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PROSPECTUS

SNIP PROJECT

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MINE DEVELOPMENT STEERING COMMITTEE

JANUARY 1988

Cominco Ltd.

DELAWARE RESOURCES CORP.

PROSPECTUS

SNIP PROJECT

Submitted by:

The Joint Venture Partners

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1.0 FACT SHEET

Metal Reserves

Metals	Gold, minor silver
Reserves (diluted)	1.1 million metric tonnes (1.2 million short tons)
Average Grade of Ore	24.0 g/tonne (0.7 oz/ton)
Potential for Additional Reserves	Excellent

Mining

Mine Operation	Underground by adit entry
Production Rate	500 tons per day milled
Process Plant	Conventional cyanidation mill or combination gravity/cyanidation
Mine Life	7 years (plus)
Work Period	Mining - 7 days/week Milling - 7 days/week

Transportation

Aircraft	Fixed-wing from Smithers/Terrace and Wrangell, Alaska
Road	Possible consideration of constructing a 70 km access road from mine site to Bob Quinn Lake on Cassiar-Stewart Highway. Road access is being considered only as an option for extending the life of mine. Current plans envisage Stage I application and

	approval to be based on air only access. Once the mine is in production, discussions will be carried out with the appropriate regulatory agencies to determine whether road access is viable.
Power	Diesel fuel generation with consideration of hydroelectric development from two possible sources: on site or from an overland transmission line originating from the head of Bradfield Canal in Alaska.

Work Force

Operational	125
Construction	145
Housing	Northwest Communities of Smithers, Terrace, Stewart and Dease Lake
On-site Accommodation	
Pre-Production	80
Production	65

Schedule

Construction and Pre-Production	November 1988
Operation	July 1989

2.0 PROJECT DESCRIPTION

2.1 Introduction

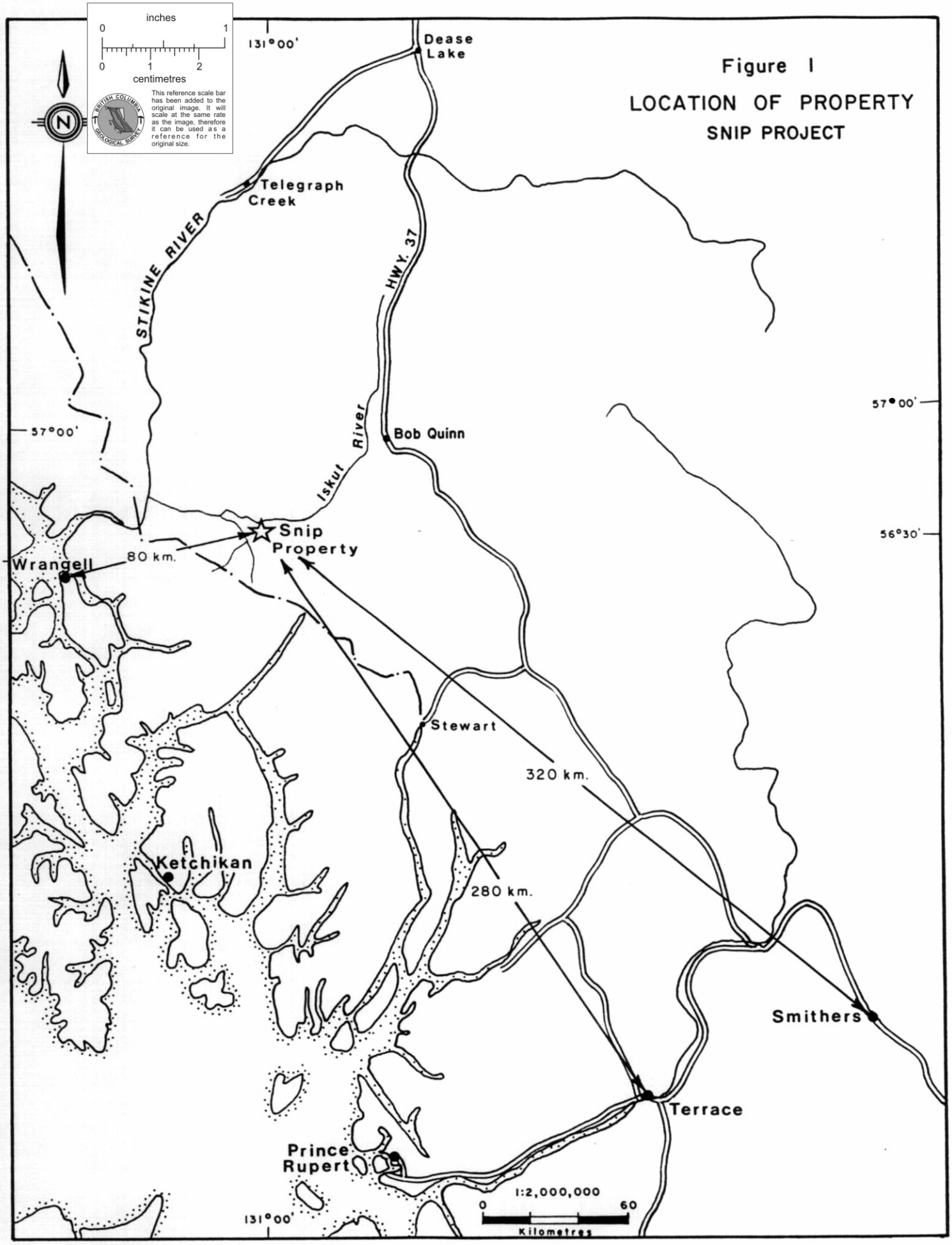
Cominco Ltd. in Joint Venture with Delaware Resources Corp. proposes to develop the SNIP Project, a gold deposit in northwestern British Columbia (Figure 1). The property is located near the Iskut River 100 km northwest of Stewart, B.C. Geographic coordinates are 56°41'N Latitude and 131°05'W Longitude, within NTS Map Sheet 104-B-11 (Craig River).

The property is 100% owned by Delaware with Cominco maintaining an option to back in for a 60% interest in the mine by financing the first stages of mine and plant construction. Claims were originally staked by Cominco in November 1980. From 1981 to 1985, geological mapping, soil geochemical sampling and trenching were undertaken. During 1986 and 1987, 85 drill holes totalling 15 354 m were completed.

