

PROSPECTUS
AND
APPLICATION FOR A MINE DEVELOPMENT CERTIFICATE
HEARNE HILL PROJECT

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SUMMARY

A small open pit is proposed in order to mine the upper part of a copper and gold-bearing breccia at Hearne Hill, on the eastern side of the Morrison Lake valley. The total tonnage of rock removed is not expected to exceed 45,000 tonnes in this phase of a continuing operation. The ore is to be carried by truck to the concentrator at Noranda's Bell Mine for processing. Acid-base accounting indicates the rocks are acid consumers with generally high neutralization potentials, and acid generation is not anticipated in either the proposed pit or in the waste rocks.

INTRODUCTION

This submission outlines a proposal to mine, on a pilot project basis, the easily accessible upper portions of a copper and gold-bearing breccia on Hearne Hill, east of Morrison Lake. Three men are to work at the mine site, and they are expected to board at the Morrison camp of Houston Forest Products Co. It is hoped to begin site preparation and road improvements during the second quarter of 1992. This work is expected to take approximately three weeks. Production is expected to be started and completed during the third quarter of 1992.

LOCATION AND ACCESS

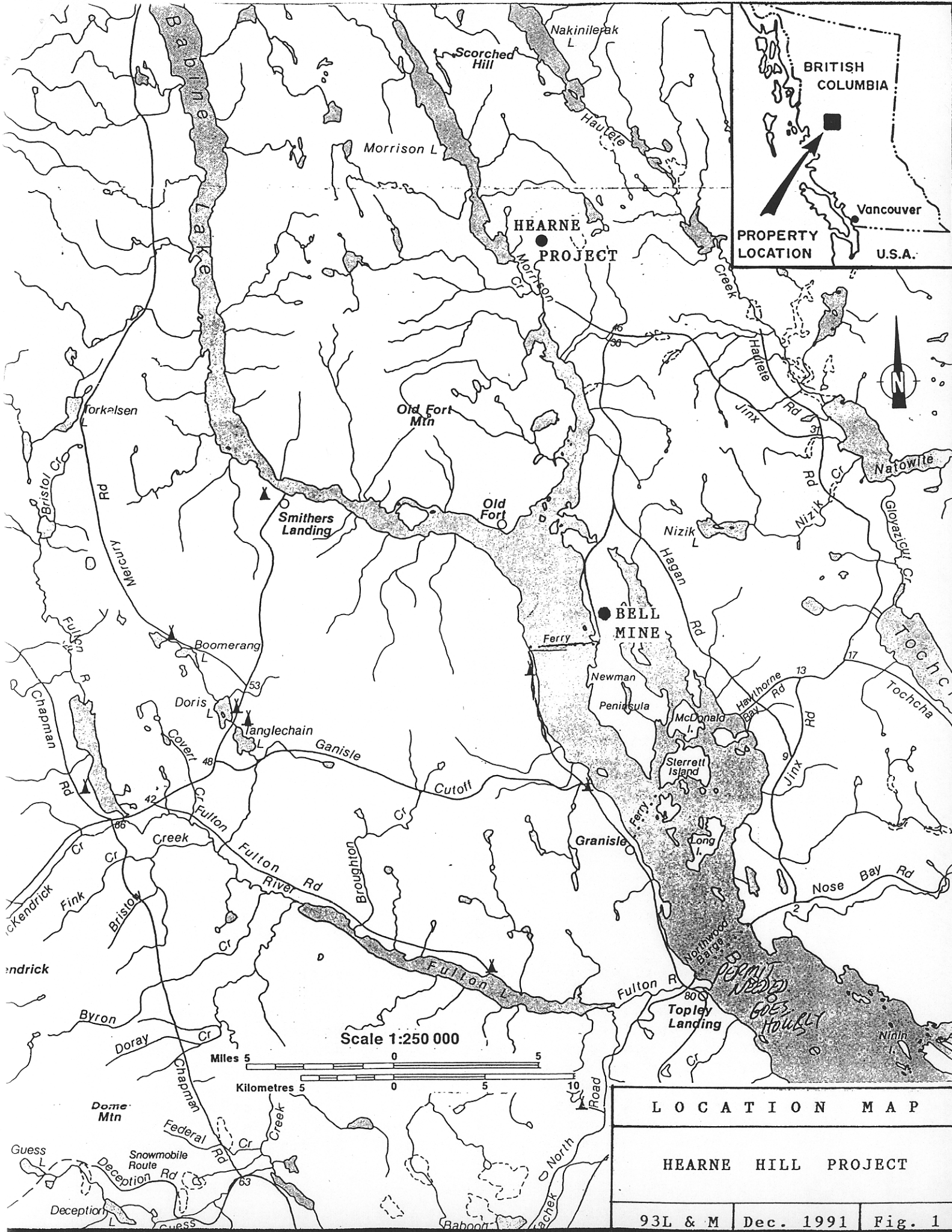
The proposed pit is at approximately 55° 10' 54" north latitude and 126° 17' 10" west longitude, on the southwestern slopes of Hearne Hill at about 1088 m elevation above sea level. Hearne Hill is situated on the east side of Morrison Lake, and is shown on map 93M/1.

