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Mineral Industry Report 1975 Yukon Territory

EGS 1976-15

W. D. Sinclair
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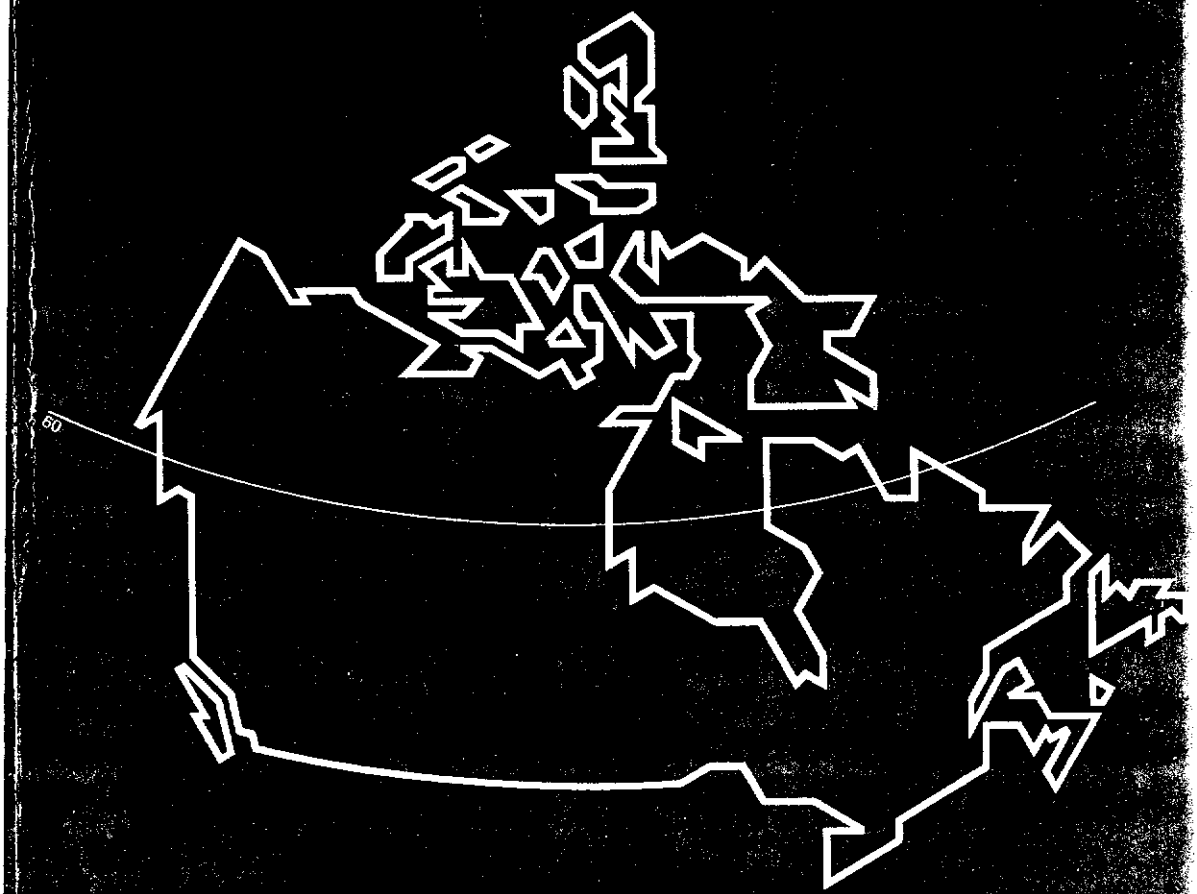
M. Marchand



MINERAL INDUSTRY REPORT

1975

YUKON TERRITORY

BY

W.D. SINCLAIR
J.A. MORIN
D.B. CRAIG
M. MARCHAND

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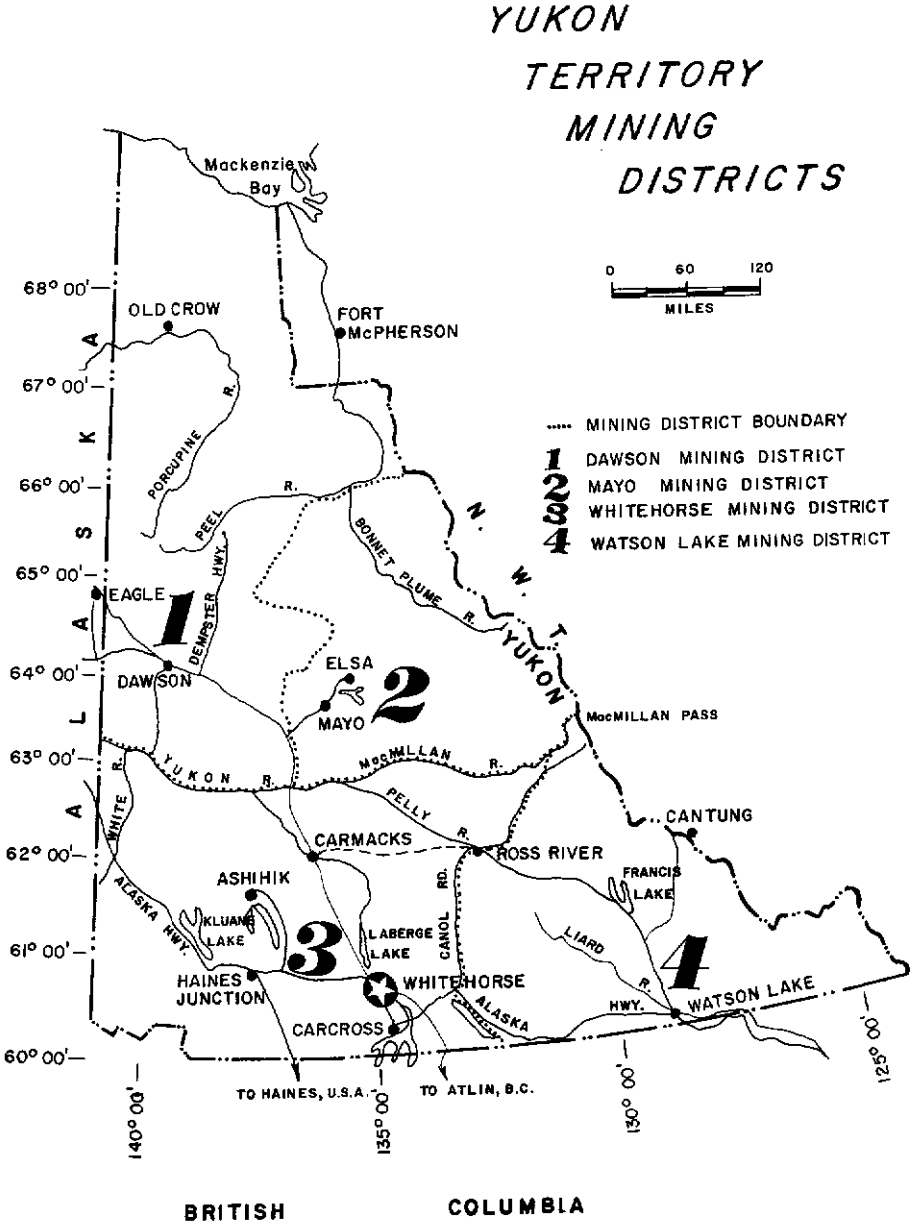
YUKON
TERRITORY
MINING
DISTRICTS
0 60 120
MILES
..... MINING DISTRICT BOUNDARY
1 DAWSON MINING DISTRICT
2 MAYO MINING DISTRICT
3 WHITEHORSE MINING DISTRICT
4 WATSON LAKE MINING DISTRICT
Mackenzie Bay
68° 00'
67° 00'
66° 00'
65° 00'
64° 00'
63° 00'
62° 00'
61° 00'
60° 00'
OLD CROW
FORT McPHERSON
PORCUPINE R.
PEEL R.
DEMPSTER HWY.
EAGLE
DAWSON
ELSA
MAYO
BONNET PLUME R.
N. W. T.
YUKON
MacMILLAN PASS
YUKON R.
MacMILLAN R.
PELLY R.
WHITE R.
CANTUNG
CARMACKS
ROSS RIVER
ASHIHIK
ALASKA HWY.
KLUANE LAKE
LABERGE LAKE
CANOL RD.
FRANCIS LAKE
LIARD R.
HAINES JUNCTION
WHITEHORSE
ALASKA HWY.
HWY.
WATSON LAKE
CARCROSS
TO HAINES, U.S.A.
TO ATLIN, B.C.
140° 00'
135° 00'
130° 00'
125° 00'
ALASKA
BRITISH COLUMBIA

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INTRODUCTION

This report is a review of the Yukon mineral industry for 1975 by officers of the Geology section, Northern Natural Resources and Environment Branch, Department of Indian and Northern Affairs. It includes descriptions of work conducted on mineral claims by individuals and mineral exploration companies and operating summaries of the several producing mines in the Yukon. Earlier records of mineral industry activities are presented in the Annual and Summary Reports of the Geological Survey of Canada (1898 to 1933), Memoirs of the Geological Survey of Canada (1934 to 1940), Papers of the Geological Survey of Canada (1960 to 1968) and Mineral Industry Reports of the Department of Indian and Northern Affairs (1969 to 1974).

Information in this report was obtained from visits to mineral properties, from personal communication with individuals and from technical reports, trade journals, newspapers, publications of the Geological Survey of Canada and the monthly reports of the District Mining Recorders. Considerable information was provided by exploration companies in completing and returning the questionnaires on each of the properties on which work was conducted. The cooperation of industry in this regard is gratefully acknowledged. A great deal of valuable information is contained in the geological, geochemical and geophysical reports accepted for credit as assessment work by the Department of Indian and Northern Affairs. A list of assessment reports, both confidential and those available for inspection, are included in the list of Technical Reports prepared by the Canada Center for Geoscience Data for the Department. These reports are listed by NTS locations and are produced annually in February of each year. The assessment reports are currently released for public inspection six months after the claims (on which the work was carried out) have lapsed.

In this report, activities of the mineral industry are divided into lode mining and exploration, coal mining and exploration and placer mining. Each of these sections are further subdivided into the separate mining districts in the Yukon (see the frontispiece). Individual properties in the various mining districts are then listed in order of their occurrence based on the National Topographic System. The location of each property is given by its National Topographic System designation of the 1:50,000 map-sheet in which the property lies and by the latitude and longitude of the centre of the property. In cases where a property involves a large number of claims or covers more than one NTS sheet, several latitudes and longitudes and more than one NTS designation are given. The name or names given to a property are generally the names of the claims that constitute the property. However, if there is a name by which a property was originally or formerly known and which is commonly used at present, then this name takes precedence.

During the 1975 field season, W.D. Sinclair visited lode mining and exploration properties in the Whitehorse and Watson Lake Mining Districts and carried out additional field work in the Minto area. J.A. Morin visited lode mining and exploration properties in the Mayo Mining District and carried out field investigations in the Moosehorn Range area in the Whitehorse Mining District. D.B. Craig visited placer mining properties in the Yukon Territory and lode mining and exploration properties in the Dawson Mining District. In addition to the above, W. Styan carried out detailed investigations of the King Lake and Kreft-Takacs properties in the Whitehorse area and of the Laforma property in the Dawson Range. The results this work are embodied in the respective property descriptions contained within this report. M. Marchand, who joined the staff of the Geology Section late in 1975, has contributed significantly to the writing and organization of this report.

Asterisks (*) placed after the claim name indicate that the property was visited by one of the geological staff. The addresses of the companies have been consolidated and placed in a section at the end of this publication.

Facilities of the Geological Section

The Geology Office sells topographical, geological, aeronautical, and land-use maps, as well as Geological Survey of Canada publications, covering the Yukon and some adjacent parts of B.C. and the N.W.T. A library of G.S.C., B.C. Dept. of Mines, Alaska Bureau of Mines, U.S.G.S. Alaska publications, and other geological books and journals is available for consultation. Some open file reports on the Yukon are also available for viewing. A sizeable collection (25,000) of air photos covering the Yukon from Latitude 60° to 65° is available for use in the office as is the latest catalogue of Yukon Air Photos from the National Air Photo Library. An updated computer list of 'good' quality photos of the 1972-1975 satellite [LANDSAT] imagery of the Yukon is included in the Air Photo catalogue. We also have a LANDSAT mosaic of the cordillera on display and a nearly complete collection of colour LANDSAT photos of the Yukon

The H.S. Bostock Core Library, situated across the street from the Geology Office, contains drill core from various Yukon mining properties, some available for inspection and the remainder confidential. The core library also contains working quarters equipped with diamond saws, a core splitter, a vibrating polisher, rock staining facilities and fume hood. A petrographic microscope, with capabilities for both transmitted and reflected light, and a binocular microscope are also situated in the core library. The Geology Office acquired the McPhar Spectra 44, a four channel gamma-ray spectrometer and a new UV light for the '76 field season. The equipment and instruments are available for use by industry personnel on arrangement with one of the geologists.

The office is staffed by four geologists who welcome visits by exploration personnel when they are in town. The office is situated at 200 Range Rd. in the Takhini sub-division, about halfway between downtown Whitehorse and the airport, at the top of "Two Mile Hill". The staff and their telephone extensions are listed below:

Doug Craig, Regional Geologist 136; Dave Sinclair, District Geologist 137
Jim Morin, District Geologist 138; Mike Marchand, Staff Geologist 136
Beth Phillips, Clerk & Map Sales 140.

Telephone - 403-668-5151 Telex - 036-8-342
Mailing Address:

Geology Section
Dept. of I.A.N.D.
200 Range Road
Whitehorse, Yukon
Y1A 3V1

TRANSPORTATION FACILITIES

Whitehorse, with a population of roughly 14,000 in 1975, is the capital and main distribution centre in the Yukon. It is serviced by ship and rail via Skagway and by truck, bus and air from Edmonton and Vancouver. From Whitehorse, all-weather surface transportation routes connect to Dawson, Carmacks, Faro, Ross River, Watson Lake, Haines Junction, Alaska and points between. (Regular bus and freight services are available.) Minor roads connect with many mining properties, ranches and timber leases. Boats or barges are also used on occasion to transport heavy equipment and fuel on the Yukon River. Fixed wing and helicopter aircraft are available for charter at Whitehorse, Ross River and Watson Lake throughout the year and at numerous other points during the summer months. Representative costs for transportation in the Yukon during 1975 are given in Table 1.

TABLE I

Transportation Costs, Yukon Territory, 1975

RAIL AND BOAT

Ore and concentrates, Whitehorse to North Vancouver

Lead, zinc and copper con's (30,000 lb. carloads)...$16.00/ton
Asbestos fibre, in sacks....1st 60,000 tons.....$19.34/ton
....next 40,000 tons.....$17.14/ton
in excess of 100,000 tons...$13.84/ton

Mining equipment and related supplies - North Vancouver to Whitehorse (dollars/100 lb.)

	10,000 lb.	24,000 lb.	36,000 lb.
Machinery	4.35	3.80	3.70
Petroleum Products	4.65	4.15	4.00
Drilling mud, plywood	4.35	3.80	3.70

Backhaul rate up to 12 months is 2/3 of applicable commodity rate.

TRUCK

Basic industrial rates - Whitehorse from Edmonton and Vancouver (dollars/100 lb.)

	100 lb.	1,000 lb.	5,000 lb.	10,000 lb.
From Edmonton	13.75	8.53	7.15	6.20
From Vancouver	15.55	10.69	8.54	8.05

Table I (cont'd)

BUS

Express rates - Whitehorse from Edmonton and Vancouver (dollars)

	1-2 lb.	2-10 lb.	40-50 lb.	90-100 lb.
From Edmonton	4.30	6.50	14.65	18.25
From Vancouver	4.70	6.50	15.60	22.80

AIR

Air Express rates - Whitehorse from Edmonton and Vancouver (dollars)

	min. 1 lb.	min. 3 lb.	10-11 lb.	16-20 lb	91-100 lb.
From Edmonton	-	11.00	13.30	16.00	40.00
From Vancouver	11.00	-	13.85	17.00	45.00

Air Freight rates - Whitehorse from Edmonton and Vancouver (dollars)

	min. 30 lb.	min. 50 lb.	50-100 lb.	over 500 lb.
From Edmonton	-	13.00	.26/lb.	.24/lb.
From Vancouver	8.00	-	.26/lb.	.22/lb.

CHARTER AIRCRAFT

Type	Rate per hour	Rate per mile
Fixed Wing		
Cessna 185	$120.00	$0.90
Beaver	125.00	1.20
Turbo Beaver	175.00	1.35
Otter (single)	170.00	1.55
Otter (twin)	305.00	1.90
Beech Travelair	145.00	0.80
Helicopter (fuel supplied by charterer)		
Bell 47G-3B-1	$180.00	
Bell 47G-3B-2	180.00	
Bell 206B	290.00	
Hughes 500C	260.00	
Hiller 12E	160.00	

MINERAL PRODUCTION OF YUKON

Mineral production in Yukon Territory in 1975 came from three underground and two open-pit mines which together produced lead, zinc, copper, and silver concentrates, asbestos fibre and coal. The current and cumulative values of the mineral production summarized in Table II show a preliminary value of $229 million for 1975 compared with $171 million in 1974. Production of copper decreased slightly while that of lead, silver, zinc and asbestos increased significantly. This was due mainly to increased production at the Anvil Mine. Individually, the Anvil Mine continued to be the Yukon's leading mineral producer ($150 million) followed by Clinton Creek ($32 million), Whitehorse Copper Mines ($15 million) and United Keno Hill Mines ($16 million). Production of coal from the Tantalus Butte Mines was used almost entirely for heating and concentrate drying at the Anvil Mine.

TABLE II

Mineral Production, Yukon Territory

Product	1973	1974	1975[1]	Cumulative totals[1] 1886-1975
Gold...$	2,032,502	4,111,631	4,245,000	278,907,486
ounces	20,856	26,472	26,000	
Silver...$	15,342,856	26,800,905	29,434,000	234,957,995
ounces	6,073,973	5,789,783	6,516,000	
Lead...$	38,013,324	41,194,600	56,260,000	280,583,867
pounds	235,522,452	198,950,056	276,466,000	
Zinc...$	61,167,027	60,899,995	95,159,000	365,836,876
pounds	253,321,575	174,498,553	253,757.000	
Cadmium...$	45,718	17,331	11,000	6,362,566
pounds	12,560	4,358	4,000	
Copper...$	14,791,665	15,571,426	11,580,000	73,886,410
pounds	23,186,245	20,086,720	18,180,000	
Asbestos...$	13,915,140	22,752,400	31,970,000	128,961,070
tons	100,734	90,896	112,000	
Coal...$				
tons	19,915	17,027	25,712	
TOTALS	150,667,311	171,348,288	228,659,000	1,381,814,816

[1]preliminary figures. Cumulative totals for 1973 and earlier include production of nickel and platinum.

In the Watson Lake Mining District, Canex Placer continued to work on their lead-zinc deposit at Howard's Pass, completing nearly 12,000 feet of diamond drilling.

Noranda Exploration began a re-evaluation of the McMillan lead-zinc deposit near Hulse Lake and carried out a program of diamond drilling totalling over 8,400 feet.

Granby Mining drilled 4,600 feet on the MEL lead-zinc-barite property near Otter Lake. The main zone on the property was estimated to contain 3 million tons grading approximately 8 per cent combined lead-zinc.

Exploration activity in Mayo Mining District was considerably diminished in 1975 compared to 1974. A good portion of the continuing activity involved detailed property work and evaluation. As in 1974, the carbonates received the greatest share of attention. In the Corn Creek area, Cominco conducted diamond drilling programs on the DF and PING claim groups over showings in Upper Hadrynian dolomite. On the Goz Creek property, the drilling program of Barrier Reef Resources Limited led to the delineation of 12 million tons of ore averaging 8 per cent zinc. McIntyre Mines Limited drilled their TARA (Nadaleen Mountain) and TOM (south of Bonnet Plume Lake) claim groups for lead-zinc. In the northern part of the Bonnet Plume River area, Archer-Cathro (Ogilvie Joint Venture) conducted 1,328 feet of diamond drilling on their FLUNK claim group and determined weak sphalerite mineralization in a Lower Cambrian dolomite unit for at least 1,400 feet.

In the Macmillan Pass area, Clyde Smith's Ogilvie Joint Venture initiated a drilling program on the JASON claim group in their search for Pb-Zn-Ba mineralization similar to the nearby TOM deposit. Union Carbide conducted a drilling program on Mount Armstrong to evaluate several pods of scheelite-bearing sulphide skarn.

LODE EXPLORATION

Mineral exploration activity in Yukon Territory was responsible for the spending of $16.5 million in 1975, up from $11.9 million in 1974. In addition to this, feasibility studies and underground drifting on the GRUM lead-zinc deposit cost $4 million. Activity consisted mainly of assessment work and drilling on claims staked in the past two years. This is shown by the decrease in total number of claims staked in Yukon, from 13,734 in 1974 to 8,559 in 1975. (Table III)

TABLE III

Mineral Claims Staked, Yukon Territory

Mining District	1971	1972	1973	1974	1975
Dawson	1,054	669	1,168	1,504	1,695
Mayo	1,026	1,784	2,587	6,038	1,609
Watson Lake	1,245	2,470	2,509	1,325	1,801
Whitehorse	4,380	1,922	3,119	4,867	3,454
TOTALS	7,705	6,845	9,383	13,734	8,559

In the Whitehorse Mining District, the most significant activity occurred in the Anvil Range. Kerr Addison began a $6 1/2 million program of surface and underground development on the GRUM property five miles northwest of Faro. Work to date has included installation of a semi-permanent camp, an underground decline roughly one-half mile long, and 68,000 feet of surface diamond drilling. Cyprus Anvil also conducted diamond drilling on several properties in the Anvil Range. A number of other companies, including Welcome North, carried out surface exploration in the area.

The discovery of gold in quartz veins in the Moosehorn Range area resulted in the staking of a large number of claims in this area. Although subsequent drilling on properties owned by Great Bear Mining Limited and Claymore Resources Limited was discouraging, interest was aroused later in the season in the potential for placer gold deposits in the area.

In the Dawson Range, Western Mines carried out 5,000 feet of diamond drilling on the CAR claims southwest of Prospector Mountain and Rayrock Mines completed over 7,000 feet of diamond drilling on the Laforma property on the southwest flank of Freegold Mountain.

In the Whitehorse Copper Belt, Whitehorse Copper Mines drilled several skarn occurrences, including the Kreft-Takacs property on Jackson Creek. United Keno Hill Mines drilled 5,000 feet on the King Lake property northwest of Whitehorse.

Progress Report on The Clinton Creek Asbestos Project

by
M. Htoon
Department of Geological Sciences
University of British Columbia

GENERAL GEOLOGY

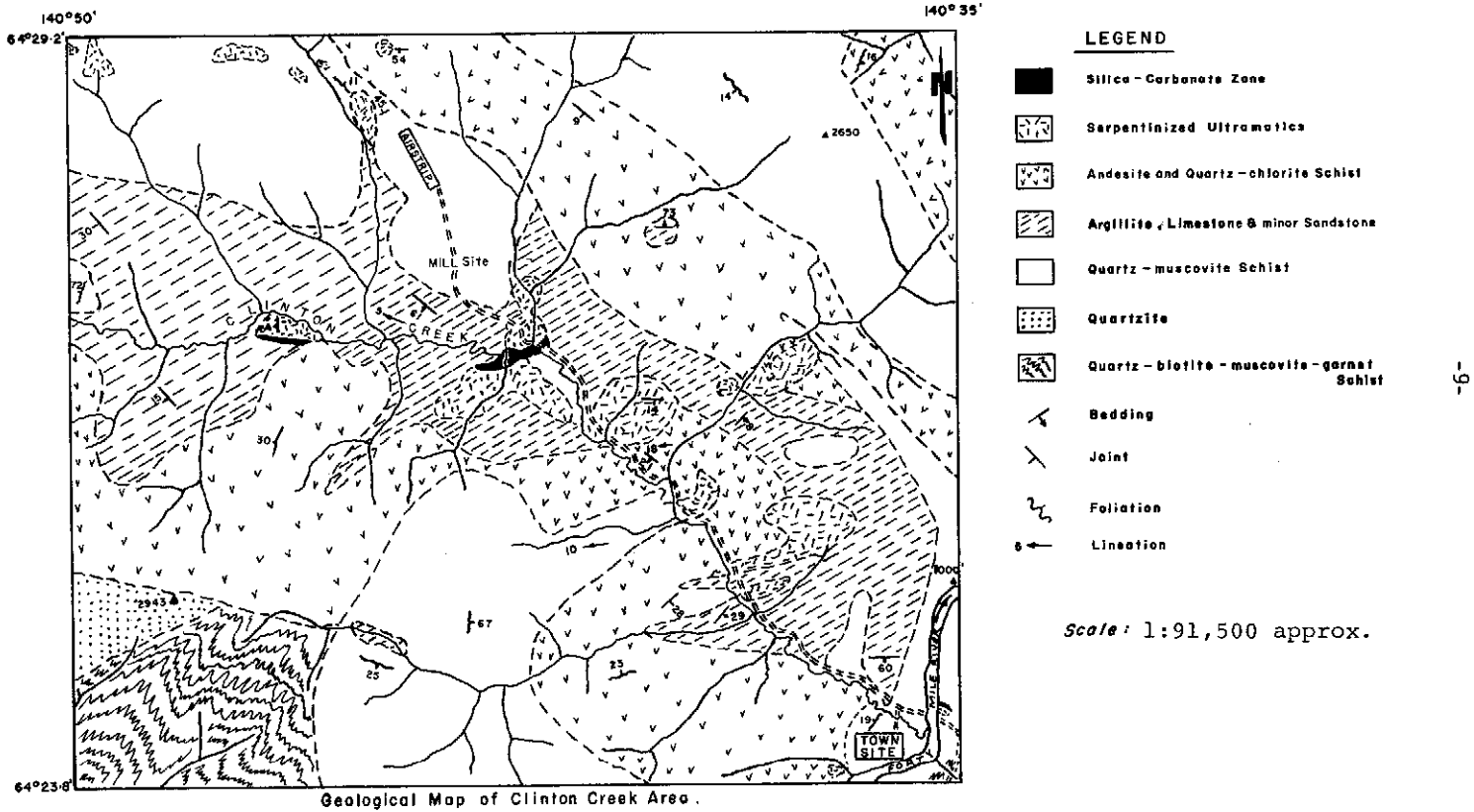
The Clinton Creek asbestos deposit is situated at latitude 64°23' and longitude 140°43' in western Yukon. (Fig. 1) About a 60 square mile area around the deposit was mapped during 1975 at a scale of 1:12,000. The mine site itself was mapped at 1:12,000 (1 inch = 100 feet). Rock exposure is less than 5 per cent and most outcrops are at the mine and along road sections. A few exposures occur along streams and very steep sides of hills.

Country rocks are metamorphic rocks of the Yukon Group, whose age, though uncertain, is believed to be late Precambrian and/or early Paleozoic. Specific lithologies found within the area include thin-bedded limestone, sandstone and shale in the sedimentary category; argillite, marble, slate, phyllite, quartz-mica schist, chlorite schist, talc-chlorite schist, quartz-biotite schist, quartzite and quartz-biotite gneiss in the metamorphic group; and diorite, andesite, serpentinized ultramafites and serpentinites in the igneous group. Quartz-carbonate rock is found as an alteration product here and there throughout the area adjacent to some serpentinite bodies.

There are four major structural trends in this area that could be delineated only by detailed mapping of individual outcrops. Probably the oldest and most complex trend (300° to 315° azimuth) is roughly parallel to the direction of the Tintina Trench. The second oldest trend is approximately east-west (080° to 090° azimuth). The third and fourth structural trends are southwesterly and northerly, but no evidence has yet been found to show the relative ages of these two youngest structural elements. North-trending structural features are not well preserved within the mapped area.

There are several small ultramafic bodies intruded into the metamorphic rocks of this area. Thus far, 18 ultramafic bodies of variable size have been mapped by the author within the principally metamorphic terrain. Almost every serpentinite mass contains chrysotile, but the amount and quality is highly variable. In general, ultramafic bodies intruded into schists contain very little fibre, whereas those intruded into limy argillites have appreciably more fibres. Porcupine and Snowshoe ore bodies are in contact with limy argillites and intercalated limestone. The ore-bearing, ultramafic body trends northeast in an elongated dome shape. Its upper surface plunges 10° to the southwest beneath graphitic, limy argillites. The ore zone is restricted to the northwest side of the serpentinite body. Its northwest end is terminated by a limonitic-silica-carbonate zone which acts as a hanging wall. To the southeast the ore body is bounded by a highly sheared serpentinite zone.

The overall distribution pattern of chrysotile vein orientations appears random on standard stereonet plots. Examination of individual chrysotile veins in a specific shear zone, shows them to be curvilinear, indicating an explanation of the apparent random dispersion of vein orientations. If generalized attitude of individual veinlets in a shear zone are considered, particular trends are apparent. There are 4 such trends that correlate with the major structural trends of the region. The maximum concentration of generalized vein orientations (300° - 315°) parallels the oldest structural alignment of the area. A second vein concentration trends 080° - 090°, and minor, but economical, concentrations parallel the remaining two structural elements of the area. One might speculate that more than one period of chrysotile formation occurred in this region but more evidence is necessary.



Geological Map of Clinton Creek Area.

Figure 1.

CHARACTERISTICS OF CHRYSOTILE VEINS

a) The fracture-filling character of many veins is shown by the cross-cutting character (Fig. 2a) where vein "a" is cut by vein "b" to produce a lateral shift in the positions of the 2 segments of vein "a".

b) Picrolite veins almost invariably truncate chrysotile veins (Fig. 2b). Some chrysotile veins are coated with picrolite that is normally thick on one side of the vein and thin or absent on the other side.

c) Where two semi-parallel veins are joined by a third veinlet or two semi-parallel veins merge, a central layer of magnetite and/or picrolite is present at the zone of merging (Fig. 2d; 2e). Several magnetite "trains" can also be present, inclined slightly relative to the vein orientation (Fig. 2f). In one case a fibre vein was found to be bordered by thin zones of magnetite (Fig. 2g).

d) There is a direct relation between quantity of fibres and intensity of fracturing. The quantity of fibre increases with increase in fracture density. Fibre length varies inversely with intensity of superposed fracturing and shearing (fig. 2h; 2i). If a zone is severely sheared (to the degree of fish scale shearing) there is very little or no fibre present (Fig. 2j). This indicates that fibre destruction is due mainly to mechanical deformation.

In these very highly sheared zones fibres survive locally. Such fibres occur on slip planes or close to slip planes and are brittle, brownish and have a multiple fibre character. The existance of pre-shearing fibre can also be proved by chrysotile-bearing massive blocks of serpentine surrounded by non-fibre-bearing, very highly sheared zones (Fig. 2k).

e) Apparent cross-cutting relationships of the veins do not serve to determine relative ages of the vein. Vein "a" cuts vein "b" at one level but vein "b" cuts vein "a" only a few feet above (Fig. 2l). In some cases two veins which appear to have a cross-cutting relationship, have a continuous fibre through both veins at their point crossing (Fig. 2m; 2n).

f) Fibres filling tension gashes seem to represent the initial stage of the growth of multi-fibre vein (Fig. 2o; 2p).

g) Figure 2q shows the relationship of the orientation of fibres with the direction of movement. Maximum stress direction is assumed to be parallel to the direction of movement, that is, parallel to vein "a". Thus, it is found that:

i) Inclination of fibre to the walls of the vein is (10°) in vein "a".

ii) Vein "b" which is sub-parallel to the force direction has an angle of 35°.

iii) The angle between fibre and wall is about 55° in vein "d", which is oriented at about a 45° angle to the force direction.

iv) Vein "c", nearly normal to the force direction has an 85° angle between wall and fibre. It yields by offset parallel to fibre rather than shearing.

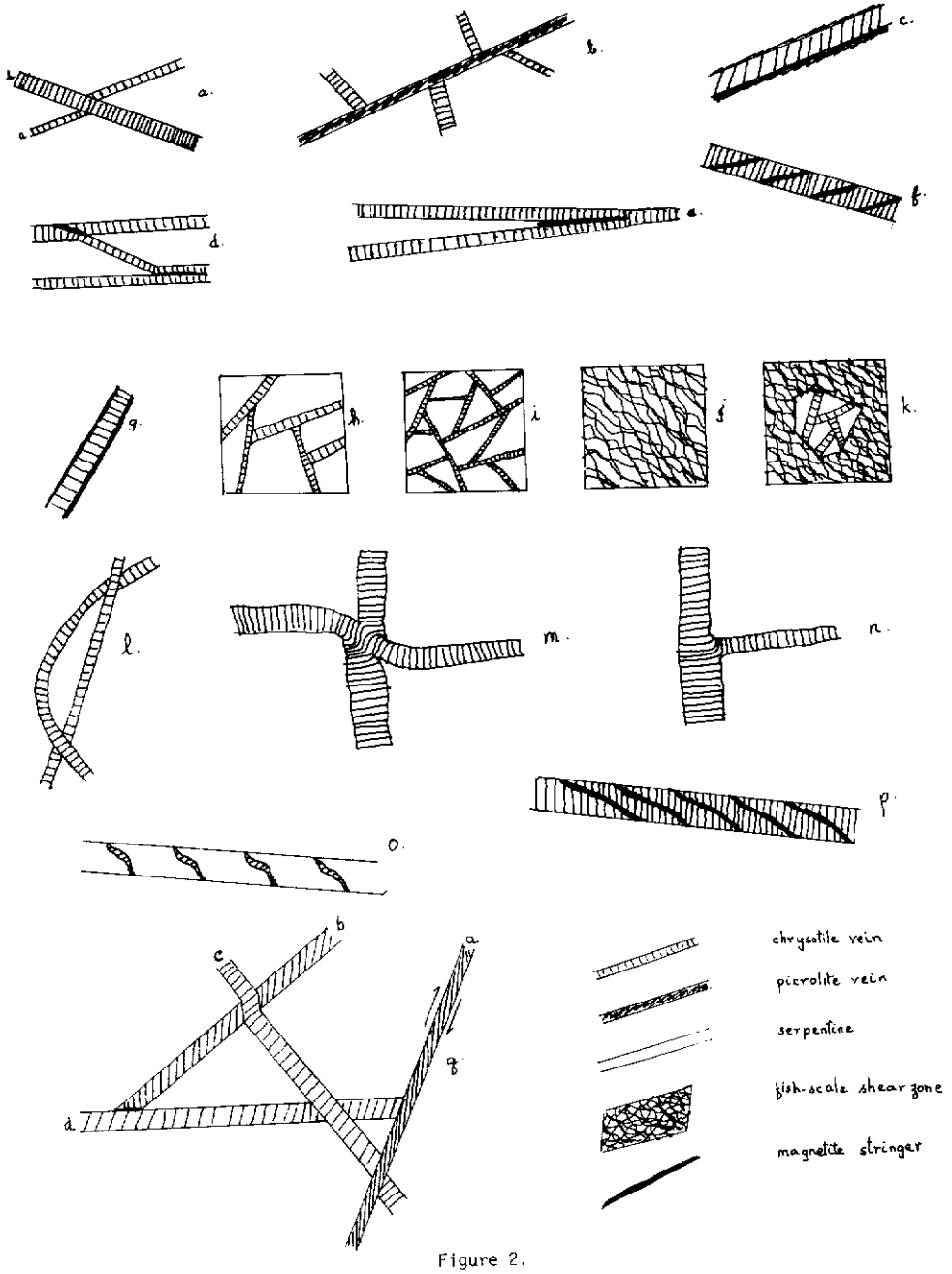

a.
b.
c.
d.
e.
f.
g.
h.
i.
j.
k.
l.
m.
n.
o.
p.
a
b
c
d
g
chrysotile vein
picrolite vein
serpentine
fish-scale shear zone
magnetite stringer

Figure 2.