The proposed development is to establish a mechanized trackless underground mine where ore will be processed in an on-site mill. A camp near the mine site will house workers for a fly-in operation utilizing the Bronson Creek airstrip.

2.2 Access

Access to the property is by fixed-wing aircraft from Wrangell Alaska (80 km) or Smithers (320 km away) or by helicopter from Stewart or Bob Quinn Lake to the Bronson Creek airstrip. The airstrip is large enough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BRITISH COLUMBIA GEOLOGICAL SURVEY
N
131°00'
Dease Lake
Figure 1
LOCATION OF PROPERTY
SNIP PROJECT
Telegraph Creek
STIKINE RIVER
HWY. 37
57°00'
Bob Quinn
Iskut River
57°00'
56°30'
Snip Property
Wrangell
80 km.
Stewart
320 km.
Ketchikan
280 km.
Smithers
Terrace
Prince Rupert
131°00'
1:2,000,000
0
60
Kilometres

to handle DC3 aircraft. The Cassiar-Stewart Highway lies 70 km east and is the nearest road. On the property a 3 km road connects the airstrip, camp and gold deposit. During property development, access will be via air. An all-weather gravel road into the mine site from the Cassiar-Stewart Highway is an option that will be considered for the transport of equipment and supplies after the mine is in operation.

2.3 Description of Mineral Claims

The project mineral claims consist of seven staked mineral claims (SNIP 1-5, JIM 1-2) for a total of 67 units covering an area of 1675 ha (Figure 2). Claim boundaries on SNIP 1 and 2 have been defined by a legal survey which has been submitted to the Surveyor General of British Columbia for approval prior to application for a Mining Lease on these claims.

Exploration to-date has been concentrated on the SNIP-1 mineral claim, with the main emphasis on detailing the Twin Zone structure by diamond drilling. Gold mineralization in the Twin Zone has been traced over a strike length of 1000 metres through a vertical range of 500 metres between the 150 m and 650 m elevations on the northwest facing slope of Johnny Mountain. The general attitude of the Twin Zone ranges from 110-120^{o} strike and 40-60^{o}SW dip. The dip length of the deposit has been established at 150-250 m on individual drill sections. The Twin Zone deposit as presently outlined is entirely confined to the SNIP-1 mineral claim.

inches
0 1 2
0 1 2 3 4 5
centimetres

BRITISH COLUMBIA GEOLOGICAL SURVEY

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ISKUT

JIM 1

JIM 2

SNIP 1

SNIP 2

SNIP 3

SNIP 4

SNIP 5

RIVER

Airstrip

Camp

Road

Twin Zone

MONSOON LAKE

Bronson Creek

Craig River

500

1000

1500

2000

2500

3000

1:20,000

0 500

metres

Figure 2
PROPERTY CLAIMS
SNIP PROJECT

Numerous other gold showings and geochemical anomalies are known on the property and these will be the targets of future exploration sampling and diamond drilling to evaluate their potential. This work will continue during underground exploration and mine construction stages in order to define additional reserves and extend the mine life.

2.4 Existing Facilities

An exploration drill camp of woodframe construction exists on-site. It consists of one office, one cookshack, mens' and womens' dry, recreation building, a food storage building, a core shack, two sample preparation buildings, a first-aid building, a sample storage building and 18 sleeping cabins. The frame construction, plumbing, electrical and septic systems all conform to the B.C. building code. Additional installations on-site include one satellite telephone dish, 5 core racks, two water wells, a vehicle maintenance building, a sawmill shelter, a generator building and an airport warehouse building.

A 900 m-long airstrip and 4 km of access roads exist on the property.