The site can be reached from the Bell Mine by way of Northwood Pulp and Timber Ltd logging roads (Hagan and Jinx), followed by 4 km of mineral exploration road (Nak and Hearne Hill roads) that branches north from the Jinx road about 700 m east of the Morrison Creek bridge. Another access route is from Topley Landing via the Northwood barge across Babine Lake and then up the Nose Bay, Hagan, Jinx and Nak roads to the Hearne Hill road.

It is proposed to haul ore by truck down the Hearne-Nak-Hagan road system to the Bell Mine, a road distance of about 25 km.

PHYSIOGRAPHY AND VEGETATION

Hearne Hill reaches an elevation of about 1350 m elevation above sea level on the northwest side of a horst block complex of glaciated hills, swamps and lakes. Slopes on the west side of the complex are generally steep, and there are several small creeks that drain westward into Morrison Lake.



LOCATION MAP

HEARNE HILL PROJECT

Alpine fir, spruce and pines are the dominant trees in the general area. However, the western slopes of Hearne Hill in the claims area support a growth of mostly deciduous species including poplars, alder and willows. It is expected that no merchantable timber will be disturbed by this mining operation. A free use permit (FUP 12675) has been granted for exploration work on the Hearne Hill property, but the permit will expire at the end of December 1991.

CLAIMS AND OWNERSHIP

This mining property comprises the following mineral claims, all situated on Crown lands:

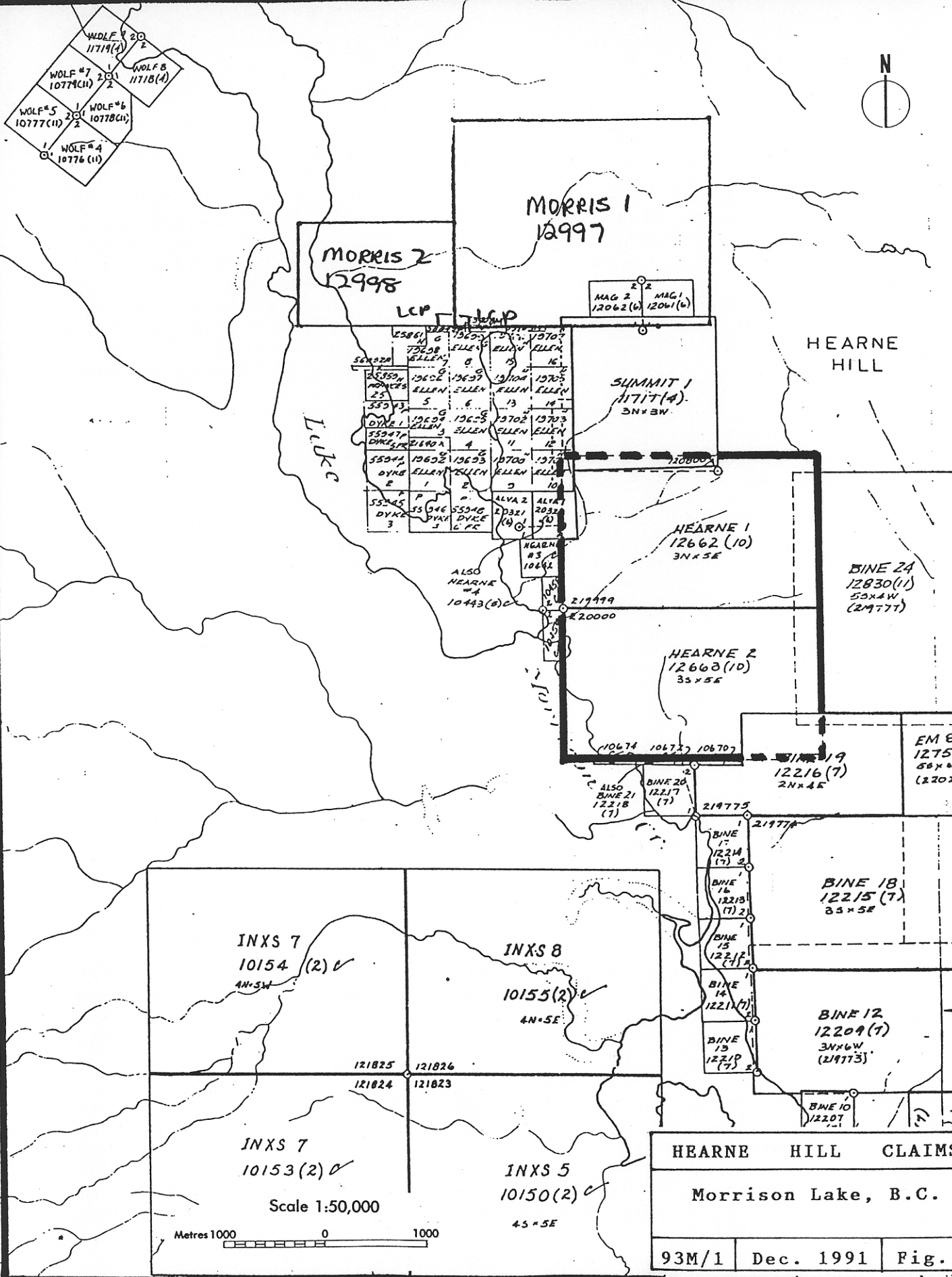
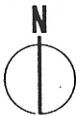
<u>Claim</u>	<u>Units</u>	<u>Title No.</u>	<u>Expiry</u>
Hearne 1	15	242812	15 Oct. 1999
Hearne 2	15	242813	15 Oct. 1999

David Chapman, Box 2139, Smithers, B.C., is the recorded holder of the claims.

PREVIOUS WORK

A mineralized breccia, now known as the Discovery Zone, was found on Hearne Hill in the early summer of 1967 by Peter Bland who was supervising the trenching of geochemical anomalies for Tro-Buttle Exploration Ltd (Dirom, 1967; P. Bland, pers. comm.). The prospect was soon optioned by Texas Gulf Sulphur Co. who completed an exploration program during the fall of 1967 that included road building, trenching, geological mapping, and 1942 m of BQ diamond drilling in twelve holes (Newell, 1968). This work outlined a substantial but apparently subeconomic hydrothermal system of the porphyry copper type that extends far beyond the original discovery. In 1968 Canadian Superior Exploration Ltd optioned the Hearne Hill prospect and conducted geophysical, geochemical and geological surveys on the claims in that year (Kahlert and Fawley, 1968), followed by percussion drilling in 1969 (Kahlert, 1969).

No further significant work was done on the prospect until 1989 when Peter Bland and David Chapman restaked the area and extended the old trenches at the Discovery Zone. Noranda Minerals Inc. (Bell Mine) subsequently optioned the claims and, concentrating their efforts on the Discovery Zone, completed a geochemical survey, and 468 m of diamond drilling in six holes (Ogryzlo, 1990), followed by 856 m of diamond drilling in five holes in 1990 (Ogryzlo, 1991). An additional seven diamond drill holes totalling about 550 m were drilled in the Discovery Zone in 1991 by David Chapman (D. Chapman, pers. comm.).



