

Management of the program for Franconia and Beaver Bay will be under the supervision of Ernest K. Lehmann, AIPG Certified Professional Geologist #583 and Minnesota Licensed Professional Geologist #30111. All notices and orders are to be delivered to the attention of Mr. Lehmann at the offices of Lehmann Exploration Management, Inc. at the following address:

Mr. Ernest K. Lehmann	Tel. 612-338-5584
Lehmann Exploration Management, Inc.	Fax 612-338-5457
1140 Plymouth Building	e-mail: geomine@worldnet.att.net
12 South Sixth Street	
Minneapolis, MN 55402	

INTRODUCTION

Initial exploration and drilling by Franconia will be conducted on lands in Sections 5 and 6, T61N R11W, and Section 32, T62N R12W, Lake County Minnesota. These lands are public domain lands in the Kawishawi Ranger District of the Superior National Forest.

Work will be conducted according to applicable rules and regulations of the US Departments of Interior and Agriculture and the State of Minnesota as set forth in this Plan of Operation. Operations to be conducted under this plan will consist largely of drilling but may also include some surface and down-the-hole geophysical surveys, geologic mapping and soil and rock chip geochemical surveys. Drill cores will be sampled and assayed and selected portions will be used for metallurgical testing and related studies such as waste characterization and rock mechanics tests.

The area of activity for the proposed program is principally lands under lease MNES 1352 located in Section 5, T61N R11W but may also extend on lands under lease MNES 1352 in Lot of Section 6 T61N R11W and into Lot 4 of Section 32, T62N R11W. (See attached map.)

The area consists of low, nearly flat land with a maximum topographic relief of about 70 feet; the mean elevation is approximately 1450 feet. Vegetation is mostly mixed immature conifers and deciduous forest and some swampy areas. The South Fork of the Kawishawi River cuts through the northeast part of Section 5, 6 and 32 and a series of summer cabins are located along the south shore of the Kawishawi. These cabins are north and west of an access road that parallels the shore line.

The initial drilling activities will all be southeast of the access road and at least 125 meters from the shore at the closest point with most holes being 250 or more meters from the shore.

The principal current land uses within and adjacent to the area are logging and recreation. Extensive current exploration for mineral deposits is occurring in adjoining and nearby areas.

Wildlife species present in the areas of operation should not be adversely affected by the proposed exploration activities. No air pollution, water pollution, or damage to fish and wildlife is anticipated from any of the proposed exploration activities.

ACNC and INCO conducted previous surface drilling of about 40 holes in Sections 5 and 32 in the 1950s, 60s and 70s by ACNC and INCO. One hole was drilled by Wallbridge Mining in 2000. INCO also constructed an exploration shaft about 1080 feet deep. From this shaft, located in the northwest part of Lot 1 of Section 5, a 576 metric tonne bulk sample was taken for testing. Underground drilling of 12 holes was carried out on the 990 foot level.

Re-evaluation of available data in October 2006 by Scott Wilson RPA¹, independent mining consultants commissioned by Franconia, indicated an inferred resource of about 83 million metric short tonnes averaging 0.70% copper, 0.26% nickel, 0.02% cobalt 0.26 grams/ MT palladium, 0.1 grams/MT platinum and 0.05 grams/MT gold, at a net smelter return cut off of \$34 per metric

¹ Scott Wilson Roscoe Postle Associates,” Technical Report on the Preliminary Assessment of the Birch Lake and Maturi Deposits, Minnesota, USA, October 20, 2006, available on www.Sedar.com.

tonne and the following long terms prices in 2006 US dollars: Copper- \$1.50/lb; Nickel - \$6.00/lb; Cobalt - \$10/lb; Platinum - \$800/oz; Palladium - \$300/oz; Gold - \$450/oz.

The Maturi deposit is hosted by South Kawishiwi Intrusive, part of the Duluth Complex, a 1.1 billion year old compound mafic intrusive complex that hosts a number of large and potentially commercial deposits of copper-nickel and platinum group metals with accessory cobalt. These include the nearby Birch Lake, Mesaba and NorthMet deposits, two of which are being advanced toward development. Exploration for possible other commercial deposits in the South Kawishiwi Intrusive is currently underway by Duluth Metals and Encampment Minerals. The Duluth Complex rocks not only contain additional targets for discovery of copper, nickel and platinum group metals and also have potential for deposits of chromium, vanadium and titanium. Nickel, chromium, cobalt and platinum group metals are considered to be both strategic and critical.

At Maturi, the mineralized zone in the intrusive consists of a tabular sheet of disseminated copper-nickel-iron sulfide mineralization 70 to 100 meters thick that rests on or close to the granitic footwall underlying the deposit, The dip of the zone varies from 35 to 55 degrees and the zone is believed to plunge about north 60 degrees east. Higher grades of mineralization are concentrated in the upper 30 meters of the zone whose strike extends about two kilometers. The zone sub-crops within about 200 feet of the surface and extends at least 3000 feet down dip.²

OPERATIONS

THE PROPOSED INITIAL PROGRAM

The lands on which drilling is planned in Section 5, Lot 6 of Section 6 and Lot 4 of Section 32 are public domain lands in the Kawishawi Ranger District of Superior National Forest.

All work will be conducted according to applicable rules and regulations of the US Departments of Interior and Agriculture and the State of Minnesota as set forth in this Plan of Operation. Operations to be conducted will consist largely of drilling but may also include some surface and down-the-hole geophysical surveys, geologic mapping and soil and rock chip geochemical surveys. Drill cores will be used for metallurgical testing and may also include waste characterization, rock mechanics tests and other uses.