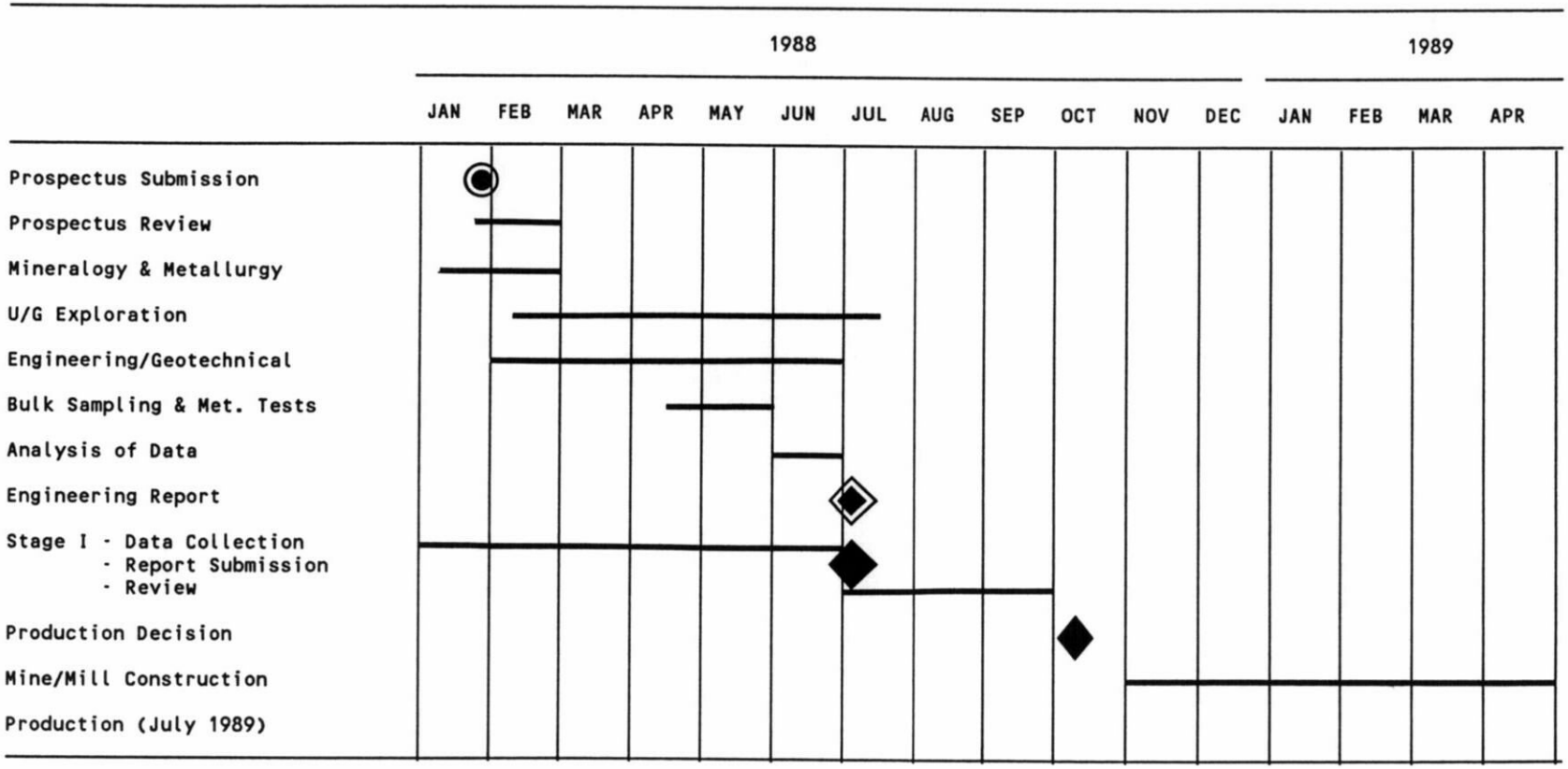
2.5 Project Schedule

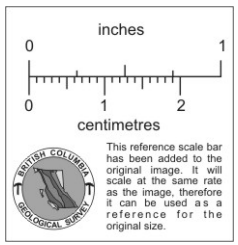
The project schedule is shown in Figure 3. Key project dates are:

Submission of Prospectus Report	January, 1988
Submission of Stage I Report	July, 1988
Approval-in-Principal	October, 1988
Site Construction and Pre-Production	November, 1988
Production Target Date	July, 1989

FIGURE 3

SNIP PROJECT: CRITICAL PATH SCHEDULE 1988-89





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3.0 GEOLOGY AND ORE RESERVES

3.1 Geology

3.1.1 Regional geology

Rocks in the general region near the junction of the Craig and Iskut rivers consist of folded and faulted sequences of volcanic, volcaniclastic and clastic sedimentary rocks of the Mesozoic Hazelton Group. Precise correlations are uncertain, but the thick clastic sedimentary sequence on the SNIP claims is possibly correlated to the Lower Jurassic Unuk River Formation. These layered rocks are intruded by intermediate to felsic stocks and plutons of Jurassic and younger age that are related to the Coast Range Batholiths. The area is extensively cut regional thrust faults and more regional NE and NW trending normal block faults. The E-W trending Iskut River valley may form part of a large scale regional graben structure - possibly related to recent extrusion of a thick pile of basalt flows at Mount Hoodoo located 10 km northwest of the SNIP claims.

3.1.2 Property geology

The Twin Zone geology can be best described as a 1- to 10-metre thick discordant shear vein that cuts through a massively bedded feldspathic greywacke-siltstone sequence. Bedding in the sediments is variable from 045-100^{o}/10-45^{o}NW-W. The character of the Twin Zone mineralization shows no appreciable change over the vertical range tested to date.

Gold mineralization occurs in centimetre to metre scale alternating bands of, in descending order of abundance: massive (streaky) calcite; heavily disseminated to massive pyrite; biotite-chlorite, as thin bands-streaks; quartz; pyritic to non-pyritic fault gouge.

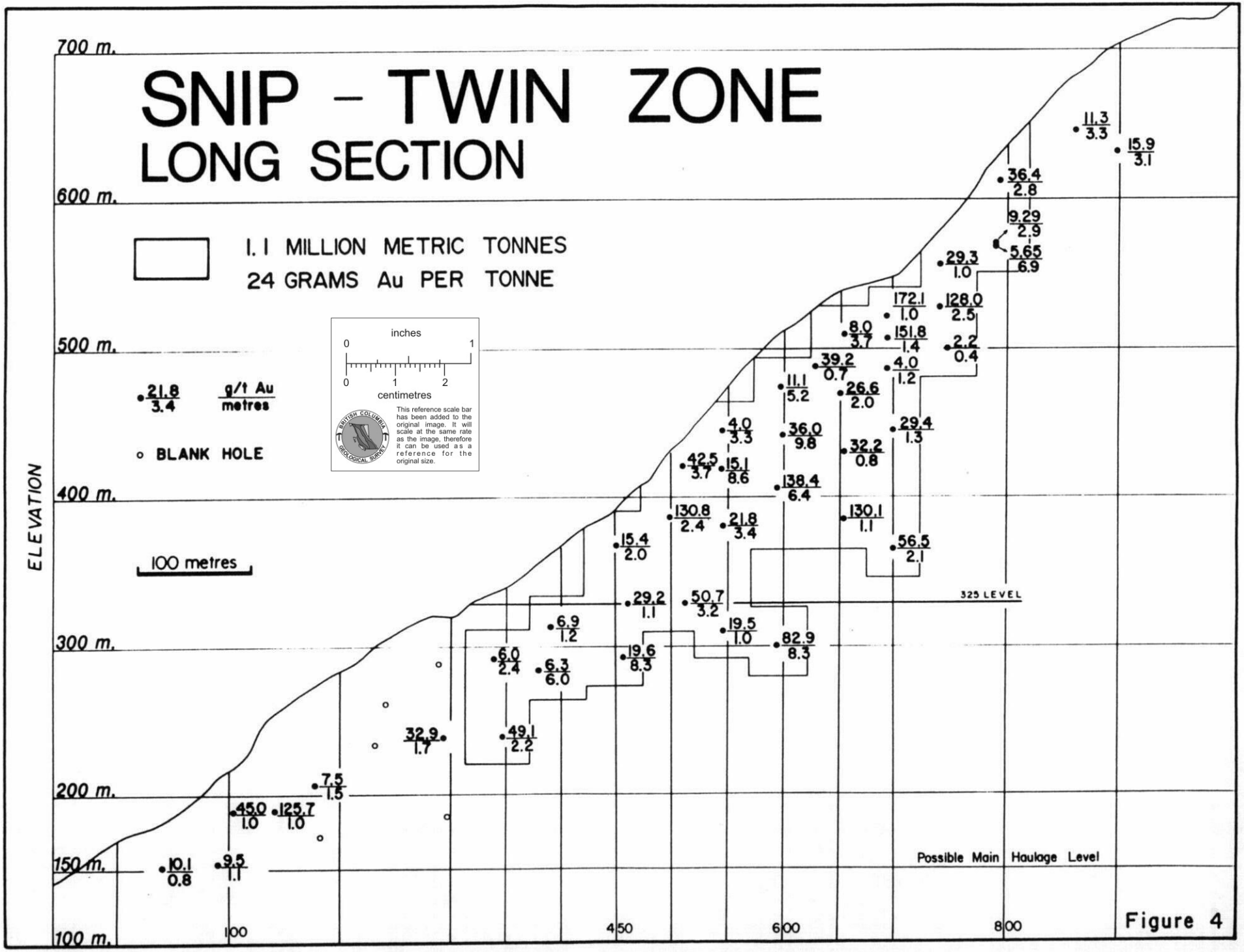
Abundant calcite occurs throughout the Twin Zone. Sulphide minerals include pyrrhotite, chalcopyrite, sphalerite, galena, molybdenite and arsenopyrite. In overall total, these sulphides comprise less than 2% of the deposit. Minor/trace amounts of bismuth and lead tellurides, including tellurobismuthite, cosalite, hessite and volynskite have been noted in polished thin sections.