MORRIS 1
12997

MORRIS 2
12998

MAG 2
12062(6)

MAG 1
12061(6)

HEARNE
HILL

SUMMIT 1
11717(4)
3N x 3W

HEARNE 1
12662(10)
3N x 5E

BINE 24
12830(11)
5S x 4W
(29777)

HEARNE 2
12663(10)
3S x 5E

EM 8
12757(10)
5S x 6W
(220254)

BINE 19
12216(7)
2N x 4E

ALSO
BINE 21
12218(7)

BINE 20
12217(7)

BINE 18
12215(7)
3S x 5E

BINE 12
12209(7)
3N x 6W
(29773)

BINE 17
12214(7)

BINE 16
12213(7)

BINE 15
12212(7)

BINE 14
12211(7)

BINE 13
12210(7)

BINE 10
12207(7)

INXS 7
10154(2)
4N x 5W

INXS 8
10155(2)
4N x 5E

INXS 7
10153(2)

INXS 5
10150(2)
4S x 5E

Scale 1:50,000

Metres 1000 0 1000

HEARNE HILL CLAIMS

Morrison Lake, B.C.

93M/1 Dec. 1991 Fig. 2

PLU 20 Jan. 92: Temp. of deposition from fluid
inclusion studies: 80° - 160° C

-3-

GEOLOGY AND ORE RESERVES

Hearne Hill lies on the northern edge of the Skeena Arch, in an area underlain by volcanic and epiclastic rocks ranging in age from Lower Jurassic (Telkwa Formation) to Lower Cretaceous (Skeena Group). These rocks have been cut by a generally northwest-trending series of faults that have created a long, linear sequence of horsts and grabens, and the rocks have been intruded by a variety of intermediate to felsic stocks, plugs and dykes of Eocene age (Richards, 1990). The geological setting has been described by Tipper and Richards (1976).

The Hearne mineral claims cover an area of northwesterly-striking, generally andesitic rocks of the Telkwa Formation with subsidiary interbedded arenaceous and argillaceous sediments. In the western sector of the claims, near the base of the hill, there are outcrops of a major epiclastic unit (Ashman Formation?) associated with the Hearne-Morrison faults (Kahlert and Fawley, 1968; Richards, 1990). The andesitic rocks have been intruded by a dioritic stock which in turn has been invaded by a northeasterly-trending biotite (hornblende) -feldspar porphyry intrusive complex of Eocene age (Newell, 1968; Richards, 1990).

A porphyry copper system of the Babine Lake type (e.g. Bell and Granisle mines) is associated with the intrusive rocks on the Hearne claims. Chalcopyrite, local chalcocite, and small amounts of bornite and molybdenite are found as fracture fillings and, to a lesser extent, as disseminations in parts of the intrusions and in altered volcanics. Pyrite is ubiquitous and hematite is common. Magnetite is locally present, as are galena, sphalerite and marcasite. Gangue minerals are mainly carbonates and quartz. Minor chalcedony has been noted. Alteration minerals include fine-grained biotite, sericite, quartz, iron-bearing carbonates and chlorite. Copper carbonate hydroxides and iron oxides occur in the zone of weathering. Generally, where explored to date, the grade across significant widths is in the 0.1 - 0.3% Cu range (Kahlert, 1969; Newell, 1968; Ogryzlo, 1991).

Within this large and apparently low-grade system, several breccia zones are known to exist. One of these, the Discovery Zone, has been found to be locally rich in copper (e.g. 12.9 m grading 3.6% Cu in diamond drill hole H89-1) accompanied by recoverable amounts of gold. The Discovery Zone comprises a generally angular, clast-supported, drusy breccia, with much of the interclast space filled with chalcopyrite, minor chalcocite, pyrite, and iron-bearing carbonates. Noranda's work in this zone outlined drill-indicated and inferred reserves of about 180,000 tonnes grading 1.7% Cu (Ogryzlo, 1991), and it is this zone that is the target of this pilot project. All references to ore in the proposed pit are to inferred ore reserves.