Degree of serpentinization and intensity of fracture seem to be the major controlling factors for the formation of chrysotile crystallized in both shrinkage and tectonic fractures. Tectonic fractures seem to be more important for development of most economically important fibres. Deformation associated with intermediate to high angle faulting probably gives rise to fibre formation. Reverse and thrust faulting destroyed some of the fibres and divided chrysotile into different spatial zones and different grades.

Ultramafic rocks were serpentinized, and later, under favourable circumstances chrysotile and picrolite were formed. Field evidence shows that these two minerals may also be formed one from the other.

There is a zoning of alteration minerals from centre of the main ultramafite body towards the margins. Magnesite, talc and some quartz characterize the central alteration zone of the body. The marginal alteration zone is serpentinite partly replaced by coarse-grained, dark green chlorite. Chlorite becomes paler, closer to the margin and is associated with tremolite. In some places these marginal alteration minerals penetrate a few feet into adjacent metamorphic rocks, and are found in fractures which are parallel to tranverse faults related to folds whose axes trend east-west.

Silica-carbonate alteration occurs only at the margins of some ultramafics in east-west trending normal faults. This alteration type has a rusty-brown colour due to a high content of limonite and ochre. Opal blocks in this zone are very fragile and colour ranges from orange-brown to "dirty" green. These chunks of opal are generally embedded in muddy and earthy looking groundmass of clay minerals, limonite, ochre, chips of magnesite, calcite and highly altered serpentine.

Seventy thin sections were examined to investigate the different stages of transformation from serpentine to the ultimate complete products replacement by quartz and carbonates. X-ray diffraction and electron microprobe techniques were used to identify those minerals which could not be identified by petrographic methods. A fluid inclusion study is to be carried out to examine the minimum temperature of deposition of quartz-carbonate alteration. Age of metamorphism of metamorphic rocks at the vicinity of mine will be determined by the K-Ar method. Polished-section studies will also be done to reveal the associated apaque minerals and their textural relations relative age and implications.

APPENDIX

PRINCIPAL ROCK TYPES--APPROXIMATE MODES

Serpentinite

Ultramafic bodies around Clinton Creek area are highly serpentinized (more than 90 per cent), but a few still give some indication of the original mineralogical composition.

Approximate Mode

Serpentine (antigorite)	50%
Clinopyroxene (diallage	30%
Orthopyroxene (enstatite)	18% (partially serpentinized to Bastite)
Olivine	trace
Magnetite	2%

∴ Lherzolite

Quartz Carbonate Rock

Quartz	33%
Magnesite	50%
Magnetite	3%
Hematite	10%
Periclase	2%
Calcite	2%

There are 2 generations of quartz and magnesite. Late quartz and magnesite are coarse-grained and normally found in cavities or fractures. Hematite has replaced magnetite. Calcite is a late fracture filling. Rock close to the serpentinite contact has magnesite vein pseudomorphs after chrysotile.

Quartzite

Quartz	86%
Carbonaceous matter	8%
Muscovite	5%
Calcite	1%

Quartz and carbonaceous matter are interbedded. Muscovite is parallel to the plane of layering (schistosity).

Quartz Muscovite Schist

Quartz	60%
Muscovite	25%
Calcite	4%
Magnetite	1%
Sericite	10%

Quartz is commonly recrystalized normal to the previous schistosity plane. Muscovite formed a layering against quartz, but could also be seen within quartz domain, with its elongation parallel to schistosity. Recrystallized coarse-grained quartz has negative association with muscovite within its domain.

Quartz Chlorite Schist (Andesite)

Quartz	27%
Chlorite	20%
Sericite (Muscovite)	17%
Calcite	12%
Epidote (Zoisite)	8%
Hornblende	10%
Oligoclase	3%
Biotite	3%
Magnetite	trace

Quartz-chlorite schist mainly consist of quartz, chlorite, sericite and calcite. It is derived from andesite. Some rocks still show the relicts of original minerals, such as hornblende, biotite and plagioclase. Carbonates and epidote are alteration products of plagioclase. Albitization is also pronounced. Chlorite impregnates all the original minerals.

Argillite

The term argillite includes a group of slightly metamorphosed sedimentary rocks including sandstone and limestone, in which graphitic and/or limy argillite is a major constituent.

Graphite	20%
Calcite	30%
Quartz	25%
Muscovite	3%
Sericite	2%
Pyrite	1%
Clay minerals	20%

Granitic Rocks and Associated Mineral Deposits of the Whitehorse Map-Area, Yukon Territory

by Gregg W. Morrison

Dept. of Geology
University of Western Ontario

Introduction:

This paper is a discussion of preliminary work carried out in the Whitehorse Map-Area on the age, form and composition of the granitic plutons in an effort to determine their relationships to the known mineral occurrences and to explain the apparent absence of porphyry copper deposits similar to those in the Mesozoic of British Columbia and the Lower Tertiary of the west-central Yukon. This is an interim report only, confirmation (or denial) of the ideas set out here depends on the availability of radiometric age determinations on selected granitic bodies. The work has been carried out at the University of Western Ontario with assistance from the Department of Indian Affairs and Northern Development and several mining companies working in the Whitehorse area.

General Geology:

The geology map (Fig. 3) is a modified version of the Geological Survey of Canada four mile map for the Whitehorse Area (Wheeler, 1961). The Mesozoic volcanic and sedimentary units in the eastern half of the sheet belong to the Whitehorse Trough segment of the Hinterland Belt. The igneous and metamorphic rocks in the west are part of the Yukon Crystalline Terrane.

Using the stratigraphic position of the plutons and their form, composition and rock textures as compared with dated bodies in adjacent map-areas, four major subdivisions of the Whitehorse granitic rocks have been recognized. However, the known mineral occurrences appear to be related to only two of the four subdivisions. Each subdivision and its associated mineral occurrences will now be considered in turn.

Upper Triassic - Lower Jurassic Hornblende Granodiorite:

Upper Triassic-Lower Jurassic hornblende granodiorite constitutes approximately sixty per cent of the total granitic rocks in the map-area, is the major phase of the Yukon Crystalline Terrane but also occurs as northwest elongated composite batholiths in the Whitehorse Trough. The composition of the batholiths ranges from quartz diorite to quartz monzonite (Fig. 4). Cobbles and boulders in Upper Triassic and Jurassic conglomerates have a

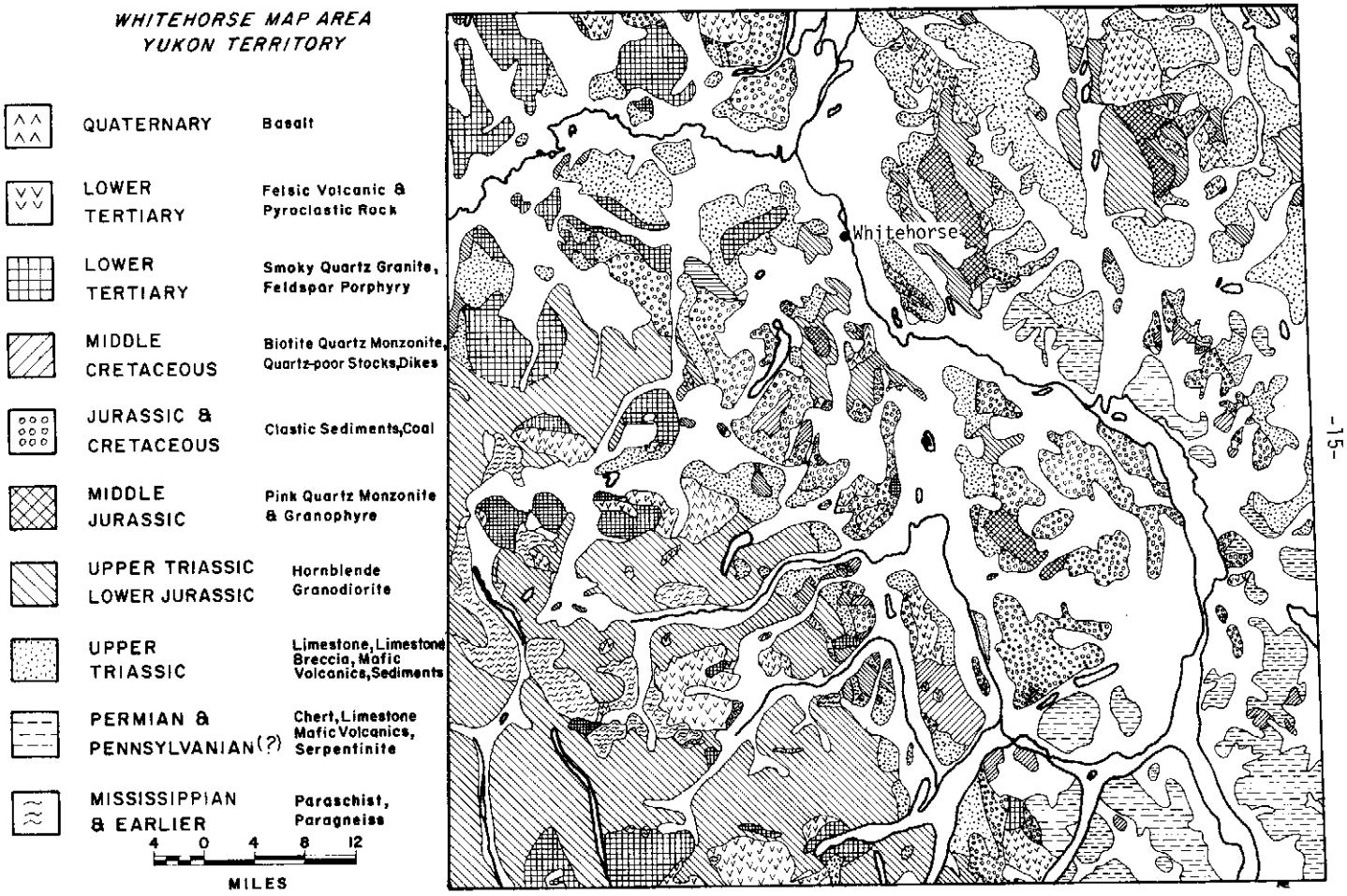

WHITEHORSE MAP AREA
YUKON TERRITORY
QUATERNARY
Basalt
LOWER TERTIARY
Felsic Volcanic & Pyroclastic Rock
LOWER TERTIARY
Smoky Quartz Granite, Feldspar Porphyry
MIDDLE CRETACEOUS
Biotite Quartz Monzonite, Quartz-poor Stocks,Dikes
JURASSIC & CRETACEOUS
Clastic Sediments,Coal
MIDDLE JURASSIC
Pink Quartz Monzonite & Granophyre
UPPER TRIASSIC LOWER JURASSIC
Hornblende Granodiorite
UPPER TRIASSIC
Limestone, Limestone Breccia, Mafic Volcanics,Sediments
PERMIAN & PENNSYLVANIAN(?)
Chert,Limestone Mafic Volcanics, Serpentinite
MISSISSIPPIAN & EARLIER
Paraschist, Paragneiss
4 0 4 8 12
MILES
Whitehorse

Figure 3.

similar range of composition to the Upper Triassic-Lower Jurassic hornblende granodiorite. However, some well-foliated quartz diorite fragments may be more comparable to mid-Triassic quartz diorites of the Tulsequah map-area in northern British Columbia (Souther, 1971). Similar rocks may also outcrop in the Whitehorse map-area. The hornblende granodiorite generally has a weak foliation due to the alignment of euhedral hornblende phenocrysts and is characterised by the presence of coarse yellow sphene crystals.

The copper-iron skarn deposits of the Whitehorse Copper Belt occur in enclaves of Upper Triassic limestone within the Upper Triassic Copper Belt Intrusion. The best mineralization often occurs in stratabound lenses within graphitic, dolomitic limestone underlain by unmineralized quartzite and sandstone. Sharp contacts between the granoriorite and the sedimentary rocks and the virtual absence of hydrothermal alteration, dykes and veins related to the granodiorite suggest the intrusion was passive and had a simple crystallization history. The intrusion may only have acted as a heat source in redistributing metals already present in the sedimentary rocks.

Mid-Jurassic Pink Quartz Monzonite:

Mid-Jurassic pink quartz monzonite and granophyre constitutes about ten per cent of the total granitic rocks in the whitehorse Map-Area. The northwest elongated plutons occur exclusively within the Whitehorse Trough as cores to Upper Triassic granodiorite batholiths. The composition of the plutons is almost entirely within the quartz monzonite field (Fig. 4) and the rock is characterised by altered zoned plagioclase phenocrysts in a pink granophyric groundmass. No mineral occurrences appear to be associated with these plutons.

Mid-Cretaceous Biotite Quartz Monzonite:

Mid-Cretaceous biotite quartz monzonite plutons and quartz-poor stocks and dykes constitute about ten per cent of the granitic rocks in the map-area. They occur sporadically in the Whitehorse Trough and are comparable to intrusions in the Omineca Crystalline Belt to the east. The compsition of the plutons is quartz monzonite to granodiorite and the hypabyssal rocks range from diorite to syenite (Fig. 4). The quartz monzonite is generally unfoliated and is characterised by the presence of large plagioclase phenocrysts and biotite-rich inclusions. No significant mineral occurrences are associated with these intrusions.

Lower Tertiary Smoky Quartz Granites:

Lower Tertiary and possibly Upper Cretaceous granite plutons make up about twenty per cent of the granitic rocks in the map-area. They occur mainly in the Yukon Crystalline Terrane but also sporadically in the Whitehorse Trough and have affinities for the Coast Plutonic Complex. The intrusions are generally circular and associated with feldspar porphyry and rhyolite dyke swarms and felsic volcanic and pyroclastic rocks. The plutons range from granite to quartz monzonite in compsition with marginal phases transitional to granodiorite and hypabyssal rocks poor in plagioclase (Fig. 4). The rock is characterised by the presence of rounded grains and clusters of smoky quartz and by the presence of miarolitic cavities often containing quartz and fluorite.

A wide range of polymetallic sulphide occurrences appear to be related to the hypabyssal phases of the Lower Tertiary smoky quartz granite (Fig. 5). Copper-rich mineralization occurs within zones of potassic alteration in deep seated granite dykes and plugs and subvolcanic breccia zones. Felsite dykes

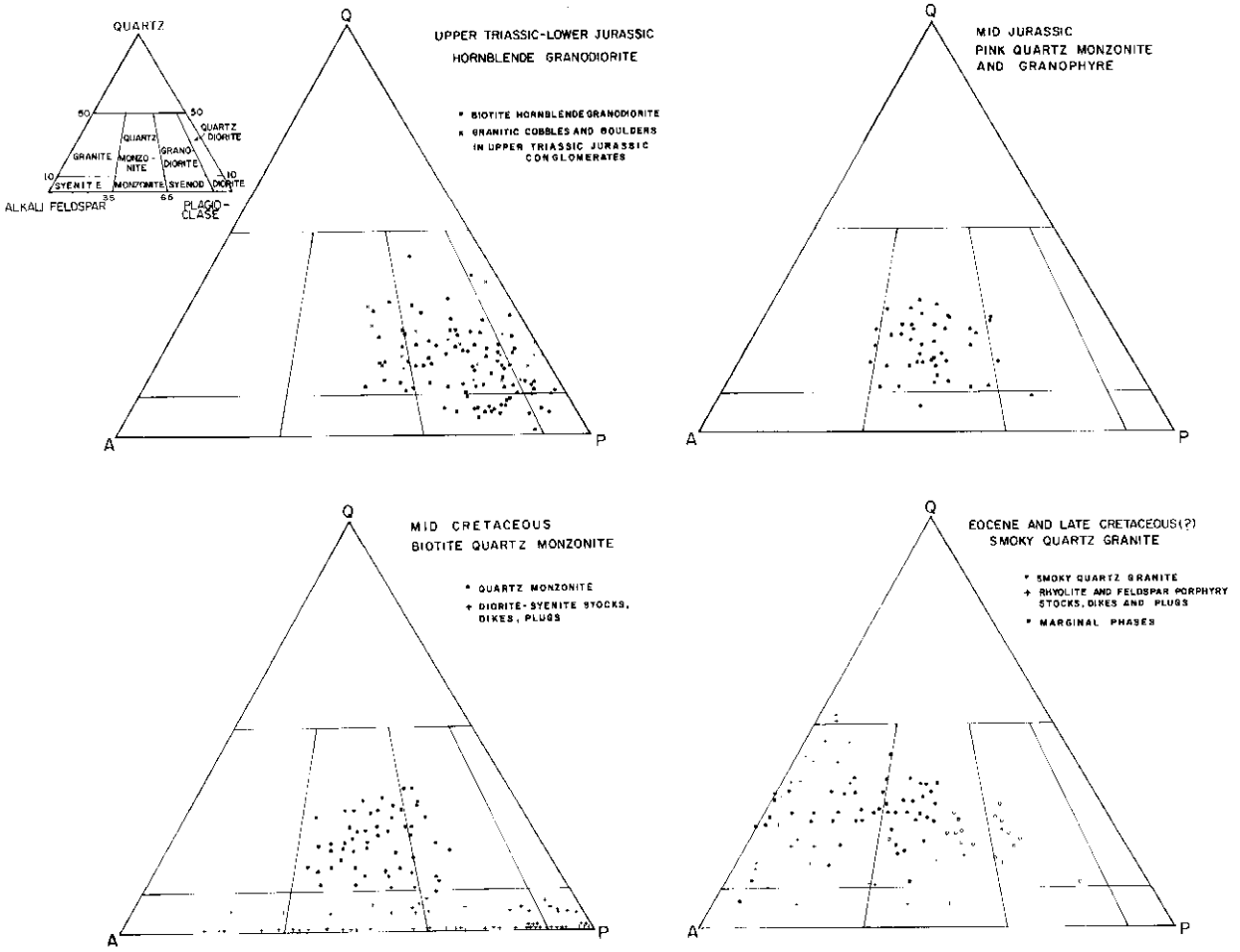

QUARTZ
50
50
QUARTZ DIORITE
GRANITE
QUARTZ
MONZO-NITE
GRANO-DIORITE
10
10
DIORITE
SYENITE
MONZONITE
SYENOD
35
65
ALKALI FELDSPAR
PLAGIO-CLASE
Q
A
P
UPPER TRIASSIC-LOWER JURASSIC
HORNBLENDE GRANODIORITE
* BIOTITE HORNBLENDE GRANODIORITE
x GRANITIC COBBLES AND BOULDERS IN UPPER TRIASSIC JURASSIC CONGLOMERATES
MID JURASSIC
PINK QUARTZ MONZONITE
AND GRANOPHYRE
MID CRETACEOUS
BIOTITE QUARTZ MONZONITE
* QUARTZ MONZONITE
+ DIORITE-SYENITE STOCKS, DIKES, PLUGS
EOCENE AND LATE CRETACEOUS(?)
SMOKY QUARTZ GRANITE
* SMOKY QUARTZ GRANITE
+ RHYOLITE AND FELDSPAR PORPHYRY STOCKS, DIKES AND PLUGS
* MARGINAL PHASES

Figure 4.

and plugs often contain disseminated molybdenite and are surrounded by zones of phyllic to propylitic alteration within which quartz veins and disseminations contain base and precious metals. The base metals generally appear closest to the intrusion and precious metals with antimony further away.

Conclusions:

It has been shown that the stratigraphic, compsitional and textural data are sufficient to easily distinguish the four major granitic rock types. This is an essential first step in exploration for intrusion-related mineral occurrences in this area, since the known mineral occurrences are associated with only two of the four granitic rock types. The copper-iron skarn deposits in Upper Triassic banded limestones are associated with Upper Triassic granodiorite which may only have acted as a heat source for metal concentration. The nature of the Upper Triassic granodiorite distingushes it from porphyry copper-bearing granitic rocks of similar age in British Columbia. The Upper Triassic granodiorite batholiths in the Yukon Crystalline Terrane are not a good prospect for porphyry-type mineralization. The polymetallic nature and the alteration associated with the Lower Tertiary subvolcanic rocks suggest they have good potential for porphyry copper mineralization of the Casino type (Tempelman-Kluit, 1974; Godwin, 1975).

DIAGRAMMATIC ALTERATION AND METAL ZONATION IN AND ADJACENT TO TERTIARY SUBVOLCANIC ROCKS

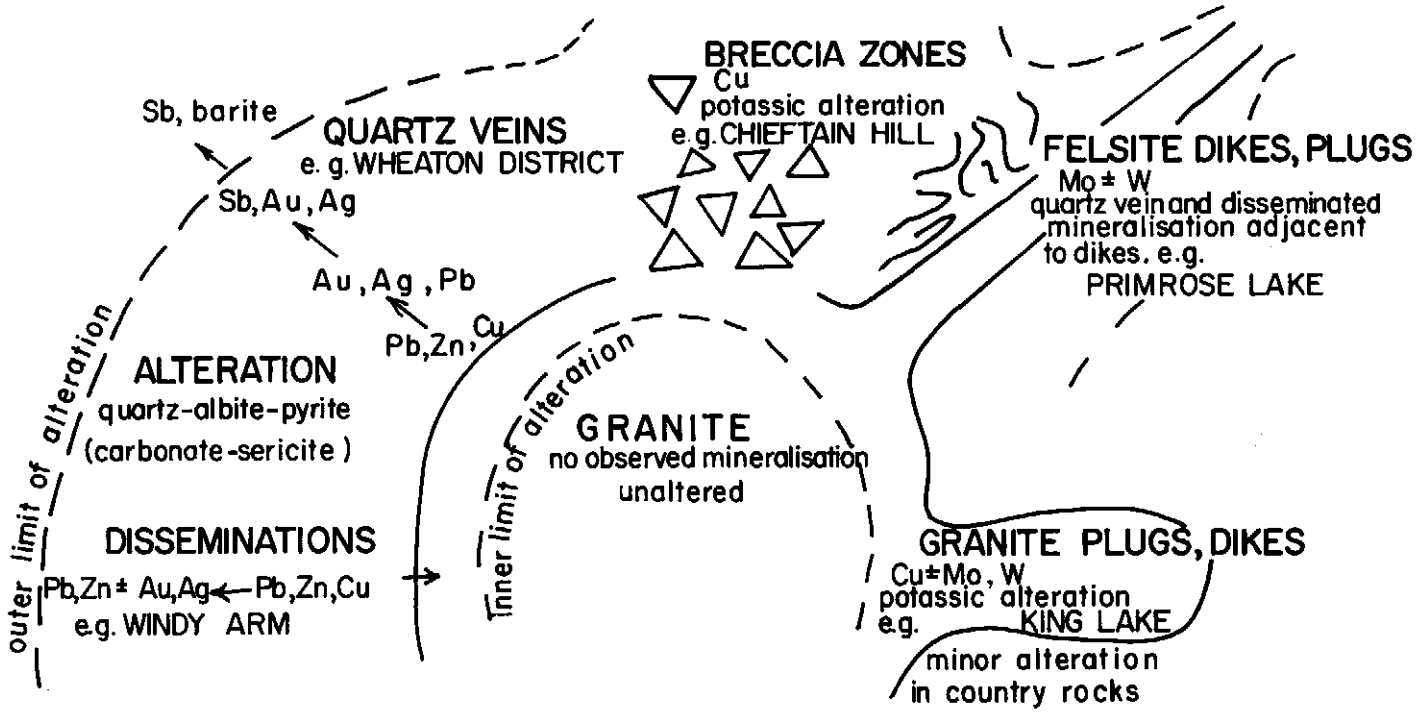


Figure 5.

MAYO MINING DISTRICT

* - Properties visited by J.A. Morin unless otherwise indicated.

SON, PIK
Norex Development Limited

Antimony, Silver, Gold
105 M 11
(63°35'N, 135°12'W)

Reference: Bostock (1947); Sinclair and Gilbert (1975).

Claims: PIK 1-6; SON 7-26

Location and Access:

The property is located about 22 miles east of Mayo and is easily reached by helicopter from that point. In addition, a tote road extends from Mayo to the property along the valley of the Stewart River, but the road is sometimes impassable by wheeled vehicles.

History:

The SON claims were staked in November 1970 following the discovery of a large boulder of stibnite in 4 Mile Creek. The PIK claims were staked in October, 1971. Intermittent trenching and stripping have been carried out on the main showing from 1971 to the present.

Description:

The property is underlain by flaggy to blocky weathering massive pebbly quartzite with interbedded schist and phyllite. (Unit 6, Bostock, 1947) belonging to the Yukon Group of Precambrian age or younger. To the northeast, these rocks are underlain by interbedded quartz-mica schist and schistose quartzite (Unit 5, Bostock, 1947) also belonging to the Yukon Group.

The showing occurs along a 15 foot high rock face at the base of a steeply dipping overburden covered slope on the north side of 4 Mile Creek. It consists of a vein of massive fine- to coarse-grained stibnite with a maximum apparent thickness of 12 inches and a length of about 7 feet. The vein pinches out to the east as a thin yellow oxidized seam dipping about 60° into the hillside. In addition, some boulders of massive stibnite occur along the top of the bedrock outcrop below the overburden. These boulders may have been derived in situ.

The geology of the immediate showing area is complex and consists of isoclinally folded interbedded phyllite and quartzite. The quartzite exhibits well developed fracture cleavage which is parallel to the bedding and is intersected at high angles by schistosity. Both the quartzite and phyllite are transected by thin veinlets of white quartz. The presently exposed mineralization appears to be on the south dipping limbs of a minor synform and is probably an extension of the original much longer vein situated at the foot of the rock face. This vein is now covered by fill but is reported to 100 feet long (Sinclair and Gilbert, 1975). Axes of minor folds on the outcrop vary from 215 to 250 degrees and plunge 30 degrees. Along the showing outcrop a vertical fault trending 085 degrees is exposed, which appears to terminate the northern extension of the vein. However, the mineralized boulders along the top of the outcrop may be the upthrown extension of the showing vein.

Current Work and Results:

During 1975, work on the property included blasting, stripping and a soil geochemical survey. A bench about 30 by 120 feet was bulldozed at the base of the hill adjacent to the showing and systematic shorthole drilling and blasting was performed at the rock face. The blasting resulted in the removal of about 6 feet of the face and the mineralized vein was found to decrease considerably in length down to about 7 feet.

Along the hill slope on the north side of the creek a trail was bulldozed which ends nearby over the showing area, about 50 feet higher up the hill. Attempts were made to bulldoze through the overburden to reach the top of the bedrock behind the showing. However, these attempts have been unsuccessful to date.

A soil geochemical survey for antimony was conducted along the hill slope on the north side of the creek. Samples were collected at 100 foot intervals along four 600 foot long lines spaced 200 feet apart. In addition, samples were also collected along two lines at 50 foot intervals across the grid lines.

Assays on chip sampled material obtained during the summer ranged from 2 to 2 1/2 per cent antimony over a vein length of 10 feet and 40 to 50 per cent antimony over a width of 18 inches.

United Keno Hill Mines Limited

Silver, Lead, Zinc, Cadmium
105 M 13, 14
(about 63°55'N, 135°29'W)

Selected References: Boyle (1957; 1965; 1968); Green and McTaggart (1960); Green (1966, pp. 10-17) Gleeson (1966; 1967); Findlay (1967, pp. 18-21; 1969a, pp. 20-24; 1969b, pp. 10-12); Tempelman-Kluit (1970); Craig and Laporte (1972, pp. 11-13); Craig and Milner (1975, pp. 28-29); Sinclair and Gilbert (1975, pp. 9-11); Sinclair *et al* (1975, pp. 10-12).

Claims: 493 claims

Location and Access:

The properties situated mainly on Keno Hill and Galena Hill, are readily accessible by an all-weather road from Mayo, 32 miles to the south. Ore concentrates are trucked 277 miles to Whitehorse, then transferred to the White Pass and Yukon Route and shipped by rail to Skagway.

History:

Silver-bearing galena was first discovered on Galena Creek in 1906 and small tonnages of high-grade ore were shipped from 1913 to 1919. Following the discovery of the No. 9 vein by Louis Beauvette in 1919, which resulted in a stampede, numerous important prospects were located. Since then there has been almost continuous production from veins in the area, except for the period 1942 to 1946.

Description:

The area is underlain by graphitic and sericitic schist, phyllite and quartzite which have been divided into three units: a lower schist, a central quartzite, and an upper schist (Units 1, 2 and 3, Boyle, 1965). Formerly considered to be part of the Precambrian Yukon Group metasediments, the lower schist and central quartzite are now considered to be Jurassic and Lower Cretaceous respectively, based on stratigraphic correlations (Tempelman-Kluit, 1970). The age of the upper schist is uncertain. Metadiorite and metagabbro, locally referred to as "greenstone", occurs as conformable lenses and sills in the lower schist and central quartzite. Granitic stocks of Cretaceous age outcrop northwest and southeast of Galena and Keno Hills and related quartz-feldspar porphyry dikes are present locally throughout the area.

The metasediments form the southern limb of a large, open anticline and dip gently to the southeast. There are two systems of steeply-dipping faults, one trending northeast and the other northwest.

The ore deposits consist of veins developed in dilatant zones in northeast-trending faults cutting thick-bedded quartzite and greenstone. The principal ore minerals are galena, sphalerite, freibergite and chalcopyrite. Gangue minerals include siderite and pyrite.

Current Work and Results:

In 1975, United Keno Hill Mines Limited operated six mines in the Keno-Galena Hills area with a total production of 90,860 tons of ore averaging 35.0 ounces per ton silver, 4.0 per cent lead and 1.2 per cent zinc. Production was mainly from the Husky Mine, followed by the No Cash and Keno Mines. The Elsa, Townsite and Dixie Mines produced lesser amounts of ore. Development work at the Husky included 511 feet of drifting on the third level, of which 160 feet was in ore. In addition, 356 feet of cross-cutting were completed on the third level to provide diamond drill stations for exploration below the third level. Three minor ore zones were found beneath the bottom of the shaft and studies were underway at the end of the year to determine the feasibility of mining these zones. At the No Cash Mine, development work consisted of 181 feet of cross-cutting and 1,386 feet of drifting and sub-drifting which developed 48 feet of ore. Underground development at the Keno Mine, including the Shamrock Project, consisted of 184 feet of cross-cutting and 662 feet of drifting, of which 271 feet were in ore. Several favourable structures were indicated by overburden drilling but the targets are too deep to be explored from surface and underground drifting is required to delineate the targets. At the Elsa Mine, development work consisted of 364 feet of subdrifting on the 500 level, 143 feet of which developed ore. At the end of the year, raising was underway to test a high-grade intersection found above the 200-foot level by overburden drilling. Although some 244 feet of cross-cutting and 206 feet of drifting were completed at the Townsite, this mine was closed in 1975 because of the low grade of the ore. At the Dixie Mine, development work totalled 190 feet of cross-cutting and 432 feet of drifting. Although no ore was developed, the mine is considered to have potential.

United Keno continued its program of overburden drilling on Galena, Keno and Sourdough Hills. In addition to the small ore zone in the Elsa 200 area, the drilling outlined four areas which warrant further work. Surface exploration was also carried out on the KPO-LEO claims optioned from Cima Resources Limited.

The following summary of operations in 1973, 1974 and 1975 is taken from annual reports of the company:

	1975	1974	1973
Tons Milled	90,860	93,232	94,819
Daily Average (tons)	249	255.4	259.8
Mill Heads:			
Silver (oz/ton)	34.96	37.93	34.99
Lead (%)	4.03	4.22	4.04
Zinc (%)	1.15	1.15	0.92
Metal Production:			
Silver (oz/ton)	2,917,920	3,237,205	3,134,828
Lead (lb)	6,407,368	6,737,719	7,262,400
Zinc (lb)	620,763	545,357	1,345,062
Cadmium (lb)	8,758	7,330	17,944
Metal Sales:	$15,696,435	$17,480,540	$11,614,473
Ore Reserves (tons)	121,737	105,632	84,500
Silver (oz/tons)	39.3	44.0	47.4
Lead (%)	4.7	4.9	5.8
Zinc (%)	1.1	1.2	1.5

ROSS
Rio Plata Silver Mines Limited

105 M 14
(63°54'N, 135°26'W)

Reference: Sinclair and Gilbert (1975).

Claim: ROSS

Location and Access:

The claim is located 1.4 miles west of Keno City and access is gained by the old highway from Keno City to Calumet which crosses the upper part of the claim.

History:

The claim was staked in October 1973 and is part of the AZTEC group of claims and is bounded on the northeast by the CALIENTE claim and on the southeast by the MEXICO. In 1973, a geochemical soil sampling program was conducted over the property and several anomalous areas were determined.

Description:

The claim is underlain by the Cretaceous Central Quartzite Formation which trends east-west and dips gently to the south. A major cross-fault strikes easterly across the ROSS claim south of Hinton Creek.

Current Work and Results:

During summer 1975, a geochemical soil sampling program for Pb was conducted over the ROSS claim to further delineate anomalous areas found in 1973. Forty-five samples were collected and anomalously high values were determined in the area of Hinton Creek.

FORMO
Rio Plata Silver Mines Limited

Silver, Lead, Zinc
105 M 14
(63°56'N, 135°23'W)

References: Green and Godwin (1963, p. 10); Boyle (1965, pp. 67-68); Sinclair and Gilbert (1975, p. 12); Sinclair et al (1975, p. 12).

Claims: PAPOOSE; TYEE; PREMIER; SPRUCE; CHEECHAKO; ROCKET; TILLICUM; DOROTHY; TAGISH; SKOOKUM; BIRCH; BRA; SOMETHING (Fr); WIMPY (Fr)

Location and Access:

The property is situated on the north slope of Galena Hill, nearly five miles northeast of Elsa. Access is by the Keno-Elsa Road.