Narrow parts of the zone (1 metre+/-) often comprise dominantly one of the above types. Thicker sections show repetitive interbanding of all types. The thicker (3 metres+/-) sections also contain centimetre to metre interbands of weak to highly biotite/carbonate/k-spar altered-flooded feldspathic wacke. These bands often contain less than 1 g/t gold, and have been included as internal low grade sections in the ore reserve calculations. Later shearing has imparted a moderate to strongly developed foliation to the zone, which is best developed in biotite (chlorite) rich sections. Vein boundaries are usually sharp and well defined with gold values in the immediate footwall and hangingwall mostly up to a few 100 ppb. A few values in the 1 to 10 g/t range have been encountered in rocks adjacent to the Twin Zone, but these have not been included in the tonnage and grade estimates outlined below.

3.2 Ore Reserves

Diluted mineable ore reserves have been calculated for the Twin Zone deposit to be 1.1 million metric tonnes grading 24 grams Au per tonne (1.2 million short tons grading 0.7 ounces Au per ton). The reserves lie within the geological boundaries of the Twin Zone vein between the surface and depths ranging from 150 to 250 metres. The vein is apparently continuous, dipping 40 to 60 degrees to the southwest. The ore outline is shown on a long section in the plane of the vein in Figure 4. The deposit is open to depth and along strike to the east. The above reserve figures incorporate:

- expansion of ore body thicknesses to 2 metre minimum mining thickness,
- overall mining dilution of 20% at zero grade, and
- cutting of individual assays greater than 150 g/t to 150 g/t.


SNIP – TWIN ZONE
LONG SECTION
700 m.
600 m.
500 m.
400 m.
300 m.
200 m.
150 m.
100 m.
ELEVATION
1.1 MILLION METRIC TONNES
24 GRAMS Au PER TONNE
21.8 / 3.4 g/t Au / metres
BLANK HOLE
inches
centimetres
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100 metres
325 LEVEL
Possible Main Haulage Level
100
450
600
800
11.3 / 3.3
15.9 / 3.1
36.4 / 2.8
9.29 / 2.9
5.65 / 6.9
29.3 / 1.0
172.1 / 1.0
128.0 / 2.5
8.0 / 3.7
151.8 / 1.4
2.2 / 0.4
39.2 / 0.7
4.0 / 1.2
11.1 / 5.2
26.6 / 2.0
4.0 / 3.3
36.0 / 9.8
29.4 / 1.3
42.5 / 3.7
15.1 / 8.6
32.2 / 0.8
138.4 / 6.4
130.8 / 2.4
21.8 / 3.4
130.1 / 1.1
15.4 / 2.0
56.5 / 2.1
29.2 / 1.1
50.7 / 3.2
6.9 / 1.2
19.5 / 1.0
82.9 / 8.3
6.0 / 2.4
6.3 / 6.0
19.6 / 8.3
32.9 / 1.7
49.1 / 2.2
7.5 / 1.5
45.0 / 1.0
125.7 / 1.0
10.1 / 0.8
9.5 / 1.1

Figure 4

4.0 MINE PLANNING AND OPERATION

4.1 Conceptual Mining Plan

Mine development will be by conventional underground methods using cut and fill or shrinkage stopes depending on the dip of the ore zone. Access to the orebody will be by adit entry, initially on the 325 m (a.s.l.) level with ultimate internal development of stopes and levels connecting via ore passes to a main haulage level at about the 150 m elevation. Ore will be moved by trackless equipment to a primary crusher and mill established near the 150 m portal site. Additional access levels will be established above 325 m level and between the 325 m level and the 150 m portal. Waste rock will be stockpiled at appropriate sites and will also be used for road building purposes.

Development and production will operate on a two shift per day and seven day per week basis since this operation will be a fly-in project.

4.2 Processing of Ore

Preliminary cyanidation testing carried out on composited drill core material has indicated recoveries of 96% for Au and 80% for Ag. Polished sections reveal that native gold is almost always in free form. It occurs with gangue minerals (biotite, sericite, quartz) and commonly at the margins of pyrite, arsenopyrite and telluride grains. It is, therefore, assumed that gold recovery will be achieved by a conventional cyanidation process or combination of gravity and

cyanidation. A 300-500 ton per day capacity mill will be constructed. Mill process tailings will be piped to a tailings impoundment. Water will be reclaimed from the impoundment for re-use in the mill circuit. A mill flow sheet is shown on Figure 5.