DD91-2: incl. 10' (160-170) of 0.401 gpt Au, 1.33 Cu

MINING

It is proposed to develop a small open pit from which up to 45,000 tonnes of rock would be mined at a rate of about 1000 tonnes/day. The pit would extend to a maximum depth of about 15 m below the 3 m of overburden expected at the site, and would be mined in two lifts by a three man crew using an air track drill, a JD 892 excavator and a backhoe. Very approximately 12,500 tonnes of ore and 5,200 tonnes of waste rock would be removed in the first lift and, if this phase of the operation produces satisfactory results, a second lift may be removed comprising about 12,000 tonnes of ore and 15,000 tonnes of waste rock. The waste rock is to be piled on the slope southwest of the pit. Ore would be trucked to the Bell Mine, where it would be stockpiled prior to milling.

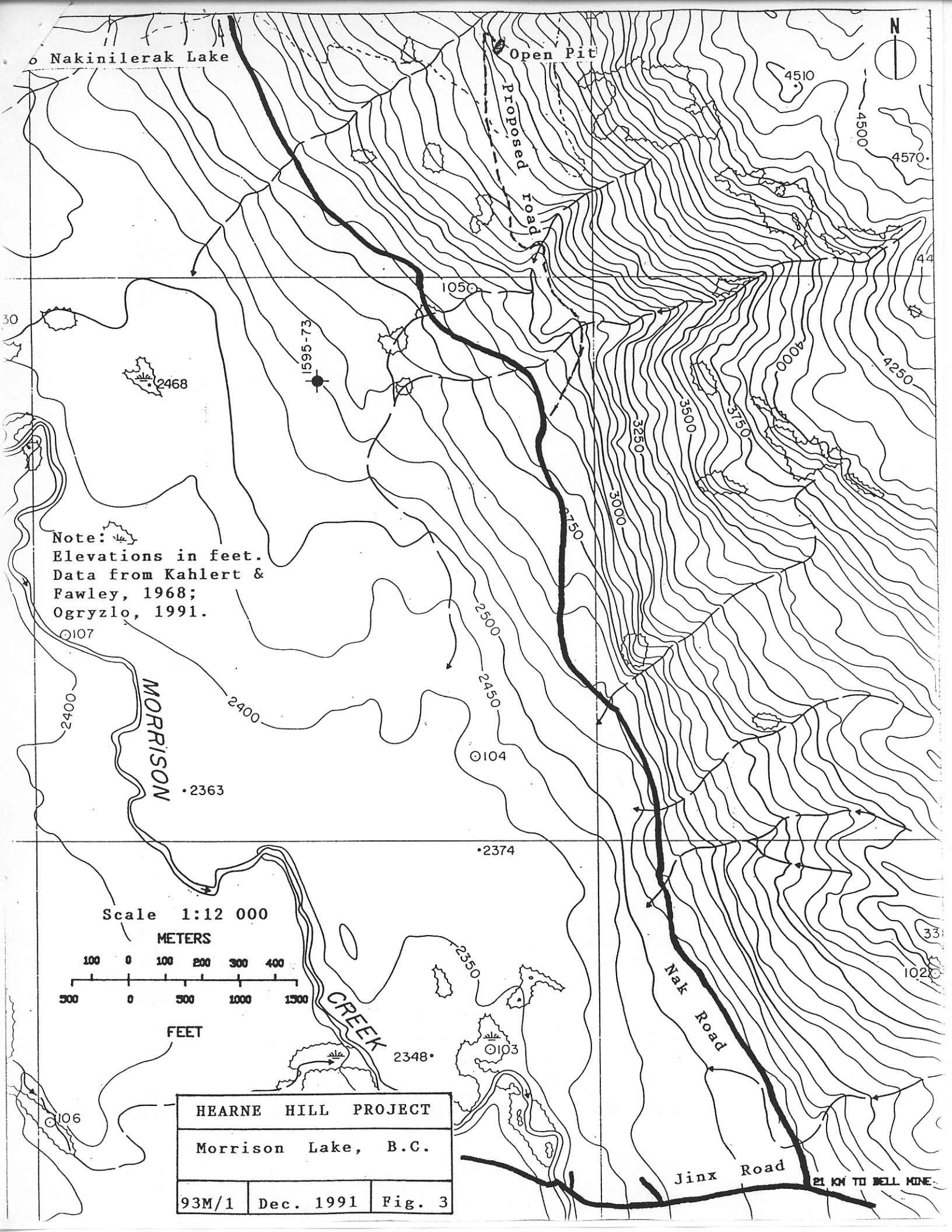
ROAD CONSTRUCTION

Existing roads will be used wherever possible but, in order to attain a satisfactory grade, approximately 1.2 km of new road construction is necessary. This construction is to be done in accordance with the guidelines established by the Ministry of Energy, Mines and Petroleum Resources. Bridges are to be built over the two small creeks to be crossed by the new road in order to ensure the accommodation of maximum water flow on this southwesterly slope. Neither of these creeks supports a fish population at this elevation. Adequate culverts are to be installed elsewhere as required.

RECLAMATION PLAN

This is a pilot project which, it is hoped, will be expanded as more ore is found and developed. An objective of this mining is to generate funds for further exploration. Therefore, a definitive reclamation plan is not possible at this stage. The general plan is to return disturbed areas to wildlife habitat, and to ensure that no adverse environmental consequences arise from this operation.