History:

The history of the property to 1974 is described in the 1974 M.I.R. (Sinclair et al, 1975).

Description:

The property is underlain by graphitic, quartz-sericite schist of the Lower Schist Formation (Sinclair et al, 1975).

Current Work and Results:

During July 1975, nine geochemical soil samples for Pb were collected over the SOMETHING (Fr) claim to trace a vein fault. However, no anomalies were determined.

HEART*
G. McLeod

105 M 15
(63°59.5'N, 134°53'W)

Reference: Boyle (1965).

Claims: HEART 1-8

Location and Access:

The property is located about 42 miles northeast of Mayo on the southwest side of Mount Patterson and is accessible by helicopter.

History:

The claims were staked in September 1975. Early investigation of the property with a total count scintillometer discerned several anomalous zones of radioactivity.

Description:

The property is underlain by northerly trending rocks of Boyle's Unit 1 which dip gently to the east. They consist of interbedded massive dark grey amphibolite, biotite hornblende schist, phyllitic staurolite sericite schist and thinly layered micaceous sandstone.

Current Work and Results:

The property was examined in June 1976 with a gamma ray spectrometer (Exploranium DISA 400-A). Over eighty measurements were taken and representative values are presented below:

	Total Count/sec	K	U	Th
Amphibolite	130	2	2	1
Biotite-hornblende schist	400	9	2	2
Phyllitic staurolite schist	650	12	4	2
Sericite schist	920	20	4	3
Sandstone	460	12	3	2

Inspection of the data shows that areas which recorded high scintillometer total counts in the earlier survey correspond with potassium rich zones within units of sericite staurolite schist. The potassium rich zones have only background values in uranium and thorium.

G. McLeod, prospector, reported the presence of narrow veins of pitchblende (?) up to 15 feet long and varying from 3 to 7 feet in width. The veins were in quartzite and were reported to consist of colloform masses of a brick red metallic mineral with pyramidally terminated crystal, one sample of which may have caused a skin rash on Mr. McLeod. However, no samples exist from the occurrence and its exact location has not been redetermined.

Mount Armstrong*
Union Carbide Canada Mining Limited

Tungsten, Copper
105 N 3
(63°15'N, 133°20'W)

Reference: Blusson (1974a).

Claims: TONGUE 1-32, CHEEK 1-16, TONSIL 1-14, NOSTRIL 1-2

Location and Access:

The property is located on Mount Armstrong, 65 miles due north of Faro. Access is by float equipped fixed wing aircraft to Russell Lake (on Russell Creek), about 80 miles east-southeast of Mayo and thence the remaining 8 miles by helicopter to the property. In 1975 access to Russell Lake was provided by float plane from Little Salmon Lake, 85 miles to the southwest and from Watson Lake.

History:

The claims were staked in 1974 and 1975 following a regional exploration reconnaissance, which led to the discovery of relatively high-grade float mineralization in talus near the main showing.

Description:

The geology consists of an elliptical plug of medium grained, grey quartz monzonite intrusive into sediments of Hadrynian age. Near the intrusion, the regional trend is locally deformed into a series of synclinal warps. Three siliceous marble units contain the mineralization with the main showing in the middle unit.

The main showing consists of foliated medium grained quartz-pyrrhotite-chalcopyrite-scheelite-skarn situated at the contact of the quartz monzonite plug with siliceous and limy sedimentary rocks. Other mineralization on the property includes a few sulphide skarn units about two feet thick, localized near and along contacts with the quartz monzonite. Nearby, similar thin beds of skarn are found associated with faults.

Current Work and Results:

In 1975, the claims were geologically mapped at a scale of 1 inch = 400 feet, a geochemical soil sampling survey for Cu, W, and Zn and geophysical surveys were also carried out.

Five diamond drill holes were drilled (BQ core) for a total of 4,866 feet and one Winkie diamond drill hole (AX core) for 103 feet. Results were discouraging and no further work is planned.

JASON
Ogilvie Joint Venture

105 O 1
(63°09'N, 130°15'W)

Reference: Blusson (1974a).

Claims: JASON 1-44

Location and access:

The claims are located about 10 miles southwest of Macmillan Pass, about 130 miles east of Ross River along the North Canol Road.

History:

The claims were staked in August 1974.

Description:

The property is underlain by argillite of the Ordovician-Silurian Road River Formation, which is overlain by argillite, conglomerate, black shale and siltstone of Devonian (?) age. A horizon consisting of bedded and spotty barite within the black shale unit is thought to occur at the same stratigraphic horizon as on the adjacent TOM property to the east. The rocks have been folded into easterly plunging anticlines and synclines which trend in a southeast direction. The black shale exhibits a marked increase in thickness over a short distance within the claim group which may be related to a syn-sedimentary fault west of the claim group.

Current Work and Results:

Geological mapping was carried out on the property during June and July 1975 at a scale of 1 inch = 1,000 feet. In addition, geochemical (Pb, Zn, Ba) and gravity surveys were performed on two grids having lines spaced 1,500 feet apart. The soil samples and gravity readings were taken at 100 foot intervals.

Pb-Zn-Ba anomalies coincident with a gravity high led to exploratory diamond drilling in October 1975. Seven holes were drilled (BQ core) for a total of 2,100 feet. The stratigraphy encountered was as expected and dditional drilling along with geochemical and geophysical surveys were recommended for 1976 by the company geologist.

TEA
Welcome North Mines Limited

Barite
105 O 2
(63°02'N, 130°37'W)

Reference: Blusson (1975a, 1971).

Claims: TEA 1-100

Location and Access:

The property is located about 17 miles southwest of the TOM property and 5 miles north of the Canol Road. Access to the property is by helicopter.

History:

The claims were recorded in July 1975.

Description:

The property is underlain by the Besa River Formation of Upper Devonian age. Bedded barite occurs within a 700 foot thick stratigraphic sequence of Lower Besa River shale. The barite is grey to black, fine grained to nodular, and generally has a low silica content. Other occurrences of barite have been found on the property and in these the barite is mainly nodular or concretionary. Within the main barite horizon, initial sampling has indicated potential zones of direct shipping grade material.

Current Work and Results:

During the summer of 1975, geological mapping of the claim group at scales of 1 inch = 1/2 mile and 1 inch = 1 mile and a geochemical soil sampling program for Pb, Zn were undertaken. Bulldozer trenching and bulk sampling of the barite occurrences was completed late in the season.

CATHY, LORRAINE, CHAS, KAM,
LES, WALT, FAT, CITY
Baroid of Canada, Limited

Barite
105 O 7
(63°16'N, 130°34'W-
39'W)

Reference: Blusson (1974a, 1971).

Claims: CATHY 1-6, LORRAINE 1-6. CHAS, KAM 1-2 Fr, LES, WALT, FAT and CITY

Location and Access:

The property is located about 105 miles northeast of Ross River and 12 miles west of the Yukon-NWT border. During 1975, access was provided by float plane to Keele Lake where a base camp was situated and from there by helicopter the remaining 15 miles south to the property.

History:

The CATHY and LORRAINE claims were staked in February 1975, with the remaining claims staked in July 1975.

Description:

The property is underlain by the Besa River Formation (Blusson, 1971) of Upper Devonian age which consists of black, noncalcareous shale interbedded with siltstone, limestone, pebble conglomerate and barite.

Current Work and Results:

Preliminary geological and geochemical work was conducted during 1975.

KEN
Canada Tungsten Mining Corporation Limited

Tungsten
105 O 8
(63°15'N, 130°05'W)

References: Blusson (1974a); Sinclair et al (1975).

Claims: KEN 1-30

Location and Access:

The KEN claims are located roughly four miles northwest of Macmillan Pass on the Yukon-N.W.T. border. Access is by helicopter from the Canol Road.

History:

The KEN 1-30 claims were staked in May 1973 and subsequently acquired by Tyee Lake Resources Limited and Titan-Polaris Mines Limited who conducted geological mapping, and soil and silt sampling in 1973. Several skarn zones were outlined and some associated scheelite was noted. In 1974, the property was optioned to Canada Tungsten Mining Corporation Limited who conducted a combined Turair electromagnetic and magnetic survey which outlined a number of coincident electromagnetic and magnetic anomalies.

Description:

The property is underlain by black to grey argillite, limestone and impure limestone which strike 075° and dip gently to nearly vertical to the south. Immediately overlying the Proterozoic-Paleozoic unconformity is a unit of thinly bedded grey, green, brown calc-silicate-bearing rocks along with limestone conglomerate and minor banded limestone. Associated with these rocks is a minor pyrrhotite-garnet-diopside skarn with minor scheelite and chalcopyrite.

Current Work and Results:

In 1975, the property was geologically mapped at a scale of 1 inch = 1,000 feet. In addition, some bedrock and soil geochemical sampling was conducted over two claims (Y 69355 and Y 69356). Two diamond drill holes (AQ core) were drilled on Y 69364 and Y 69363 for a total of 1,861 feet. No mineralization other than pyrite, pyrrhotite, chalcopyrite (small amount) and carbonate was found in any of the core.

ODD
McIntyre Mines Limited

Zinc, Lead
105 O 13
(63°51'N, 131°54'W)

Reference: Blusson (1974a).

Claims: ODD 1-90

Location and Access:

The property is located about 125 miles east of Mayo and is accessible by float plane from Mayo to a small unnamed lake and from there four miles northwest to the property by helicopter.

History:

The claims were staked in September 1974 as a result of reconnaissance prospecting.

Description:

The claims are underlain by carbonate and clastic rocks of the Hadrynian 'Grit Unit' which are deformed into broad, open north-south-trending folds. The local stratigraphy is similar to that of the TOM group, 24 miles to the north and specifically consists of the following from bottom to top: lower shale unit (very thick, no major lithology change to 1,500 feet); lower arenaceous unit (120 to 250 feet); grey weathering micrite unit (700 feet); upper thin bedded limy clastics (330 to 600 feet); upper arenaceous unit (200 to 450 feet) and the upper varicoloured shale unit (very thick, no top seen on claims).

Most of the mineralized lead-zinc showings are associated with zebra dolomite breccia zones situated within the grey micrite unit. The mineralization occurs as pods of massive coarse-grained galena and green sphalerite associated with coarse-grained white dolospar in zebra breccia. A typical assay of the massive mineralization yielded 8.00% Pb, 28.00% Zn and 0.058 oz Ag/ton over a trenched sample interval of 11 feet. Another type of mineralization is cross-cutting fractures of sphalerite and galena in unaltered micrite close to showings of massive mineralization. An eight foot diamond drill hole intersection of this type of mineralization gave the following assay: 1.84% Pb, 4.00% Zn 0.06 oz Ag/ton.

Current Work and Results:

During summer 1975, the claim group was geologically mapped at a scale of 1 inch = 1,000 feet and locally at 1 inch = 200 feet. A geochemical soil survey for Pb, Zn, Ag, Cd was also conducted. Over 750 soil samples were collected at 200 foot intervals along lines spaced 200 feet apart on one grid and 400 feet on the other. Several anomalies determined by the survey correlated with occurrences of lead-zinc mineralization. Several trenches were cut across the mineralized pods and limited short hole diamond drilling (EXT core) resulted in four holes with a total footage of 148 feet.

TOM, MOM*
McIntyre Mines Limited

Zinc, Lead
106 B 4
(64°08'N, 131°54'W)

Reference: Blusson (1974a).

Claims: TOM 1-112; MOM 1-64

Location and Access:

The claims are located about 135 miles northeast of Mayo, and about 12 miles south of Bonnet Plume Lake. Access to the property is provided by float plane to Bonnet Plume Lake and the remaining distance by helicopter.

History:

The claims were staked in August 1974 as a result of reconnaissance prospecting.

Description:

The property is underlain by isoclinally folded limestone, shale, dolomite and quartzite of the Hadrynian 'Grit Unit'. Specifically in ascending order the following units are represented: orange weathering carbonate unit (approximately 780 feet thick); lower shale unit (very thick, no bottom seen and encloses orange carbonate unit); lower arenaceous unit (discontinuous lenses); grey weathering micrite unit (900 to 1,200 feet thick); upper arenaceous unit (250 to 375 feet thick, depending on shale interbeds); upper varicoloured shale unit (very thick, no top seen).

All lead-zinc showings are contained within the upper portion of the grey micrite unit. They are associated with breccia pods in large discontinuous areas of zebra dolomite, which occur at a common stratigraphic position close to the contact between the grey micrite and upper arenaceous units. The main showing (J-35) consists of coarse grained galena and sphalerite with white dolospar in a pod of zebra breccia. Sphalerite ranges in colour from dark green through yellow to red and a 33 foot assay interval in a trench gave about 25% Pb-Zn, with Zn values from 15 to 20% and Pb values quite erratic.

Current Work and Results:

The property has been geologically mapped at a scale of one inch = 1,000 feet, with several portions at much larger scales, reflecting the complex fold and dolomitization structures. Geochemical soil surveys for Pb, Zn, Cd and Ag were conducted over various parts of the property with about 820 samples collected from five grid areas. On the large grids, samples were taken at 400 foot intervals on lines 200 feet apart.

The geochemical anomalies were found to be closely associated with the numerous small Pb-Zn showings. Lead anomalies were usually found to coincide with primary bedrock mineralization whereas zinc anomalies with no associated high lead values were commonly observed to be hydromorphic when prospected in detail.

Limited trenching was also undertaken on several of the showings. Six long diamond drill holes (BQ core) for a total footage of 2,955 feet, and 22 short holes (EXT core) for a total footage of 1,068.5 feet were completed.

BONNET PLUME RIVER AREA, 106 C

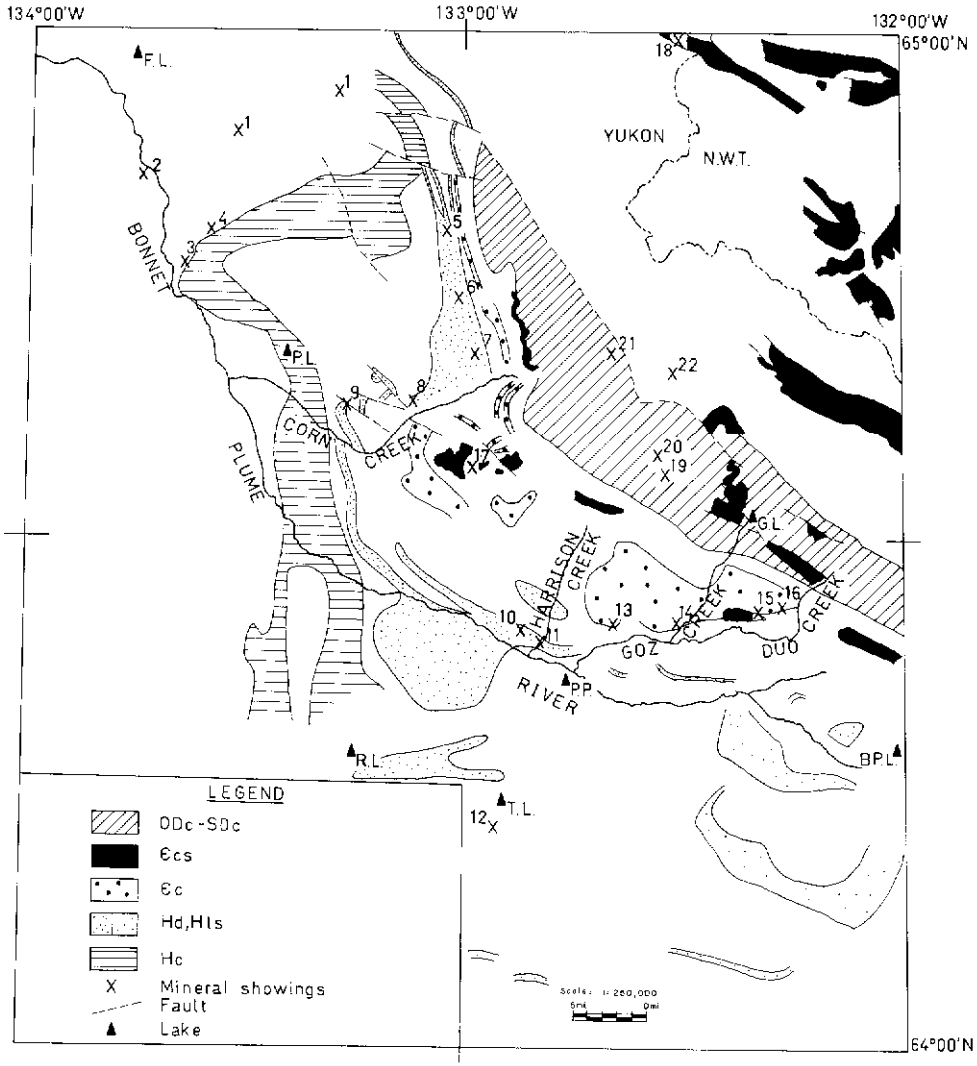
Location and Access:

The Bonnet Plume River area is located about 110 miles northeast of Mayo. Access is usually provided by fixed wing float or ski-equipped aircraft to lakes and from there by helciopter to the properties. However, a relative dearth of lakes exists and the following summarizes the salient points of each.

In the northern part of the area, mainly three lakes have been used for access: Margaret Lake, Kiwi Lake and Fairchild Lake. Margaret Lake (65°20'N, 134°30'W) is about 130 miles north of Mayo, north-south-trending and lies at an elevation of 1,605 feet above sea level. It is a large lake (2.5 by 0.5 miles) and has been used by several companies, most of whom have camped on the southern shores. Kiwi Lake (65°13'N, 134°37'W) is a local name for a small lake, (1.0 by 0.3 miles) about 9 miles south of Margaret Lake. It has been used as a base camp for mining exploration companies (Archer-Cathro) but has been noted for rather large differences between fall and spring water levels. In 1975, the spring ice level was 15 feet higher than the fall water level. Fairchild Lake (64°59'N, 133°46'W) is located about 32 miles southeast of Margaret Lake (see accompanying diagram). It is a large (2.0 by 0.5 miles) north-south trending lake and has been used as a base camp by exploration companies (Cyprus Anvil).

In the central part of the area, Pinguicula Lake (64°41'N, 133°24'W) is the main lake used by companies for access to properties in the Corn Creek area. The lake trends northwest, is 2.0 by 0.3 miles in size and is located about 105 miles northeast of Mayo. Camps have been maintained on the northeast shore, notably by Cominco. In the eastern part of the area, Goz Lake (64°32'N, 132°20'W) has been used occasionally by companies for access to properties in the Goz Creek area. The lake is small and consists of two small lakes, each 0.5 by 0.25 miles in size, connected by a creek and lies at an elevation of about 4,000 feet above sea level.

Several lakes occur in the southern part of the area: Porter Puddle, Rackla Lake, Tara Lake and Bonnet Plume Lake. Porter Puddle (64°22'N, 132°47'W) is a small lake (0.5 by 0.25 miles) with several lobate extensions that lies in the valley of the Bonnet Plume River. It is about 110 miles northeast of Mayo and is characterized by large fluctuations between spring and fall levels. In September 1975, the lake was considered to be too shallow for landing by Turbo-Beaver and Porter Pilatus aircraft. The comparative ease with which Porter Pilatus STOL aircraft can take off from the lake was the main reason for coining the local name 'Porter Puddle' for the lake. The south shore of Porter Puddle has been used as a camping and storage spot by many companies. Rackla Lake (64°18'N, 133°14'W) is located about 15 miles southwest of Porter Puddle. It is a small lake, 1.0 by 0.3 miles, and trends east-west. Tara Lake (64°15'N, 132°40'W) is a small lake about 9 miles south of Porter Puddle, just east of Nadaleen Mountain. Its name is local and was derived from the TARA claim group and it is 0.5 by 0.2 miles in size with a north-south trend. Bonnet Plume Lake (64°18'N, 132°00'W) lies at the head of the Bonnet Plume River, about 23 miles east of Porter Puddle. It is a large lake (4.0 by 0.4 miles) and trends in a northeast direction. Camps have been located on the north shore, adjacent to the outpost cabin of a game outfitter.


134°00'W
133°00'W
132°00'W
65°00'N
64°00'N
F.L.
P.L.
R.L.
T.L.
G.L.
PP.
BP.L.
YUKON
N.W.T.
BONNET
PLUME
CORN CREEK
HARRISON CREEK
GOZ CREEK
DUO CREEK
RIVER
LEGEND
ODc-SDc
Ecs
Ec
Hd,Hls
Hc
Mineral showings
Fault
Lake
Scale: 1:250,000
5mi
0mi

Property Aquisition and Evaluation:

Properties in the area were generally acquired by one of the following methods:

1) Reconnaissance geochemical stream sediment survey, usually for Cu, Pb, Ag and follow up prospecting and/or staking over anomalies: e.g. DOC, DTG, TARA.
2) Grassroots prospecting in rock units assessed as 'geologically favourable', e.g. BOB (Cominco), Goz Creek (Barrier Reef).
3) Blanket staking of rock units assessed as 'geologically favourable' e.g. PING, BOB et al (Great Plains), CYR et al (Cypress, Brinex).

Following the acquisition of ground, the properties were prospected in detail, geologically mapped and/or subjected to a geochemical soil survey. In several cases, induced polarization surveys were also conducted. Where mineralization was visible at the surface, trenches were usually cut across the showings.

Because of the abundant outcrop exposure, many properties received no further work after preliminary surface evaluation. However, several properties received further evaluation by diamond drilling and these include the DF, CYR et al, Goz Creek, PING, TARA, FUN, DEA and BOB et al.

Geology:

The Bonnet Plume River area is made up of sedimentary rocks ranging in age from Helikian to Triassic (Blusson, 1974a, b). In general, the units trend northwesterly and dip to the northeast. Faults are common and have a dominant northwest trend with a minor north-south trend, and in many places, the stratigraphic sequence is much complicated by their presence.

The area is situated at the northeastern margin of the Selwyn Basin and was represented by the Bonnet Plume High during late Proterozoic and early Paleozoic time (Lenz, 1972). Shallow water platform carbonates formed on the High, and lithofacies to the northeast and southwest consist of shallow water sandstone and deep water shale respectively. In addition, the eastern and probably the western sides of the High were the site of small reef developments. It is within these carbonates that much of the Pb-Zn mineralization in the area occurs.

Mapping by the Geological Survey of Canada has determined the limits of the carbonate strata, though precise age correlation of the different carbonate units is beset with difficulties. The following discussion of the rock units is therefore based only on the ages determined by the G.S.C. In general, Pb-Zn mineralization is concentrated in carbonates of Lower and Upper Hadrynian and Lower Cambrian, with the largest number of showings by far in the Upper Hadrynian dolomite units. The carbonate units are briefly discussed below, along with a listing of selected mineralized occurrences contained within them and both are depicted in the accompanying map of the Bonnet Plume River area.

Hsc, Hcs units

Both the Hsc and Hcs units are of Helikian age. Hsc consists of dark slate and argillite, with minor fine-grained quartzite and limestone whereas Hcs is made up of grey weathering, interbedded dark argillite and limestone with minor biotite calc-silicate hornfels.

Mineralized occurences include the following:

(1) Dolores Creek (MAMMOTH) - chalcopyrite ± cobaltite within veinlets and pods and disseminated in limy fine-grained clastics locally associated with hornblende-granite stock; uranium mineralization also reported.

Hc Unit

The Hc unit is of Upper Helikian age and consists of orange weathering, grey, pink and buff fine grained dolomite.

Mineralized occurrences include the following;

(2) ALE - pyrite, galena and sphalerite within open space fillings in brecciated dolomite
(3) LAD - chalcopyrite, malachite, tetrahedrite and azurite disseminated within limestone.

Hc Unit

The Hc unit is Lower Hadrynian in age. It has been divided into two subunits: Hc^1 and Hc^2. Hc^1 forms the lowermost portion of the Hc unit and consists of orange weathering banded dolomite and minor limestone. Generally, it is not as dominant as the upper Hc^2 subunit which is made up of grey weathering dolomite and limestone.

Occurrences of mineralization are few within this unit and include the following;

(4) Dolores Creek (DTG)- pyrite, galena and sphalerite within fracture and vein stockwork in proximity to several faults in the Hc^1 subunit.

Hd Unit

The Hd unit is Upper Hadrynian in age and has been divided into two subunits: Hd^1 and Hd^2. Hd^1 is the lowermost portion of the unit and consists of grey weathering, medium to thick bedded, fine-grained dolomite. It is much more extensive than the upper Hd^2 subunit of light grey, buff weathering, porous fine-grained dolomite. The Hd unit undergoes a facies change to the north where it merges into fine clastics of the Rapitan Group. To the east and south, the Upper Hadrynian carbonate units are predominantly limestone (Hls).

A large portion of the mineralized occurrences are situated within the Hd unit:

(5) Mount Profeit (DOC) - pyrite, galena, sphalerite and tetrahedrite within pods, fractures, veins, vugs and along faults in the Hd^1 subunit;

(6) Corn Creek (DEA) - galena and sphalerite within vugs and fractures;

(7) Corn Creek (DF) - pyrite, galena, sphalerite, chalcopyrite and tetrahedrite within pods and fractures associated with faults in Hd^1 subunit;

(8) Corn Creek (WX) - galena and sphalerite within vugs and fractures near a fault zone in Hd^1 subunit;

(9) Corn Creek (PING) - galena, sphalerite and pyrite in zebra dolomite breccia associated with faults in Hd^1 subunit;

(10) Harrison Creek (CYR et al) - galena, sphalerite and pyrite and barite with vugs, zebra dolomite breccia and fractures in Hd^2 subunit; bedded detrital sphalerite present;

(11) Harrison Creek (BOB et al) - galena, sphalerite and pyrite within zebra dolomite breccia, vugs and fractures;

(12) Nadaleen Mountain (TARA) - galena and sphalerite within fractures and zebra dolomite breccia, probably in Hd^1 subunit (Blusson, personal communication).

Ꞓc Unit

The Ꞓc unit has been assigned to the Backbone Ranges Formation of Lower Cambrian age, though it may be Hadrynian in part. It has been subdivided into two subunits: the lower $Ꞓc^1$ and the upper $Ꞓc^2$. Subunit $Ꞓc^1$ consists of pale buff grey weathering, poorly bedded, in part pisolitic dolomite, with minor quartzite whereas $Ꞓc^2$ is made up of buff yellow weathering, in part porous, fine grained dolomite.

Mineralized occurrences within this unit are not numerous and include the following:

(13) ANN et al - sphalerite and galena in breccia zones, fractures and as vug fillings

(14) Goz Creek (Barrier Reef) - sphalerite, galena, boulangerite, trace pyrite and marcasite within silicified dolomite breccia, vugs and fractures and disseminated within coarse crystalline dolomite in $Ꞓc^2$ subunit;

(15) GUS sphalerite and galena within vugs, fractures and veinlets;

(16) LIZ - sphalerite, minor galena and smithsonite within breccia zones in limestone and dolomite.

Ꞓcs Unit

The Ꞓcs unit has been assigned to the Sekwi Formation of Lower Cambrian age. It consists of brown and orange weathering, thin-bedded dolomite, grey and buff mottled limestone, brown shale and sandstone.

Few mineralized occurrences are within this unit and they include the following;

(17) Corn Creek (BOB) - galena, sphalerite, pyrite and chalcopyrite within vugs and algal lamination planes;

(18) CAB - bands of sphalerite parallel to the bedding in dolomitic host rocks and also as coarse crystalline sphalerite which in company with barite, quartz or calcite fills fractures and voids;

SDc Unit

The SDc unit is Silurian and Devonian in age and consists of light grey, well bedded dolomite with minor limestone near the top.

Mineralized occurrences within this unit include the following:

(19) AXE, NEST - sphalerite and smithsonite rim calcite - filled voids in dolomite and occur within irregular veinlets;

(20) BAR - sphalerite and galena as veinlets within a breccia zone and sphalerite pseudomorphous after fragments of algal reef;

(21) GYR - sphalerite and galena as veinlets and matrix in an intra clastic conglomerate and sphalerite possibly pseudomorphous after brachiopods;

(22) AL - sphalerite and galena within veinlets of calcite in SDc limestone and very minor bornite and chalcopyrite in a vuggy white quartz vein within Ecg along a contact between dolomite and a quartzite-siltstone unit.

TARA*
McIntyre Mines Limited

Zinc, Lead
106 C 2, 3, 6, 7
(64°12'N, 132°59'W)

Reference: Blusson (1974a).

Claims: TARA 1-250

Location and Access:

The property is located about 100 miles northeast of Mayo. Access is provided by float plane to Porter Puddle and 12 miles south-southwest from there to the property by helicopter.

History:

The property, staked in the summer of 1975, was found as a result of stream sediment geochemical sampling and follow-up prospecting.

Description:

The claim geology consists of Hadrynian red to maroon shales which are underlain by dolomite and overlain by Ordovician to Devonian carbonates. The dolomite unit is continuous over a distance of more than 70,000 feet and occurs along the perimeter of a bathtub shaped synclinal downwarp. It is sugary-textured near the top, but is zebra dolomitized in the lower portions.

Two types of mineralization have been noted. Type 1 mineralization consists of massive coarse-grained colloform galena, barite and minor sphalerite within grey, surgary-textured vuggy dolomite near the top of the dolomite unit close to the contact with overlying shales. Type 2 mineralization consists of medium-grained, pale yellow sphalerite and traces of red sphalerite as fracture fillings and breccia matrix in zebra dolomite. To date, the best mineralization is found to occur in dolomite closely associated with shales.

Current Work and Results:

During summer 1975, the claims were geologically mapped at a scale of 1 inch = 1,000 feet with a smaller portion at 1 inch = 200 feet. Reconnaissance soil geochemical surveys for zinc, lead and cadmium were conducted with samples obtained at 100 foot intervals along lines spaced 250 feet apart. Several anomalous areas have been outlined by the soil geochemistry and to date, seven diamond drill holes have been drilled, three holes with BQ core for a total of 2,436.5 feet and 4 holes with EXT core for a total of 206 feet. Drilling results were reported to be inconclusive.

KIDD
McIntyre Mines Limited

106 C 3, 105 N 14
(64°00'N, 133°07'W)

Reference: Blusson (1974a,b).

Claims: KIDD 1-36

Location and Access:

The property is located about 90 miles northeast of Mayo and is accessible by helicopter.

History:

The claims were staked during summer, 1975.

Description:

The property is underlain by the Hadrynian 'Grit Unit' and Devono-Mississippian black shales.

Current Work and Results:

A reconnaissance geochemical survey resulted in a high zinc geochemical anomaly which was investigated by means of a short diamond drill hole (37 feet). The drilling results were inconclusive.

TEX
Hercon Resources Limited

106 C 6
(64°27'N, 133°00'W)

Reference: Blusson (1974b).

Claims: TEX 1-20

Location and Access:

The property straddles the Bonnet Plume River, about 10 miles northwest of Porter Puddle.

History:

The claims were recorded in March, 1975.

Description:

The property is underlain by a northwest trending shale unit (Hsq, Blusson, 1974b) which is overlain by dolomite of the Hd^1 unit, all of Hadrynian age. Minor pyrite and pyrrhotite occur in thin bands along the bedding planes in the shale and a small amount of secondary zinc mineralization is present in very localized fault zones in the dolomite.

Current Work and Results:

During summer 1975, the northeast portion of the property was subjected to detailed geological mapping (1 inch = 400 feet), and a geochemical soil and rock chip sampling program. About 150 soil samples were collected at 100 foot intervals along lines spaced 400 feet apart and analyzed for lead and zinc. No significant anomalies were determined.

FUN
Yukon Revenue Mines Limited
Cominco Ltd.

Zinc, Lead
106 C 7
(64°23'N, 132°46'W)

Reference: Blusson (1974b).

Claims: FUN 1-4

Location and Access:

The property is on the north side of the Bonnet Plume River near the mouth of Goz Creek and about 110 miles northeast of Mayo. Access is by fixed wing aircraft to Porter Puddle and from there by helicopter to the property.

History:

The claims were recorded in September 1973. During 1974, geological mapping and geochemical soil sampling were conducted and one geochemical anomaly outlined by the work.

Description:

The property is underlain by slate, siltstone, sandstone conglomerate and dolomite of Hadrynian age. Mineralization consists of galena and sphalerite in fault breccia in Upper Hadrynian dolomite.

Current Work and Results:

During summer 1975, three diamond drill holes (BQ core) were collared for a total footage of 701 feet and some mineralized fault breccias were intersected.

CYR, FXE, ED, PB, ZIN,
CYP, SCREW, ZOT, WHI
Cypress Resources Limited
British Newfoundland Exploration Limited

Zinc, Lead
106 C 7
(64°25'N, 132°53'W)

References: Blusson (1974b); Sinclair et al (1975, pp. 42-43).