4.3 Surface Facilities

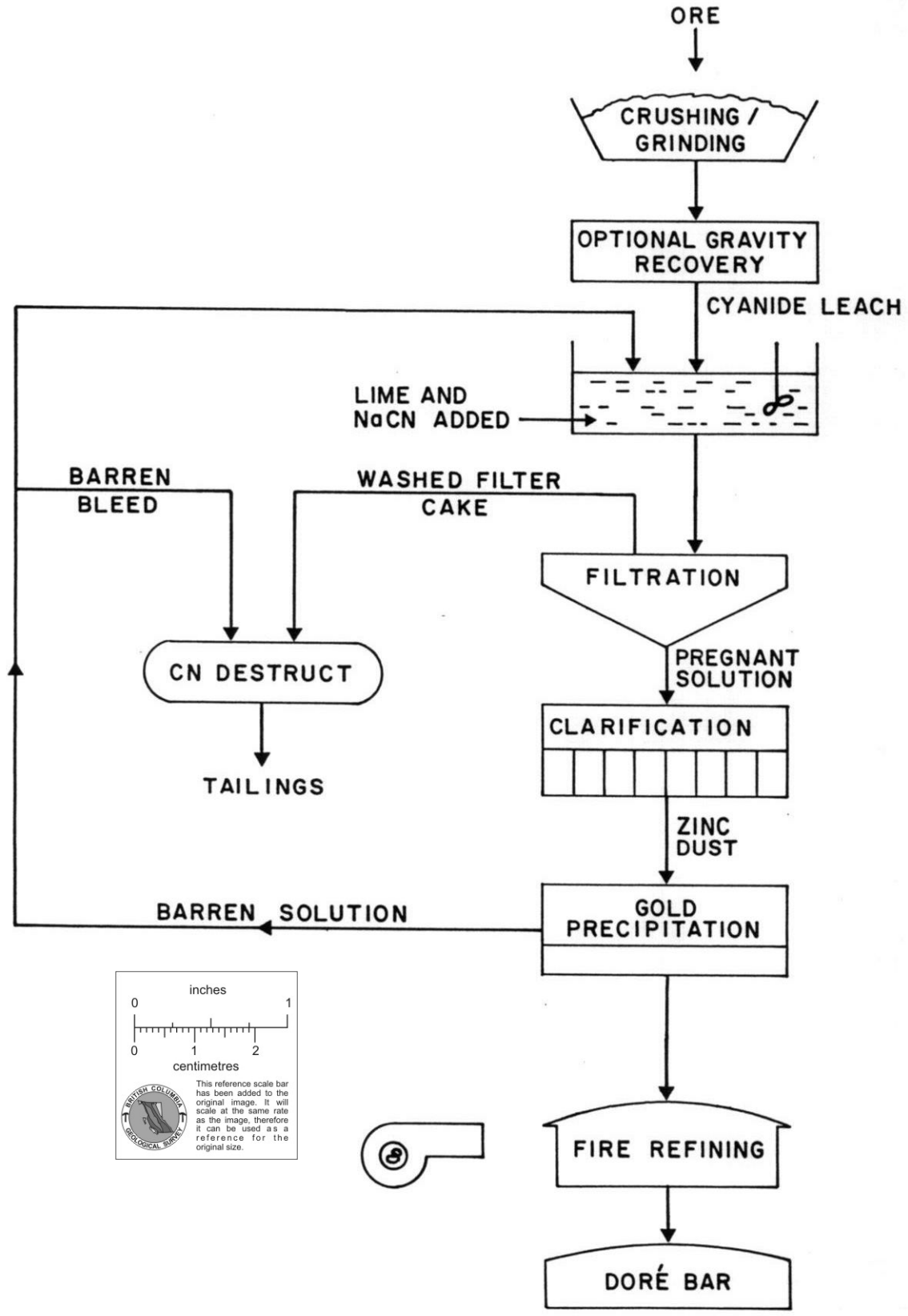
The mine offices, shops, dry and warehouse will be located near the mine access or on the area of flat ground near the site of the present exploration camp on Bronson Creek. Fuel tanks and explosives magazines will be located at appropriate sites and will comply with government regulatory requirements.

4.4 Tailings Disposal

Several tailings pond sites are presently being considered. The engineering and environmental considerations of the more viable options will be evaluated during Stage I using refined reserve estimates, geotechnical, groundwater and environmental assessments.

4.5 Water Supply

Fresh water will be required for domestic use, fire protection and for the process plant. Potential surface and groundwater sites will be investigated during Stage I studies.



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PRELIMINARY MILL FLOW SHEET

SNIP PROJECT

Figure 5

4.6 Power Supply

Current conceptual plans for development envisage on-site power to be supplied by diesel generator. However, the potential for hydro-electric power from nearby streams or overland transmission of hydro power generated at Bradfield Canal in Alaska will also be investigated.

4.7 Transportation

Access during property development will be via air from surrounding communities to the Bronson Creek airstrip. Smithers has so far been the focal point for transportation of personnel and supplies. Construction of an all-weather gravel road into the mine site from the Cassiar-Stewart Highway is also being considered for transport of equipment and supplies.

Current conceptual plans envisage project development, construction and commencement of operations to be facilitated by air access only. To extend mine life and project feasibility, construction of an all-weather road in year one or two of operations is being considered. Stage I application and approval will be based on air only access. Once the mine is in production, discussions will be carried out with the appropriate regulatory agencies to determine whether road access is viable.

5.0 ENVIRONMENTAL ASPECTS

5.1 Environmental Setting

5.1.1 Climate

The climate of the northwest coast of British Columbia is West Coast Marine dominated by the on-shore flow of North Pacific airstreams. Precipitation is abundant along the coast, especially along the westerly windward face of mountain slopes.

The SNIP project area lies between elevations of 100 m to 800 m and is located within two biogeoclimatic zones (B.C. Ministry of Environment, Planning and Assessment Branch 1983). The Iskut River valley lies in the Coastal Western Hemlock Zone. Higher elevations below the treeline (1100 m) are in the Mountain Hemlock Zone.

In general the area is characterized by moderately low mean annual temperatures of between 0.0°C and 1.0°C. Temperatures would be lowest in December and January with extreme lows of about -40°C and highest from July to August with an extreme high of 30°C. Based on data from nearby B.C. Ministry of Environment climate stations (elevations 470 - 620 m), annual precipitation on the SNIP property is about 2000 - 2400 mm annually of which 1000 mm to 1200 mm occurs as snow. Snow course data from nearby stations at elevations similar to the SNIP property indicate mean snow depths in the order of 110-170 cm.