Franconia and Beaver Bay plan up to approximately 31 holes drilled at 24 sites as shown on the attached map and as listed in the attached table. The approximate locations of the holes are indicated by the large black dots with yellow numbers on the attached map and the UTM coordinates (NAD 27) are shown in the attached table.³ Each hole will consist of a pilot hole drilled from surface to the basement rocks underlying the Duluth Complex rocks. In addition one or two wedged offsets may be drilled from the pilot hole as indicated in the table. At some sites up to three holes will be collared at the same location but will be drilled with different inclinations and/or azimuths. In the deeper holes, one or more wedged off sets will be drilled to provide additional intercepts of the mineralized zone. The wedged offsets will average about 300 feet in length. The total footage drilled will be about 41,000 feet.

² Roscoe Postle Associates, Inc. "Technical Report On The Mineral Resource Estimate for the Maturi Property, Minnesota, USA, June 30, 2006.

³ The green dots on the map indicate holes drilled by INCO with their serial numbers. Logs of these holes are believed to be on file at the BLM office in Rolla, MO.

The drilling will be done with a truck mounted Atlas Copco 3100 Drill. The drilling will be done with “PQ” tools making a 5 inch diameter hole and recovering a 3.343 inch diameter core.

Drilling will involve some surface disturbances because of the need to prepare drill sites (including sumps for water recirculation and settling out of drill cuttings) and the need to construct temporary access trails, but this will be minimized to the extent possible. The location of proposed sites can be modified slightly in cooperation the surface managers. Proposed access trails are shown on the attached map by the red dashed lines. The access trails shown attempt to avoid apparent wetlands areas in so far as possible and minimize the use of the existing road that serves the cabins. Normally access is by upgraded trail, approximately 12 feet wide, from which trees and underbrush have been cleared. When required, water bars or culverts will be used to control runoff and erosion. Gravel will not be added to the drill sites or access roads without express consent of the surface manager. The location of the access trails can be revised in cooperation with the surface managers. If geophysical surveys are conducted this may require clearing of narrow trails through underbrush to lay out required cables. Where wet ground conditions cannot be avoided, mats will be used to minimize impact or drilling will be deferred until winter.

Any additional drilling that may be required will be made in amendments to this proposed plan of operations and subject to approval by the managing agencies.

Each drill site will affect an area approximately 100 by 100 feet unless otherwise specified. Within a drill site, all or part of the area may be cleared of vegetation to accommodate the drill rig and sump pit. Trees and shrubs cut during construction of the sites and access roads will be lopped and scattered to lie within 30 inches of the ground. Any uprooted stumps will be scattered and will not be visible from any major road. Any timber cutting that may be required will be done in accordance with US Forest Service regulations and any salvageable timber will be stacked at the side of the drill site. Disturbance at the drill site will be limited to the cleared area and will include a 30 to 60 by 20 by 20 foot pit (sump pit) to contain return water and drill cuttings. No structures or facilities will be built on the site. On completion of the drilling, all equipment will be removed, the pits will be back-filled and the site will be restored according to requirements of the surface management agency and Minnesota DNR regulations as soon as weather conditions permit.

Existing access roads used to access the temporary access trails will be maintained as necessary by Franconia or its contractors, in compliance with specifications and instructions.

Areas constructed as drill sites will be open to state and federal officials, hired contractors and their employees and employees or consultants of Franconia. In the interest of safety and to the extent practical, unauthorized personnel will be restricted from entering operations areas.

Initial drilling operations will be conducted by Idea International, Virginia MN, an experienced drilling contractor. A standard truck-mounted diamond core drill will be used. Support equipment may include a skid-mounted rod dray, a D-8 or comparable dozer, an excavator, a high lift and two or three axle trucks for transporting water, pipe, fuel and other equipments and drill core. Four wheel drive pickups and SUVs will be used to transport personnel and to service drill rigs. Vehicles and drills will be equipped with the required fire-fighting equipment.

The proposed source of drill water will be the Kawishawi River, or other sources that are most accessible to the drill site and will require the least disturbance to obtain access. Water will be

trucked to drill sites or, where more advantageous, pumped to drill sites from nearby water sources. Water will be obtained only from sources approved by the Minnesota DNR. Approximately up to 1000 gpd make-up water may be required per drill rig under normal conditions, though as much as 2000 gpd may be required in the unusual event of the intersection of highly fractured rock. Only additives to drilling water will be those approved by the Minnesota Department of Health, generally bentonite-based drilling mud. There is minimum danger of pollution because all drilling fluids are collected in the sump-pit and re-circulated. Where shallow bed rock prevents constructing a sump-pit, drilling fluids and cuttings will be collected in tanks, the water re-circulated and the drill cuttings disposed of at another site.