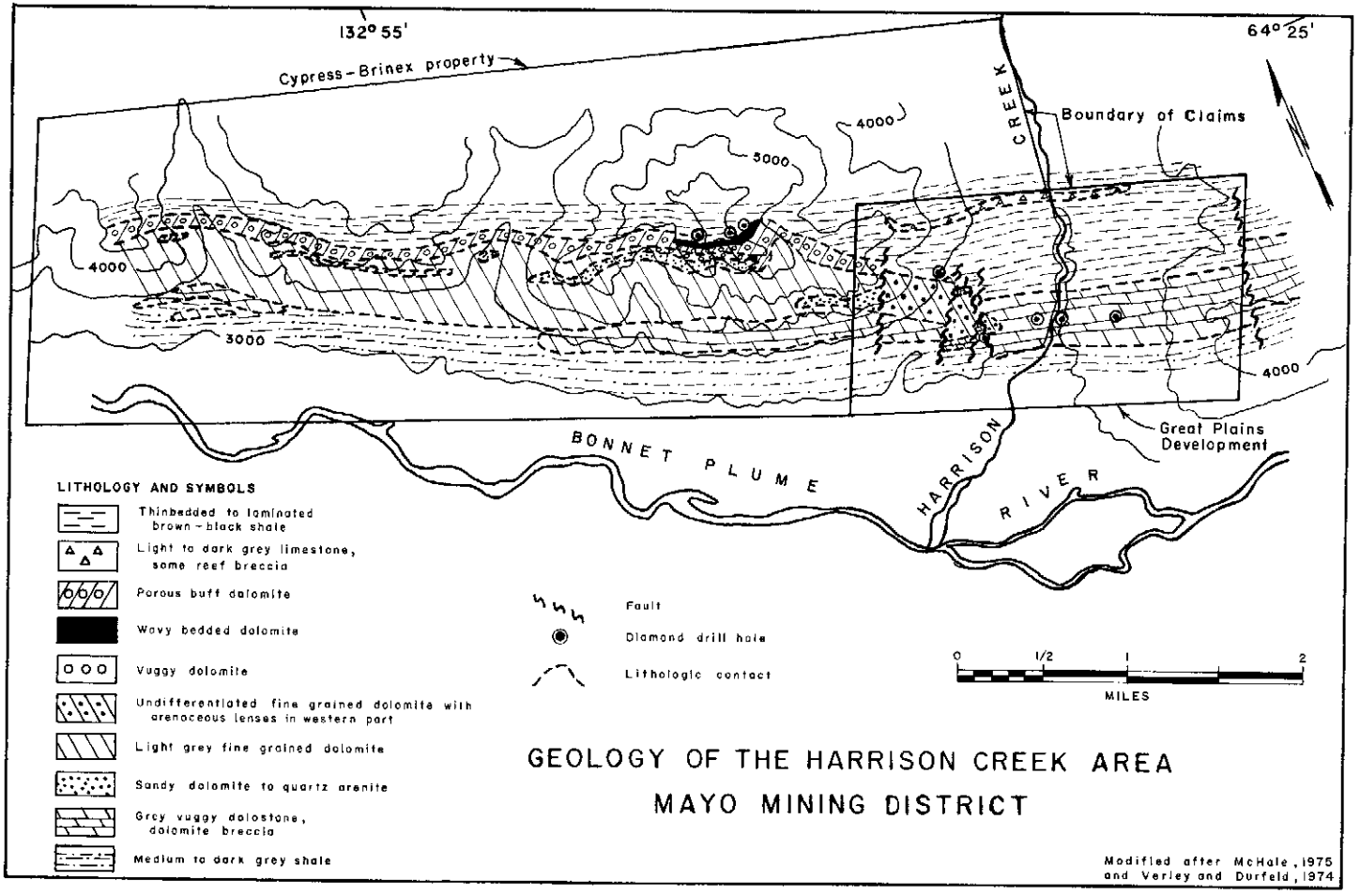
Claims: CYR 9-40; FXE 1-8; PB 1-8; ED 1-8; ZN 1-8; CYP 1-40; SCREW 1-16; ZOT 1-22; WHI 1-24

Location and Access:

The claims form a single block on the northeast side of the Bonnet Plume River, 110 miles northeast of Mayo and 13 miles northeast of Rackla Lake. They are contiguous with the Norcen Energy Resources (Great Plains Development) property which lies to the south and east. Access in 1975 was by fixed-wing aircraft from Mayo to Rackla Lake or Porter Puddle (six miles southeast of the property) and then by helicopter.

History:

The majority of the claims were staked in July and August 1973, following the lead-zinc discovery by Barrier Reef Resources on Goz Creek. Preliminary mapping and prospecting were carried out by Cypress Resources Limited in 1973 and three short holes were drilled, one of which encountered 28 feet of 8.3 per cent zinc (Northern Miner, November 1, 1973). Work on the property in


132° 55'
64° 25'
Cypress-Brinex property
Boundary of Claims
HARRISON CREEK
4000
5000
4000
3000
4000
BONNET PLUME
HARRISON RIVER
Great Plains Development
LITHOLOGY AND SYMBOLS
Thinbedded to laminated brown-black shale
Light to dark grey limestone, some reef breccia
Porous buff dolomite
Wavy bedded dolomite
Vuggy dolomite
Undifferentiated fine grained dolomite with arenaceous lenses in western part
Light grey fine grained dolomite
Sandy dolomite to quartz arenite
Grey vuggy dolostone, dolomite breccia
Medium to dark grey shale
Fault
Diamond drill hole
Lithologic contact
0 1/2 1 2
MILES
GEOLOGY OF THE HARRISON CREEK AREA
MAYO MINING DISTRICT
Modified after McHale, 1975 and Verley and Durfeld, 1974

1974 was carried out by British Newfoundland Exploration Limited (Brinex) under an agreement with Cypress. The ZOT and WHI claims and fractions were staked during the summer of 1974.

In 1974, Brinex carried out an extensive program of exploration on the property which included geological mapping, soil and stream geochemical sampling, a limited I.P. survey, hand trenching and 3,000 feet of diamond drilling in seven holes. Mineralization of the dolomite appeared to be erratic and discontinuous in grade and size and no significant intersections were reported from the drilling.

Description:

The claims are underlain by a northwest-trending sequence of Hadrynian to Mississippian rocks which dip steeply to the northeast. The accompanying geological map shows the Hadrynian to Lower Cambrian succession in the area which consists mainly of dolomite and shale with minor limestone and sandstone. Most of the lead-zinc mineralization occurs within the dolomite units situated immediately below the laminated brown-black shale. The mineralization consists of sphalerite with minor galena, pyrite and smithsonite with accessory quartz, dolomite, minor barite and calcite. The sulphide mineralization is found in solution cavities and local collapse breccias, solution channel in fillings, primary bedded material and late stage cross cutting structures.

Current Work and Results:

During 1975, a program of further geological mapping (1 inch = 400 feet), geochemical soil sampling and trenching was conducted on the property. Approximately 1,350 soil samples were collected along lines spaced 200 feet apart, for a total line length of 166,600 feet and analyzed for Pb and Zn. Several soil geochemical anomalies were determined and trenching with the use of cobra drill and dynamite was carried out over them. However, no economic mineralization was found and a company geologist recommended no further work be done.

One interesting result from the 1975 program concerns the shales which lie stratigraphically below the main mineralized dolomite unit. They contain minor amounts of lead and zinc and leaching has resulted in the formation of iron oxide cemented "false gossans" that assay up to 3.2 per cent Zn. The soils over this unit are enriched in Pb and Zn and give a high response, but are thought not to be related to economic mineralization.

LEGEND

SHALE- dark gray and brown, very thin bedded to laminated silty shale and sandstone.

DOLOSTONE- medium to light gray and mottled gray, thick bedded to massive, fine to microcrystalline vuggy dolostone with minor solution breccia, chert. Locally arenaceous and pisolitic. Host unit for Pb-Zn mineralization.

SANDSTONE- light gray to brownish gray, very thin bedded to thinly laminated porous dolomitic quartz sandstone and dark gray non-calcareous shale. Abundant tangential crossbedding. Conglomeritic at base. Weathers gray to reddish brown. "Marker bed"

DOLOSTONE - medium to light gray, thin to thick bedded, fine to microcrystalline dolostone. Locally arenaceous, pisolitic.

SHALE - light brown, medium to dark gray, thin bedded to laminated phyllitic shale. Non-resistant.

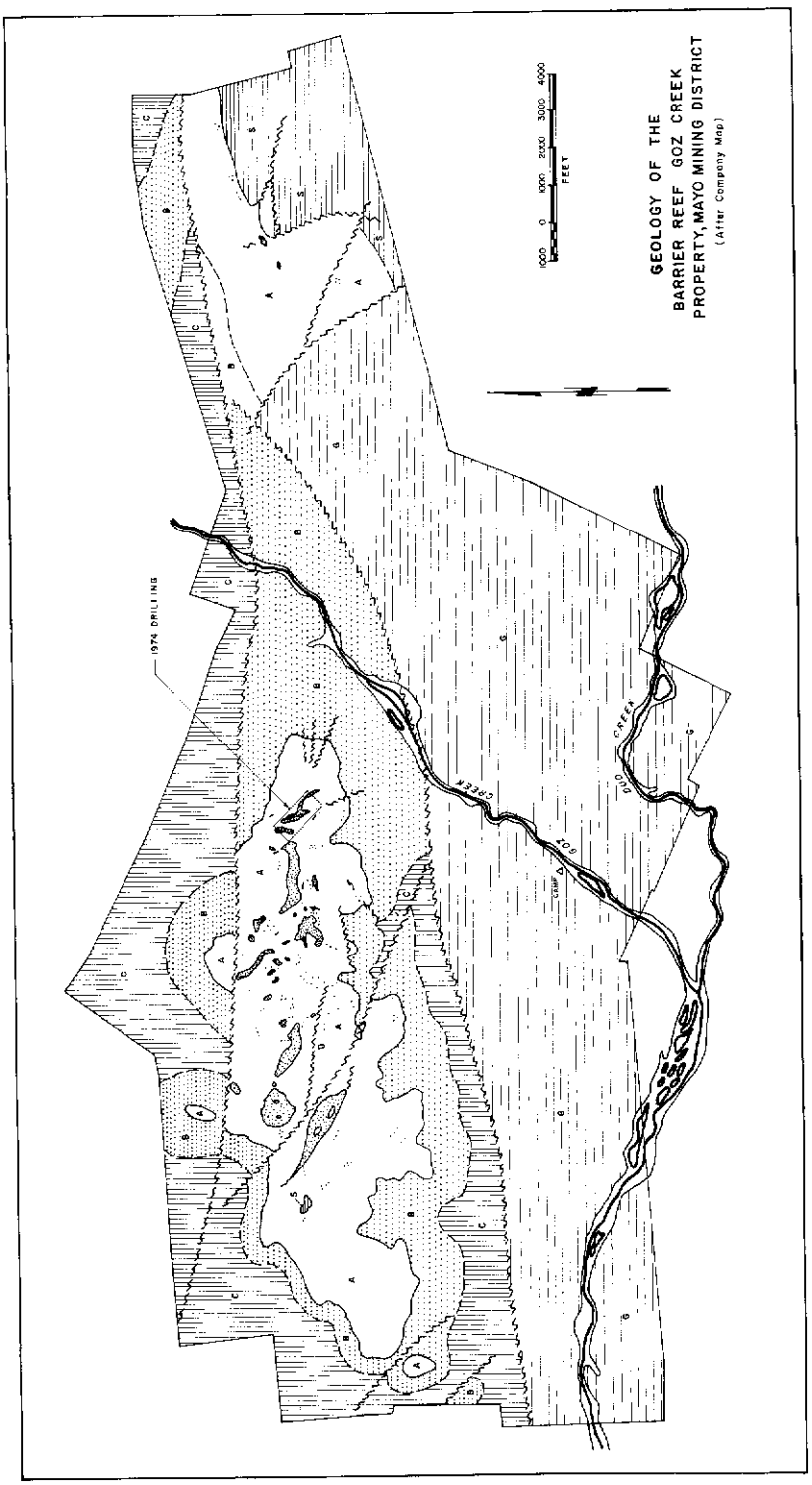
Lithologic contact, definite

Fault

Mineralized Areas:

Sphalerite

Smithsonite, Hydrozincite


GEOLOGY OF THE
BARRIER REEF GOZ CREEK
PROPERTY, MAYO MINING DISTRICT
(After Company Map)
1000 0 1000 2000 3000 4000
FEET
1974 DRILLING
GOZ CREEK
GOZ CREEK
CAMP

Goz Creek Property
Barrier Reef Resources Limited

Zinc, Lead
106 C 7, 8
(64°25'N, 132°30'W)

References: Blusson (1974a); Sinclair et al (1975).

Claims: GAZ 1-8; LUV 1-8; DUO 1-8; STOL 1-8; VUH 1-8; WALT 1-8; LIN 1-8; ANN 1-8; BON 1-8; HAM 1-16; BAF 1-96; ANG 1-8; MEB (Fr).

Location and Access:

The property straddles Goz Creek just above its confluence with Duo Creek. Mayo lies 118 miles to the southwest. Access is by fixed wing aircraft from Mayo to Goz Lake or Rackla Lake, and thence by helicopter to the property.

History:

The original block of 192 claims was staked in June and July 1973 to cover widespread zinc-lead mineralization discovered during the course of a regional geological and geochemical reconnaissance program. The discovery resulted in a staking rush in the area which lasted through the following winter and on into the spring. Initial work on the Barrier Reef property consisted of detailed geological mapping and prospecting, measurement of stratigraphic sections and surface rock sampling.

In 1974, a diamond drilling program resulted in 20 holes drilled for a total of 6,639 feet. Assay results were as high as 32 per cent sulphide zinc and three per cent oxide and carbonate zinc in dolomite beds dipping 5° to 10° to the south.

Description:

The property is underlain by a sequence of carbonates and clastics of Lower Cambrian age (see accompanying diagram). At the base of the section is a recessive phyllitic shale (Unit G). This is overlain conformably by Unit C, a resistant, grey, thin- to thick-bedded, calcareous dolomite, locally vuggy and pisolitic. Total thickness of this unit is about 1,150 feet. A disconformity separates it from overlying Unit B,a very thin-bedded, dolomitic quartz sandstone about 150 feet thick. The sandstone is overlain by a thick-bedded to massive fine to microcrystalline calcareous dolomite (Unit A). Porous vuggy beds with local breccias and pisolitic textures are common. Total thickness of this unit is about 1,000 feet, although the upper part has been removed by erosion in the vicinity of Goz Creek. At the top of the exposed secion is a very thin-bedded, silty shale and sandstone unit about 1,000 feet thick, Unit S.

Regional deformation has resulted in a structural style characterized by west-northwest-trending fold axes and faults. Two prominent westerly-trending faults cut across the property, one across its northern edge and one about a mile farther south. Between these faults the upper dolomite unit is exposed in outcrop for about 5 1/2 miles in an east-west direction. Extensive showings of zinc and lead sulphides occur along this outcrop over a stratigraphic interval of about 400 feet.

The mineralization is mostly greenish-yellow and red crystalline sphalerite with minor amounts of galena. Secondary smithsonite, cerussite and hydrozincite are common. Minor boulangerite occurs with sphalerite at several locations. Trace amounts of pyrite and marcasite are present, and secondary

limonite is widespread. Several modes of mineralization are recognized: matrix in silicified breccia beds, vug fillings, fracture fillings and disseminations in coarse crystalline dolomite.

The showings are visualized as irregular stratabound bodies of high-grade disseminated sphalerite, and as breccia with sphalerite matrix. These are surrounded by areas of lower grade sphalerite vug and fracture fillings.

Current Work and Results:

In 1975 field program included detailed gological mapping of the central part of the property (1 inch = 100 feet) and geochemical soil sampling of all claims east of Goz Creek. The central part of the property was subjected to 35 diamond drill holes (BQ core) for a total footage of 13,764 feet. As stated in a public release, preliminary evaluation of drill results suggested "drill-indicated potential of about 12 million tons of ore averaging 8 per cent zinc in the upper dolomite horizon" (Northern Miner, December 25, 1975).

GYR, ADD, ETC*
Harman Syndicate

Zinc, Lead
106 C 10
(64°40'N, 132°40'W)

Reference: Blusson (1974b).

Claims: GYR 1-26; ADD 1-32; ETC 1-12

Location and Access:

The claims are located about 135 miles northeast of Mayo. Access is by helicopter from Goz Lake, about 15 miles southeast of the property.

History:

The GYR claims were staked in July 1974, and the ADD and ETC claims in August 1974.

Description:

The property is underlain mainly by Siluro-Devonian limestone with windows of Ordovician Road River Formation shale. The rocks are relatively flat lying and are in contact with a partially overthrust block of the Sheepbed Formation along a northwest trending thrust fault dipping gently to the east. Mineralization consisting of yellow sphalerite and minor galena occurs within a fossiliferous and conglomeratic facies of the Siluro-Devonian limestone. The sphalerite is present along with white sparry calcite as a conglomerate matrix filling, as thin veinlets and as sphalerite pdeudomorphs after fossil fragments. The abundant fossil fragments, rounded limestone clasts and locally discordant attitude of the fossiliferous and conglomeratic facies suggests a possible paleoenvironment for the accummulation of reef breccia.

Current Work and Results:

In 1974, the area was subjected to preliminary geological mapping at a scale of 1 inch = 1,000 feet and detailed mapping at a scale of 1 inch = 200 feet of the main showing area. Assay values of random grab samples ranged from about 1 per cent to 9 per cent zinc and a main mineralized zone was determined which covered an area approximately 1,000 feet by 200 feet in size. Recommendations for further work included more detailed mapping, trenching and about 2,000 feet of exploratory short hole diamond drilling.

PONG
Bow River Resources Limited
Highhawk Mines Limited

106 C 10
(64°40'N, 132°55'W)

Reference: Blusson (1974a).

Claims: PONG 1-40

Location and Access:

The property is in the upper drainage area of Corn Creek, about 14 miles east of Pinguicula Lake and 115 miles northeast of Mayo. Access is by float plane from Mayo to Goz Lake or Pinguicula Lake, and from there by helicopter to the property.

History:

The claims were staked early in 1974 and field work was carried out in the summer of 1974.

Description:

The property is underlain by Hadrynian dolomite, shale of the Sheepbed Formation and dolomite of the Backbone Ranges Formation.

Current Work and Results:

During summer 1974, work consisted of a soil sampling program for Cu, Pb, Zn, over the contact area between the Hadrynian dolomite and the Sheepbed Formation. A total of 493 samples were collected at approximately 200 foot intervals along northeast-trending lines spaced 400 feet apart, within a grid about 14,500 feet by 2,500 feet in area. No significant anomalous copper values were obtained and only sporadic anomalous lead-zinc values were determined. Company geologists recommended follow-up geochemistry and prospecting to evaluate two of the anomalous lead-zinc zones.

BOB*
Cominco Limited

Lead, Zinc
106 C 10
(64°33'30"N, 132°56'W)

Reference: Blusson (1974a).

Claims: BOB 1-20

Location and Access:

The property is located about 115 miles northeast of Mayo. Access to the property is provided by float plane from Mayo to Pinguicula Lake and from there by helicopter, the remaining 14 miles to the southeast.

History:

The claims were recorded in August 1974 and July 1975.

Description:

The property is underlain by dolomite, quartzite and siltstone of the Lower Cambrian Sekwi Formation which is overlain by carbonates of the Ordovician Mount Kindle Formation. The rocks strike easterly with a very gentle dip to the north.

The main showing is exposed along the west side of a north-flowing creek draining into Corn Creek. The host rock is stromatolitic, orange to buff weathering, fine-grained dolomite of the Sekwi Formation with narrow vugs localized within stromatolitic zones. Some zebra structure is present. Coarse-grained galena, sphalerite, pyrite (marcasite?) and chalcopyrite constitute the mineralization. Three kinds of sphalerite are present; dark grey, red, and honey coloured. The mineralization is localized within vugs along the algal lamination planes of small moundlike bioherms, up to several feet in both length and width, and also along bedding planes in the dolomite. It occurs intermittently down dip for approximately 100 feet and for 50 feet along strike. Chip sampling of the main showing resulted in an average assay value of 0.69 ounces silver per ton, 5.86 per cent lead and 3.75 per cent zinc.

Current Work and Results:

During the summer of 1975, the property was subjected to geological mapping (1 inch = 1,000 feet), detailed prospecting and an induced polarization (I.P.) survey. The I.P. survey was conducted along five parallel lines spaced 100 m apart for a total length of 10 km, and it resulted in some weak responses in the southern portion of the main showing area. The company geologist did not recommend further work.

DF*
Cominco Ltd.
Canwex Exploration Limited

Lead, Zinc
106 C 10
(64°40'N, 133°00'W)

References: Blusson (1974b); Sinclair et al (1975, p. 57).

Claims: DF 1-81

Location and Access:

The property is located beside Corn Creek, about 12 miles east of Pinguicula Lake. Access is by fixed wing aircraft from Mayo to Pinguicula Lake and from there by helicopter to the property.

History:

The claims were staked in January 1974. During 1974, field work consisted of prospecting, geological mapping and a geochemical soil survey which outlined one coincident lead-zinc anomaly.

Description:

The property is underlain by Upper Hadrynian sediments, notably the Rapitan Group, the Keele Formation and the Sheepbed Formation. A more detailed description of the geology is given in the earlier report.

Two areas of mineralization occur on the property. One showing consists of dolomite breccia float with abundant buff fine-grained smithsonite. Mineralization encountered in drill holes consisted of minor fine- to coarse-grained sphalerite and pyrite within small vugs lined by quartz, sparry dolomite and with accessory pyrobitumen.

The main showing consist of galena, sphalerite, and minor chalcopyrite along with veinlets of coarse-grained sparry dolomite localized along a fault trending 070°/80°-85° south in dolomite breccia. Locally, traces of tetrahedrite are also present. The showing is situated near the middle of the Keele Formation and is located on the south side of a creek draining into Corn Creek. It is lens shaped in horizontal section, about 350 feet long and 60 feet maximum width.

Current Work and Results:

During 1975, parts of the property were subjected to detailed geological mapping (1 inch = 400 feet), geochemical grid soil sampling and IP survey. The geochemical grid was 200 feet by 400 feet and the IP grid, 50 m by 100 m.

Three trenches of 20 foot, 60 foot and 45 foot lengths were cut across the main showing. The centre trench resulted in assays of 2 1/2 ounces of silver per ton, 8 per cent zinc and 2 per cent lead. A diamond drill hole encountered the mineralized zone about 90 feet below the surface where it assayed less than 2 per cent lead-zinc over an interval less than 10 feet. In total, seven diamond drill holes were collared (BQ core) for a total footage of 1,704 feet.

MID
R.J. Hibbard

106 C 11
(64°34'N, 133°07'W)

Reference: Blusson (1974b).

Claims: MID 1-6, 11-16

Location and Access:

The property is located about 108 miles northeast of Mayo and 11 miles southeast of Pinguicula Lake. Access to the property is provided by float plane to Pinguicula Lake and thence by helicopter to the property.

History:

The claims were staked in March 1974.

Description:

The property is underlain by Lower Cambrian carbonates, quartzite, shale and sandstone which are overlain by dolomite of Siluro-Devonian age. The rocks strike northwesterly and dip gently to the northeast. No mineralization of economic interest has been found.

Current Work and Results:

A roconnaissance geochemical soil and stream sediment survey was conducted on the property in July 1974 for copper, lead and zinc. A moderately anomalous zone of zinc values occurs in the southern section of the property, but its trend could not be determined with the large sample spacing. Further work consisting of geological mapping, prospecting, and soil sampling on 400 foot line spacings and 100 foot sample intervals was recommended for the southern section of the property by a consulting geologist.

PING*
Bow River Resources Limited
Highhawk Mines Limited
Cominco Limited

lead, Zinc
106 C 11
(64°37'N, 133°15'W)

References: Blusson (1974b); Sinclair et al (1975, pp. 53-54).

Claims: PING 1-26

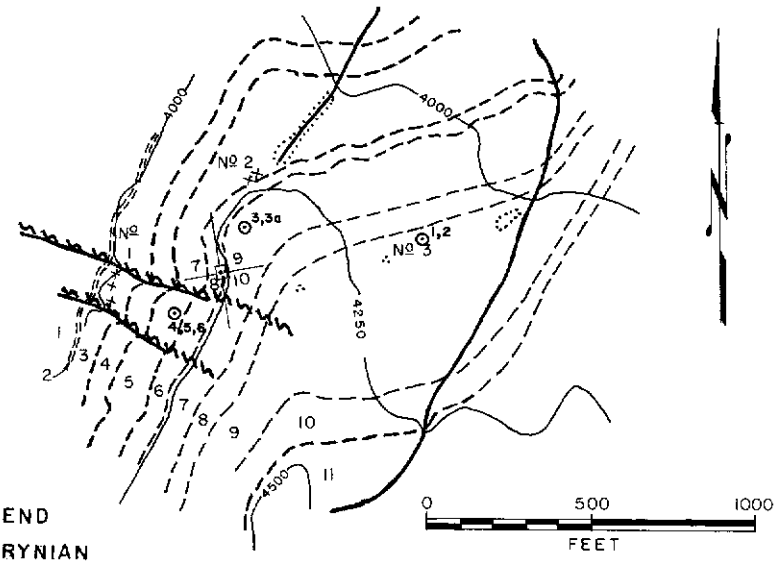
Location and Access:

The property is located about 107 miles northeast of Mayo and is accessible by float plane to Pinguicula Lake and from there by helicopter, 5 miles to the southeast.

History:

Most of the claims (1-24) were staked in January 1974 on the basis of a favourable geological environment as indicated on recently released G.S.C. geological maps. In addition, claims PING 25 and 26 were staked in September 1974. Geochemical work done in summer 1974 revealed several anomalous areas, and follow-up investigation resulted in the discovery of three main showings of lead-zinc mineralization in Hadrynian dolomite (Sinclair et al, 1975,). Detailed soil geochemistry and geological mapping were undertaken in August

GEOLOGY OF THE PING CLAIM GROUP, MAIN SHOWING AREA, BLACK CANYON CREEK. MAYO MINING DISTRICT



Modified after Travis, 1974

LEGEND

HADRYNIAN

KEELE FORMATION

11	Dolomite, microcrystalline, white to buff weathering.
10	Quartz pebble conglomerate; brown siltite and shale, frequently dolomitic.
9	Dolomite, stromatactoid, yellow-grey and black interbanded, medium to coarsely crystalline, sandy near base.
8	Shaly dolomite, orange weathering, platy, colour varies from light grey to black, pyritic.
7	Dolomite, finely crystalline, algal and stromatolite laminations, light grey colour.
6	Interbedded argillite and dolomite, dark grey to black, very pyritic.
5	Dolomite, dark and light grey laminations, possibly algal. Stromatactoid in places with frequent vugs. Minor pisolite beds.
4	Dolomite, medium grained with many sandy sections, carbonaceous.
3	Dolomite, microcrystalline, light grey, intensely recrystallized to coarsely crystalline white dolospar in places; minor dark shale beds.
2	Dolomite, medium crystalline, black, finely laminated with minor argillite laminae.
1	Dolomite, black and white, interbanded, coarsely crystalline.

Inferred fault

Lithologic contact

Pb-Zn mineralization, outcrop, float

7 | 9 / 8 | 10 Claim post

⊙ Diamond drill hole

1974 in the vicinity of the main showings. The property is jointly owned by Bow River Resources Limited and Highhawk Mines Limited and is covered by an option agreement whereby Cominco Limited can earn up to a 70 per cent interest.

Description:

The property is underlain by rocks of Hadrynian to Ordovician-Silurian in age. The oldest strata are Upper Rapitan Group clastic sediments and carbonates witch range from slate and argillite to sandstone and quartzite. Most units are ferruginous and are frequently interbedded with platy orange weathering dolomite. The Keele Formation overlies the Rapitan Group and is mainly dolomite with minor clastic intercalations (see accompanying diagram). Overlying the Keele Formation is the Sheepbed Formation which is largely comprised of dark grey to black recessive weathering shale and argillite with minor limestone and quartzite. The unit is poorly exposed on the property and may be partially removed by the overlying unconformity. Ordovician-Silurian carbonates containing pods of black argillite and locally reefal fossils, overlie the older sediments unconformably and are exposed on the southwest edge of the property.

All rock units on the property strike northeast and dip gently to the east. They are cut by normal faults striking primarily southeast and appear to be on the north limb of a southeast trending syncline (Blusson, 1974a).

Mineralization on the property is found in different stratigraphic horizons of the Keele Formation dolomite, frequently in the vicinity of faults. Two main showings have been located on the PING group. The No. 1 showing, exposed along the sloping east bank of a creek consists of about 3 per cent coarse-grained galena and red to honey sphalerite with coarse-grained white dolospar forming the matrix of a breccia. Fine-grained grey dolomite form the breccia clasts and above and below the mineralized zone, the dolomite is marked by well banded zebra structure. The mineralized zone is exposed for about 35 feet up and down the bank slope and about 125 feet along the length of the creek.

The No. 2 showing is about 150 feet stratigraphically above the No. 1 showing and consists of similarly mineralized dolomited breccia. The No. 3 showing is a float zone with sporadic occurrences of boulders of massive coarse-grained red sphalerite with minor galena.

Current Work and Results:

In the summer of 1975, further geological mapping of the claim group was performed at a scale of 1 inch = 100 feet, along with an IP survey and follow-up diamond drilling (AQ core). Coincident geochemical and IP anomalies over the float zone (No. 3 showing) led to the drilling of diamond holes 75-1 and 75-2 which encountered very minor sphalerite-galena, and a 4 foot interval of 6.17 per cent lead and 5.76 per cent zinc. The IP rsponse in the area was ascribed to the presence of pyrite.

DDH 75-3 and 75-3A were drilled in the No. 2 showing and did not encounter any significant mineralization.

DDH 75-4, 75-5 and 75-6 were drilled behind the main No. 1 showing. Only holes 75-5 and 75-6 encountered significant mineralization and their intersections are tabulated below, together with assays of trench samples from three sections cut across the 100 foot long surface exposure of No. 1 showing:

Hole No.	Attitude	Intersection	Interval	Pb wt %	Zn wt %	Ag oz/ton
75-5	-55°	209'-242'	33'	7.9	14.84	1.75
		179.5'-186.5'	7'	5.9	13.29	1.00
75-6	-75°	199'-217'	18'	13.62	1.25	1.97
Trench			11'	15.47	2.67	3.0
"			17'	1.59	1.65	0.17
"			27'	13.85	13.18	2.94

BALLS, SAM
Cominco Ltd.

Lead, Zinc
106 C 11
(64°39'N, 133°05'W)

Reference: Blusson (1974b).

Claims: BALLS 1-10; SAM 1-14

Location and Access:

The property is located north of Corn Creek, about 120 miles northeast of Mayo. Access to the property is via fixed-wing aircraft from Mayo to Pinguicula Lake and then by helciopter, a distance of 10 miles to the east.

History:

The claims were staked during March and July 1975 by Bow River Resources and optioned by Cominco in July 1975. Prior to Cominco's optioning of the property, personnel employed by Bow River Resources prospected the property and completed a small geochemical survey.

Description:

The claims are underlain by rocks, tentatively assigned to the Upper Hadrynian Keele Formation, and consist of several northwest-trending dolomite units with minor limestone and quartzite.

Mineralization is sparse and consists of sphalerite, galena and minor tetrahedrite in vugs and fractures. The best mineralization is exposed in a talus zone approximately 300 feet long and 6 to 35 feet in width in close proximity to a fault. It occurs at an elevation of 4,900 feet above sea level and consists of honey coloured to brown sphalerite and lesser galena as disseminations and thin veinlets in a chocolate-brown weathering dolomite. The average grade for the zone is 0.84 per cent Pb-Zn across an average width of 17 feet.

Current Work and Results:

During July 1975, the property was subjected to geological mapping (1 inch = 500 feet) and geochemical soil sampling for lead and zinc. Twenty-nine soil samples were collected at intervals of 200 feet along 2 lines spaced 1,000 feet apart. Anomalous values were correlated with surface mineralization. Company geologists recommend that further work should consist of trenching in the best mineralized area.

DEA
Spectroair Explorations Limited
Cominco Limited

Lead, Zinc
106 C 11
(64°43'N, 133°02'W)

Reference: Blusson (1974b).

Claims: DEA 1-72

Location and Access:

The property is on the upper part of Corn Creek, 11 miles east of Pinguicula Lake. Access is by fixed wing aircraft from Mayo to Pinguicula Lake and from there by helicopter to the property.

History:

The DEA 1-70 claims were recorded on September 25, 1973 and the DEA 71 and 72 claims were added a year later.

In 1974, geological mapping, geochemical soil sampling and some hand trenching were conducted. Two coincident lead-zinc anomalies were outlined by the soil survey.

Description:

The property is underlain by medium- to thick-bedded, fine-grained dolomite of Hadrynian age. Scattered occurrences of sphalerite and galena have been found in vugs, fractures and breccia zones within the dolomite.

Current Work and Results:

During summer 1975, three diamond drill holes (BQ core) were collared for a total footage of 1,103 feet. Minor disseminated lead-zinc mineralization was encountered in all holes.

Dolores Creek*
Amax Exploration Incorporated

Lead, Zinc
106 C 13
(64°49'N, 133°36'W)

References: Blusson (1974b); Sinclair et al (1975, p. 62).

Claims: DTG 1-144

Location and Access:

The claims are situated on the east side of the Bonnet Plume River, roughly two miles south of Dolores Creek. Access is by float plane to Pinguicula Lake, nine miles to the southeast, and then by helicopter.

History:

The claims were staked in 1974 as a follow-up on a reconnaissance stream sediment geochemical program for Pb-Zn. In 1974, preliminary mapping, prospecting and sampling were conducted.

Description:

The property is underlain by a synclinal east-west-trending sequence of Hadrynian carbonate and clastic rocks which lie unconformably on Helikian sediments. Numerous northeast, northwest, and east-northeast trending faults disrupt the local stratigraphy and hamper correlation of units.

Mineralization consists of fracture fillings and veinlets of quartz, dolospar, galena, sphalerite, pyrite and hydrozincite within a well bedded unit of grey to black, fine-grained dolomite of Hadrynian age. The mineralized zone appears restricted to an extensive fault structure striking westerly and characterized by intermittent sheared and sheet-jointed zones up to 20 feet wide. It occurs at an elevation of approximately 4,500 feet above sea level and has a surface area of at least 1,000 feet by 1,000 feet with an approximate stratigraphic thickness of 400 feet. Channel samples from separate outcrops within the main showing returned values up to 1.74 per cent zinc and 0.24 per cent lead across 20 feet.

Copper mineralization also occurs on the property in a Helikian interbedded sequence of maroon sandstones and conglomerates (Hs). Chalcopyrite, hematite, pyrite, malachite and azurite returned assay values of 1.34 per cent copper and 0.44 ounces of silver per ton across 0.5 feet.

Current Work and Results:

During the summer of 1975, work consisted of prospecting and geological mapping (1 inch = 500 feet) with some sporadic geochemical sampling for Cu, Pb, Zn, Ag. Further work recommended by company geologists included more detailed geological mapping and prospecting.

ALE
Cyprus Anvil Mining Corporation Limited

Lead, Zinc
106 C 13
(64°52'N, 133°45'W)

Reference: Blusson (1974b).

Claims: ALE 1-6

Location and Access:

The claims are located on the west bank of the Bonnet Plume River, 12 miles south of Fairchild Lake and 110 miles northeast of Mayo. Access is provided by float plane from Mayo to Fairchild Lake and from there by helicopter to the property.

History:

The claims were staked in August 1975.

Description:

The property is underlain by carbonates of Helikian age, and the mineralization consists of open space fillings of pyrite, galena, and sphalerite in brecciated portions of buff-weathering dolostone. The showings occur along a strike length of 1,600 feet and are on strike with similar showings on the former LAD claims, 8,000 feet to the southeast on the east bank of the Bonnet Plume River.

Current Work and Results:

During 1975, a geochemical soil sampling program was conducted along a small grid for Cu, Pb, Zn. Soil samples were collected at 200 foot intervals along 3 north trending lines spaced 200 feet apart for a total length of 10,000 feet. Anomalous Pb-Zn values were encountered along the strike extensions of the mineralized areas and the company geologist recommended further work which included additional geochemical soil sampling, hand trenching and geological mapping.

Mount Profeit*
Amax Exploration Incorporated

Lead, Zinc, Copper
106 C 14
(64°49'N, 133°03'W)

References: Blusson (1974a); Sinclair et al (1975, pp. 60-61).

Claims: DOC 1-150

Location and Access:

The property lies to the north of and straddles Mount Profeit, roughly 15 miles northeast of Pinguicula Lake. Access in 1975 was by float plane to Pinguicula Lake and thence by helicopter to the property.