5.1.2 Topography

The project area lies within the Boundary Ranges of the Coast Mountains and has steep and rugged glaciated topography. Permanent icefields and major valley glaciers are common at higher elevations. The high peaks have matterhorn forms produced by cirque glaciation. Peaks and ridges below 2000 m are rounded from ice-sheet erosion and valleys are typically U-shaped.

5.1.3 Drainages

The project area is located about 45 km up the Iskut River from its confluence with the Stikine River. The Iskut River is the largest tributary of the Stikine River, and from their confluence the Stikine flows 11 km to the B.C.-Alaska Border and a further 30 km through the Alaska panhandle to the sea near Wrangell.

The exploration area is drained by Monsoon Creek and Monsoon Lake which flow northeast into Bronson Creek. Monsoon Lake is a small lake which has an average depth of approximately 2 m. The west side of the SNIP claims area is drained by Sky Creek, a high gradient stream which flows northwest into the Craig River. The Craig River is a major tributary of the Iskut River, whereas Bronson Creek is an intermediate size tributary of the Iskut River.

5.1.4 Hydrology

Peak discharge from snowmelt in the headwaters of the Iskut River is moderated because of storage in Eddontenajon, Tatogga, Kinaskan and Natadesleen lakes. As the Iskut River enters the Coast Mountains, the runoff processes are dominated by snow and glacier melt and fall rain events (Jones & Associates 1984). Environment Canada (1983) has collected discharge data for stations on the Iskut River located near the mouth (Station 08CG001) since 1959 and approximately 15 km upstream of Bronson Creek (Station 08CG004) since 1967. These data indicate that discharge begins to increase in May and peaks in July as a result of annual snowmelt. Major flood events occur in October and November due to rainfall, then decline through the winter reaching stable low flows from February to March. The station near the mouth of the Iskut River recorded a minimum mean yearly flow of 62 m^3/s in February whereas a maximum mean yearly flow of 1110 m^3/s occurred during July (Environment Canada 1983).

5.1.5 Fisheries

The project area is bounded by the Iskut River and its tributary, the Craig River. The Iskut River supports all five species of Pacific salmon, but coho and sockeye salmon spawn in greatest numbers near the project area (Fisheries and Oceans 1984). A barrier to salmonid fish movement is located in the Iskut River approximately 30 km upstream of Bronson Creek. The Craig River is one of the most important tributaries of

the Iskut River and is used for spawning by coho, sockeye and chinook salmon. Most salmon spawning in the Craig River apparently occurs upstream of its confluence with the Jekill River (Fisheries and Oceans 1984). Other salmonid species known to occur in the Iskut River watershed include rainbow, cutthroat and steelhead trout, Dolly Varden char and mountain whitefish. Cutthroat trout and Dolly Varden char have been identified in Monsoon Creek. Coho, chinook, pink and sockeye salmon, cutthroat trout and Dolly Varden char have been identified in the lower 1 km of Sky Creek.

Since the SNIP property is located in the Stikine River watershed any effects of the project on the fisheries resources would have international implications.

The Stikine River is a transboundary river which supports U.S. and Canadian commercial, sport and native salmon fisheries. The harvest-sharing and management of fish stocks in the Stikine River is governed jointly by the U.S. and Canada under the Pacific Salmon Treaty signed in 1985.

5.1.6 Wildlife

The Iskut River and Stikine River valley supports a wide variety of large and small mammals. Mountain goats and Stone's sheep occur in the rugged terrain and on the steep canyon walls of the region. Moose appear to be the most common ungulate in the valley. Grizzly and black bear are found in almost all vegetation types. Coyote, wolf, red fox and lynx occur in the

Stikine/Iskut area. A variety of other mammals such as beaver, porcupine, and other small mammals also occur in the area.

5.1.7 Vegetation

The lower Iskut River valley and its tributaries lie within the Coastal Western Hemlock vegetation zone. This zone is typically dominated by such tree species as western hemlock and Sitka spruce. Higher elevations within the project area are representative of the Mountain Hemlock Zone which extends as high as tree line (1100 m).

5.1.8 Soils

The area has been extensively glaciated resulting in the region being covered by till, silt, sand and gravel from glacial retreat, ice damming and stream deposition. Surficial deposits on the upland slopes are mostly thin mantles or veneers of colluvium and till. Soils which have developed under the vegetation of forested zones are Podzols. These are Orthic Ortstein, Humo-Ferric and Ortho-Humic Podzols in the Western Hemlock Zone and Humic Podzols in the Mountain Hemlock Zone.

5.1.9 Land use

At present, the Iskut River valley is predominantly wilderness. Forestry activities in the lower Iskut River valley are non-existent due to the remoteness of the area. Hunting, guiding and outfitting, and

trapping occur in the Iskut valley, but recreational usage is not extensive due to lack of access.

There are no known parks, ecological reserves, Indian reserves or other Crown reserves in the vicinity of the SNIP project. A flooding reserve, held by B.C. Hydro for a potential hydroelectric dam site, is located in the Iskut River canyon about 25 km upstream of the project area.

5.2 Potential Concerns

The main environmental concerns for the project are the potential effects on water quality and the fisheries resources. In particular, the salmon resources in the Iskut/Craig River systems are of concern due to their importance to Canadian and U.S. commercial, sport and Native fisheries.

Siting and design of facilities will require detailed study to ensure proper containment and treatment of mine waste materials. Potential downstream effects resulting from mine construction and operation will be addressed in the Stage I report.

Since the SNIP project will be a relatively small scale operation, disruption to wildlife habitat and populations is not anticipated to be a major concern.

5.3 Proposed Studies

Baseline data collection was conducted in September and October, 1987 for water quality, hydrology and

fisheries study components of Stage I. A complete program of environmental studies addressing specific concerns and providing input to engineering design will begin in early 1988. Terms of reference for a complete environmental program are anticipated to be established in March 1988 following review of the project Prospectus by Provincial and Federal government agencies.

Skyline Explorations Ltd. (1987) submitted a Stage I report for its REG property in March 1987. The REG claims border the Cominco/Delaware SNIP claims along the southern boundary. B.C. Hydro has also collected considerable information on the Iskut/Stikine area for potential hydroelectric developments. Hatfield Consultants Ltd. (1987a) prepared an environmental summary and compendium of information for the SNIP property. In addition, Hatfield (1987b) conducted on-site water quality and fisheries studies in June and September, 1987. All existing information pertinent to the project area will be reviewed and used to supplement data gathered during Stage I environmental studies. The proposed program of environmental studies is outlined below.