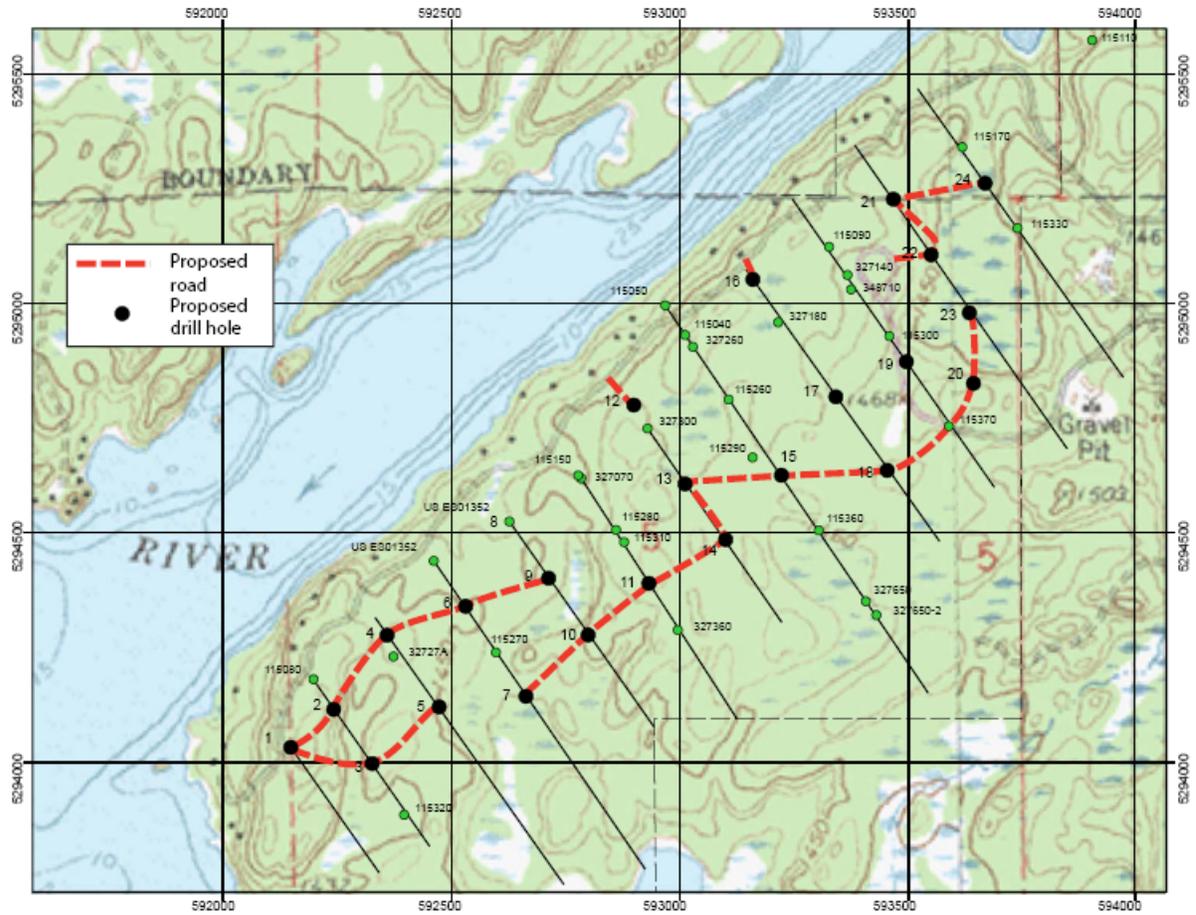
During drilling, trash will be stored in suitable containers and removed from the site for disposal. No explosives or firearms will be permitted on the project. Fires will be permitted only in specific heating devices (salamanders, cook stoves, etc.) and all state and federal fire laws and regulations will be observed to prevent and suppress fires in the areas of operation.

At the completion of drilling, all drill holes will be abandoned pursuant to Minnesota statutes and rules governing abandonment of exploration drill holes.

Because of the location of the proposed exploration activity, minimal contact with the public is anticipated. However, the District Ranger will be given advance notification of any activity that could involve hazards to public safety and suitable action will be taken to protect the public

Although cultural resource surveys may have been conducted over areas where the surface is likely to be disturbed by prospecting activities, no guarantee can be made that all such sites will have been identified by standard survey techniques. If during the course of exploration, any artifacts, cultural features or other archaeological items are discovered, representatives of, or contractors for, Franconia will immediately cease operations and notify the US BLM and Forest Service so that the potential significance of the material can be assessed and a possible plan for mitigation can be prepared.

Reports of all work on the permit will be submitted to BLM as required under CFR 43.



Appendix B – Biological Evaluation

BIOLOGICAL EVALUATION

For
Kawishiwi Exploratory
Drilling Project
Kawishiwi Ranger District, Superior National Forest

Prepared by: /s/ Dan Ryan/ Date: 8/10/2007
Dan Ryan, Laurentian District Wildlife Biologist

Introduction

The exploratory drilling may impact Proposed, Endangered, Threatened or Region 9 Foresters Sensitive Species (TES). This Biological Evaluation addresses the impacts of these projects on TES species.

It is Forest Service policy to review all Forest Service planned, funded, executed, or permitted programs and activities for possible effects on endangered, threatened, proposed or sensitive species (TES). A Biological Evaluation (BE) is a means for conducting the review and documenting the findings. This BE was prepared in compliance with the requirements of Forest Service Manual (FSM) Directives 2671.1 through 2672.43.

The objectives of a Biological Evaluation are as follows (FSM 2672.41):

- To ensure that Forest Service actions do not contribute to the loss of viability of any native or desired non-native plant or animal species, or contribute to trends towards federal listing in compliance with the National Forest Management Act (1976).
- To comply with the requirements of the Endangered Species Act (1973 as amended), that actions of Federal agencies not jeopardize or adversely modify Critical Habitat for the recovery of Federally listed species without a thorough analysis of the significance of such impacts.
- To provide a process and standard by which to ensure that threatened, endangered, proposed, and sensitive species receive full consideration in the decision making process.

Federal land management activities on the Superior National Forest are governed by:

- The Endangered Species Act 1973 as amended (ESA)
- The National Forest Management Act 1976 (NFMA)
- Forest Service Manual Directives (FSM)
- The Superior National Forest Land and Resource Management Plan (Forest Plan)
- Recovery Plans and Conservation Assessments and Strategies

This BE evaluates the effects of the exploratory drilling, on the Kawishiwi Ranger District, will have on 1 federally threatened species and 89 Regional Forester's Sensitive Species known or suspected to occur on the Superior National Forest.