At the proposed pit, overburden will be stockpiled and then redistributed as a plant growth substrate over waste rock and nearby disturbed areas. The substrate will then be seeded and fertilized in accordance with recommended reclamation treatments for the Northern Interior Region as directed by the Inspector of Mines and Resident Engineer. Waste rock is to be piled well away from the intermittent stream that flows northwest of the proposed pit. The rock is to be piled in such a way as to ensure its long-term stability, and the rock will be monitored as required.



Nakinilerak Lake

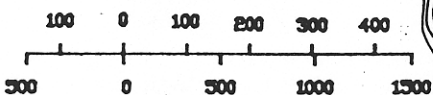
Open Pit

Proposed road

Note:
Elevations in feet.
Data from Kahlert &
Fawley, 1968;
Ogryzlo, 1991.

Scale 1:12 000

METERS



FEET

HEARNE HILL PROJECT
Morrison Lake, B.C.
93M/1 Dec. 1991 Fig. 3

MORRISON

CREEK

Nak Road

Jinx Road

21 KM TO BELL MINE

A primary environmental concern of this project is the management of open pit and waste rocks, and water drainage from these rocks. Three representative drill core samples of waste rock and two of low grade ore from within the proposed pit were submitted to Min-En Laboratories of Vancouver, B.C., for acid-base accounting analyses to assess rock potential for acid generation. As shown Table 1, the rocks all registered a positive neutralization potential.

TABLE 1

ACID-BASE ACCOUNTING OF HEARNE HILL ROCKS

SAMPLE	PASTE PH	TOTAL S %	SULPHATE AS S%	NP*	Net** NP	ROCK
1/26	7.70	0.41	0.17	94.63	87.13	Waste
1/50	7.90	0.24	0.11	39.13	35.07	Waste
1A/20	7.82	0.62	0.18	149.12	135.37	Waste
6/25	7.90	0.60	0.15	150.99	136.93	L.ore
6/38	7.60	0.61	0.15	96.38	82.00	L.ore

* Neutralization potential: Tons CaCO₃ equivalent/1000 tons.