5.3.1 Climate

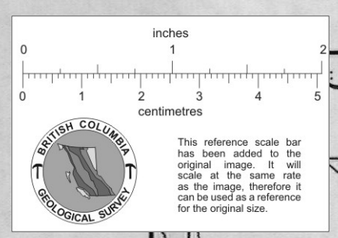
Regional climate data for the project will be evaluated in the Stage I report. Atmospheric Environment Service stations at Stewart, Telegraph Creek and Bob Quinn Lake have relatively long term data on temperature and precipitation. The B.C. Air Studies Branch has operated a number of climate stations near the SNIP

property. The nearest climatological stations to the study area are Forrest Kerr Glacier and Forrest Kerr Low, located approximately 35 km to the north. Mean temperature, precipitation and snowpack data are available for the Forrest Kerr Glacier. Snow course data are available from a station at Snippaker Creek, 20 km to the southeast, and the Forrest Kerr station. A rain gauge has been installed at the SNIP exploration camp. Max/min thermometers will be installed in the near future to provide some short term weather data for comparison to nearby weather stations.

5.3.2 Hydrology

Three stream gauging stations were established by Norecol in late October/early November, 1987 on Bronson Creek near camp, near the mouth of Monsoon Creek, and upper Sky Creek (Figure 6). Each installation consisted of a staff gauge, crest gauge and discharge measurements. Additional measurements of stream discharge and water level will be made over as wide a range of flows as possible to develop stage-discharge rating curves. Staff gauges will be read 1-2 times a week throughout the exploration program by Cominco personnel.

Regional hydrology studies will evaluate all existing information pertinent to the project area. This will provide data on storm events, peak flow, base flow and will provide data for comparison with regional stations.



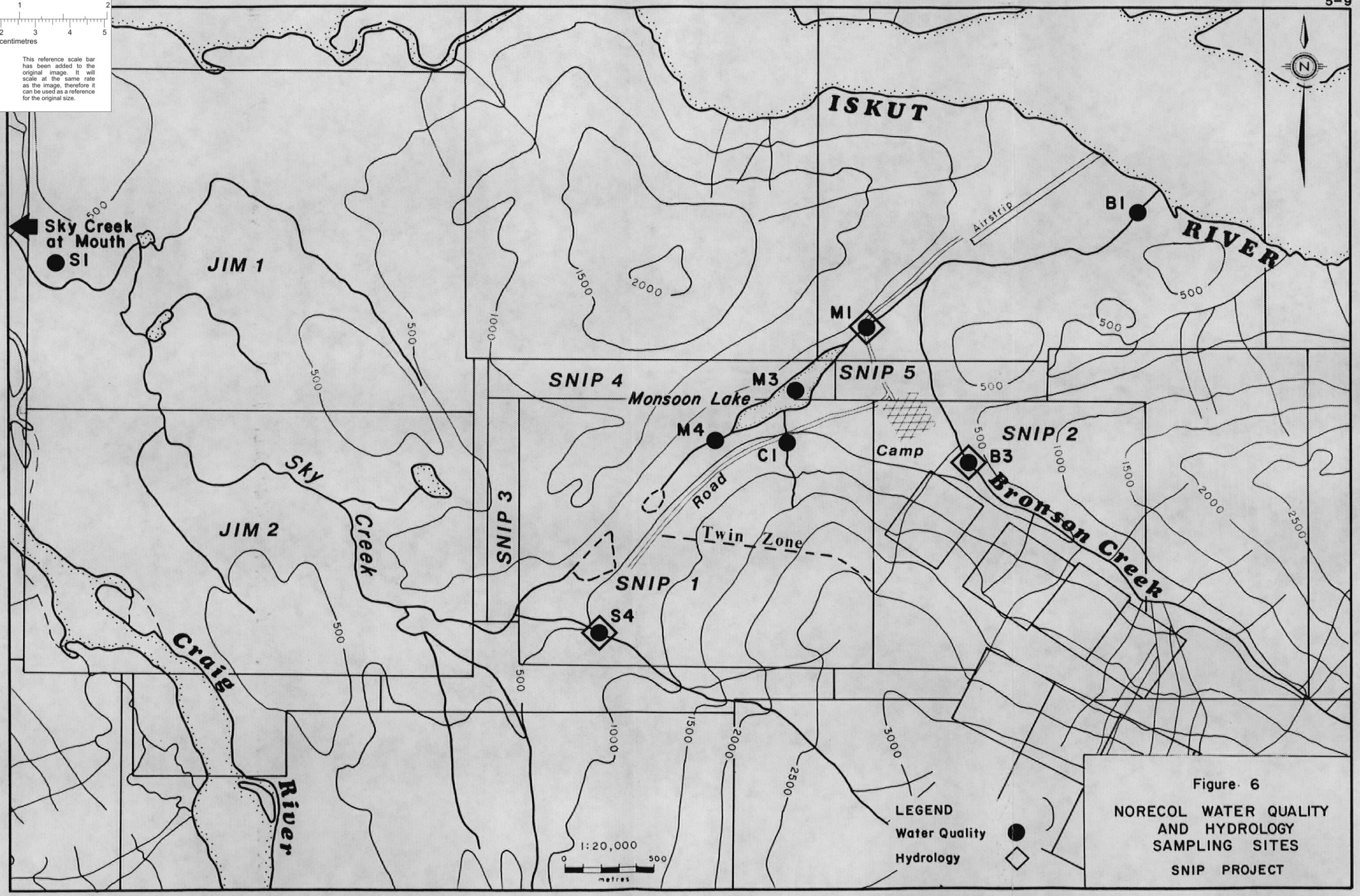


Figure 6

NORECOL WATER QUALITY AND HYDROLOGY SAMPLING SITES

SNIP PROJECT

5.3.3 Groundwater

No information on groundwater exists for the project area. Information on quantity and quality of groundwater will be assessed during the Stage I environmental program. Aquifers and aquitards will be identified and water samples will be collected from flowing boreholes, springs or seeps. Shallow drilling and piezometer installation will be used where necessary to characterize the groundwater.