History:

The claims were staked in July 1974 as a result of follow-up prospecting on a stream sediment geochemical anomaly. In 1974, work consisted of preliminary mapping, prospecting and sampling.

Description:

The property is underlain by Hadrynian clastics and carbonates which strike north-northwest and dip moderately to the east. In the northern portion of the property, Upper Hadrynian dolomite (Unit Hd^1, Blusson, 1974a) changes facies northwesterly into dominantly basinal clastics of the Rapitan Group. The Hadrynian dolomite and shale unconformably overlie older Hadrynian thin bedded dolomite, siltstones and shale (Unit Hsc). Several faults with small displacement occur and northeasterly trending sheet jointing and local shearing are present in the area of the main showing. Small folds are locally present beneath an unconformity in the older Hadrynian units.

Lead-zinc mineralization on the property is scattered mainly within a 1,000 foot thick portion of Unit Hd^1 consisting of light grey weathering, mottled, vuggy, stromatolitic dolomite. The main mineralized showings are sporadically exposed on the eastern slope of Mount Profeit from 5,100 to 5,900 feet elevation above sea level within a 2,000 foot by 4,000 foot area and the modes of mineralization include massive pods, breccia and fracture fillings in shear and sheet jointed zones, irregular replacement patches, vug fillings or linings and stratabound bedding plane and fracture fillings. The mineralization consists of some or all of the following: galena, sphalerite, tetrahedrite, pyrite, marcasite with secondary smithsonite, hydrozincite and malachite. The largest massive pod (31 feet by 27 feet) of galena and red-green sphalerite with minor tetrahedrite gave the following assay over 31 feet: 16.8 per cent zinc, 47.2 per cent lead, 17.2 ounces of silver per ton. A 21 foot sample across a shear zone assayed 3.48 per cent lead, 6.60 per cent zinc, and 2.00 ounces of silver per ton. The clustering of showings within the Hd^1 unit suggests some sort of stratigraphic control.

Current Work and Results:

During 1975, prospecting and detailed geological mapping at a scale of 1 inch = 500 feet were carried out on the property in addition to sporadic geochemical soil sampling. Company geologists recommended further work consisting of 5,000 feet of diamond drilling in 8 to 10 holes to test extensions and controls of the mineralization.

PTERD, PNERD, KNIT, PTOES, SKIN
Archer-Cathro (Wernecke Joint Venture)

Uranium
106 C 14
(64°57'N, 133°18'W)

Reference: Blusson (1974a).

Claims: PTERD 1-10; PNERD 1-4; KNIT 1-8; PTOES 1-8; SKIN 1-4

Location and Access:

The property is located about 13 miles east of Fairchild Lake and 120 miles northeast of Mayo. Access in 1975 was provided by helicopter from Kiwi Lake, 43 miles to the northwest. An emergency airstrip is located about 2 miles south of the property, near the junction of Tetrahedrite and Cobalt creeks.

History:

The PTERD claims were staked in July 1975, PNERD in August and KNIT, PTOES and SKIN in September 1975.

Description:

The claims are underlain by carbonate and clastic rocks of Helikian age - Unit Hcs and Hsc (Blusson, 1974a). Mapping by company geologists also identified fine-grained metavolcanics with mudstone interbeds, calc-silicates, and an orange weathering argillaceous dolomite.

Uraniferous float has been located in a boulder train. In addition, chalocpyrite with minor cobaltite occurs as disseminations and fractures in metavolcanics at the headwaters of Cobalt Creek.

Current Work and Results:

During summer 1975, a portion of the property was geologically mapped at a scale of 1 inch = 500 feet. In addition, a radiometric survey was conducted over a grid area of about 700 feet by 2,200 feet. Readings were taken with a scintillometer at 50 foot intervals along lines spaced 100 feet apart.

CH, REUBEN
United Keno Hill Mines Limited

Silver, Lead, Zinc
106 D 4, 105 M 13
(64°00'N, 135°35'W)

Reference: Sinclair et al (1975, p. 14).

Claims: CH 1-224; REUBEN 1-6

Location and Access:

The claims are situated on Chambers Hill, approximately six miles northwest of Elsa, and are joined on the southwest by the REUBEN claims. Access to the claim block is mainly by helicopter, although two poorly maintained tote trails to near the southern claim group boundary do exist: one from the south McQuesten Road to the Shanghai workings and one from the Hansen Lake Road to the vicinity of the old U.R. group.

History:

Previous work on the CH group is documented in Sinclair et al (1975). In late 1974, the REUBEN claims (formerly TEX 1-6) were staked adjoining the CH group on Chambers Hill.

Description:

CH group geology is described in Sinclair et al (1975). The REUBEN claims are underlain by a thick sequence of thick-bedded quartzite interbedded with sericite schist. In addition, quartz-feldspar porphyry, biotite lamprophyre and greenstone sills occur which may be continuous with similar units on the Shanghai property to the west and the CH group to the east.

Structure on the claim groups is complex and consists of northwest, northeast and north trending elements. Two unmineralized major crossfaults on the property have a northwest trend whereas several mineralized vein faults with a northeast trend are present on the REUBEN and CH group. The north trending lineations are probably related to crossfaults.

The former Shanghai Mine with 2,200 feet of underground workings is located on the REUBEN claim group. Mineralization is concentrated in two mineralized vein faults, the No. 1 and No. 2 vein zones. The No. 1 vein zone trends northeast and dips steeply to the northwest. High zinc values were encountered near the portal, but the rest of the vein appeared to be poorly mineralized, though three diamond drill holes encountered high silver values in the hanging wall. The No. 2 vein zone is about 200 feet southeast of the No. 1 vein and is heavily mineralized with pyrite, minor galena and sphalerite. Numerous rusty fractures containing siderite are also present in outcrops on the property.

Current Work and Results:

In 1975, geological mapping (1 inch = 400 feet) was conducted on the REUBEN claims and on favourable areas of the CH group not previously covered. Mineralized veins and showings were examined and sampled. Preliminary and detailed geochemical soil sampling was conducted on the REUBEN and CH claims to trace known and inferred vein zones. About 2,400 soil samples were collected along lines spaced 300 feet apart at 100 foot intervals (locally 100 feet by 100 feet) and analyzed for Ag, Pb, Zn. Several anomalies were determined, most of which correlated with already known zones of mineralization.

Recommendations for further work included overburden drilling of mineralized vein zone areas, detailed prospecting and bulldozer trenching of three geochemical anomalies.

WILL
Cyprus Anvil Mining Corporation

Zinc. Lead, Copper
106 D 7
(64°24'N, 134°42'W)

Reference: Green (1972).

Claims: WILL 1-60

Location and Access:

The property is located near Mount Williams, about six miles north of the Beaver River and 68 miles northeast of Mayo. Access during summer is by helicopter from Mayo, although the Wind River winter road passes six miles west of the claim group.

History:

The claims were staked during July 1975 as a follow-up on several geochemical anomalies and lead-zinc showings discovered during a regional geochemical survey.

Description:

The claims are underlain by Helikian shale and dolomite. The predominant orange weathering, light and dark grey interbedded argillaceous dolomite and chert unit trends northwest and dips gently to moderately to the northeast. Brown to black, thin bedded shales occur throughout the dolomite unit.

Mineralization consists of light brown to yellow sphalerite, minor galena, chalcopyrite and sparry dolomite as matrix in a tectonic breccia and as thin fracture fillings within the main dolomite unit. Numerous showings occur throughout the dolomite unit. The main showing consists of mineralization in a tectonic breccia over a strike length of roughly 2,000 feet with widths up to 50 feet. A metal zonation has been determined in the showing which consists of an upper copper-zinc zone and a lower lead-zinc zone. An estimated average grade of 10 per cent combined Cu, Pb and Zn over a 20 foot width has been postulated for the length of the showing.

Current Work and Results:

During the summer of 1975, the property was subjected to preliminary geological mapping (1 inch = 1,320 feet) and geochemical soil sampling for Cu, Pb, Zn. One hundred and ten geochemical soil samples were collected along the banks of creeks in the local area. Most of the lead and zinc anomalies are directly related to the known showings, though several anomalies do occur in the north half of the claim group where no showings have been found to date. Company geologists recommended further work consisting of geological mapping, chip sampling and possibly diamond drilling.

A
Dawson Range Mines Limited

106 D 7
(64°25'N, 134°55'W)

Reference: Green (1972).

Claims: A 1-16

Location and Access:

The property is located on the east side of Blaine Creek, a tributary of Beaver River, about 65 miles northwest of the town of Mayo. Access is by helicopter from Mayo or by a winter tote road from Mayo along Blaine Creek.

History:

The claims were staked in August 1974.

Description:

The claim group straddles the contact zone of a Proterozoic dolomite unit that was intruded by a large stock of gabbro. The mineralized zone consists of interbanded galena, sphalerite, chalcopyrite, pyrite and pyrrhotite in a tremolite skarn zone. It has been exposed in the creek for a distance of 20 feet and can be traced north for approximately 300 feet.

Current Work and Results:

Reconnaissance prospecting and a brief geological examination of the showing were carried out. A chip sample of the main mineralized zone assayed 7.13 per cent lead, 2.61 per cent zinc, 0.40 per cent copper, 1.57 ounces per ton silver and .003 ounces per ton gold.

BOND
Archer-Cathro (Wernecke Joint Venture)

Uranium
106 D 10
(64°40'N, 134°57'W)

Reference: Green (1972).

Claims: BOND 1-96

Location and Access:

The claims are located about 80 miles northeast of Mayo in the vicinity of the headwaters of Bond Creek. Access was provided by helicopter from Kiwi Lake, about 40 miles to the north.

History:

The claims were staked in June and September, 1975.

Description:

The property is underlain by by a window of Proterozoic rocks which are surrounded by Ordovician and Silurian limestone and dolomite. Shale, argillite and quartzite comprise the Proterozoic undivided Unit 1 as mapped by Green (1972). Further mapping by company geologists has shown that locally, the Proterozoic rocks consist of fine-grained metavolcanics with mudstone interbeds. The sequence has been complexly folded and the metavolcanics are foliated in an east-west direction.

Two areas of uranium mineralization have been located. The first consists of a vein occurence of siderite-quartz (±) barite with accompanying minor chalcopyrite, pyrite and pyrrhotite and the second consists of several radioactive, iron and manganese stained, lensoid zones in foliated and brecciated metavolcanics.

Current Work and Results:

During summer 1975, a portion of the claim group was subjected to programs of detailed geological mapping (1 inch = 200 feet), soil geochemistry and a radiometric survey. Soil samples were taken at 200 foot intervals along lines spaced 400 feet apart over a grid area of 2,400 by 8,800 feet. In addition, radiometric measurements were taken at 50 foot intervals along grid lines spaced 400 feet apart and several small anomalies were located.

BOZO
Archer-Cathro (Wernecke Joint Venture)

Uranium
106 D 10
(64°40'N, 134°45'W)

Reference: Green (1972).

Claims: BOZO 1-16

Location and Access:

The claims are located about 80 miles northeast of Mayo along a tributary of Bond Creek. In summer 1975, access to the property was provided by helicopter from Kiwi Lake, 40 miles to the north. The Wind River Trail, a winter road, passes less than five miles east of the claims but is separated from them by rugged topography.

History:

The claims were staked in June 1975.

Description:

The property is underlain by a window of Proterozoic rocks surrounded by Ordovician and Silurian limestone and dolomite. Shale, argillite and quartzite comprise the Proterozoic undivided Unit 1 as mapped by Green (1972). Further mapping by company geologists has shown that locally, the Proterozoic rocks consist of fine-grained tuffaceous metavolcanics with mudstone interbeds.

Mineralization occurs within a weakly radioactive gossan which consists of up to fifty per cent disseminated pyrite and marcasite with minor magnetite and barite and a trace of chalocpyrite in brecciated volcanics over an area approximately 600 feet long and 400 feet wide.

Current Work and Results:

During the summer of 1975, the property was subjected to detailed geological mapping (1 inch = 100 feet), soil geochemistry and radiometric surveys. Soil samples were taken at 200 foot intervals on lines 200 feet apart within a grid area about 1,600 feet by 1,000 feet. In addition, radiometric measurements were taken at 50 foot intervals on lines 100 feet apart and an anomalous area approxumately 150 feet long and 75 feet wide was located on the eastern side of the gossan.

PIKE
Archer-Cathro (Wernecke Joint Venture)

Uranium
106 D 16, 106 E 1
(65°00'N, 134°26'W)

References: Green (1972); Norris (1975).

Claims: PIKE 1-14

Location and Access:

The property is located about 110 miles northeast of Mayo and access was provided by helicopter from Kiwi Lake, 15 miles to the north.

History:

The claims were staked in June 1975.

Description

The claims are underlain by Lower Proterozoic Unit HO (Norris, 1975) phyllitic argillites and quartzites. Further mapping by company geologists has shown the rocks to consist locally of three units: a fine-grained, locally phyllitic, metavolcanic with mudstone interbeds, a grey to black phyllitic argillite and an interformational breccia.

Mineralization consists of traces of brannerite in fractures within the phyllitic argillite.

Current Work and Results:

During the summer of 1975, the property was subjected to detailed prospecting, soil geochemistry and radiometric survey programs. Soil samples were collected at 200 foot intervals along lines spaced 400 feet apart within a grid area of 3,600 feet by 3,000 and uranium anomalies were determined in two separate areas of the claim group. Radiometric measurements were taken at 50 foot intervals along grid lines spaced 400 feet apart but no specific anomalous zones or trends were determined.

BEV*
Great Plains Development Company
of Canada Limited

Zinc
106 E 1
(65°12'N, 134°15'W)

Reference: Norris (1975).

Claims: BEV 1-20

Location and Access:

The property is located about 130 miles northeast of Mayo and 12 miles southeast of Margaret Lake. Access to the property is provided by float plane to Margaret Lake and from there by helicopter to the property.

History:

The claims were staked during summer 1974 as a follow-up on a reconnaissance stream sediment geochemical program in the Bonnet Plume area.

Description:

The property is underlain by Helikian limestones (Unit H2, Norris, 1975) in fault contact with mudstone breccia of the Hadrynian Rapitan Formation in the southern portion. The rocks are tightly folded into a series of synclines and anticlines and have been faulted in several places.

Minor mineralization occurs within black, fine-grained limestone adjacent to a northwest trending fault. It consists of colloform marcasite, coarse-grained yellow sphalerite and galena.

Current Work and Results:

During the summer of 1975, the property was subjected to geological mapping (1 inch = 1,060 feet) and a soil geochemical survey. Soil samples were collected at 100 foot intervals along 100 foot contour lines and analyzed for Pb, Zn, Cd. The survey determined a weak open zinc anomaly which corresponded to a change in lithology from grey microcrystalline to yellow weathering limestone. Further geochemical sampling was subsequently undertaken but the results are unknown at present.

OTIS
Archer-Cathro (Wernecke Joint Venture)

Uranium
106 E 1
(65°02'N, 134°24'W)

Reference: Norris (1975).

Claims: OTIS 1-64

Location and Access:

The claims are located about 120 miles northeast of Mayo and are accessibel by helicopter from Kiwi Lake, 14 miles to the northwest.

History:

The claims were staked in June 1975.

Description:

The property is underlain by Lower Proterozoic phyllitic argillites and quartzites (Unit H0, Norris, 1975). Further mapping by company geologists has subdivided this unit locally into a fine-grained, locally phyllitic, metavolcanic with mudstone and breccia interbeds, calc-silicate and a grey to black phyllitic argillite. Major north and west trending faults disrupt the rock units in the claim area.

Mineralization consists of occasional coarse disseminations of brannerite commonly surrounded by brick red halos of hematite alteration and associated with both the north and west trending faults.

Current Work and Results:

During summer 1975, geological mapping (1 inch = 1/2 mile), soil geochemistry and radiometric survey programs were conducted. Soil samples were taken at 100 foot intervals along 700 foot long lines spaced 200 feet apart within a grid area of 9,200 feet by 700 feet. Only small erratic uranium anomalies were located. In addition, radiometric measurements were made at 50 foot intervals along the grid lines and several anomalies were located.

WERNECKE
Archer-Cathro (Wernecke Joint Venture)

Uranium
106 E 1
(65°08'N, 134°23'W)

Reference: Norris (1975).

Claims: WERNECKE 1-82

Location and Access:

The property is located on Quartet Mountain about 120 miles northeast of Mayo and access is provided by helicopter from Kiwi Lake, eight miles to the northwest.

History:

The claims were staked in June (1-42) and September (43-82) 1975.

Description:

The claims are underlain by Lower Proterozoic phyllitic argillite and quartzite (Unit H0, Norris, Further mapping by company geologists has shown the rocks to locally consist of fine-grained metavolcanics with breccia and mudstone interbeds.

Uranium mineralization consisting of brannerite with traces of thorite and uranothorite occurs disseminated within pink to brown banded metavolcanics in the vicinity of a similarly mineralized quartz vein on the north side of Quartet Mountain.

Current Work and Results:

During summer 1975, the property was subjected to detailed geological mapping (1 inch = 900 feet and 1 inch = 100 feet), soil geochemistry and airborne and ground radiometric survey programs.

A contour airborne radiometric survey was flown around Quartet Mountain at 500 foot elevation intervals and several anomalous zones were determined. In addition, ground radiometric measurements were made at 50 foot intervals along lines spaced 100 feet apart over the quartz veined area.

FLUNK
Ogilvie Joint Venture
c/o Archer, Cathro and Associates Limited

Zinc, Lead
106 E 2
(65°06'N, 134°52'W)

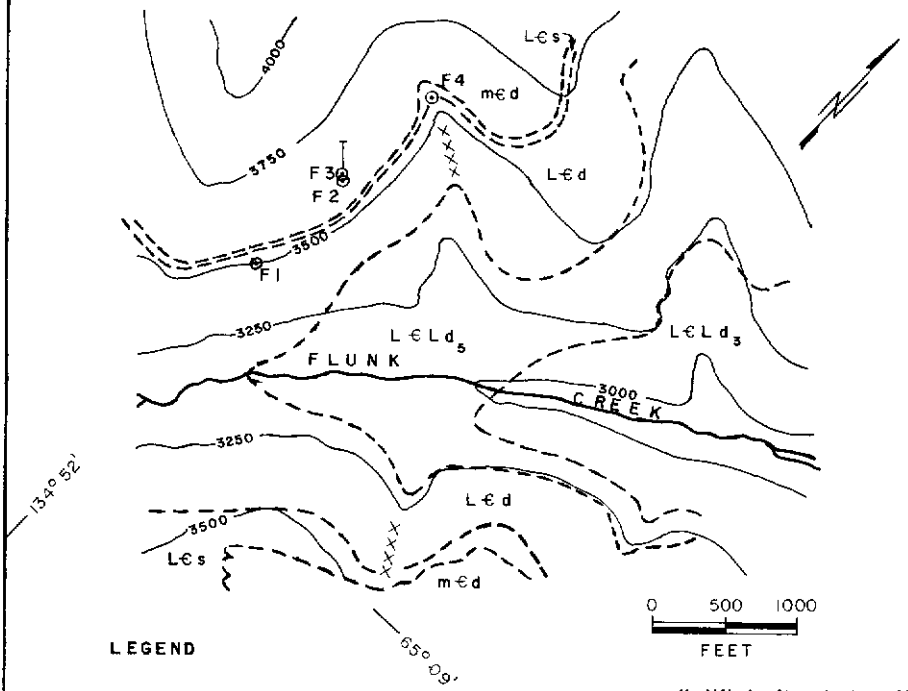
References: Norris (1975); Dawson (1975).

Claims: FLUNK 1-164

Location and Access:

The FLUNK claims are situated 18 miles southwest of Margaret Lake. Access in 1975 was by fixed wing aircraft to Kiwi Lake (eight miles southwest of Margaret Lake) and then by helicopter to the property.

GEOLOGY OF THE FLUNK CLAIM GROUP, MAIN SHOWING AREA, ILLTYD CREEK, MAYO MINING DISTRICT



LEGEND

Modified after Archer, 1976

MIDDLE CAMBRIAN

M€d — Massive light grey dolomite

LOWER CAMBRIAN

L€s — Dark grey, purple or green dolomitic shale

L€d — Red-brown weathering thick bedded, reefoidal dolomite, generally porous, vuggy, brecciated with tertiary dolomite, host of Pb-Zn mineralization

L€Ld — 3-Thin bedded limestone with clastics, trilobites, oolites and oncolites
5-Oncolitic, thin bedded, shaly dolomite

Diamond drill hole, vertical inclined

Pb-Zn mineralization

Lithologic contact

History:

The claims were staked in June and July 1974 during a program of regional geochemical reconnaissance and prospecting. In 1974, work consisted of geological mapping and geochemical surveys.

Description:

The property is underlain by a series of Middle and Lower Cambrian clastics and carbonates which unconformably overlie Proterozoic quartzite and shale (see accompanying diagram). The rocks are broadly folded along northeast trending axes that plunge gently to the southwest.

Mineralization is generally restricted to a 200 foot thick vuggy Lower Cambrian dolomite (Unit L6d) which is underlain by thin bedded limestone and shaly dolomite and overlain by a thin horizon of purple shaly dolomite (see accompanying diagram). It generally consists of disseminated honey yellow to light grey fine-grained sphalerite. Accessory marcasite and pyrite also occur in amounts varying from a few per cent to about 10 per cent, usually filling vugs in the dolomite and occasionally occurring as thin fracture fillings. The best mineralization is found in areas of most intense brecciation. The dolomite unit is best mineralized over a length of slightly more than 2,000 feet along both sides of a northeast flowing creek. It outcrops locally in three areas and chip channel sampling of these showings in 1974 returned the following assay values:

Showing	Stratigraphic thickness (ft)	Zn %	Pb %	Ag oz/ton
No. 1	59	8.10	0.46	1.16
No. 2	135	1.11	0.14	0.12
No. 3	25	2.22	0.16	0.18

Current Work and Results:

During the summer of 1975, the property was subjected to 1,328 feet of diamond drilling in four holes (BQ core). Lead-zinc mineralization was encountered in all four holes and selected assay results from the best mineralized zones encountered in drilling are presented below:

DDH	Interval (ft)	Zn %	Pb %	Ag oz/ton
F 1	180-185	2.10	-	-
F 2	125-145	6.04	1.46	0.69
F 3	215-230	1.69	1.27	0.36
F 4	115-150	1.70	0.16	0.40

Drilling results showed that the 200 foot section of FLUNK dolomite is weakly mineralized with sphalerite over a length of at least 1,400 feet.

IGOR
Ogilvie Joint Venture
c/o Archer, Cathro and Associates Limited

Copper, Uranium
106 E 2
(65°03'N 134°38'W)

References: Norris et al (1963); Norris (1975); Blusson (1976).

Claims: IGOR 1-24

Location and Access:

The claims lie five miles northeast of Wind River and 20 miles south of Margaret Lake in the Wernecke Mountains. Access is by fixed wing from Mayo to a base camp at Kiwi Lake, 12 miles north of the claims and thence by helicopter.

History:

The IGOR claims were staked in 1974 by Ogilvie Joint Venture, a consortium of Chevron Standard Limited, Marietta Resources International Limited, Aquitane Company of Canada Limited and L. and H. Clay. Preliminary geological mapping and soil sampling were carried out in 1974.

Description:

The claims are underlain by a sequence of metavolcanic and metasedimentary rocks (Unit HO, Norris, 1975) of Proterozoic age. Copper mineralization is found in fine-grained banded metavolcanics associated with magnetite, hematite and barite.

Current Work and Results:

In 1975, geological mapping, a soil geochemical survey for Cu and U, and a broadband scintillometer survey outlined an area of copper mineralization some 1,500 feet long and 500 feet wide. The copper occurs as chalcopyrite associated with hematite and magnetite and the best outcropping area assayed 2.5 per cent copper across 10 feet. Uranium mineralization occurs in minor quantities in narrow discontinuous veins cutting the metavolcanics. No specific area of interest for uranium was outlined.

YOGI
Great Plains Development Company of Canada Limited

106 E 2
(65°09'N, 134°44'W)

Reference: Norris (1975).

Claims: YOGI 1-16

Location and Access:

The property is located in Illtyd Creek, about 115 miles north of Mayo and 15 miles southwest of Margaret Lake. Access is provided by float plane to Margaret Lake and from there by helicopter to the property.

History:

The claims were staked in summer 1974 as a result of a reconnaissance stream sediment geochemical program and adjoin the FLUNK group to the west.

Description:

The property is underlain by complexly folded and faulted clastic rocks of the Helikian HO unit (Norris, 1975).

Current Work and Results:

During the summer of 1975, the property was geologically mapped at a scale of one inch = 1,060 feet. In addition, a soil geochemical survey for Pb, Zn, Cd was conducted along generally north-south trending elevation contours. soil samples were collected at 200 foot intervals over a total line length of about 45,000 feet, but only sporadic, isolated anomalies were determined.

GREMLIN
Cyprus Anvil Mining Corporation

Copper
106 E 2
(65°11'N, 134°38'W)

Reference: Norris (1974).

Claims: GREMLIN 1-12

Location and Access:

The property is located 10 miles west of the Bonnet Plume River and 10 miles south of Margaret Lake, about 120 miles north of Mayo. Access is provided by float plane to Kiwi Lake (local name for lake 8 miles south-southwest of Margaret Lake), about 1 mile to the north.

History:

The claims were staked during August 1975, as a follow-up on a Cu geochemical anomaly determined by a regional stream sediment geochemical program.

Description:

The property is underlain by Helikian clastic rocks consisting of complexly folded and faulted black shale, sandstone, and conglomerate. Two types of mineralization are present:

(1) Most of the copper is in veins of siderite-barite-pyrite and chalcopyrite and a chip sample from one assayed 1.33 per cent copper over a 21 foot interval.
(2) Massive and heavily disseminated pyrite in conglomerate and sandstone with one chip sample assaying 0.53 per cent copper over 38 feet of pyritic conglomerate and another chip sample assaying 0.29 per cent copper and 0.8 ounces of silver per ton over 10 feet of massive pyrite.

In addition, traces of cobalt as erythrite are present with the best assay at 0.09 per cent Co from a grab sample of vein material.

Current Work and Results:

During 1975, work consisted of preliminary geochemical soil sampling for Cu, Pb, Zn along both banks of the creek at 200 foot intervals for a distance of about 3,000 feet. Values were consistently anomalous in copper along both banks for about 2,500 feet. A company geologist recommended further work which included detailed soil geochemistry along contour lines, detailed geological mapping and hand trenching.

CLOE
Cyprus Anvil Mining Corporation Limited

Zinc
106 E 2
(65°12'N, 134°42'W)

Reference: Norris (1975).

Claims: CLOE 1-12

Location and Access:

The property is located 10 miles west of the Bonnet Plume River and 10 miles southwest of Margaret Lake, about 120 miles north of Mayo. Access is provided by float plane to Kiwi Lake (local name for a lake 8 miles south-southwest of Margaret Lake) and from there by helicopter to the property, about 3 miles to the west.

History:

The claims were staked in summer 1975 as a follow-up on a Pb-Zn geochemical anomaly determined by a regional stream sediment geochemical program.

Description:

The property is underlain by black fissile shale of Helikian age. Mineralization consists of float boulders of brecciated black shale cemented by dark brown to black sphalerite. A narrow fault breccia with some secondary zinc mineralization also outcrops on the property.

Current Work and Results:

During 1975, a geochemical soil sampling program for Cu, Pb and Zn was conducted along lines parallel to the main creeks on the claim group. Soil samples were collected at 500 foot intervals along a total line length of over 15,000 feet. Two Pb-Zn anomalies were determined and recommendations for further work included geochemical surveys along grids and contour lines.

JEANETTE
Great Plains Development Company of Canada Limited

106 E 2
(65°09'N, 134°48'W)

Reference: Norris (1975).

Claims: JEANETTE 1-15

Location and Access:

The property is located on Illtyd Creek, about 115 miles north of Mayo and 15 miles southwest of Margaret Lake. Access is provided by float plane to Margaret Lake and from there by helicopter to the property.

History:

The claims were staked during summer 1974 as a result of a reconnaissance stream sediment geochemical program in the Bonnet Plume area, and adjoin the FLUNK group to the east.

Description:

The property is underlain by sandstone and shale of the Backbone Ranges Formation which are overlain by limestone, dolomite and shale of the Sekwi Formation. The units dip gently to the southwest and are displaced approximately 500 feet by a major northwest-trending fault.

Current Work and Results:

During summer 1975, geological mapping of the property was undertaken at a scale of one inch = 1,060 feet. In addition, a soil geochemical survey for Pb, Zn and Cd was performed along two elevation contours. Samples were taken at approximately 250 foot intervals for a total line length of about 9,000 feet, but only sporadic anomalies were determined with the survey.

WINDY
Great Plains Development Company of Canada Limited

106 E 2
(65°11'N, 134°53'W)

Reference: Norris (1975).

Claims: WINDY 1-14

Location and Access:

The property is located on Illtyd Creek, about 115 miles north of Mayo and 15 miles southwest of Margaret Lake. Access is provided by float plane to Margaret Lake and from there by helicopter to the property.

History:

The claims were staked during summer 1974 as a result of a reconnaissance stream sediment geochemical program, and adjoin the FLUNK group to the south.

Description:

The property is underlain by clastics and carbonates of Lower Cambrian age that dip gently to the southwest.

Current Work and Results:

During the summer of 1975, the property was geologically mapped at a scale of one inch = 1,060 feet. In addition, a soil geochemical survey was conducted along several elevation contours for Pb, Zn and Cd. Soil samples were collected at 200 foot intervals along a total line length of about 25,000 feet, but only sporadic, small anomalies of limited interest were determined.

Doll Creek South*
Amax Exploration Inc.

Lead, Zinc
106 E 14
(65°58'N, 135°25'W)

Reference: Norris et al (1963).

Claims: TUKU 1-16; ALI 1-10

Location and Access:

The property is in the southern Richardson Mountains, nine miles north of Doll Creek and 164 miles north of Mayo. Access is provided by float-equipped aircraft from Mayo to an unnamed lake 10 miles northwest of the property or from Moose and Davis lakes 28 miles northwest of the property and from there by helicopter to the property.

History:

The claims were staked in June and July 1974 to cover lead-zinc showings discovered as a result of a follow-up prospecting on a stream sediment geochemical anomaly obtained during a reconnaissance program in 1974. Work in 1974 consisted of preliminary mapping, prospecting and sampling.

Description:

The property covers Lower Cambrian micritic limestone overlain by Middle Cambrian limonitic siltstone, the former locally uplifted to form a north-trending window about 3,000 feet by 12,000 feet in size. To the north and west, the window of micrite is in fault contact with the siltstone. It consists mainly of light to dark grey weathering micritic limestone with occasional vuggy and organic horizons.

Mineralization on the property consists of scattered showings of galena, barite and hydrozincite along fractures within light grey, vuggy micritic limestone. The main showing consists of disseminated and massive galena, sphalerite, minor chalcopyrite and pyrite with associated barite and siderite in a north-trending zone of fault breccia. A creek is localized along the fault and breccia on either side of the creek indicates a fault zone width of approximately 70 feet. Within the fault zone, the main showing is about 12 feet wide by 300 feet long and one continuous chip sample assayed 3.0 per cent lead, 6.4 per cent zinc over a 12-foot interval. Another assay across a 17-foot interval of well fractured, light grey micrite returned 0.24 per cent lead and 0.16 per cent zinc.

Current Work and Results:

During 1975, the property was covered by detailed geological mapping at a scale of 1 inch = 400 feet. In addition, a soil geochemical survey for Mo, Cu, Ni, Co, Mn, Fe, Ag, Zn and Pb was conducted along four east-west traverse lines across the fault zone. The lines cover a 4,000 foot length along the fault zone and samples were collected at intervals of 150 to 250 feet. Anomalous zinc and lead values encountered over the eastern portion of the lines were attributed to scattered local mineralization. No further work was recommended on the property.

YUK
Great Plains Development Company of Canada Limited

106 F 4
(65°05'N, 133°55'W)

Reference: Norris (1975).

Claims: YUK 1-20

Location and Access:

The property is located about 125 miles north of Mayo and 26 miles southeast of Margaret Lake. Access to the property is provided by float plane to Margaret Lake and from there by helicopter to the property.

History:

The claims were staked during summer 1974 as a result of a reconnaissance stream sediment geochemical program in the Bonnet Plume area.

Description:

The property is underlain by complexly folded and faulted sedimentary rocks of the H2 unit (Norris, 1975) and the Katherine Group.

Current Work and Results:

During summer 1975, the property was geologically mapped at a scale of 1 inch = 1,060 feet and partially covered by a soil geochemical survey along two elevation contours. Soil samples were taken at 400-foot intervals along a total length of 33,000 feet and analysed for Pb, Zn and Cd. No marked anomalies were obtained over two black micrite units. Further geochemical sampling was recommended to better evaluate the anomalous limestone units.

KEN
Great Plains Development Company of Canada Limited

Zinc
106 F 4
(65°09'N, 133°52'W)

Reference: Norris (1975).

Claims: KEN 1-4

Location and Access:

The property is located on Rapitan Creek, 22 miles southeast of Margaret Lake and 130 miles north of Mayo. Access to the property is provided by float plane to Margaret Lake and from there by helicopter to the property.

History:

The claims were staked in summer 1974 as a follow-up on a reconnaissance stream sediment geochemical program in the Bonnet Plume area.

Description:

The property is underlain by limestone and argillite which have been complexly folded and faulted. Mineralization consists of sphalerite and hydrozincite as partial fracture and vug in-fillings in a brecciated grey micrite. One grab sample assayed 8.0 per cent zinc, while a chip sample across 16 feet of the mineralized zone assayed 1.9 per cent zinc.

Current Work and Results:

During the summer of 1975, the property was geologically mapped at a scale of 1 inch = 200 feet and a soil geochemical survey was conducted for Pb, Zn and Cd. Samples were collected along north-south trending lines spaced 200 feet apart, at 100-foot intervals for a total length of 7,000 feet. The survey showed a small anomalous zinc-rich area near the showing. A trench about 16 feet long was cut into the limestone breccia to further expose the mineralization. The company geologist concluded that the mineralization did not extend laterally, but did recommend short hole diamond drilling to determine the nature of the mineralization at depth.

VUG
Cyprus Anvil Mining Corporation

Zinc, Lead
116 A 9
(64°34'N, 136°17'W)

Reference: Green (1972).

Claims: VUG 1-40

Location and Access:

The property is located ten miles south of the Hart River and 68 miles north of Mayo. Access in 1975 was provided by fixed wing aircraft to Worm Lake and the remaining ten miles northwest to the property by helicopter.