** Net neutralization potential: Tons CaCO₃ equivalent/1000 tons.

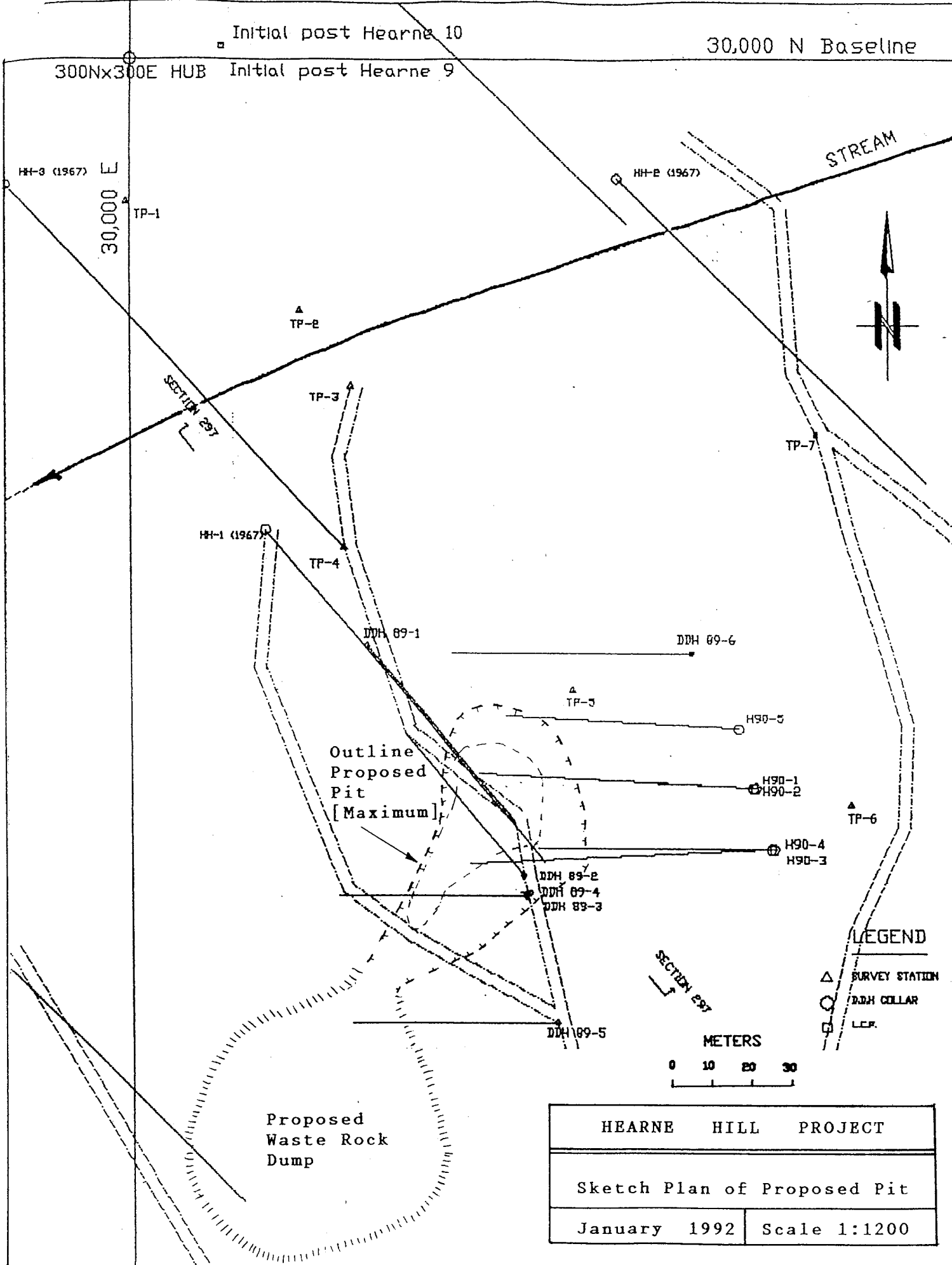
All but one of the samples (1/50) contained appreciable amounts of sulphide minerals (visual estimates of up to 4%), but they also carried carbonate minerals in estimated amounts of 10-20%. There is a positive correlation between the amount of sulphides and the amount of carbonates in this portion of the deposit. As a further check on potential acid generation, additional samples are to be collected for acid-base accounting as mining progresses.

The proposed pit area subject to reclamation is less than 1 ha, and the cost of this reclamation is not expected to exceed \$2,500. This work is scheduled to be done upon completion of mining, but not before 1993.

Roads are to be ultimately reclaimed as directed by the Inspector of Mines and Resident Engineer but, for the foreseeable future, the roads will remain in use as exploration work continues on this mining property. However, roadsides and embankment slopes may be revegetated as required.

A Notice of Work and Reclamation Program on a Mineral Property will be filed for each exploration program outside the pit area.

The impact of this operation upon wildlife will be minimal, and the site is considered to have a low heritage resource potential.



A. L'Orsa; based on a plan by P. Ogryzlo, 1991

PUBLIC CONSULTATION

Three parties have been identified that may be affected by this program. They are:

1. Dave Hooper, Tukii Lodge.
2. Northwood Pulp and Timber Ltd.
3. Houston Forest Products Co.

The matter has already been discussed with Mr Hooper, and it is proposed that letters be sent to Northwood and to Houston Forest Products, short sections of whose logging roads would be used. In addition, an advertisement will be placed in local newspapers inviting public comments. A public meeting will be held if there is sufficient interest.