5.3.4 Water quality

Water quality has been monitored by the Ministry of Environment and Parks (MOEP) on the Iskut River approximately 5 km from its mouth (Station No. 9020125) from March 1969 to January, 1984. The existing data base in 1986 for the immediate project area includes data collected for the Skyline Stage I report and on the SNIP property in 1987 by Hatfield Consultants Ltd. These data will be used to supplement 1987/88 data collected by Norecol. Norecol sampled several sites for water quality (Figure 6) in late October 1987 to characterize fall conditions. Additional samplings at most of these sites will occur during winter low flow, spring freshet and summer low flow conditions. The parameters and their respective detection limits for Norecol samplings are shown in Table 1.

5.3.5 Acid generation

A preliminary sampling program will assess the potential for acid generation at the project site.

TABLE 1

PROPOSED STAGE I WATER QUALITY ANALYSIS PROGRAM

Characteristics	Detection Limits
Temperature	field
pH	lab
Total Solids	
Suspended Solids	1 mg/l
Turbidity	0.1 NTU
Specific Conductivity	1 umhos
Total Hardness	1 mg/l
Total Alkalinity	1 mg/l
Sulfate	1 mg/l
Nitrate	5 ug/l as N
Nitrite	2 ug/l as N
Ammonia	5 ug/l as N
Total phosphorus	3 ug/l as P
Total Cyanide	1 ug/l
Total Mercury	0.05 ug/l
Total and dissolved	
Aluminum	10 ug/l
Antimony	2 ug/l
Arsenic	1 ug/l
Barium	5 ug/l
Cadmium	0.2 ug/l
Cobalt	1 ug/l
Chromium	1 ug/l
Copper	0.5 ug/l
Iron	5 ug/l
Lead	1 ug/l
Manganese	1 ug/l
Molybdenum	5 ug/l
Nickel	2 ug/l
Selenium	1 ug/l
Silver	0.2 ug/l
Zinc	0.5 ug/l

Representative samples of waste rock, ore and tailings materials will be collected and submitted for testing. Samples will be analyzed for total and sulfide sulfur, paste pH, and neutralizing potential. For waste rock, a minimum of three samples of each lithology will be tested. Representative samples will be selected by the project geologist.

5.3.6 Fisheries

Hatfield Consultants Ltd. conducted on-site fisheries investigations on the Cominco/Delaware SNIP property June 30 - July 1 and September 15 - 16, 1987. Preliminary habitat assessments were based on aerial and foot surveys and existing information from aquatic biophysical surveys conducted in 1982 by the B.C. Ministry of Environment. Fish sampling was conducted in September 1987 on Monsoon and Bronson creeks and the Iskut River.

Fisheries investigations were conducted by Norecol on the SNIP property in late October 1987. Fish sampling and fish habitat assessments were conducted on mine area drainages. Adjacent areas of the Iskut and Craig rivers were surveyed by helicopter to document coho salmon spawning areas.

Additional fish sampling will be conducted in the spring to document cutthroat trout spawning in mine area drainages.

5.3.7 Soils and surficial geology

Generalized mapping of soils in the project area has been undertaken by the Ministry of Environment. Some limited interpretations of this mapping will be carried out along with further work to verify and describe on-site conditions. This information will be used to provide background environmental data and also for input to location and design of mine site facilities and for the formulation of site reclamation plans. A terrain features map will be prepared at a more detailed scale than MOEP mapping. Map units will be verified and terrain hazards documented. Analyses of the results will pay particular attention to identifying soil units which would pose problems with construction of roads and mine site facilities.

5.3.8 Vegetation

Regional scale vegetation studies have been conducted for B.C. Hydro and Power Authority as part of their assessments for proposed hydro electric developments of the Iskut and Stikine rivers. This broad scale survey covers a very large area and describes several major biogeoclimatic zones and a number of vegetation types comprising the zones.

Field work will be conducted in summer 1988 to describe actual vegetation units on the project area and to map basic habitat types. This information will be used in the interpretation of wildlife habitat use in the project area and is essential toward an understanding of wildlife habitat relationships. The general, broad

scale vegetation studies done for B.C. Hydro can be used as a general reference but are not detailed enough to specifically identify habitat relationships for wildlife and potential habitat relationships for the project area.

5.3.9 Wildlife

Biophysical capability mapping for ungulates has been undertaken for the region by the Ministry of Environment and Parks. This provides general capability interpretations for wildlife for the region, as based on terrain units. The project area has been identified as comprising moose summer range and mountain goat range.

Specific wildlife data for the project area are lacking. Such data are required for an assessment of wildlife values in the area and will be collected on a seasonal basis. An observation log is being kept by camp staff which will be valuable in the assessment. Site specific wildlife surveys will be done during the winter period (February - March) to document winter distribution and snow conditions. The work will be repeated in the spring - early summer to document ungulate calving and lambing in the area. The surveys would also document the occurrence and distribution of raptors, carnivores and furbearers in the area. A spring survey would document grizzly bear and black bear use of the area.

5.3.10 Resource use, heritage

General resource use capability and land tenure has been described by Hatfield Consultants Ltd. (1987) and only limited additional work and some verification will be required. Heritage resource values would be assessed from existing information at the "overview" level, identifying heritage potential into broad classes such as low, medium and high. Detailed heritage work would be conducted only if required and would depend on the findings of the overview study.

5.3.11 Supplementary studies

In addition to the aforementioned surveys and studies, the Stage I program will address water management, waste management and reclamation and provide conceptual plans in the Stage 1 report. All three plans will be comprehensive and will address potential problem areas.

5.3.12 Socio-economic

Due to the small size of the project and required workforce and because fly-in/fly-out transportation is proposed, the socio-economic impact on surrounding communities is expected to be minimal. Northwest communities such as Stewart, Iskut, Dease Lake, Smithers and Terrace would be the main centres for employee housing and for the purchase of goods and services.

Recent work on the Mt. Klappan, Kutcho Creek, Johhny Mountain, Golden Bear, Energex Al and Lawyers projects

has collected a substantial amount of information on the local communities, available construction and operational labour force, breakdown of available labour skills, available housing and the feasibility of a fly-in/fly-out mining operation. This information will be reviewed for the SNIP project and presented in the Stage I report.

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