Description of Proposed action

The Superior National Forest proposes the following actions listed in Table 1. Attachment 1 lists the summaries of the Operating plans for the three companies. Duluth Metals, Encampment Resources, and Franconia propose exploratory drilling on a total of 77 sites; 10 for Duluth Metals, 44 for Encampment Resources, and 23 for Franconia. The surface area disturbed by the combined 77 drill sites would total about 9 acres.

Figure 1 displays the sites of the proposed drilling. Many of the proposed drill holes are sited in swampy terrain or are otherwise accessible overland only when the ground is frozen. Where drilling is proposed in swampy areas, overland access to these sites would be during winter when the area is thoroughly frozen and access can be established with minimal disturbance.

Forest roads 181, 181B and F, 186, and 1900 would be used to transport drill rigs, personnel and supplies to the drill sites. A combined total of approximately 5.3 miles of temporary road would be constructed to access the drill sites. Temporary roads are roads authorized by contract, permit, lease, other written authorization, or emergency operation that are not intended to be a part of the forest transportation system, and not necessary for long-term resource management. These roads are not included on the National Forest System road inventory and are decommissioned after use (Forest Plan, Glossary-27).

Some clearing of overgrowth on existing roads may be required for passage of the drill rigs. All the proposed temporary roads would be closed from use after drilling operations and permanently decommissioned after the holes are plugged. All proposed temporary roads would be closed to public use during and after drilling operations. The closures and decommissioning would be monitored for effectiveness. Access to drill sites would also include the possibility of utilizing helicopters to lengthen the potential operations period beyond frozen conditions, where required for access considerations.

Table B.1: Project Area Description and Legal Location

Project Name	Legal Location	Acres /Length	Project description	Habitat description
Duluth Metals Corp. Mining Exploratory Drilling and Special Use Access	Lake County in T61N, R11W, Section 4 and T62N, R11W, Sections 33 and 34.	1.0 acres for drill sites. 0.8 mile of road for special use access.	Exploratory drilling to delineate deposits of hard rock metallic minerals. Special use access via various roads for drilling on federal and non federal lands.	F1 The roadbed is mostly covered w/grass and forbs. Vegetation at the drill site is mixed conifer/deciduous with scattered large white pine. F2 is in a similar area, but the drill site is in a pocket of large black spruce with a thick layer of young balsam in the understory on a transition between upland and lowland. F3 The site and the access road are located in mature red pine stand. The drill site is located in a small grassy opening in the stand. F4 is in a stand of mixed conifer/hwd. All upland. F5 drill site and access road are located in a young mixed red pine/ jack pine stand. F6 and F7 The drill site and access road are located in a bog. Scattered stunted black spruce and tamarack, sphagnum, cotton grass,..etc F8 access is similar, but drill site is on the upland transition. F9 The drill site is located in a wetland that has an aspen/black spruce canopy will an alder shrub layer. The access starts off on an upland w/mixed conifer with some red pine and then drops off into the veg at the drill site. F10 The access is on an old upland logging road that will need some brushing to widen it out. It gradually deteriorates father in. The drill site is located in a transitional position. Mostly a relatively young aspen stand throughout. Primarily upland .
Encampment Resources		2.5 acres for drill sites. 2.4 mile of road for special use access.	Exploratory drilling to delineate deposits of hard rock metallic minerals. Special use access via various roads for drilling on federal and non federal lands.	The Project Area contains a wide diversity of habitat types, including mature/old aged upland aspen, mature pine, upland grass openings, and lowland black spruce, tamarack, and brush. The Project Area also contains an active beaver pond and meadow in the center and a portion of FR 181F is flooded. Drill sites would be located in mature pine, lowland black spruce, and mature/old aged upland aspen.
Franconia Minerals Corporation	Lake County in T61N, R11W, Section 5	5.5 acres for drill sites. 2.1 mile of road for special use access.	Exploratory drilling to delineate deposits of hard rock metallic minerals. Special use access via various roads for drilling on federal and non federal lands.	The area consists of low, nearly flat land with a maximum topographic relief of about 70 feet; the mean elevation is approximately 1450 feet. Vegetation is mostly mixed immature conifers and deciduous forest and some swampy areas. The South Fork of the Kawishawi River cuts through the northeast part of Section 5 and a series of summer cabins are located along the south shore of the Kawishawi. The initial drilling activities will be at least about 700 feet southeast of the access road that runs southeast of the cabins and about 1000 feet from the shore. The principal land uses within and adjacent to the area are logging and recreation. Exploration for mineral deposits is also active in adjoining and nearby areas.

This analysis covers only the above mentioned activities. Future exploratory work or mine development activities would require further analysis and is not covered in this document.

Consultation with US Fish and Wildlife Service

As outlined by section 7 of the Endangered Species Act, the Forest Service is required to enter into formal/informal Consultation or Conferencing with the US Fish and Wildlife Service (USFWS) for any proposed activity that is likely to “affect” species federally listed as endangered, threatened, or proposed for listing. Consultation is permissible but not required for No Effects determinations. This analysis finds that this project *may effect but is not likely to adversely affect* the federally listed Canada lynx. Consultation with USFWS was initiated on August 13, 2007. Recommended changes as a result of consultation will be incorporated into the final project design and decision.

Identification of Listed Species

This BE evaluates the effects of the proposed action, on TES species known or suspected to occur on the Superior National Forest. A list of species analyzed can be found in Table 2: Analysis of Effects. Information regarding proposed, threatened, endangered and sensitive plants and animals is obtained through the cooperation of the U.S. Fish and Wildlife Service (FWS), Minnesota Department of Natural Resources (Mn DNR), Natural Resources Research Institute (NRRI) and various other sources.