REFERENCES

- Dirom, G.A., 1967, Geochemical and magnetometer report, "K" group of mineral claims, Morrison Lake: B.C. Min. of Energy, Mines and Petroleum Resources, Assessment Report 1102, 6 p. plus appendices.
- Kahlert, B.H., and Fawley, A.P., 1968, Report on geological, geophysical and geochemical surveys and preliminary diamond drilling on the Trobuttle Mines Limited property, Morrison Lake...: B.C. Min. of Energy, Mines and Petroleum Resources, Assessment Report 1854, 11 p. plus appendices.
- Kahlert, B.H., 1969, Morrison Lake area drilling results: Map prepared for Canadian Superior Exploration Ltd.
- Newell, J.M., 1968, 1967 exploration report, Hearne Hill properties, Omineca Mining Division, B.C.: Report for Texas Gulf Sulphur Co.
- Ogryzlo, P.L., 1991, 1990 diamond drilling program of the Hearne Hill breccia pipe: Report for Noranda Minerals Inc., 13 p. plus appendices.
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- Richards, T.A., 1990, Geology of Hazelton map area (93M): Geological Survey of Canada, OF 2322, map, two sheets.
- Smit, H., 1991, Diamond drill core log of hole 91-2: Log for David Chapman, 4 p.
- Tipper, H.W., and Richards, T.A., 1976, Jurassic stratigraphy and history of north-central British Columbia: Geological Survey of Canada, Bull. 270, 73 p.

MINE DEVELOPMENT REVIEW PROCESS

PROJECT FACT SHEET

CORPORATE DATA

PROJECT NAME: Hearne Hill.

COMPANY NAME AND ADDRESS: David Chapman, Box 2139, Smithers,
B.C., V0J 2N0.

CONTACT: David Chapman, telephone 847-3119.

PROJECT DETAILS

PROJECT LOCATION: Hearne Hill, east of Morrison Lake (map 93M/1)
and about 72 km northeast of Smithers, B.C.

ESTIMATED CAPITAL COST: \$20,000.

MINERALS: Chalcopyrite accompanied by pyrite, carbonate
minerals, quartz, hematite and small amounts of
chalcocite, bornite, molybdenite, magnetite, galena
and sphalerite.

MINE SYSTEM: Open pit.

ESTIMATED PRODUCTION: Total rock production (ore plus waste) is
estimated to be up to 45,000 tonnes over a
period of up to three months.

PROCESS PLANT/MILL: Existing mill at Bell Mine.

PROPOSED MINE LIFE: Three months.

MINERAL RESERVES/RESOURCES

RESERVES/RESOURCES: Drill-indicated and inferred reserves are
about 180,000 tonnes.

AVERAGE GRADE OF ORE: 1.7% Cu.

CUT-OFF GRADE: 1% Cu.

POTENTIAL FOR ADDITIONAL RESERVES: Good.

ACCESS/TRANSPORTATION

ROAD: Logging roads to Bell Mine or Nose Bay.

RAIL: Not applicable.

AIR ACCESS: Helicopter from Smithers.

SHIPPING: Not applicable.

POWER SUPPLY

REQUIREMENTS: No.

SUPPLY ALTERNATIVES: Not applicable.

WORKFORCE INFORMATION

TOTAL OPERATIONAL WORKFORCE: Two drillers, one excavator operator, up to eight truck drivers.

HOUSING OPTIONS: Morrison camp of Houston Forest Products Co.

CONSTRUCTION WORKFORCE: None.

CONSTRUCTION CAMP: None.

WORKFORCE ROTATION: None.

INDIRECT/INDUCED EMPLOYMENT: Not available.

DEVELOPMENT SCHEDULE

STAGE 1 SUBMISSION FILED: Prospectus; December 1991.

SITE CONSTRUCTION STARTUP: Site preparation; second quarter, 1992.

PRODUCTION STARTUP: Third quarter of 1992.