History:

The claims were recorded in July 1975 to cover showings discovered as a result of a regional geochemical stream sediment anomaly.

Description:

The property is underlain by a Helikian sequence consisting of a lower unit of shale and argillite with quartzite interbeds overlain by several units made up predominantly of orange-weathering dolomite. The general trend of the units is east-west with a steep dip to the south.

All known mineralization occurs in orange-weathering, thick to massive bedded, dark to light grey dolomite. It commonly consists of sphalerite, galena and white sparry dolomite as a matrix within a tectonic breccia zone in the dolomite.

Current Work and Results:

During summer 1975, the property was subjected to geological mapping (1 inch = 1,320 feet) and geochemical soil sampling for Cu, Pb and Zn. Approximately 300 soil samples were taken along contour lines at intervals of several hundred feet. All anomalous areas coincided with areas of bedrock or float lead-zinc mineralization. Company geologists recommended further work consisting of sampling, prospecting and mapping.

JANE
Great Plains Development Company of Canada Limited

116 H 6
(65°17'N, 137°14'W)

Reference: Norris (1975).

Claims: JANE 1-32

Location and Access:

The claims are located in the Ogilvie Mountains, about 130 miles north of Mayo, and 36 miles southwest of the junction of the Peel and Hart Rivers. Access to the property is provided by fixed wing aircraft to nearby lakes (Margaret Lake) or the Dempster Highway and from there by helicopter.

History:

The claims were staked in 1974 during a program of geochemical reconnaissance in the Bonnet Plume area.

Description:

The property is underlain by steeply-dipping interbedded units of limestone and shale and is thought to form the south-dipping limb of a large regional anticline. Fossil evidence indicates several of the units to be Upper Ordovician in age. No mineralization was encountered in outcrop.

Current Work and Results:

During summer 1975, a program of geological mapping (1 inch = 1,060 feet), stream sediment and soil geochemical sampling was conducted. Soil samples were taken at 200-foot intervals along lines 400 to 500 feet apart, parallel to elevation contours, and were analysed for Zn, Pb and Cd. Several high zinc anomalies near a shale-limestone contact were determined and it was recommended that a few exploratory Winkie diamond drill holes be drilled to test the anomalies.

Page 76 (not there)

DAWSON MINING DISTRICT

ML
Amoco Canada Petroleum Company Limited

Lead, Zinc
106 L 4
(66°08'N, 135°50'W)

References: Norris et al (1963); Sinclair et al (1975).

Claims: ML 76, 78, 80, 82, 84, 86, 88, 107-120 inclusive

Location and Access:

The property lies roughly 175 miles north of Mayo, two miles west of Doll Creek. Access in 1975 was by fixed wing aircraft from Mayo or Dawson to Kiwi Lake or to local lakes such as Caribou Lake or a small lake on Doll Creek, and thence by helicopter to the property.

History:

The ML claims were staked in June 1974 following a regional stream geochemical program. Work in 1974 consisted of geological mapping and geochemical silt and soil sampling. As a result of this work, the claim block was reduced from 118 to 21 claims.

Description:

The claims are underlain by Cambrian limestone exposed as a window in surrounding Silurian-Devonian rocks. Some galena is associated with a sinkhole in the limestone.

Current Work and Results:

In 1975, the claims were geologically mapped at a scale of 1 inch to 400 feet and covered by a bedrock geochemical sampling program.

Doll Creek North
Amax Exploration Incorporated

Lead, Zinc
106 L 4
(66°08'N, 135°54'W)

References: Norris et al (1963); Sinclair et al (1975).

Claims: RAS 1-12, TUS 1-12

Location and Access:

The property is located in the southern Richardson Mountains, three and one half miles west of the headwaters of Doll Creek and 175 miles north of Mayo. Access is by fixed wing aircraft from Mayo to one of several nearby lakes and then by helicopter to the property.

History:

The claims were staked during the 1974 field season as a result of follow-up prospecting on a geochemical stream sediment anomaly. Work in 1974 consisted of geological mapping, prospecting and sampling.

Description:

The property straddles a northwest striking fault which separates westerly dipping, Upper Cambrian cherty limestone and fine-grained clastic rocks on the west from flat lying Lower Cambrian micritic limestone, east of the fault.

Mineralization consists of minor pyrite, galena and sphalerite in small vugs and fractures within Lower Cambrian micrite.

Current Work and Results:

During summer, 1975, the property was subjected to detailed geological mapping (1 inch to 1,000 feet) and prospecting. No further work was recommended by company geologists.

PETE
Texasgulf Inc.

Zinc, Lead
106 L 4
(66°11'N, 135°53'W)

Reference: Norris et al (1963).

Claims: PETE 1-6, 9-24, 51-58, 70-77, 100-107

Location and Access:

The claims are located about 180 miles northeast of Dawson and are accessible from there by helicopter.

History:

The claims were recorded in July 1974. Subsequent to evaluation work on the property, the claims were abandoned by Texasgulf.

Description:

The property is underlain by a window of Lower Cambrian micrite which contains sparsely disseminated galena and sphalerite. Concentrations of lead and zinc mineralization are found along open fracture systems and within permeable limestone units adjacent to these fracture systems. The main showing is about 300 feet long and consists of colloform smithsonite and galena with fault breccia and highly fractured micrite. The fault trends 030° and veinlet of white calcite with accessory galena occur within the micrite.

Current Work and Results:

In 1975, most of the claim group was geologically mapped at a scale of 1 inch to 1,320 feet. In addition, several of the claims were covered by a program of geochemical soil sampling (PETE 1, 2, 9, 10, 11, 12). However, the mineralization proved to be local in nature and the property was abandoned.

WON
Kerr Addison Mines Limited

Copper, Molybdenum
115 I 13
(62°52'N, 137°56'W)

Reference: Tempelman-Kluit (1974a).

Claims: WON 1-24, 79-90, 101-118

Location and Access:

The claims straddle an east-flowing tributary of Black Creek, roughly 18 miles west-northwest of Fort Selkirk in the Dawson Range. Access in 1975 was by helicopter.

History:

The original WON claims were staked in October 1973 and June 1974. The current WON 1-24 claims were staked in August 1975 to cover ground which had been staked earlier but which had lapsed. Surface exploration including some test pitting was carried out in 1974.

Description:

Regional mapping has indicated that the property is generally underlain to the east by Triassic volcanics which include altered andesite and basalt and related pyroclastics. To the west, the volcanics are intruded by Triassic granodiorite, locally foliated due to alignment of mafic minerals.

Current Work and Results:

Six diamond drill holes totalling 1,861 feet were drilled on the property early in the 1975 field season. Two of the holes intersected massive to finely laminated, green to black chlorite schist carrying disseminated and fracture-controlled pyrite and traces of chalcopyrite. The remaining four holes all encountered biotite granodiorite. The fresh granodiorite is grey, medium-grained, equigranular and contains less than 1 per cent pyrite and traces of chalcopyrite, disseminated and in fractures. The granodiorite has undergone some alteration locally and in one section there is complete alteration of the feldspar to clay minerals (kaolin?) and sericite. This section of argillic alteration contains pyrite and minor chalcopyrite disseminated and in quartz veinlets, and minor amounts of molybdenite in quartz veinlets and hairline fractures. Later in the summer, an IP survey was carried out on the property.

LUCKY JOE
Rio Tinto Canadian Exploration Limited

Copper, Molybdenum
115 O 11, 12
(63°35'N, 139°30'W)

Reference: Bostock (1942).

Claims: B 1-16; SUNEP 1-14, 18-34; BJB 1-17; ASH 1-44; PAX 1-10

Location and Access:

The claims are situated near the headwaters of Lucky Joe Creek, approximately 30 miles south of Dawson and 6 miles east of the Yukon River. Access in 1974 was by helicopter from Dawson. In addition, a 22 mile long unimproved tote road extends from the mouth of Quartz Creek south to the centre of the property.

History:

The B claims were staked in the summer of 1970 by Silver Standard Mines Limited who carried out soil sampling, geological mapping and trenching during the same year. Work on the property in 1970 consisted of 422 feet of AX diamond drilling in three holes. In spring 1975, the property was optioned by Rio Tinto Canadian Exploration Limited, who staked additional claims, the SUNEP, BJB, ASH and PAX groups, peripheral to the B claim group, and extending to the northwest.

Description:

The property is underlain mainly by Yukon Group metasediments including biotite schist, quartz-muscovite schist and amphibolite (Unit E, Bostock, 1942). The metasediments are enclosed to the east and west by bodies of gneissic granite (Unit A, op. cit.) which is exposed on the west and northwest portions of the claim groups. Chalcopyrite and pyrite with minor amounts of molybdenite occur as disseminations and in fractures parallelling foliation in biotite and quartz-muscovite schists below an amphibolite horizon

Current Work and Results:

In 1975, work by Rio Tinto on the property included geological mapping, soil sampling, geophysical surveys and two diamond drill holes totalling 1,400 feet.

Detailed geochemical soil sampling for Cu, Mo, Pb and Zn was undertaken on the B and SUNEP claims at 50 metre intervals on lines 100 metres apart. Coincident copper and zinc anomalies were outlined which terminated abruptly to the south.

A ground magnetic survey on the B and SUNEP claims outlined a zone of poorly magnetic rocks coincident with the geochemical anomaly. Induced polarization was also carried out on the two claim groups

The diamond drilling on the B claims is reported to have encountered some sections of disseminated chalcopyrite, pyrite, and minor molybdenite in Yukon Group schists.

URA
Beach Gold Mines Limited

Uranium
115 P 13, 14
(63°47'N, 137°32'W)

References: Lang (1952); Bostock (1964).

Claims: URA 1-200

Location and Access:

The URA claims straddle Clear Creek, east of the Stewart Crossing-Dawson highway and roughly 60 miles east-southeast of Dawson. A tractor road from Mile 47.8 on the Stewart Crossing-Dawson highway to placer workings on upper Clear Creek cuts across the northeast corner of the claim group. Additional road-building was carried out in 1975 to provide access to the central part of the property and the areas of the anomalous radioactivity.

History:

The presence of allanite and monazite in gold placer deposits on Clear Creek has been known for some time and was first reported by Lang (1952). Bostock (1964) also reported the presence of allanite in porphyritic syenite from the Syenite Range north of Clear Creek. In 1966, an area of anomalous radioactivity in the Clear Creek area was discovered by a Whitehorse prospector, George Karens, who staked the RUSS claims. Airborne and ground radiometric surveys carried out in 1969 and 1970 outlined several areas of anomalous radiation exceeding 0.6 milliroentgens per hour. The claims were subsequently allowed to lapse and were restaked in March 1975 as the URA claims for Beach Gold Mines Limited.

Description:

The area is generally underlain by quartz-biotite-sericite schist and gneiss of the Yukon Metamorphic Complex (Unit 4, Bostock, 1964) which are intruded by granitic rocks of Jurassic and/or Cretaceous age (Unit 14, op. cit.). The granitic rocks on the URA claims consist of coarse-grained, porphyritic granite, with large tabular phenocrysts of Carlsbad-twinned albite and locally up to 20 per cent tourmaline, in crystals measuring up to 2 cm long. One of the areas of above-background radioactivity consists of an elongate anomaly on the north side of Clear Creek near its confluence with Henry Creek. The second anomaly is situated on the north side of Clear Creek about one and one-half miles upstream.

Current Work and Results:

A ground radiometric survey totalling fifty line-miles was carried out in 1975 using a four-channel gamma ray spectrometer. Results of the survey showed uranium counts in excess of 20 counts per second, four to five times above normal background, in the areas of previously defined radioactivity. Four diamond drill holes, totalling 945 feet, cored in the area of the two anomalies encountered mainly porphyritic granite.

HOT
Cyprus Anvil Mining Corporation

Zinc, Lead
116 A 13
(64°59'N, 137°46'W)

References: Green (1972); Sinclair et al (1975).

Claims: HOT 1-44

Location and Access:

The claims are located about five miles north of Michelle Creek in the central Ogilvie Mountains, 80 miles northeast of Dawson and 110 miles northwest of Mayo. Access is by helicopter from the Dempster Highway, 13.5 miles to the west.

History:

The claims were staked in June, 1974 to cover lead and zinc silt geochemical anomalies discovered earlier in the season. Work in 1974 included preliminary geological mapping, prospecting and hand trenching.

Description:

The property is underlain by intensely folded, thinly bedded, orange to buff weathering argillite, shale and quartzite of Proterozoic age (Unit 1, Green, 1972) unconformably overlain by grey, massive bedded limestone and dolomite of Ordovician and Silurian age (Unit 8, Green, 1972). All the lead-zinc mineralization is contained within the younger carbonates which underlie most of the property. They are gently folded into a major east-west trending anticline.

Mineralization consists of smithsonite with minor galena, sphalerite and pyrite within brecciated grey sparry dolomite. The main showing is a more or less continous zone of mineralized breccia float about 6,000 feet long and 10 to 15 feet wide, which extends in an east-west direction and occurs in the northern portion of the claim group. A fault zone is proposed as the main control for mineralization because of the linear trend and brecciated nature of the mineralization. Channel samples from three trenches across this zone gave the following assays:

Trench Length (ft)	Ag. oz/ton	Pb %	Zn %
15	0.12	0.19	1.18
35	0.06	0.13	0.52
12	1.76	3.98	7.32

In the southern portion of the claim group, several small mineralized zones occur at the same bedding horizon, but there is no continuity between them.

Current Work and Results:

During summer 1975, work consisted of detailed geological mapping (1 inch to 760 feet), geochemical soil sampling along contours and trenching. A total of 286 soil and silt samples were collected at approximately 250 ft. intervals along two contour lines situated around the base and halfway up the mountain slope and analysed for Cu, Pb, Zn. All the determined anomalous zones are contained within or downslope from soils overlying Unit 8. Two trenches were extended and one new trench was dug, all on the main showing. Because the main showing is thought to be related to a zone of faulting, any further mineralization is likely to be narrow in width and erratic in grade. No further work was recommended.

KIWI
Cyprus Anvil Mining Corporation Limited

Zinc, Lead
116 B 10, 15
(64°45'N, 138°45'W)

References: Green (1972); Sinclair et al (1975).

Claims: KIWI 1-80

Location and Access:

The property is located in the southern Ogilvie Mountains, 15 miles southwest of Chapman Lake (mile 74) on the Dempster Highway, and 52 air miles north-northeast of Dawson. Access is by helicopter from Dawson or from one of the helicopter pads on the Dempster Highway.

History:

The claims were staked in July and September, 1974 to cover lead and zinc mineralization and associated geochemical anomalies discovered during a reconnaissance program in the 1974 season. During 1974, hand trenching, prospecting and a soil geochemical survey indicated potentially economic lead-zinc mineralization and further work was recommended for 1975.

Description:

The property lies at the eastern end of Coal Creek Dome, an uplifted elliptical dome of Proterozoic shale and carbonates unconformably overlain by Ordovician and younger sediments. The rock units trend from east to southeast with variable dips and the host rock for mineralization on the property is mainly a light grey weathering, massive bedded dolomite (Unit 2c, Green, 1972).

Pb-Zn mineralization occurs at three sites within an area about 3,000 feet long. The main showing is about 25 feet wide and consists of smithsonite anglesite and minor galena exposed within a fault breccia zone which is parallel to the major Seela Pass fault to the south. A channel sample from a 35 foot long trench across the zone gave the following assay: 3.41 oz Ag/ton, 16.26% Pb, 19.75% Zn, 0.05% Cu. Smithsonite fills joints and fractures in the surrounding massive grey dolomite and a grab sample of the 'barren-looking' dolomite from the southern 9 feet of the trench gave the following assay: 0.18 oz Ag/ton 1.50% Pb, 0.90% Zn and 0.01% Cu.

The second showing consists of a zone of breccia float a few hundred feet north of the main showing. Boulders of coarsely crystalline galena were encountered in pits dug in the area. The third showing consists of a mineralized zone up to 10 feet wide which trends in an easterly direction parallel to the Seela Pass fault.

Current Work and Results:

During summer 1975, detailed geological mapping (1 inch = 400 feet) and a soil geochemical survey were conducted along a north-south grid over the central portion of the claim group. Soil samples were collected on the 4,200 foot by 6,000 foot grid at 100 foot intervals along lines generally spaced 400 feet apart and analysed for Cu, Pb, An. The geochemical anomalies coincided with the three known zones of mineralization. In addition, nine trenches and several pits were dug in the mineralized breccia zones. Further work consisting of additional trenching and sampling of the main showing was recommended.

OZ
Cyprus Anvil Mining Corporation Limited

Zinc, Lead
116 B 12, 13
(64°45'N, 139°45'W)

References: Green (1972); Sinclair et al (1975).

Claims: OZ 1-81

Location and Access:

The property is located in the southern Ogilvie Mountains, six miles northeast of Mount Harper and 47 miles north of Dawson. Access is by helicopter from Dawson or Clinton Creek, 38 miles to the south, which is the nearest road point.

History:

The claims were staked in July, 1974 following a regional geochemical stream sediment sampling program. Work in 1974 consisted of preliminary prospecting, geological mapping and geochemical soil surveys on the central claims in the group.

Description:

The property is underlain by a sequence of clastic sediments of Proterozoic age, consisting of orange and buff-weathering dolomite, shale, grey-weathering dolomite and lesser amounts of quartzite, limestone and conglomerate (Unit 2, Green, 1972). Sphalerite and galena occur in veins and breccia zones in dolomite and shale.

Current Work and Results:

In 1975, work consisted of grid geochemical soil sampling, geological mapping and 1,245 feet of diamond drilling (BQ core). Three drill holes were completed but no significant mineralization was intersected. Further work, consisting of hand trenching and detailed geological mapping, was recommended.

DEM
Hudson Bay Exploration and
Development Company Limited

Zinc, Lead
116 B 12, 13
(64°45'N, 139°49'W)

Reference: Green (1972).

Claims: DEM 1-42

Location and Access:

The property is located on a tributary of Coal Creek, approximately 45 miles northwest of Dawson City in the Ogilvie Mountains. Access by the company in 1974 was provided by the Dempster Highway to Chapman Lake and from there by helicopter to the property, a distance of 45 miles.

History:

The claims were staked in August, 1974 following a reconnaissance geochemical stream sediment and prospecting program.

Description:

The property is underlain by southeasterly trending units of dolomite, shale and argillite of Proterozoic age, (Unit 2b, Green, 1972) which dip moderately to the southwest. Locally, folding and faulting are common and the sequence is intruded by narrow diabase dikes. Mineralization on the property consists of trace malachite, chalcopyrite, galena and hydrozincite in diabase, quartz-carbonate fracture infillings and local patches of dolomite breccia.

Current Work and Results:

During the summer of 1975, the property was subjected to geological mapping (1 inch = 1,000 feet), geochemical soil sampling and prospecting.

OD
Union Miniere Explorations and Mining Corporation Limited

Zinc, Lead
116 B 13
(64°49'N, 139°38'W)

Reference: Green (1972).

Claims: OD 1-18

Location and Access:

The claims are situated about 12 miles north-northwest of Mount Harper and 30 miles west of Caldwell Lake. Access is by helicopter from Mile 68 on the Dempster Highway, a distance of 36 miles.

History:

The claims were staked in August 1975.

Description:

The claims are underlain by a sequence of Proterozoic clastic sediments and stromatolitic dolomites.

Current Work and Results:

Six coincident Pb-Zn geochemical soil anomalies were found. Further work was recommended.

TART
Cyprus Anvil Mining Corporation

Zinc, Lead
116 B 13
(64°50'N, 139°53'W)

Reference: Green (1972).

Claims: TART 1-80

Location and Access:

The property is located about 10 miles north of Mount Harper and is accessible by helicopter from Dawson, 55 miles to the south-southeast.

History:

The claims were staked in October 1974.

Description:

The property is underlain by a grey dolomite unit of Helikian age and the mineralization consists of sphalerite, marcasite and minor galena as void fillings in breccia zones within the dolomite.

Current Work and Results:

In 1975, the property was covered by detailed geological mapping at a scale of 1 inch to 400 feet. In addition, a geochemical soil sampling program was conducted over all the claims. Samples were collected at 100 and 200 foot intervals along lines spaced 400 and 800 feet apart. A diamond drilling program consisting of 4 holes (BQ core) for a total footage of 1,623 feet was undertaken on TART #8 and TART #23. The diamond drilling failed to intersect zinc mineralization of economic grades.

ID
Union Miniere Exploration and
Mining Corporation Limited

Copper, Zinc
116 B 13
(64°50'N, 139°45'W)

Reference: Green (1972).

Claims: ID 1-10, 17-25, 61-67, 69-72

Location and Access:

The claims are located 22 miles west of Kit Lake and 12 miles north-northeast of Mt. Harper, at an elevation of 4-6,000 feet. Access is by helicopter from Mile 68 on the Dempster Highway, a distance of 38 miles to the east.

History:

The claims were staked in July 1975.

Description:

The claims are underlain by a thick sequence of Proterozoic and younger sediments. The basal sequence consists of interbedded shales, conglomerates and dolomitic quartzites. These are overlain by a sequence of shales and siltstones with minor quartzite. To the north, these rocks are overlain by younger dolomites.

Current Work and Results:

A soil geochemical survey was conducted for copper, zinc, silver and cobalt. Several areas with anomalous copper and zinc values were found and further work is recommended.

OG
Hudson Bay Exploration and
Development Company Limited

Lead, Zinc
116 B 13, C 16
(64°50'N, 140°00'W)

Reference: Green (1972).

Claims: OG 1-72

Location and Access:

The property, located on a tributary of Coal Creek in the Ogilvie Mountains is about 50 miles northwest of Dawson. In 1974, access was by helicopter from Chapman Lake on the Dempster Highway, a distance of about 50 miles to the east.

History:

The claims were staked in August 1974 following a reconnaissance stream sediment geochemical and prospecting program.

Description:

The property is underlain by Unit 2b of Green (1972), a conglomerate containing pebbles of jasper, chert and quartzite which grades upward into finer grained rocks, principally buff weathering dolomite, but including some shale and argillite, all of Proterozoic age. Mineralization consists of galena and sphalerite within a carbonate sequence, including some breccia. It is poorly exposed on the surface and the extent of mineralization is not defined.

Current Work and Results:

In 1975, the property was geologically mapped and geochemically soil sampled. In addition, an induced polarization survey was carried out on a 6,400 foot by 5,000 foot grid. Measurements were taken at 100 foot intervals along lines spaced 200 feet apart for a total length of 18.4 miles. Two main anomalies parallel to the trend of the rocks were determined, and 12 diamond drill holes (BQ core), totalling 6,451 feet, were collared. The drilling encountered some mineralization in a breccia which may be fault related.

KIM
Hudson Bay Exploration and
Development Limited

Zinc, Lead
116 B 14
(64°46'N, 139°05'W)

Reference: Green (1972).

Claims: KIM 1-24

Location and Access:

The property is located approximately 50 miles north of Dawson City and 22 miles west of Chapman Lake in the Ogilvie Mountains. Access in 1974 was via the Dempster Highway to Chapman Lake and from there by helicopter to the property.

History:

The claims were staked in July 1974 following a reconnaissance stream sediment geochenical and prospecting program. Work in 1974 consisted of geological mapping and a geochemical soil and bedrock sampling program on a grid 1,000 feet by 5,000 feet. Samples were collected at 100 foot intervals along section lines at 200 feet and 400 feet spacings and were analysed for Pb, Zn, Ag. A broad lead-zinc anomaly was determined.

Description:

The property is underlain by shale, argillite and dolomite of Proterozoic age, (Units 1, 2b of Green, 1972) which are host to minor galena and sphalerite mineralization.

Current Work and Results:

In 1975, the property was subjected to further geological mapping and geochemical soil sanpling. However, no significant anomalies were determined.

CLINTON CREEK MINE — Asbestos
Cassiar Asbestos Corporation Limited — 116 C 7
(64°27'N, 140°42'W)

References: Green and Godwin (1964, pp. 19-21); Green (1965, pp.25-27; 1966, pp. 25-26); Christian (1966); Findlay (1967, pp. 27-29; 1969a, pp. 31-32; 1969b, pp. 18-20); Craig and Laporte (1972, pp. 30-31); Green (1972, pp. 143-144); Craig and Milner (1975, pp. 14-15); Sinclair and Gilbert (1975, pp. 29-30); Sinclair et al (1975, pp. 72-73).

Claims: 147 claims

Location and Access:

The Clinton Creek Mine is 50 miles northwest of Dawson and can be reached by a 26-mile, all-weather road from Mile 33 of the Sixtymile-Boundary Road. Asbestos fibre is shipped by truck to Whitehorse, a distance of 390 miles, and then by rail to the port of Skagway.

History:

The property was staked in 1957 and brought into production 1967.

Description:

The Clinton Creek asbestos deposits occur in serpentinized ultrabasic rocks (Unit E, Green, 1972) associated with metamorphic rocks of the Nasina series (Unit A, op. cit.). The asbestos fibre occurs almost entirely as cross-fibre veinlets, one quarter inch or less in width.

Current Work and Results:

A total of 1,407,453 tons of ore were milled in 1974 at a daily rate of 5,118 tons. Production was mainly from the Porcupine ore body and, to a lesser extent, from the Snowshoe ore body.

OPERATING SUMMARY, 1973-1975

	1975	1974	1973
Tons milled	1,407,453	1,388,248	1,247,154
Rate (tons/day)	5,118	4,596	4,838
Grade (% recovery)	5.85	4.37	5.64
Reserves (probable)	4,773,000	6,524,725	7,861,123
(possible)	928,931	461,000	8,792,000

UG
Cyprus Anvil Mining Corporation

Lead, Zinc
116 C 16
(64°51'N, 140°02'W)

Reference: Green (1972).

Claims: UG 1-32

Location and Access:

The property is located about 10 miles north-northwest of Mount Harper and is accessible by helicopter from Dawson, 57 miles to the south-southeast.

History:

The claims were staked in June 1975.

Description:

The property is underlain by dolomite of Helikian age. Mineralization consists of galena and sphalerite disseminated with breccia occurrences which are probably related to a steeply dipping fault.

Current Work and Results:

In 1975, the property was covered by geological mapping at a scale of 1 inch to 1,320 feet. In addition, a soil geochemical survey was conducted along contour lines over all claims. The geological mapping suggested that the mineralized showings are limited in extent and no more work was planned for the property at present.

KEPT
Union Miniere Explorations and Mining Corporation Limited

Zinc. Lead
116 F 2
(65°11'N, 140°59'W)

Reference: Norris et al (1963).

Claims: KEPT 1-12, 15-16

Location and Access:

The claims are situated 1 1/2 miles south of Cathedral Creek along the Alaska-Yukon border in the Ogilvie Mountains approximately 95 miles northwest of Dawson. Access during 1975 was by helicopter from the base camp at Mile 68 on the Dempster Highway, a distance of approximately 80 miles.

History:

The claims were staked in June 1975.

Description:

The claim group is underlain by grey limy dolomites and stromatolitic dolomites, with few outcrops of grey-black argillites.

Current Work and Results:

Two narrow, coincident, Pb-Zn geochemical soil anomalies trending east-west were found and further work was recommended.

DOLL
Amoco Canada Petroleum Company Ltd.

Lead, Zinc
116 I 1
(66°05'N, 136°05'W)

Reference: Norris et al (1963).

Claims: DOLL 1-79

Location and Access:

The property is located 165 miles north of Mayo and 30 miles east of the Dempster Highway. Access is provided by wheeled fixed-wing aircraft to Mile 204 on the Dempster Highway or by float plane to Margaret Lake and from these points by helicopter to the property.

History:

The claims 1-24 were staked in July 1974 following a reconnaissance geochemical stream sediment survey in the Richardson Mountains. In May, 1975 48 additional claims were staked and added to the group along with 7 fractional claims staked in June, 1975.

Description:

The property is underlain by limestone and shale of Ordovician and Silurian age. Mineralization consists of galena and sphalerite in limestone breccia. The northern portion of the property has mainly lead occurrences whereas the southern portion has both lead and zinc.

Current Work and Results:

Work in 1974 consisted mainly of preliminary stream and soil geochemical sampling. During summer 1975, a detailed soil geochemical survey for lead, zinc was conducted over 40 miles of grid lines. Soil samples were collected at 100-foot intervals along lines spaced 400 feet apart. Two main lead anomalies were determined with dimensions of 800 feet by 1,600 feet and 400 feet by 2,000 feet. The remainder of the lead anomalies are typically narrower and shorter while the zinc anomalies are much more irregular and difficult to correlate.

Most of the lead anomalies have been found to be directly related to minor lead and zinc mineralization in turbidite type breccias and tectonic-calcite vein breccias. A gravity survey was performed over some of the larger anomalies.

LLOD
Amoco Canada Petroleum Company Ltd.

Lead
116 I 1, L 4
(66°03'N, 136°00'W)

References: Norris et al (1963); Sinclair et al (1975).

Claims: LLOD 1-32

Location and Access:

The property is located 165 miles north of Mayo, and 30 miles east of the Dempster Highway. Access is provided by wheeled fixed-wing aircraft to Mile 204 on the Dempster Highway or by float plane to Margaret Lake and from these points by helicopter to the property.

History:

The claims LLOD 1-8 were staked in August, 1974 following a regional stream geochemical program. Subsequently, an additional 24 claims were staked in May, 1975. In 1974, work consisted mainly of preliminary stream and soil geochemical sampling.

Description:

The property is covered by extensive overburden and little outcrop is exposed. It is believed to be underlain by limy sediments, commonly thinly interbedded and made up of limestone breccia sequences, chert horizons and minor thin shale beds. The rock units trend east of north and are gently folded.

Current Work and Results:

During summer 1975, the property was subjected to a comprehensive soil geochemical survey for Pb, Zn. Samples were collected at 100 foot intervals along 24 lines spaced 400 feet apart for a total line length of about 27 miles. Several narrow elongate Pb anomalies were determined, but it was concluded that they corresponded to dolomitized limestone breccia similar to that on the DOLL group.

Mount Davies Gilbert Iron Formation
Welcome North Mines Limited
and Bethlehem Copper Corporation Limited

Iron
117 A
(68°30'N, 136°30'W)

Reference: Young (1972).

Claims: DELTA 1-48; DAWN 1-48

Location and Access:

The claims are located about 80 miles west of Inuvik and 88 miles northwest of Fort McPherson. Access to the area is provided by float-equipped, fixed wing aircraft to lakes within the claim area.

History:

The claims were staked in May 1974 by Welcome North, as a result of information released by F.G. Young (1972) concerning stratigraphic studies between the Blow and Fish rivers. A joint venture was entered into in June 1974 between Welcome North Mines Limited and Bethlehem Copper Corporation Limited.

Description:

The property is underlain by rocks of Early Cretaceous age consisting mainly of bedded ironstone and shale, deformed into broad open folds with gently dipping limbs (Young, 1972).

The mineralization consists of fine grained quartz-siderite iron formation which is part of the bedded ironstone and shale sequence. Over a strike length of 18 miles from Cache Creek to Mount Davies Gilbert, the ironstone-shale member varies from 2,800 to 700 feet thick locally in the Cache Creek, Fish Creek, and Rapid Creek areas.

Current Work and Results:

Preliminary geological mapping and bedrock chip sampling were conducted in August 1974 on sections from the Fish River and Rapid Creek areas about 13 miles apart.

In the Fish River area, bedrock chip samples of quartz siderite were selected along 50 foot lengths over a total slope length of 580 feet (true thickness about 360 feet). In addition, several 25 foot representative sample lengths of quartz siderite were taken from the Rapid Creek area. Averaged assay values are presented below:

	Total Fe%	SiO_2%	Al_2O_3%	Mn%	P%	L.O.I%
Fish River area (16 samples)	20.5	29.6	8.1	2.2	2.1	14.7
Rapid Creek area (5 samples)	16.7	36.7	8.1	0.73	3.0	10.1

In addition, numerous metallurgical tests were performed on a sample from the Rapid Creek area. The fine grained sample consisted of major amounts of siderite and quartz with minor lazulite and light green unknown mineral. The tests were regarded as largely inconclusive, though direct reduction using hydrogen was regarded as offering the greatest promise for iron recovery.

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WHITEHORSE MINING DISTRICT

* - Properties visited by W.D. Sinclair unless otherwise indicated.

SM
El Paso Mining and Milling Company

Lead, Zinc
105 C 13
(60°58'N, 133°46'W)

Reference: Mulligan (1963).

Claims: SM 1-8

Location and Access:

The claims lie 48 miles east-northeast of Whitehorse between Slate and Red Mountain creeks. Access in 1975 was by float plane to Rosy Lake, 8 miles south of the property, and thence via helicopter.

History:

The property was originally staked prior to 1935 and subsequently re-staked in 1946 and 1966. In 1968, Boswell River Mines Limited conducted stream sediment geochemical sampling. The property was staked in 1973 as the HM claims by El Paso, and in 1974 as the SM claims by W. Kuhn.

Description:

The property is underlain by argillite, talc-chlorite-sericite schist and minor thin limestone bands assigned to the Big Salmon Complex of Mississippian age or earlier (Unit 1, Mulligan, 1963). These rocks have been anticlinally folded about a northwest-trending axis and are intruded locally by what appears to be a lamprophyre dyke. Northeast of the property boundary, the rocks of the Big Salmon Complex are intruded by a northwest-trending dyke of dacite porphyry (Unit 14,, op. cit.); to the southwest, they are bounded by quartz-hornblende gneiss (Unit A, op. cit.) trending northwest.

Two mineral occurrences have been reported, both in brecciated argillite cemented by carbonate. One consists of a two-inch, contorted vein of galena; the other consists of a white efflorescence of zinc (hydrozincite?).

Current Work and Results:

Work in 1975 consisted of geological mapping, soil and rock geochemical sampling and a VLF-EM survey. A number of areas anomalous in lead, zinc and silver were outlined, three of which were generally coincident. The VLF-EM survey failed to outline any significant anomalies.

BUG
R.G. Hilker

Molybdenum, Copper
105 C 13
(60°59'N, 133°46'W)

References: Bostock (1957); Lees (1936); Mulligan (1963).

Claims: BUG 1-16

Location and Access:

The claims are situated on Red Mountain at an elevation of 4,500-5,000 feet. Access is by helicopter from Whitehorse, 50 miles to the southwest. There is a tote trail from Mile 26 on the South Canol Road to Red Mountain.

History:

The claims were staked and drilled in 1969 by Boswell River Mines which subsequently allowed the claims to lapse in 1970. They were restaked by prospector J.B. O'Neill in 1970 but then lapsed in 1975; the property was restaked by R.G. Hilker in June 1975.

Description:

The claims are underlain by variety of rock types including gneisses, amphibolite, schist, greenstone, and limestone intruded by the felsic plutonics of the Coast Intrusions and Tertiary and volcanic dykes. The molybdenum mineralization is associated with these felsic and porphryitic dykes.