Plant surveys and wildlife surveys have been conducted in the general vicinity in the past for past activities including mining and timber harvest projects. For the Encampment area two biological field reviews were conducted in the spring of 2003. Rare plant surveys were also conducted during the 2003 field season in the Filson Creek project area. For the Duluth Metals area Susan Catton, Kawishiwi District Biologist, conducted field reviews in 2006. For the Lehman area, ENSR conducted field surveys in summer 2007. These results can be found in the *2007 Maturi Project Wildlife Assessment*. Results from these surveys were also used in determining species presence and possible effects. A current forest-wide list of federally listed species was received from FWS (July 10, 2007) which outlines those federally listed species that may occur within the forest and which species have designated critical habitat that needs to be considered in project planning. The federally listed species addressed is the Canada lynx. Sensitive Species addressed in this analysis are based on the Regional Forester's list signed 20 February 2000 (maintenance update 10 August 2002 for T and E Species, and 5 August 2006 for Regional Foresters Sensitive Species).

Analysis of Effects of the Proposed Action

Table 2 (attached) contains the analysis of effect of the proposed action(s) on all Federally Threatened (T), Endangered (E) and Region 9 Regional Foresters Sensitive Species (S) known or expected to occur on the Superior National Forest.

This analysis was conducted through a review of the listed references and tiers to the forest plan BE, BA and EIS, discussions with district Forest Service specialists, various species specialists, plant survey reports, field habitat analysis by biologists and soil scientists, aerial photo interpretation, district forest typing data and a review of the MN-DNR Natural Heritage database (Minnesota Department of Natural Resources, Natural Heritage and Nongame Research Program 2006).

Only those species that are likely to occur within the analysis area or having suitable habitat are analyzed in detail. For all other species, no effect/impact is expected which is documented in the analysis of effects table.

For this project, the proposed action alternative will be analyzed. The analysis area varies by species but in general the Lynx Analysis Unit (LAU SNF 10) is used to consider effects to lynx and wolf, 1.5 mile radius of the project area is used for bald eagle, and ¼ mile from project area is used for most sensitive species.

For a list of past, present and reasonably foreseeable actions please see the IDT meeting notes from 7/13/07.

Discussion of Affected Species

Federally Listed Species

***Felis canadensis* (Canada lynx) Federally Threatened**

There are no habitats designated as “critical” (as defined by ESA), within the Superior National Forest.

In the Great Lakes region, lynx habitat includes boreal, coniferous, and mixed coniferous/deciduous vegetation types dominated by pine, balsam fir, black and white spruce, northern white cedar, tamarack, aspen, paper birch, conifer bogs and shrub swamps. Logs and windfalls provide cover for denning sites, escape, and protection from severe weather. Stand structure appears to be more important than forest cover type. Snowshoe hare are the primary prey species of the Canada lynx. Other important alternate prey species include red squirrel, flying squirrel, ground squirrel, porcupine, beaver, mice, voles, shrews, fish, and ungulates as carrion or occasionally as prey (Ruediger et al. 2000). The Project Area contains suitable denning habitat and foraging habitat in the form of red squirrel and snowshoe habitat.

Canada lynx populations disappeared from many parts of its original range in the lower 48 United States in the first part of the 1900s presumably due to over trapping and ecological changes due to settlement, logging, and agriculture. A bounty was placed on lynx in Minnesota from 1951 through 1964, and regulated hunting and trapping of lynx continued until 1984 when the Lynx gained full protected in Minnesota. Concurrently, lynx were apparently scarce in the 1990s, although this was not documented formally. More recently, between 2001 and 2003, Minnesota lynx numbers appear to be increasing. Various field observers report that numbers, at least in some areas of the Superior National Forest and vicinity, are higher than at any other time since the mid 1970's. Recent fieldwork on the Superior National Forest has documented the occurrence of lynx through photography, and DNA analysis. Anecdotal and photographic evidence indicate successful lynx reproduction as well. Lynx have been documented near the Project Areas.

Several range-wide risk factors for lynx are identified in the Canada Lynx Conservation Assessment and Strategy. Conservation measures have been developed with the intent to conserve the lynx, and to reduce or eliminate adverse effect from management activities on federal lands. Projects that implement them are generally not expected to have adverse effects on lynx, and the implementation of these measures across the range of the lynx is expected to lead to the conservation of the species. Lynx Analysis Units (LAUs) are intended to provide the fundamental or smallest scale with which to begin evaluation and monitoring of the effects of management actions on lynx habitat. These Project Areas fall within LAU 10. The LCAS Conservation Measures that apply to these projects involves Forest/Backcountry Roads and Trails. Specific measures include objective 1) Maintain the natural competitive advantage of lynx in deep snow conditions, and guidelines 2) minimize roadside brushing in order to provide snowshoe hare habitat and 4) Limit public use on temporary roads constructed for timber sales. Design new roads, especially the entrance, for effective closure upon completion of activities.

Direct/Indirect Effects

Habitat - Suitable habitat for prey would not change as a result of this project. There are currently 35,557 acres of lynx habitat and 15,053 acres of denning habitat in this LAU (August 2007) and only 9 acres would be impacted and these impacts would be short-term.

Disturbance - Minor direct effects could occur in the form of disturbance (drill operations, helicopter, vehicle traffic) to animals and den sites while activities are taking place; these effects are expected to be minimal and discountable because activities will be of short duration and reach. Also, if a den site is located G-WL-2 will be implemented to protect the site during the denning season.

Access - Human access into the analysis area would not likely change as result of this project. Current road and trail density in this LAU is 1.52 mi/sq. mi and this would not change. All sites will be accessed from existing roads or trails except an additional 5.3 miles of temp road would be constructed and used. This project could result in short term (one winter) degradation in the competitive advantage of lynx in a very small portion of LAU 10. Because of the small area of impact these effects are expected to be discountable. Another issue that has been brought up is that this project could also possibly become a barrier to movements of lynx. This should not be the case, since the project area is small in comparison to the whole LAU and the activities within the project area will only occupy 9 acres of land. Lynx should be able to move through the project area without anything but minor disruption.

These projects are not likely to lead to an increase in human access or in a change to suitable habitat for prey. This project will not have an effect on habitat quantity and quality of suitable denning habitat, red squirrel, or snowshoe hare habitat for foraging. If specific Conservation Measures are applied, this project meets the intent of the Lynx Conservation Strategy and Assessment. For these reasons it was determined that this project may affect (federally listed species), but is NOT likely to adversely affect (NLAA) Canada lynx.

This analysis covers only the above mentioned activities. Future exploratory work or mine development activities would require further analysis and is not covered in this document.

Region 9 Sensitive Wildlife Species

Table 3 provides a complete list of all designated Regional Forester's Sensitive Species (RFSS) listed for the Superior National Forest, a summary of important habitat requirements for each species, determination of analysis area occurrence, determination of effects of the proposed action(s) (including direct, indirect and cumulative combine), and a brief justification for the determination of effects. As part of the analysis process, all species were put through a screen to determine the likelihood of occurrence within the project area, based on availability of suitable habitat and known occurrence locations. There are no known occurrences of any RFSS in the project area; however suitable habitat for some sensitive wildlife species does occur. For analysis purposes, average home-range size was used for most of the species to consider effects to individuals and the forest boundary was used for population viability considerations.

Within the project area suitable habitat exists for 13 RFSS wildlife species (see Table 3). Limiting factors for these species (see references), which may be effected by the proposed action, include the loss or degradation of suitable habitat that would impair the species ability to fulfill its basic biological needs of feeding, breeding and sheltering. The extent that these sensitive wildlife species use the project area is unknown. However, varying amounts of suitable habitat does occur for each. Below is a general discussion of all RFSS species and a more detailed discussion of gray wolf and Bald eagle since they both have recently been de-listed from the Endangered Species list.

Direct/Indirect Effects

No direct or indirect effects are anticipated to the LeConte's sparrow, olive sided flycatcher, yellow rail, black-throated blue warbler, Connecticut warbler, Wilson's phalarope, wood turtle or *Cicindela denikei* or their habitat, because project activities would occur outside of these species breeding/nesting period of the neo-tropical migrants and during the dormant period of the permanent residents, and proposed activities will not change the quantity or quality of available suitable habitat.

Minor amounts of suitable nesting and foraging habitat for the heather vole could be directly impacted by the proposed action. However with this small amount it is expected to have an insignificant impact to vole habitat in the area.

Activities could occur during the breeding and nesting season of the boreal owl, northern goshawk and great gray owl. This could have a direct impact in the form of disturbance to nesting raptors. However, no nests or species detections were found during surveys.

Indirect effects are not likely to occur to any RFSS. Neither direct nor indirect effects are expected to be significant, because the minor amounts of suitable habitat (9 acres) that would be impacted and overall quality of suitable habitat in the surround area will not change. Except for disturbance of sensitive individuals, species use of that habitat is not likely to change as a result of the project.

***Canis lupus* (gray wolf) Recently removed from Threatened list/VIS /State Special Concern**

The Forest Plan refers to the Recovery Plan for the Eastern Timber Wolf (USDI 1992) for governing the management of wolves on the forest. The main requirements include:

- Maintain availability of adequate wild prey
- Maintain large tracts of wildland with low human densities and minimal accessibility
- Provide ecologically sound management
- Provide environmental education to promote adequate understanding of wolf ecology and management

The Project Areas lie within Wolf Management Zones 1 and 2 as defined in the Recovery Plan, which is designated as Critical Habitat for the survival and recovery of the gray wolf. The Recovery Plan for the Eastern Timber Wolf set a goal of 50 packs with 400 individual wolves for the Superior National Forest. Based upon the population levels, wolf numbers have been at or near that level since 1988. It is unknown how many separate packs reside on the Forest. Populations statewide have increased dramatically in numbers and range since 1989.

Human activity and density are important factors that may limit wolf populations through increased potential for negative wolf/human interactions such as shooting, trapping, and vehicle collisions (USDI 1992). The public road density and accessibility threshold is 0.9 linear miles per square mile (driveable by a 2-wheel drive vehicle and not including temporary roads, or snowmobile and ATV trails, or hiking trails). Road densities exceeding 0.9 miles per square mile have been considered a critical threshold over which wolf populations generally fail to sustain themselves (Thiel 1985). Management activities that alter habitat for the wolf's prey (deer, moose and beaver) can have both positive and negative effects on wolves.

Wolves and suitable wolf habitat does exist on the Kawishiwi Ranger District. For this analysis, the area of the district that falls outside of the BWCAW is used to analyze road densities for the wolf. This analysis area was chosen because, the projects analyzed in this document are spread widely across the district, and the wolf's large home range makes analyzing road densities on an individual small project basis impracticable. Wolf Standard road density for the analysis area is approximately 0.54 miles/ sq mile.

In addition to human related factors, natural mortality factors, such as canine parvovirus (CPV) and mange, appear to limit wolves on the Superior National Forest. How much the wolf decline since 1995-1996 was related to CPV or mange is unknown, however the main effect of these natural mortality factors is to reduce the number of dispersing wolves (Mech, 2002).