Current Work and Results:

A brief geological examination of the property was made by a consulting geologist.

ARCTIC MINE
Arctic Gold and Silver Mines Limited

Gold, Silver
105 D 2
(60°05'N, 134°42'W)

References: Cairnes (1906, pp. 24-25; 1908, p. 14; 1917, pp. 28-36; in Bostock, 1957, pp. 209-217; 245-275; 426-459); Cockfield and Bell (1926, p. 39; 1944, p. 12); Wheeler (1961, p. 127); Green (1966, pp. 55-60); Findlay (1967, pp. 46-47; 1969a, pp. 58-60; 1969b, pp. 35-37); Craig and Laporte (1972, pp. 117-118).

Claims: PRIDE OF THE YUKON, CARIBOU, PEERLESS 1, 3, 5-9

Location and Access:

The property is situated 46 miles south of Whitehorse on Sugarloaf Hill about 1 mile north of Montana Mountain summit. The main workings are at elevations over 5,000 feet and are accessible by an 8.6-mile road from Carcross 6 miles to the north.

History:

The property is an old one which dates back to at least the early 1900's. Underground development was carried out between 1905 and 1912 and approximately 3,000 tons of handpicked ore grading 1.08 ounces per ton gold and 27.7 ounces per ton silver were reportedly shipped from the property prior to 1915. Work from 1965 to 1968 included the driving of adits on two levels, the 800 level at 5,400 feet elevation and the 700 level at 5,275 feet, and extensive underground exploration and development on these two levels. At the end of 1967, ore reserves were announced as 254,920 tons averaging 0.68 ounces per ton gold and 19.70 ounces per ton silver. Production from the mine began in May 1968 and terminated October 1969 having produced a total of 7,635 ounces of gold and 207,225 ounces of silver from 55,943 tons of ore milled.

Description:

Two principal vein systems striking northeast cut altered granodiorite host rock. The veins consist of individual veins up to 3 feet across and series of veins over widths up to 8 feet. The veins vary from flat-lying to dipping 30° to 45° to the northeast. Massive lenses and shoots of pyrite, arsenopyrite, sphalerite and galena with rare chalcopyrite with varying amounts of quartz make up the principal vein minerals. Argentite and freibergite have also been reported.

Current Work and Results:

From July to October, up to 5 men were employed in re-opening the 700 level adit. Work consisted mainly of de-icing the portal and retimbering as well as mapping and sampling of the veins. The mine was shut down for the winter in October.

TUB
R.G. Hilker

Copper, Molybdenum
105 D 6
(60°20'N, 134°05'W)

References: Wheeler (1961); Craig and Milner (1972, p. 44).

Claims TUB 1-10

Location and Access:

The property is on the north side of the Watson River, two miles southeast of Alligator Lake and 27 miles southwest of Whitehorse. Bush roads extend west from Robinson, on the Carcross Road to the property. Access is usually by helicopter from Whitehorse.

History:

The claims were part of the former WAT, SON and RIV groups of Phelps Dodge Corporation (M.I.R., 1971-72) and were staked in June 1975 by R.G. Hilker.

Description:

The property is underlain by biotite granodiorite of the Coast Intrusion (Unit 8, Wheeler, 1961). Shear zones containing copper and molybdenum mineralization are found on the property but pyrite is the cause of the gossan found on the property.

Current Work and Results:

The property was examined briefly by a consulting geologist.

Whitehorse Copper Mines Limited

Copper, Silver, Gold
105 D 10, 11
(60°33'N to 60°45'N,
134°53'W to 135°10'W)

References: Kindle (1964); Green and Godwin (1964, pp. 33-39); Green (1965, pp. 40-41; 1966, pp. 50-51); Findlay (1967, pp. 41-43; 1969a, pp. 49-54); Hilker (1967); Craig and Laporte (1972, pp. 110-111); Sinclair and Gilbert (1975, pp. 74-76); Sinclair et al (1975, pp. 142-143).

Claims: Approximately 700 claims in the Whitehorse Copper Belt

Location and Access:

The properties are located along a north- to northwest-trending belt, up to four miles wide and 20 miles long, lying west of Whitehorse. Access to the property is provided by various mine roads connected to the Alaska Highway. Copper concentrates are shipped by rail to Skagway.

History:

Copper showings in the Whitehorse area were known at least as early as 1897 and most of the known occurrences were staked in the period 1898 to 1899 by miners enroute to the Klondike. Some production took place up to 1920 and subsequent exploration on the Copper Belt included diamond drilling by Richmond Yukon Company Limited in 1927 and Noranda Exploration Company Limited in 1947 and 1948.

In 1955, Imperial Mines and Metals commenced exploration in the area and started drilling on the Best Chance prospect in 1956. In 1957, the company was renamed New Imperial Mines Limited. By 1965, the company had outlined roughly 4.6 million tons of ore grading 1.17 per cent copper and milling began in 1967. Since then, there has been production from six open pits: Little Chief, Arctic Chief East and West, Black Cub, Keewenaw and War Eagle.

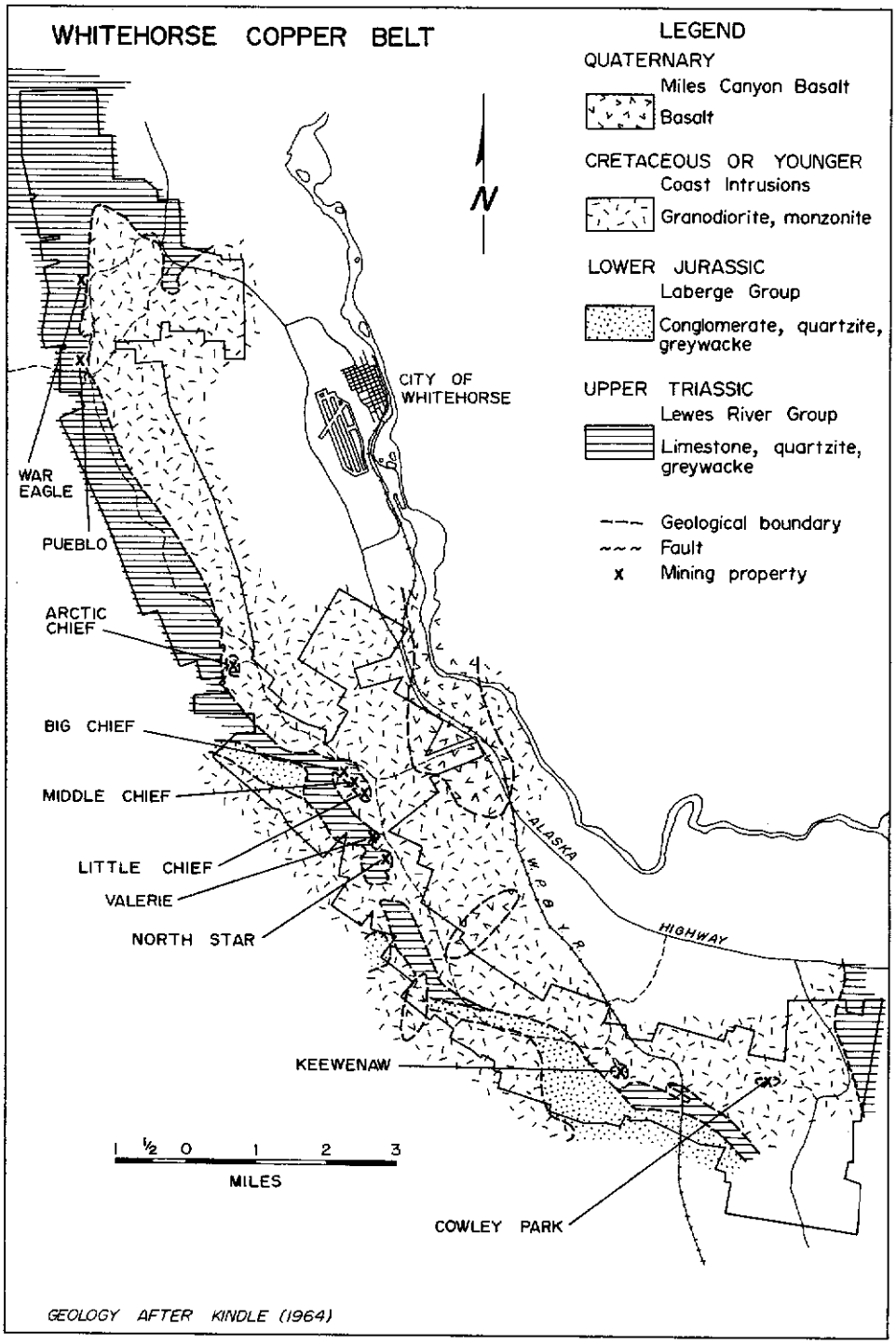
Production was suspended in June 1971 due to low metal prices and was resumed in December 1972 from underground mining of the Little Chief ore body. The company was renamed Whitehorse Copper Mines Limited in September 1971.

Description:

Copper occurrences of the Whitehorse Copper Belt are in calc-silicate-magnetite skarns developed along the irregular contact between Triassic Lewes River sediments (Unit 3c, Wheeler, 1961) and Cretaceous granodioritic to dioritic intrusions of the Coast Intrusions (Unit 8, op. cit.). The skarns are best developed in massive limestone of the Lewes River Group and consist of varying amounts of diopside, epidote, tremolite-actinolite, garnet, serpentinite, magnetite and/or hematite and, occassionally, asbestos. The primarily ore minerals are bornite and chalcopyrite with minor amounts of chalcocite and native copper. Valleriite, a relatively rare copper sulphide, is locally abundant but mill recovery is poor because of its physical properties.

Current Work and Results:

Production in 1975 was 737,062 tons grading 1.52 per cent copper, mainly from the Little Chief ore body. The ore also contained an average of 0.3 ounces of silver per ton and 0.025 ounces of gold per ton.


WHITEHORSE COPPER BELT
LEGEND
QUATERNARY
Miles Canyon Basalt
Basalt
CRETACEOUS OR YOUNGER
Coast Intrusions
Granodiorite, monzonite
LOWER JURASSIC
Laberge Group
Conglomerate, quartzite, greywacke
UPPER TRIASSIC
Lewes River Group
Limestone, quartzite, greywacke
Geological boundary
Fault
x Mining property
N
CITY OF WHITEHORSE
WAR EAGLE
PUEBLO
ARCTIC CHIEF
BIG CHIEF
MIDDLE CHIEF
LITTLE CHIEF
VALERIE
NORTH STAR
KEEWENAW
COWLEY PARK
ALASKA HIGHWAY
W. P. & Y. R.
1 ½ 0 1 2 3
MILES
GEOLOGY AFTER KINDLE (1964)

OPERATING SUMMARY, 1973-1975

	1975	1974	1973
Tons Milled	737,062	626,541	700,054
Rates (tons/day)	2,030	1,745	1,919
Grade (%Cu)	1.52	1.84	1.83
Reserves (tons),	3,054,897	3,567,980	3,182,388

Surface exploration on the Whitehorse Copper Belt included diamond drilling on several properties. One hole, 213 feet long, was drilled on the Cowley Park property to test a magnetic low and encountered Miles Canyon basalt. In addition to bulldozer trenching and ground magnetic survey, two holes totalling, 996 feet were drilled on the North Star property. Hole No. 1, drilled on a magnetic anomaly, intersected dioritized and skarnified quartzite with pyrite. Hole No. 2, 500 feet away, was drilled on an I.P. anomaly and encountered up to 1,000 feet of serpentine skarn and minor limestone. One 2-foot section from the second hole assayed 7.4 per cent zinc and 2.5 per cent copper. The company plans to carry out more drilling on the North Star property in 1976. On the Valerie property, one hole drilled to a depth of 871 feet failed to intersect significant mineralization. A ground magnetic and an I.P. survey were conducted on the WE claims in the northern part of the Copper Belt and the company plans to test the results of these surveys with diamond drilling in 1976.

In addition to the exploration by Whitehorse Copper Mines, Hudson Bay Exploration and Development Company Limited carried out extensive I.P. and magnetic surveys on the northern portion of the Copper Belt under their joint venture agreement.

GROUSE (KREFT-TAKACS)*
Whitehorse Copper Mines Limited

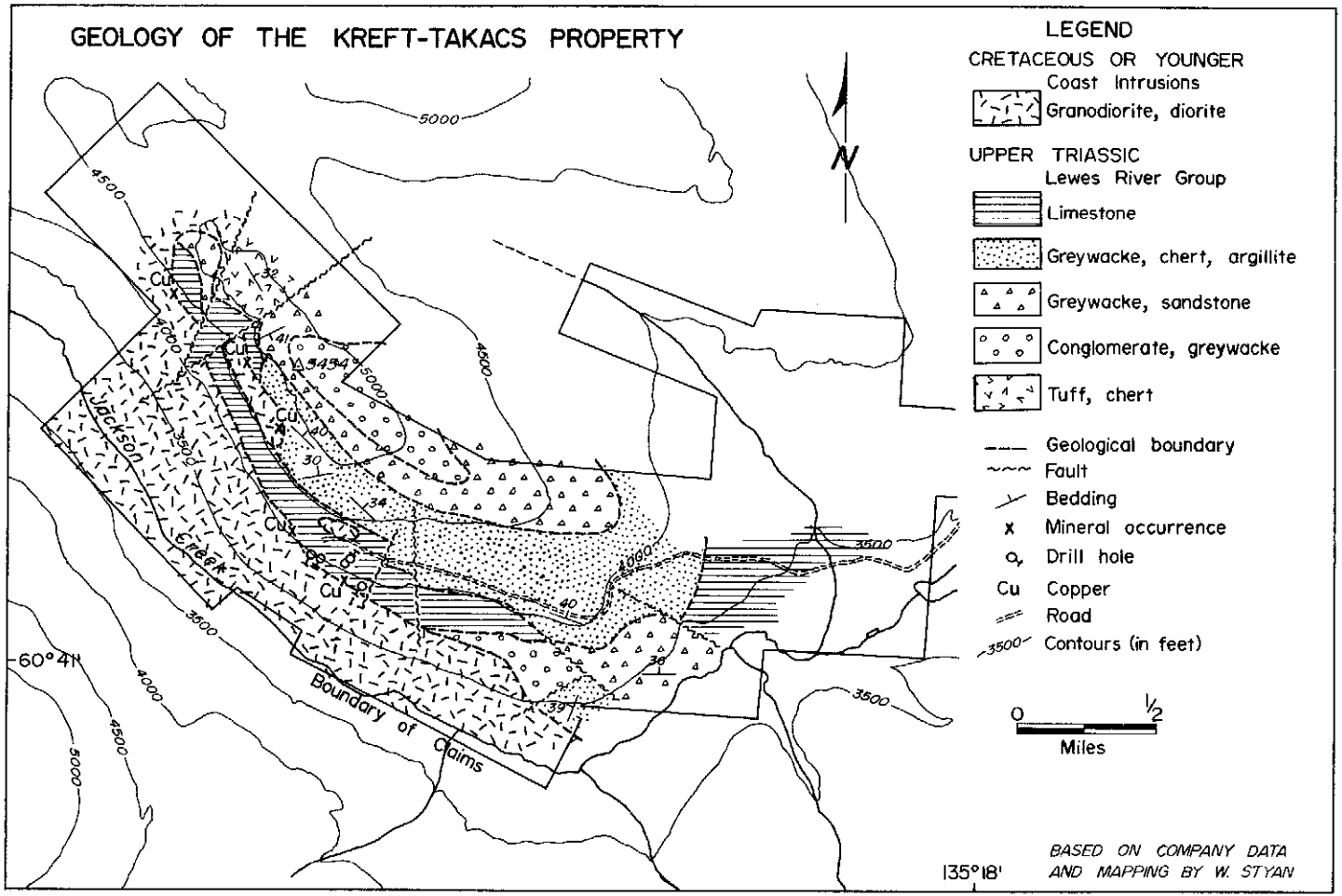
Copper
105 D 11
(60°41'N, 135°22'W)

References: Wheeler (1961); Craig and Milner (1975, p. 52); Sinclair et al (1975, pp. 143-144).

Claims: GROUSE 1-16; ROY 1-8; WOLF 1-6; LUNAR 1-8; APEX 17-18, 23-24; PANTHER 1; GEAR 1-6; JAKE 1,2

Location and Access:

The property is situated on the north side of Jackson Creek roughly two miles west of Franklin Lake and 11 miles west of Whitehorse. The topography in the area is generally steep and elevations range from 3,200 to nearly 5,500 feet. Access to the property is provided by a summer tote road from the Fish Lake-Jackson Creek road.


GEOLOGY OF THE KREFT-TAKACS PROPERTY
LEGEND
CRETACEOUS OR YOUNGER
Coast Intrusions
Granodiorite, diorite
UPPER TRIASSIC
Lewes River Group
Limestone
Greywacke, chert, argillite
Greywacke, sandstone
Conglomerate, greywacke
Tuff, chert
Geological boundary
Fault
Bedding
Mineral occurrence
Drill hole
Cu Copper
Road
Contours (in feet)
0 1/2 Miles
N
Jackson Creek
Boundary of Claims
60°41'
135°18'
BASED ON COMPANY DATA AND MAPPING BY W. STYAN

History:

Copper mineralization was discovered and staked in 1969 by S. Takacs and E. Kreft. New Jersey Zinc Corporation optioned the property in 1972 and drilled six holes totalling 1,500 feet. Only weak copper mineralization was encountered by this drilling in which the best assay was 0.26 per cent copper. In 1974, the property was optioned by Whitehorse Copper Mines Limited.

Description:

The property is underlain by Upper Triassic Lewes River Group sediments (Unit 3, Wheeler, 1961) intruded by granitic rocks of the Coast Intrusions (Unit 8, op. cit.).

The Lewes River Group sediments consist mainly of greywacke and conglomerate but include chert, argillite and limestone. Cherty tuff occurs locally near the northwestern corner. On the property the conglomerate consists of well-rounded boulders and cobbles of feldspar porphyry, hornblende porphyry and andesite within a matrix of greywacke. Lenses of quartzite occur locally in the conglomerate. The greywacke is grey to dark-grey and varies from fine- to coarse-grained. The coarse-grained greywacke locally contains lenses of conglomerate. Chert, argillite and limestone interbeds occur in the fine-grained greywacke. Massive limestone up to several hundred feet thick varies from white and fine-grained to black, coarse-grained and fossiliferous. The latter is often brecciated and veined by calcite.

The sediments generally strike northwest with dips averaging 30° to 40° but locally up to 80° in the northeast. Steeply-dipping faults striking northwest to north to northeast cut the sediments.

In the southwestern portion of the property along the Jackson Creek valley, the Lewes River Group sediments are intruded by granitic rocks of the Coast Intrusions. The granitic rocks are made up primarily of coarse-grained, porphyritic (plagioclase phenocrysts up to 2 cm) hornblende granodiorite. Small bodies of hornblende diorite also intrude the sediments.

Copper mineralization in skarn occurs sporadically over a distance of two miles along the contact between hornblende granodiorite and massive limestone and limy clastics of the Lewes River Group. Well-developed skarn is concentrated in a massive, grey to white limestone in the centre of the ridge and consists of actinolite, diopside, magnetite and calcite with minor wollastonite, serpentine, chlorite and epidote. Copper mineralization consists of disseminated chalcopyrite with secondary malachite, azurite and chrysocolla. Malachite and minor chalcopyrite have been observed in skarn at several other localities along the granodiorite-limestone contact.

Barren skarn assemblages of diopside, garnet, epidote and minor magnetite occur in thinly interbedded limestone and clastics and in limy clastics. No mineralization was observed in the intrusive rocks themselves.

Current Work and Results:

Six diamond drill holes totalling 1,401 feet were drilled in the central part of the ridge along the granodiorite-limestone contact where the skarn is best developed. The drilling encountered calc-silicate-magnetite skarn up to 80 feet thick developed in limestone at the contact of limestone and quartzite. One hole, drilled at an angle of -55° to the southwest, encountered 20 feet of disseminated and patchy chalcopyrite in actinolite magnetite skarn which assayed 5.60 per cent copper and 7.9 ounces per ton silver. However, another

hole, drilled from the same location at an angle of -80° to the southwest, encountered only 5 feet of 0.29 per cent copper. No significant sections were encountered in four other drill holes. The company plans to continue drilling on the property in 1976.

TILL
Asarco Incorporated

105 D 14
(60°47'N, 135°26'W)

Reference: Wheeler (1961).

Claims: TILL 1-48

Location and Access:

The claims are situated roughly 12 miles west-northwest of Whitehorse. Access to the property is via a bush road which leaves the Alaska Highway at approximately Mile 932.

History:

The claims were staked in November 1974.

Description:

The claims are largely covered by glacial overburden except in the southeastern portion of the property where sediments of the Triassic Lewes Group (Unit 3c, Wheeler, 1961) are exposed.

Current Work and Results:

Work on the property in 1975 consisted of limited geological mapping, soil sampling and ground magnetic surveying. Results were negative and the claims were allowed to lapse.

GEE
United Keno Hill Mines Limited

Copper
105 D 14
(60°56'N, 135°20'W)

Reference: Wheeler (1961).

Claims: GEE 1-4

Location and Access:

The GEE claims are situated nearly six miles west of the Klondike Highway and four miles north of the Takhini Hotsprings. The normal mode of access in 1975 was by helicopter from Whitehorse, 20 miles to the southeast.

History:

The claims were staked in May 1975 to cover copper mineralization discovered during the course of a regional exploration program.

Description:

The property is underlain mainly by Lower Jurassic sediments of the Laberge Group (Unit 4a, Wheeler, 1961) consisiting of argillite, sandstone, limestone pebble conglomerate, chert and shale. These sediments strike roughly north, dip moderately to the east and are cut by several east-trending faults. To the west, the Laberge Group sediments are in contact with Upper Triassic Lewes River Group sediments (Unit 3, op. cit.) along a major, north-striking fault.

Copper mineralization occurs in limestone pebble conglomerate close to the contact of this rock with grey chert. The limestone conglomerate is composed of closely-packed and elongated pebbles of white to grey, microcrystalline limestone with less than 10 per cent dark green, argillaceous matrix. The copper minerals consist of chalcocite and minor malachite and appear to be restricted entirely to the matrix of the conglomerate.

Current Work and Results:

Geological mapping on the property in 1975 suggested that the exposed mineralization was of limited extent and no significant anomalies were detected by soil sampling. Two samples from the mineralized zone gave the following assays:

Sample	Cu. (%)	Ag. (oz/ton)
1	0.83	0.02
2	0.36	0.02

KING LAKE*
United Keno Hill Mines Limited

Copper, Molybdenum
105 D 14
(60°49'N, 135°28'W)

References: Wheeler (1961); Sinclair et al (1975, pp. 144-145).

Claims: KING 1-8; LAKE 1-54; K-L 1, 2

Location and Access:

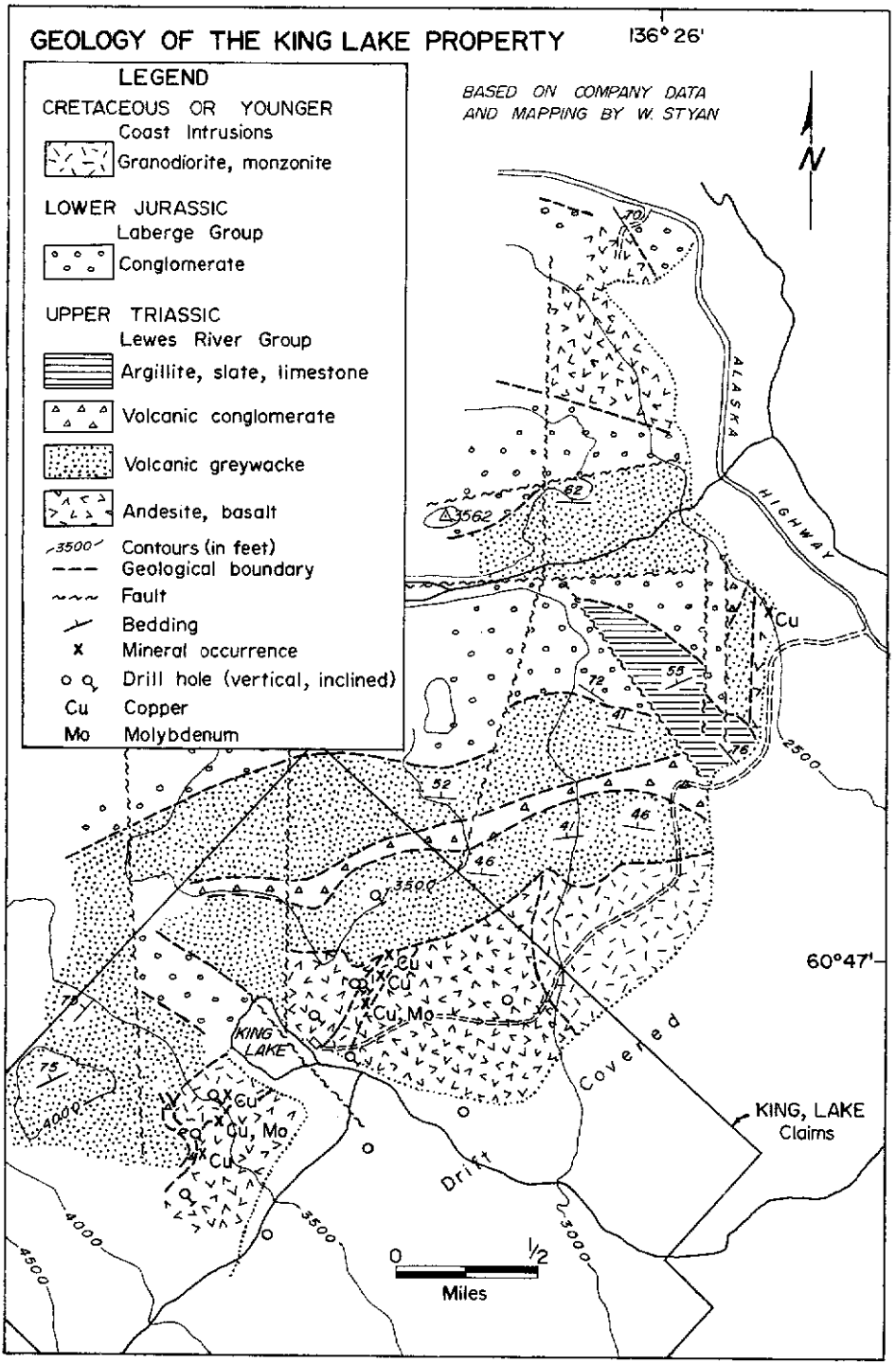
The property lies south of the Alaska Highway roughly 15 miles west-northwest of Whitehorse and can be reached by a 3.1 tote road which leaves the Alaska Highway at Mile 933.9 (Km 1502). Most of the showings are situated near a small lake, locally referred to as King Lake, which is near the centre of the property. The terrain is moderately sloping to steep, with elevations ranging from 2,800 to 5,000 feet.

History:

The KING and LAKE claims were staked by the Suits Brothers of Whitehorse in May 1974 after Joe Suits found copper showings while looking for a cabin site. The property was subsequently optioned by United Keno Hill Mines Limited.

Description:

The area is underlain primarily by volcanics and related sediments of the Upper Triassic Lewes River Group (Unit 3a, Wheeler, 1961), Jurassic Laberge Group sediments (Unit 3aa, op. cit.) and granitic rocks of the Cretaceous Coast Intrusions (Unit 8, op. cit.).


GEOLOGY OF THE KING LAKE PROPERTY
136° 26'
LEGEND
CRETACEOUS OR YOUNGER
Coast Intrusions
Granodiorite, monzonite
LOWER JURASSIC
Laberge Group
Conglomerate
UPPER TRIASSIC
Lewes River Group
Argillite, slate, limestone
Volcanic conglomerate
Volcanic greywacke
Andesite, basalt
3500 Contours (in feet)
Geological boundary
Fault
Bedding
Mineral occurrence
Drill hole (vertical, inclined)
Cu Copper
Mo Molybdenum
BASED ON COMPANY DATA
AND MAPPING BY W. STYAN
N
ALASKA
HIGHWAY
Cu
Cu, Mo
KING
LAKE
Covered
Drift
KING, LAKE
Claims
60°47'
0
1/2
Miles

The base of the Lewes River Group in the property area consists of volcanic rocks, including basalt, andesite and minor bands of chert tuff, although massive, fine- to medium-grained andesite predominates. Up to 10 per cent pyrite occurs as disseminations and fracture fillings within the volcanics. The Lewes River Group volcanics appear to lie conformably on altered diorite, of unknown age.

The Lewes river Group sediments consist mainly of greywacke and conglomerate with minor argillite, slate and limestone near the top of the section. The greywacke is white- to grey-weathering, green to grey in colour, medium-to coarse-grained and poorly sorted. The conglomerate is generally massive and poorly sorted with a matrix of grey to green greywacke. The conglomerate contains lenses of greywacke and locally is well-bedded. Granitic fragments in the conglomerate are rare. Minor lenses of dark grey, platy limestone associated with argillite and slate occur locally, probably near the top of the section but stratigraphic relationships are not clear.

The younger Laberge Group conglomerate is thick-bedded and poorly sorted with a gritty, argillaceous matrix. The abundance of granitic fragments help to distinguish it from Lewes River Group conglomerate.

Dykes and sills (?) of coarse-grained, serpentinized gabbro, of uncertain age, intrude altered diorite but not Lewes River Group sediments. Observed mainly in drill core, the serpentinized gabbro varies from feldspar-rich phases composed essentially of pyroxene, now altered to a mixture of serpentine and fine-grained magnetite.

Granitic rocks of the Coast Intrusions intrude altered diorite in two dyke-like bodies on the northeast and southwest sides of King Lake and in a larger stock to the east. The two dyke-like bodies near King Lake, with which all the known mineral showings are associated, consist of quartz monzonite to biotite granodiorite. These rocks are white-weathering, pinkish to grey on fresh surfaces, medium- to coarse-grained and locally porphyritic with pink feldspar phenocrysts up to 6 mm in diameter. They are not highly altered although minor chlorite and epidote alteration is pervasive. Some local kaolinization and silicification was observed in drill core, but is apparently unrelated to any increase or decrease in sulphide mineralization. The granitic stock to the east consists of coarse-grained hornblende granodiorite. The age of the granitic rocks has generally thought to be Cretaceous or younger although some older ages have been reported (Wheeler, 1961). The granitic rocks near King Lake have not been observed intruding Lewes River Group sediments and it is possible they may be older than Upper Triassic.

Basaltic dykes one to two feet wide cut Lewes River Group sediments and are possibly related to Miles Canyon Basalt of Pleistocene age.

The structure of the area is dominated by a broad, northwest-plunging anticline and most of the sediments dip moderately to steeply to the north and northwest. The structure has been modified by faulting, predominantly in a north to northwesterly trend.

Mineral occurrences on the King Lake property have been divided into three types. The first type consists of chalcopyrite and occassionally molybdenite associated with pyrite and magnetite occurring as disseminations and fracture fillings in quartz monzonite. Chlorite, epidote and calcite commonly accompany the sulphide mineralization but the mineralized monzonite generally does not appear to have been noticeably altered. This type of mineralization is most prevalent in the dyke-like body of quartz monzonite

northeast of King Lake where it is present in several small, localized occurrences.

The second type of mineralization consists of chalcopyrite, molybdenite and pyrite in small quartz veins in strongly altered diorite peripheral to quartz monzonite. Scattered occurrences of this type of mineralization are found southwest of King Lake.

Pyrite occurring as disseminations, in fractures and in amygdules in andesitic volcanics northeast of King Lake forms the third type of mineralization. No copper or molybdenum sulphides have been recognized in these volcanics.

Current Work and Results:

Geophysical and geochemical surveys outlined a number of anomalous areas. An I.P. survey, employing a dipole-dipole configuration, outlined 10 anomalies, all but two coincident with magnetic highs. An EM-16 survey also outlined a number of conductive zones, some corresponding with I.P. anomalies. Most of the geophysical anomalies were located on the southeast portion of the claims where till cover obscures the bedrock geology.

Soil sampling failed to outline any major anomalies with the exception of coincident copper and molybdenum anomalies southwest of King Lake believed related to minor copper and molybdenum sulphides in quartz veins. Soil sampling in the southeastern portion of the property was precluded by the thick till cover.

A diamond drilling program totalling 5,056 feet in 14 holes was conducted to test the geophysical anomalies and the copper showings. The drilling indicated the coincident I.P. and magnetic anomalies were caused by serpentinized gabbro containing magnetite. Drilling northeast of King Lake beneath copper showings in the quartz monzonite intersected only minor, localized copper mineralization.

Subsequent to the drilling program, United Keno terminated their option agreement with the Suits Brothers.

ABI
United Keno Hill Mines Limited

Lead, Zinc, Silver
105 D 16
(60°49'N, 134°21'W)

Reference: Wheeler (1961).

Claims: ABI 1-4

Location and Access:

The claims are situated approximately six miles directly south of Mount Byng at elevations of 4,500 to 5,500 feet. Access in 1975 was by helicopter from Whitehorse, 25 miles to the west.

History:

The claims were staked in July 1975.

Description:

The claims lie in an area mapped by Wheeler (1961) as pink quartz monzonite (Unit 9). Mineralization discovered on the property consists of sphalerite and galena with pyrite disseminated in a very fine-grained, white to pink, siliceous shear zone. Manganese oxide staining is evident.

Current Work and Results:

Work on the property in 1975 included geological mapping, soil sampling and hand trenching. Soil sampling outlined some anomalous but discontinuous lead and zinc values and low silver values. Hand trenching in the area of mineralized float failed to indicate the nature of the bedrock source. It appears to be a silicified shear zone up to four feet wide but no strike or dip could be determined and the occurrence appears to be local. Three mineralized samples from the trenching assayed as follows:

Sample	Pb. (%)	Zn (%)	Ag. (oz/ton)
1	1.40	0.44	1.36
2	0.10	0.16	0.14
3	0.08	0.13	0.10

LYNX
Loon Lake Syndicate

Copper, Gold
105 E 1
(61°21'N, 134°11'W)

References: Bostock and Lees (1938); Craig and Laporte (1972, pp. 119-120); Sinclair et al (1975, p. 148).

Claims: LYNX 1-16

Location and Access:

The claims lie immediately northwest of Upper Loon Lake, roughly 45 miles northeast of Whitehorse. Elevations on the property range from 3,300 to 4,400 feet. Access in 1975 was by fixed wing aircraft from Whitehorse to Loon Lake.

History:

Copper showings on the property were known prior to 1900 and some development work was carried out in the early 1900's. The property was restaked as the BEAVER and MINK claims in 1969 and as the LYNX claims in December 1972 and May 1974.