Direct/Indirect Effects

Direct effects could occur in the form of disturbance. However, due to the relatively short duration of activities and activities occurring outside the wolves denning period, direct effects are expected to be negligible. Wolf pack territories range from 20-214 square miles, with wolves using different portions of the territory throughout the year. The potential for wolf/human encounters increases where there is a concentration of human activity within a wolf home range. However, wolves may or may not avoid the area during operations. Project operations could disturb the wolves during the denning period. However, if a wolf den is found, operations near the den would be suspended. The proposed activity would not change the existing habitat condition for the wolf or its prey. No new road construction, of roads ML 3 or above, will occur with the project. Road Densities on the District would not change. One of the largest threats to individual wolves appears to be natural mortality factors such as CPV and mange (Mike Nelson, personal communication to Susan Catton). At the forest scale, the wolf population is fluctuating at near-natural levels and human attitudes towards wolves appear to be generally positive. And at the range-wide scale wolves have been down-listed within portions of their range and have been removed from the endangered species list. Indirect effects are not likely.

Haliaeetus leucocephalus (Bald Eagle) Recently removed from Threatened list/VIS

The entire Superior National Forest lies within the range of the bald eagle. No habitat on the Forest has been designated as "Critical Habitat" for the recovery of the species. The Northern Lake States Bald Eagle Recovery Plan (Grier et. al. 1983) for governs the management of eagles and their habitat on the forest.

Bald Eagles are known to use the forest during the spring and summer for breeding and nesting. Suitable nesting habitat consists of stands dominated by mature and old growth timber or younger forest with a remnant component of older super (above) canopy trees located within 0.25 miles streams and lakes bearing predominantly shallow water fish species. Nests are sometimes found further from water than 0.25 miles. On the Superior National Forest, 85% of nest trees selected by eagles are large-diameter, old age, white pine (Lindquist 1990). Eagle habitat also includes foraging and roosting areas within 1.5 miles of nesting areas. There are no known bald eagle territories within 1.5 miles of either Project Area. Likewise there are not suitable foraging lakes within the Project Areas.

The Bald Eagle Recovery Plan set a goal of 300 breeding areas in Minnesota by the Year 2000. This goal was surpassed in 1987. According to a Minnesota Department of Natural Resources 2000 survey report, growth in the state's bald eagle population appears to be slowing, but remains at a healthy level. In 1999 the US Fish and Wildlife Service proposed to delist the bald eagle in the conterminous (lower 48) states. It has been delisted effective August 8th, 2007.

Direct/Indirect Effects

No direct or indirect effects would occur to the bald eagle. The Project Area lies well outside of the zones of disturbance outlined by the recovery plan and 1.5 miles of any known nesting territory. Habitat suitability would not change and no large trees, suitable for nesting or roosting would be cut. These projects will result in no change to the quality of roosting or foraging habitat.

Region 9 Sensitive Botanical Species

The same analysis approach that was used for sensitive wildlife species was used for analyzing the effects to botanical species. This approach is described above under the Region 9 Sensitive Wildlife Species heading. There are no known occurrences of any RFSS in the project area; however suitable habitat for some sensitive botanical species does occur. A Field survey for rare plants was conducted by contract during the 2003 field season in parts of the Project Area and in

other parts as part of other plant surveys. No rare species were located. *Moehringia macrophylla* was found on the north side of the Spruce Road just outside of the project area.

Within the project area suitable habitat exists for 33 RFSS botanical species (see Table 3). Limiting factors for these species (see references), which may be effected by the proposed action, include the loss or degradation of suitable habitat that would directly impact existing populations and/or indirectly limit their spread.

Direct/Indirect Effects

This project could result in some minor direct and localized impacts to upland aspen, pine and lowland black spruce bog. However these impacts will occur on a small scale and will not impact any known populations or suitable habitat of exceptional quality. Overall quality of the habitat is not likely to change as a result of this project.

Indirect effects are not likely to occur.



Table 3: Biological Evaluation

See Biological Evaluation Table 2 accompanying this document.

Summary of Determination of effects

This project *may effect but is not likely to adversely affect* the federally listed Canada Lynx.

This project may impact individuals of gray wolf, Heather vole, Northern goshawk, boreal owl, Black-throated blue warbler, bay-breasted warbler, Connecticut warbler, three-toed woodpecker, great gray owl, Mancinus alpine butterfly, red-disked alpine butterfly, jutta arctic butterfly, Quebec emerald dragonfly, swamp begger-ticks, pointed moonwort, common moonwort, Michigan moonwort, pale moonwort, ternate grape-fern, least moonwort, floating marsh-marigold, fairy slipper, katahdin sedge, ram's-head lady slipper, neat spike-rush, moor rush, creeping rush, Auricled twayblade, American shore-grass, large-leafed sandwort, fall dropseed muhly, dwarf waterlily, Canada rice grass, club-spur orchid, Western Jacob's ladder, lesser wintergreen, cloud berry, Northern bur-reed, alwort, lance-leaved violet, barren strawberry, yellow ribbon lichen, *Cladonia wainoi* (lichen spp.), *Peltigera venosa* (a lichen spp.), yellow specklebelly lichen, and *Usnea longissima* (a lichen spp.) but is not likely to cause a trend toward federal listing or a loss of viability. The project and associated activities will not likely lead toward the federal listing of any of these species. The projects will have no impact on all other RFSS.

RECOMMENDATIONS FOR REMOVING/MINIMIZING ADVERSE EFFECTS

If any listed species or key habitat feature (ie. nest, den etc) is found in the project area at any time, the District Biologist should be contacted immediately to determine the appropriate course of action.

Monitor drill sites and access routes for non-native invasive plant species. If found to occur consider methods for control of spread.

Effectively decommission temporary roads after intended use is complete following Forest Plan guidance for S-TS-3 and G-TS-14 (FP pg 2-50).

Stop operations on frozen ground sites when ground thaws.

This analysis covers only the above mentioned activities. Future exploratory work or mine development activities would require further analysis and is not covered in this document.

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Appendix C – Past, Present and Reasonably Foreseeable Actions Considered in Cumulative Effects Analysis

Past Actions.

- Historic Drill Holes – known drilling that has occurred in the vicinity of the proposed operating plans.
- Bulk Sampling Shaft/Maturi Site and Spruce Road Site (near FR 181F)

Present Actions -

- Drilling on State and Reserved Mineral Rights – Lehman drilling in Bob Bay on Birch lake.
- Dunka Project – Especially ongoing transportation system management actions.
- Hwy 1 Construction – Ongoing transportation system management actions

Reasonably Foreseeable Actions -

- Drilling on State and Reserved Mineral Rights – approved sites not yet drilled.
- Dunka Project & Glacier Project – transportation system management actions not yet implemented in decision document and proposals.
- Travel Management Proposal – spring/summer scoping, transportation system effects – LAU
- Polymet – proposed mining/drilling.
- Land Exchange with South Kawishiwi Recreation Residence Owners – subsurface mineral rights would not be conveyed in the surface exchange
 - Subsurface under lease to Beaver Bay Joint Venture.

Appendix D – Public Input From Scoping

Table D.1: Individuals and Organizations Who Provided Public Input

Letter Number	Name	Organization
1	Mike Link	Audubon
2	Steve Koschak	River Point Resort & Outfitting Co.
3	Steve DeVaney	
4	David Anderson	
5	Debby Ortman	
6	Henry Sandri	Duluth Metals Corp.
7	Ernie Lehmann	Lehmann Exploration Mgt.
6	Leonard Anderson	
9	Harold Noyes	Encampment Resources Inc.
10	Dan Devaney and Ed Hoffman	
11	Ernie Lehmann	Beaver Bay Joint Venture/Lehmann Exploration Mgt.
12	Phil Mitchum	
13	Edward & Patricia Pendelton	
14	David Pickford	
15	Harriet & John Ruetter	
16	Thomas Christiansen	
17	Jannette Brimmer	Minnesota Center for Environmental Advocacy
18	Mike & Barb Teichert	
19	Marilyn Vallez	
20	Ava & Russel Portman	
21	Darrell Knuffke	Friends of the Boundary Waters Wilderness
22	Daniel DeVaney	
23	Nancy Broeder	
24	Keith Thompson	
25	Peter Leschak	
26	Anne Jay	
27	Stephen Jay	
28	Steven Therrien	
29	Lori Andreson	
30	Reid Halstenrud	
31	Ed & Nancy Hoffman	

Letter Number	Name	Organization
32	Marilyn Russell	
33	Phil Jiricko	
34	Bernie & Sherry Goblisch	
35	Elanne Palcich	
36	Bradley Sagen	
37	Richard Clark	
38	Annah Gardner	Sierra Club North Star Chapter Volunteer
39	Mary Engel	
40	Matt Jay	
41	Jane & Steve Koschak	River Point Resort & Outfitting Co.
42	Jannette Brimmer	Minnesota Center for Environmental Advocacy
43	Betsy Schmeising	Vice Chair, Friends of the Boundary Waters Wilderness
44	Craig Engwall	NE Regional Director, Minnesota Department of Natural Resources
45	Darryl Knuffe	Friends of the Boundary Waters Wilderness
46	Nelson Brooke	
47	Andrea Childs	
48	Harold Goetzman	
49	Bernie & Sherry Goblisch	
50	Lori Andresen	
51	Kris Wegerson	
52	Robert Maki	
53	Daniel Mundt	
54	Bill Latady	Boise Forte Band of Ojibwe
55	Jayne Nucete	

Appendix E: Photos



Figure E.1: Proposed Temporary Road Site – To Duluth Metals Site #F8



Figure E.2: Proposed Access on System Road FR 181F Winter Road (Lowland Site) – To Encampment Sites #6 - #16,



Figure E.3: Example: Existing Proposed Upland Temporary Road Site



Figure E.4: Example: Existing Lowland Temporary Road Site (first summer following use)



Figure E.5: Example: Decommissioned Upland Temporary Road Site



Figure E.6: Proposed Upland Exploration Drilling Site (Franconia Site #12)



Figure E.7: Proposed Upland Exploration Drilling Site (DM Site #F5)



Figure E.8: Proposed Upland Exploration Drilling Site (Encampment Site #18)



Figure E.9: Proposed Lowland Exploration Drilling Site (Encampment Site #7)



Figure E.10: Proposed Roadside Exploration Drilling Site (Duluth Metals Site #F6)



Figure E.11: Example Capped Drill Hole



Figure E.12: Example Drill Site – First Season After Drilling Activities



Figure E.13: Example – Drill Site – Approximately 2 Years After Drilling Activities



Figure E.14: Example – Drill Site – Approximately 2 Years After Drilling Activities



Figure E.15: South Kawishiwi River Recreation Residence as Seen From FR 186



Figure E.16: FR 186 Near Proposed Temporary Road Spur and South Kawishiwi River Recreation Residence



Figure E.17: Spruce Road Bulk Sampling Site Near FR 181F



Figure E.18: Maturi Bulk Sampling Site – Shaft Vent Cover



Figure E.19: Area Around Maturi Bulk Sampling Site