Description:

The LYNX claims are underlain by sericite-chlorite schist and cherty quartzite dipping 55° and 75° to the southwest and northwest. Copper showings consist of disseminated chalcopyrite and minor pyrite in quartzite, crudely banded, patchy chalcopyrite and pyrite in schist, and specks of chalcopyrite in quartz veinlets.

Current Work and Results:

Additional geological reconnaissance and soil sampling were carried out in 1975. Some anomalous copper, lead and zinc values were obtained.

HIG
United Keno Hill Mines Limited

Molybdenum, Copper
105 E 2
(61°01'N, 134°44'W)

Reference: Bostock and Lees (1938).

Claims: HIG 1-22

Location and Access:

The HIG claims are four miles north of Joe Mountain and roughly 11 miles east of Lake Laberge. Access in 1975 was by helicopter from Whitehorse, 25 miles to the southeast.

History:

The claims were staked in June 1975.

Description:

The area is underlain by a stock of pink to grey granodiorite belonging to the Cretaceous Coast Intrusions (Unit 11, Bostock and Lees, 1938). Molybdenite with minor pyrite and traces of chalcopyrite occur in fractures in moderately to highly weathered (and altered?) phases of the granodiorite.

Current Work and Results:

Geological mapping and soil sampling on the property outlined a number of small, erratic and non-coincidental copper and molybdenum anomalies. One sample of the mineralized granodiorite assayed 0.03 per cent copper and 0.098 per cent molybdenum.

LORI
D.C. Syndicate

Copper, Molybdenum
105 E 2
(61°02'N, 134°43'W)

Reference: Bostock and Lees (1938).

Claims: LORI 1-13

Location and Access:

The claims are situated at the headwaters of Laurier Creek, roughly four miles west of Teslin Mountain. Helicopter was the normal mode of access in 1975.

History:

The claims were staked in June 1975 following reconnaissance exploration in the area.

Description:

The southern part of the property is underlain by granodiorite of the Cretaceous Coast Intrusions (Unit 11, Bostock and Lees, 1938) which intrudes andesitic and basaltic volcanics of the Hutshi Group (Unit 9, op. cit.) to the north. Molybdenite and chalcopyrite are reported to occur in fractures in the granodiorite.

Current Work and Results:

Soil sampling and geological mapping were carried out on the property in 1975.

GEM
D.C. Syndicate

Gold
105 E 6
(61°22'N, 135°06'W)

Reference: Bostock and Lees (1938).

Claims: GEM 1-86

Location and Access:

The claims lie roughly four miles east of the north end of Lake Laberge, on the south side of Povoas Mountain. Access in 1975 was by helicopter.

History:

The staking of the claims in August 1975 was prompted by the discovery of native gold during a reconnaissance exploration program.

Description:

The area is underlain by Mesozoic andesitic and basaltic volcanics (Unit 9, Bosotock and Lees, 1938).

Current Work and Results:

Native gold was discovered in a rhyolite dyke cutting the andesitic and basaltic volcanics during reconnaissance exploration in 1975. Subsequent geological mapping and soil and silt sampling limited this mineralization to the initial discovery.

BOND
D.C. Syndicate

Copper, Molybdenum
105 E 7
(61°25'N, 134°53'W)

Reference: Bostock and Lees (1938).

Location and Access:

The claims are situated three miles north of Miller Creek, roughly 12 miles due east of the north end of Lake Laberge. In 1975 the property was reached by helicopter.

History:

The claims were staked in August 1975.

Description:

The property is underlain by a granodiorite stock of the Cretaceous Coast Intrusions (Unit 11, Bostock and lees, 1938). The granodiorite intrudes Triassic Lewes River Series sediments (Unit 5, op. cit.), Jurassic Laberge Series sediments (Unit 6, op. cit.) and basaltic and andesitic volcanics of the Hutshi Group of Cretaceous age (Unit 9, op. cit). Molybdenite and malachite are reported to occur in fractures in the granodiorite, and chalcopyrite in volcanic float.

Current Work and Results:

Geological mapping and soil sampling were carried out on the property in 1975.

BAND*
D.C. Syndicate

Copper
105 E 13
(61°50'N, 135°31'W)

Reference: Bostock and Lees (1938).

Claims: BAND 1-4

Location and Access:

The claims lie on the west side of Packers Mountain, approximately 30 miles southeast of Carmacks. Access in 1975 was by helicopter.

History:

Copper showings were discovered and staked as the HIJ claims in the early 1970's by United Keno Hill Mines Limited. These showings were restaked as the BAND claims in July 1975 by D.C. Syndicate.

Description:

The property is underlain by argillaceous sediments probably belonging to the Jurassic Laberge Series (Unit 6, Bostock and Lees, 1938) which have been intruded by small stocks of monzonite, diorite and feldspar porphyry belonging to the Cretaceous Coast Intrusions (Unit 11, op. cit.). Chalcopyrite, associated with pyrite and magnetite, occurs in garnet-diopside skarn developed at the intrusive-sediment contacts.

Current Work and Results:

Geological mapping, soil sampling and a ground magnetic survey were carried out on the property in 1975. The highest assays returned from samples of the mineralized skarn ran 0.2 per cent copper and traces of nickel.

AU, BRIE
Utah Mines Limited

Lead, Zinc
105 F 14
(61°51'N, 133°14'W)

Reference: Wheeler *et al* (1960a).

Claims: AU 1-16; BRIE 1-128

Location and Access:

The claims are two miles south of Fox Creek, fifteen miles from the South Canol Road along Fox Creek and 26 miles southwest of the village of Ross River. Access is by helicopter from Ross River on the South Canol Road. There is a winter road along Fox Creek.

History:

The ground was originally staked as the TUB claims in 1971 and some prospecting and geochemistry done by Arrow Inter-America Corporation at that time. The AU claims were staked in January 1975 and the BRIE claims around them in September 1975.

Description:

The property is underlain by a folded series of Cambrian black and grey phyllites. Numerous veins of quartz-carbonate-green mica containing pyrite, chalcopyrite, galena and sphalerite are found.

Current Work and Results:

Prospecting and a geochemical soil and silt survey were carried out. The best mineralization was found in boulders in a stream. Two types of sulphide bearing boulders were found:

1. massive pyrite with some chalcopyrite
2. banded galena and sphalerite in a siliceous matrix.

No geochemical anomalies were found.

MAL, BAR, TENAS
Boliden-Preussag Exploration Limited

105 K 1, 2
(62°02'N, 132°14'W to 62°05'N, 132°28'W)

References: Roddick and Green (1961a); Tempelman-Kluit (1972).

Claims: MAL 1-44; BAR 1-8; TENAS 1-33

Location and Access:

The claims lie north of Ross River along a west-northwest trend in three separate blocks two to six miles apart. The MAL claims are situated roughly one mile south of Olgie Lake which can be used by fixed wing aircraft from Ross River, ten miles to the south. The BAR claims lie two miles east of the MAL claims and can be reached by a bush road which leaves the North Canol Road 3,000 feet east of Tenas Creek. The TENAS claims are roughly six miles southeast of the BAR claims. Access to the TENAS claims is provided by the North Canol Road which crosses the southern corner of the claim group.

History:

All three claim blocks were staked in August 1974 by Welcome North Mines Limited. The properties were subsequently optioned to Boliden-Preussag Explorations Limited early in 1975.

Description:

The claims are situated along a west-northwest trending belt of quartz-sericite schist and phyllite, (Unit 7, Roddick and Green, 1961a), overlain by andesitic volcanics to the south (Unit 8, op. cit.) and intruded to the north by granodiorite of the Anvil Range batholith (Unit 11, op. cit.). The schist and phyllite are thought to be correlative with the phyllite to the west which hosts the massive sulphide deposits of the Anvil Range and which is thought to

be Cambrian or earlier in age (Tempelman-Kluit, 1972). Outcrops are scarce on all the claim groups, particularly the BAR group, and no occurrences of economic minerals have been reported.

Current Work and Results:

Extensive surface exploration undertaken on the property in 1975 included geological mapping, geochemical soil sampling and a Turam electromagnetic survey. The results of this work failed to outline any anomalous areas on either the MAL or BAR claims with the exception of one electromagnetic anomaly near the southwestern corner of the BAR group. On the TENAS claims a number of electromagnetic conductors were outlined in an area underlain by quartz-sericite phyllite. The electromagnetic anomalies were also coincident with anomalous concentrations of lead and zinc in the soil. Late in the year a diamond drilling program was undertaken on the TENAS claims to test the anomalous zones. No significant sections of sulphide mineralization have been reported from this drilling.

TER — 105 K 2
Monore Metals Corporation — (62°06'N, 132°32'W)

Reference: Roddick and Green (1961).

Claims: TER 1-28

Location and Access:

The TER claims lie 10 miles north-northwest of Ross River, immediately southwest of the west end of Olgie Lake. Access in 1975 was by helicopter directly to the property or by float-equipped, fixed-wing aircraft to Olgie Lake.

History:

The TER claims were staked in August 1974.

Description:

Although largely covered by overburden, the property covers an area generally underlain by quartz-sericite schist, banded quartzose granulite and banded skarn (Unit 7, Roddick and Green, 1961). To the west and north these rocks are intruded by Cretaceous granitic rocks (Unit 11, op. cit.). No mineral occurrences have been found on the property.

Current Work and Results:

Field work in 1975 consisted primarily of geochemical soil sampling. The property was not visited.

ANVIL MINE*
Cyprus Anvil Mining Corporation

Lead, Zinc, Silver
105 K 2, 3, 6
(62°21'N, 133°22'W)

References: Chisholm (1957); Roddick and Green (1961a); Green and Godwin (1964, pp. 31-32); Green (1965, pp. 36-37; 1966, pp. 47-50); Findlay (1967, pp. 35-39; 1969a, pp. 43-45; 1969b, pp. 29-30); Tempelman-Kluit (1972); Craig and Laporte (1972, pp. 94-96); Brock (1973); Sinclair and Gilbert (1975, pp. 50-52); Sinclair et al (1975, pp. 128-129).

Claims: FARO, GAL, ED, SUN, RICH, DY, GALE, DEA, LEA, PEA, SEA, SB, DP, KAY, MOR, SINK, LO, TIE, ROCK, BILL: approximately 2,000 claims

Location and Access:

The Anvil Mine is situated 143 miles northeast of Whitehorse in the Anvil Range. Ore concentrates are trucked to Whitehorse via roughly 250 miles of all-weather roads and then transferred to the White Pass and Yukon Route for shipment by rail to Skagway.

History:

The mine was brought into production late in 1969 and, except for brief shutdowns due to labour problems, has been in continuous production since. In 1975, Anvil merged with Dynasty Explorations Limited to form Cyprus Anvil Mining Corporation.

Description:

The host rocks on the property consist of pelitic schist which are overlain by calc-silicate phyllite (Unit 2, Tempelman-Kluit, 1972). The regional trend of the schist and phyllite is to the northwest, with dips averaging 20° to the southwest. Locally, the structure is complex, with at least five stages of deformation recognized by company geologists. The ore occurs in a series of massive sulphide zones along a 6,600 foot strike length. The ore zones are tabular in longtitudinal section and lenticular in cross section and are generally conformable to the enclosing schist and phyllite host rocks. Galena and sphalerite, associated with pyrite and pyrrhotite, are the principal sulphide minerals.

Current Work and Results:

During 1975, 3,225,083 tons of ore were milled at a daily rate of 8,983 tons.

OPERATING SUMMARY - 1973-1975

	1975	1974	1973
Tons Milled	3,225,083	2,925,359	2,899,124
Daily rate (tons)	8,983	8,865	7,942
Mill Heads:			
Lead (%)	9.44)	10.11)	11.25)
Zinc (%)	combined)	combined)	combined)
Silver (oz/ton)	1	1	1
Ore reserves (tons)	46,400,000	49,674,000	52,599,000

Annual Report 1975.

1975 exploration in the vicinity of the mine consisted of 10 diamond drill holes totalling roughly 25,000 feet, with some individual holes up to 2,600 feet long. Results of this work confirmed the existing general structural/stratigraphic models for the mine area. It allowed considerable refinement of metamorphic stratigraphy and specific subdivision of the Faro schist unit. Down dip continuity of Faro #3 ore zone outside the limits of the current ultimate pit design was also demonstrated. Detailed work by Cyprus Anvil geologists continues in an attempt to unravel the internal geometry and stratigraphy of the deposit.

LINDA, JACKIE, RACHEL, EVA, MABLE
BEV, ALICE, WYNNE, IRENE, RAZ, RUTH
Welcome North Mines Limited
Getty Mining Pacific

105 K 2, 5, 6, 7
(62°10'N, 132°42'W to
62°26'N, 135°52'W)

References: Roddick and Green (1961a); Tempelman-Kluit (1972).

Claims: LINDA 1-44; JACKIE 1-64; RACHEL 1-42; EVA 1-47; MABLE 1-48; BEV 1-28; ALICE 1-30; WYNNE 1-36; IRENE 1-56; RAZ 1-20; RUTH 1-42

Location and Access:

The claims are situated in separate blocks in the Anvil Range within a northwest trending strip roughly 40 miles long. Access to the claims was mainly by helicopter from Faro or Ross River.

History:

The greater portion of claims were staked early in 1975; the rest were staked during the following summer.

Description:

The claim groups are all considered to be underlain by schist and phyllite mapped as Unit 3 by Tempelman-Kluit (1972). Locally, the schist and phyllite are intruded by granodiorite of Cretaceous age. No sulphide mineral occurrences have been reported.

Current Work and Results:

Magnetic, electromagnetic and soil geochemical surveys carried out in 1975 outlined a number of anomalous areas on which further work, including diamond drilling, is intended.

KIRK Property
M. Early

105 K 3
(62°01'N, 133°03'W)

Reference: Tempelman-Kluit (1972).

Claims: AL 1-4; KIRK 1-2; RIM 1-6

Location and Access:

The claims are situated at about the 5,500 foot level stradling a Mountain peak some 15 miles south of the town of Faro, in the Buttle Creek area. Access is by helicopter from Faro.

History:

The claims were re-staked in September 1974.

Description:

The claims are underlain by a series of metasediments. (Unit 2, Roddick and Green, 1961).

Current Work and Results:

A gravity survey of the property was conducted to evaluate a previously defined geochemical anomaly but the response was not indicative of massive sulphide mineralization.

SWIM
Kerr Addison Mines Limited
Canadian National Resources

Lead, Zinc, Silver
105 K 3
(62°13'N, 133°02'W)

References: Findlay (1969a, p. 47); Tempelman-Kluit (1972); Sinclair et al (1975, p. 134).

Claims: SWIM 1-72

Location and Access:

The property lies immediately northwest of Swim Lake, six miles southeast of the original Vangorda Creek property and 20 miles east of Faro. Access is via the Vangorda-Swim Lakes road.

History:

The SWIM claims were staked by Kerr Addison in 1963 following an airborne magnetic survey. Drilling on the property in 1965 and 1966 outlined a massive sulphide zone containing 5 million tons averaging 9.5 per cent combined lead-zinc and 1.5 ounces per ton silver. The property was optioned in 1974 by AEX Minerals Corporation (now Canadian National Resources) and electromagnetic and gravity surveys were carried out over part of the property.

Description:

The property is underlain by grey phyllite and slaty phyllite of probable Cambrian age (Unit 3, Tempelman-Kluit, 1972). The dominant foliation of the phyllites trends northwest and dips gently northeast.

The Swim deposit is a discontinuous, roughly tabular and elongate mass of sulphides with quartzose gangue enclosed in sericitic and graphitic phyllites. Galena and sphalerite are the main ore minerals and are commonly associated with pyrite, pyrrhotite, marcasite and pyrite. Arsenopyrite, magnetite and tetrahedrite also occur.

Current Work and Results:

In 1975, four holes were drilled totalling 3,460 feet.

HEK
Cyprus Anvil Mining Corporation

105 K 5
(62°22'N, 133°32'W)

Reference: Tempelman-Kluit (1972).

Claims: HEK 1-14

Location and Access:

The claims are situated stradling Rose Creek some 6 miles west of the Anvil minesite. Access was by helciopter from the minesite.

History:

The claims were staked in March 1975.

Description:

The claims are underlain by biotite-muscovite schist, amphibolite and marble (Unit 2, Tempelman-Kluit, 1972) unit of Proterozoic (?) age.

Current Work and Results:

A Turam EM survey was conducted on the claims. Five conductors were located.

SOK
Claymore Resources Limited

Copper
105 K 5
(62°23'N, 133°39'W)

References: Roddick and Green (1961a); Findlay (1969a, p. 45; Tempelman-Kluit (1972).

Claims: SOK 1-29

Location and Access:

The property straddles Rose Creek roughly eight miles west of the Anvil open pit mine. Access in 1975 was by helicopter from Faro, 15 miles to the southeast.

History:

The property was originally staked as the MULTI claims by Anvil Mining Corporation who carried out geochemical and electromagnetic surveys in 1967 and 1968. An I.P. survey carried out in 1967 outlined several anomalous areas, one of which was tested by a 500-foot drill hole in 1968. This drill hole is reported to have intersected interbedded volcanics and graphitic schists. The SOK claims were staked for Claymore Resources Limited in July 1974.

Description:

Although obscured to a large degree by overburden, the property appears to be underlain by andesitic and basaltic volcanic rocks containing minor interbands of phyllite, quartzite and limestone. The volcanic rocks are generally dark-coloured, medium- to fine-grained and schistose although to the south the volcanics are coarse-grained and, locally distinctly tuffaceous or vesicular. The volcanics are thought to be Mississippian or later in age, corresponding to Unit 7 and possibly Unit 8 of Roddick and Green (1961a). Medium- to coarse-grained granodioirte of Cretaceous age (Unit 11, Roddick and Green, 1961a) intrudes the volcanics to the north and west of the property. Several minor occurrences of chalcopyrite, pyrite, pyrrhotite and locally, minor arsenopyrite are associated with the volcanic rocks.

Current Work and Results:

Geochemical soil and silt sampling failed to outline any copper, lead or zinc anomalies and a consultant for the company considered the minor sulphide occurrences too low-grade to warrant further investigation.

BG
Claymore Resources Limited

105 K 5
(62°24'N, 133°36.5'W)

Reference: Tempelman-Kluit (1972).

Claims: BG 1-16

Location and Access:

The BG claims lie approximatley eight miles west of the Anvil Mine. Normal access in 1975 was by helicopter from Faro, roughly 15 miles to the southeast.

History:

The property was first staked late in 1965 as the FAIR claims but these lapsed and were restaked as part of the CROWN group by Anvil Mining Corporation early in 1967. Work on the claims by Anvil included soil sampling, a Turam electromagnetic survey and a gravity survey. This work is reported to have outlined two small geochemical anomalies and a number of Turam electromagnetic anomalies. The BG claims were staked for Claymore Resources Limited in July 1974.

Description:

Rock exposure is very poor on the BG claims although the area lies generally within the stratigraphic interval which contains the muscovite schist host rocks for the Faro ore bodies to the east. In the northern part of the claim group, strongly foliated schist and phyllite are in contact with andes-

itic and basaltic volcanic rocks. Outcrops of coarse-grained pyroxenite occur in the northeast corner of the property and beyond. No mineral occurrences have been reported on the claims.

Current Work and Results:

Geological mapping, soil sampling and a magnetometer survey carried out over selected areas of the property in 1975 failed to outline any new anomalous areas. The Turam anomalies outlined by Anvil, which were never drilled, may be significant in that the property is underlain by favourable host rock lithologies.

JOE
Lion Mines Limited

105 K 5
(62°25'N, 133°35'W)

References: Findaly (1969a, pp. 45-46); Tempelman-Kluit (1972).

Claims: JOE 1-8

Location and Access:

The property is roughly 21 miles northwest of Faro. Access in 1975 was by helicopter.

History:

The JOE 1-8 claims were staked in April 1967. During the 1967 season, New Far North Explorations Limited and Consolidated Bellekeno Mines Limited carried out geological, geochemical and magnetic surveys on the property.

Description:

The property is underlain by schists of Cambrian (?) age (Unit 2, Templeman-Kluit, 1972) which are intruded to the north by granodiorite of the Anvil Batholith (Unit 11, op. cit.). Outcrops of ultramafic rocks (Unit 12, op. cit.) are also present on the property. No mineral showings have been reported.

Current Work and Results:

In 1975, Lion Mines drilled a single hole to a depth of 332 feet. The hole intersected mainly biotite schist with finely disseminated pyrrhotite.

TSS
Teck Corporation Limited
Silver Standard Mines Limited

105 K 5, 6
(62°17'N, 133°29'W)

Reference: Tempelman-Kluit (1972).

Claims: TSS 1-39

Location and Access:

The TSS claims lie four miles northwest of the Faro ore body and can be reached via the access road which leads to the Anvil Mine from the town of Faro.

History:

The property was originally staked in 1965 as the JO claims and in 1966 and 1967, magnetic, electromagnetic and geochemical surveys were carried out by Kim Explorations Limited. The property was restaked as the TSS claims in June 1974.

Description:

The property lies within the belt of Cambrian or older phyllitic rocks which host the massive sulphide ore bodies of the Anvil Range area (Unit 3, Tempelman-Kluit, 1972). Outcrop on the TSS claims, however, is noteably absent.

Current Work and Results:

Bulldozer trenching in 1975 was unsucessful in locating any mineralized phyllite.

DG
Tay River Mines Limited

105 K 6
(62°13'N, 133°12'W)

Reference: Tempelman-Kluit (1972).

Claims: DG 1-6

Location and Access:

The claims are located approximately one mile east of the Anvil Mine. Access is possible by bush road from the main mine access road.

History:

The claims were staked in August 1974.

Description:

The property is covered with glacial overburden. It has been infered that the claims are underlain by Unit 2 of Tempelman-Kluit in contact with the granite of the Mt. Mye stock.

Current Work and Results:

A geochemical soil survey for lead and zinc was conducted. No anomalous readings were obtained.

GRUM
Kerr Addison Mines Limited
Canadian National Resources

Lead, Zinc, Silver
105 K 6
(62°15'N, 133°10'W)

References: Chisholm (1957); Green and Godwin (1964, p. 31); Tempelman-Kluit (1972); Sinclair et al (1975, pp. 130-131).

Claims: GRUM 1-3, 5; CHUCK 1, 2, 5-8; MAC 1, 2; TIM 1-3, 6, 7; FIRTH 6-8; HANK 2-8; SALLY 1-4; WYNNE 6-8; ALICE 1-8; ROCKY 1, 3, 5, 7, 8; ELLAMAY 3, 4; JACK 1-5; BIX 2, 3; CHAMP 1-8: total of 63 claims and fractions

Location and Access:

The property lies roughly five miles northeast of Faro and straddles the Vangorda-Swim Lakes Road which provides ready access.

History:

The property was originally staked and explored in the period 1953-55 at which time two small sulphide zones designated the Champ and Firth were discovered west of the Vangorda deposit. In 1973, AEX Minerals Corporation optioned the property and drilled four holes, one of which intersected a section of massive sulphides carrying lead and zinc. In 1974, Kerr Addison drilled 60 holes totalling 55,784 feet, outlining a massive sulphide zone containing a minimum of roughly 30 million tons of 10 per cent combined lead-zinc and nearly 2 ounces of silver per ton. Late in 1974, AEX Minerals Corporation merged with 79902 Resources to form Canadian National Resources.

Description:

Although outcrop in the immediate area of the deposit is lacking, the property is generally underlain by chlorite-muscovite schist and phyllite assigned to Unit 3 of probable Cambrian age by Tempelman-Kluit (1972). Detailed mapping by Cyprus Anvil geologists in the area of the Faro ore body indicates that the host rocks for the massive sulphides belong to Unit 2 of Cambrian age or older.

The host rocks of the GRUM deposit consist of black, graphitic phyllite and white, sericite-quartz phyllite. The latter has a tendency to form haloes around sulphide zones. These rocks are overlain by green, chlorite-sericite-quartz phyllite and grey, sericite-quartz phyllite which form the hanging wall of the deposit. The footwall rocks consist of biotite-muscovite phyllite, probably in fault contact with underlying garnet-biotite-staurolite schist. The host rocks are characterized by complex internal deformation dominated by pervasive foliation trending northwest and dipping 20° to the southwest.

The deposit is roughly elliptical in shape with a gently northwest-plunging axis over 5,000 feet long and a gently southwest-dipping axis of 1,200 feet. In gross aspect, the deposit appears to be generally conformable to the dominant foliation of the host rocks. The ore zones consist of a series of massive sulphide lenses and mineralized phyllite separated by weakly to non-mineralized host rocks. Individual ore zones vary from a few feet up to 300 feet thick.

The principal ore minerals are sphalerite and galena with minor chalcopyrite, generally associated with pyrite. Minor amounts of pyrrhotite, magnetite and arsenopyrite are present in massive sulphide secions. White barite is in sections of rich ore and appears to increase to the northwest. The massive sulphides tend to be finely banded and very fine-grained, although texture and grain size are variable.

Current Work and Results:

In March, a decline was begun to explore the deposit from underground. The main decline was driven at a grade of 15 per cent and headed northwest for 1,500 feet and then roughly northeast for approximately 1,800 feet. Two declines trending northwest and two inclines trending southeast were turned off several hundred feet apart at the end of the main decline. During December, a program of underground drilling was begun and approximately 1,900 feet were completed by the end of the year.

The section exposed in the decline consists of pale green quartz-chlorite phyllite in the upper part of the decline near the portal, and quartz-sericite phyllite interbanded with graphitic phyllite throughout the remainder. The phyllites have a dominant foliation trending 330° and dipping 20° to the southwest although small scale folds with amplitudes of several inches to several feet are abundant. Several short sections of massive sulphides had been exposed near the heading of the decline when it was visited in October. These massive sulphide horizons dip 45° to the southwest, discordant with the dominant foliation in the phyllites.

In addition to the underground development, approximately 68,000 feet of diamond drilling was carried out on the surface, mainly to determine the limits of the mineralized zones and to fill in gaps in the ore body. No official figures have been released as yet by the company, but the ore body is thought to contain in excess of 40 million tons of roughly 10 per cent combined lead-zinc and up to 3 ounces per ton silver.

LISA
Cyprus Anvil Mining Corporation

Lead, Zinc, Copper
105 K 7
(62°22'N, 132°52'W)

References: Findlay (1967, p. 39); Tempelman-Kluit (1972); Sinclair and Gilbert (1975, pp. 55-56); Sinclair et al (1975, p. 132).

Claims: LISA 1-46

Location and Access:

The claims are situated 16 miles east of Anvil Mine and roughly 18 miles northeast of Faro. Access in 1975 was by helicopter from Faro.

History:

The property was staked in 1965 and has had work done on it since then, including diamond drill holes. (See Sinclair et al, 1975).

Description:

The property is underlain by greenish-grey, chlorite-muscovite-quartz phyllite of probable Cambrian age (Unit 3, Templeman-Kluit, 1972).

Current Work and Results:

Two gravity profiles were surveyed on LISA 1-4 and 15-18 claims. No anomalies were found.

NOR
Cyprus Anvil Mining Corporation

Lead, Zinc
105 K 7
(62°29'N, 132°53'W)

References: Roddick and Green (1961a); Tempelman-Kluit (1972).

Claims: NOR 1-50

Location and Access:

The claim block is situated near the headwaters of an easterly flowing tributary of the Tay River, 23 miles northeast of Faro. Elevations range from 4,000 to 6,000 feet. Access in 1975 was by helicopter.

History:

The claims were staked in September 1974 to cover copper-lead-zinc silt anomalies discovered in 1973.

Description:

The claims are underlain by a thick sequence of chert, quartzite and limestone of probable Devonian and Mississippian age (Unit 5b, Roddick and Green, 1961a). These rocks have been deformed into tight, parallel, inclined to recumbent folds trending 110° and open to close parallel folds trending 150° to 180°. Normal faults with the east side down-dropped trend approximately 150°.

On the northwest part of the claims galena occurs thinly coated on fractures in light grey, banded siliceous rocks and finely disseminated in calc-silicate bands up to several inches thick. In the central portion of the claims minor sphalerite is associated with finely disseminated to banded pyrite ± pyrrhotite in chert and fine-grained siliceous rocks in the lower part of the section.

Current Work and Results:

In 1975, a soil geochemical survey was carried out over the property which outlined a broad lead-zinc anomaly and a number of smaller anomalies.

ZED
Cyprus Anvil Mining Corporation

105 K 10
(62°31'N, 132°56'W)

Reference: Roddick and Green (1961a).

Claims: ZED 1-50

Location and Access:

The claims are situated roughly 24 miles north-northeast of Faro, from which they can be reached by helicopter.

History:

The property was originally staked as part of the ZEUS claims in 1965 but little work appears to have been carried out at that time. The ZED claims were staked in 1974.

Description:

The property is underlain mainly by fine-grained, siliceous sediments and volcanics of Upper Devonian to Lower (?) Mississippian age (Unit 5b, Roddick and Green, 1961a). Arsenopyrite is reported to occur in veins and as disseminations in tuff breccia and fine-grained, siliceous rocks (tuffs?). No other sulphide minerals have been observed.

Current Work and Results:

Soil sampling in 1975 reportedly outlined a small lead-zinc anomaly.

DANA
Cyprus Anvil Mining Corporation

Lead, Zinc, Copper
105 K 11
(62°35'N, 133°17'W)

References: Findlay (1967, p. 39); Tempelman-Kluit (1972); Sinclair and Gilbert (1975, pp. 59-60); Sinclair et al (1975, p. 133).

Claims: DANA 1-76; HALO 1-12; IRMA 1-31

Location and Access:

The property is situated approximately 23 miles north of Faro. Normal access in 1975 was by helicopter or by float plane to Caribou Lake, two miles southwest of the property.

History:

The property was originally staked as the IVAN claims by Anvil Mining Corporation who drilled four holes totalling 1,553 feet in 1966. The claims subsequently lapsed and were restaked several times, most recently as the DANA claims by Ridgemont Mining Corporation, a subsidiary of Cyprus Mines Corporation. The HALO and IRMA claims were subsequently staked by Anvil Mining Corporation which became Cyprus Anvil Mining Corporation after corporate restructuring early in 1975. Three holes totalling 1,634 feet were drilled in 1975.

Description:

The claims are underlain by slate, chert, greywacke, chert-pebble conglomerate and limestone (Unit 7, Tempelman-Kluit, 1972) overlain by siliceous banded tuffs (Unit 8, op. cit.). Black sphalerite, pyrrhotite, galena and chalcopyrite are reported to occur in veinlets and as coarse, dissemianted grains in banded, calc-silicate rock (tuff?). The mineralization occurs within a large area of bleaching and alteration. To the south and down-dip, the mineralization consists of more uniformly disseminated, fine-grained brown sphalerite and pyrrhotite with minor chalcopyrite.

Current Work and Results:

Magnetic, electromagnetic and gravity surveys were conducted in 1975 and three holes were diamond drilled. The drilling is reported to have encountered lower grade and less extensive mineralization than that done in 1974.

LOLO
Lobell Mines Limited

105 K 12
(62°38'N, 135°50'W)

References: Tempelman-Kluit (1972); Craig and Laporte (1975, pp. 99-100).

Claims: LOLO 1-18

Locations and Access:

The claims are situated 30 miles north-northwest of Faro. Access in 1975 was by helicopter from Ross River.

History:

The claims were staked in May 1975. They are part of the former ALTA claim group of Canadian Reserve Oil and Gas Limited (Craig and Milner, 1975). Earlier work consisted of geological mapping, prospecting, geochemical surveys, and a limited amount of gravity and I.P. surveys.

Description:

The area of the claims is bounded on the south and east by granodiorite of the Anvil Batholith. West and north of the granodiorite, the rocks are intimately interbedded graphitic shale and argillite, quartzite, limestone, chert and andesite.

Current Work and Results:

A ground magnetic survey outlined an anomaly that corresponded with a residual gravity high of earlier surveys. Further work was recommended.

FELIX
Union Carbide Canada Mining Limited

Tungsten, Zinc
105 L 8
(62°25'N, 134°27'W)

Reference: Campbell (1967).

Claims: FELIX 1-42

Location and Access:

The property is situated two miles west of the north end of Glenlyon Lake and 20 miles north of the Campbell Highway. Access in 1975 was by helicopter.

History:

The claims were staked in June 1975.

Description:

The area is underlain by Lower Cambrian (?) or older (?) sediments, including limestone (Unit 2a, Campbell, 1967) which have been intruded by granodiorite and monzonite of Jurassic and/or Cretaceous age (Unit 20a, op. cit.). Scheelite and sphalerite are reported to occur in skarn developed at limestone-intrusive contacts.

Current Work and Results:

Work in 1975 included detailed mapping, soil sampling, geophysical surveys, hand trenching and two short diamond drill holes totalling 177 feet. Six small mineral showings were located but the mineralization appears to be erratic and of low grade.

A,B
Swim Lake Mines Limited

105 L 9
(62°33'N, 134°05'W)

Reference: Campbell (1967).

Claims: A 1-32; B 1-16

Location and Access:

The claims are located on the western flanks of Tay Mountain at the headwaters of Fishook Creek. Access is by helicopter from Faro, 40 miles to the southeast.

History:

The A claims were staked in June 1975 and the B group in November 1975.

Description:

The claims are in an area mapped as the Anvil Range Group (Unit 15, Campbell, 1967), and consist of a mixture of sediments and volcanics. Nearby they have been intruded by possible outliers of the Anvil Batholith.

Current Work and Results:

A gravity survey of 869 stations was conducted on the A claim group. Six anomalies were outlined, one of which was considered to be strong and very significant. Further work was recommended.

LOBO
Lobell Mines Limited

105 L 9
(62°35'N, 134°12'W)

References: Campbell (1967); Tempelman-Kluit (1972); Craig and Milner (1975, p. 89).

Claims: LOBO 1-14

Location and Access:

The claims are near the Tay River near its junction with the Pelly, about 30 miles northwest of Faro. Access is by helicopter from Ross River.

History:

The claims were staked in May 1975. They are tied on to the ARROW claims of Canadian Reserve Oil and Gas (Craig and Milner, 1975, p. 89).

Description:

The claims are in an area of Anvil Range rocks consisting of massive volcanics, tuffs and shale.

Current Work and Results:

A ground magnetic survey was conducted on the property.

END
Envoy Resources Limited

Copper
105 L 10
(62°40'N, 134°36'W)

References: Campbell (1967); Findlay (1969b, pp. 28-29).

Claims: END 1-24

Location and Access:

The END claims lie on the southeast side of the Pelly River, roughly six miles east-southeast of Detour Lakes. Access in 1975 was by fixed wing aircraft to a point on the Pelly River near the northwest end of the property.

History:

The property was originally staked as the JH claims in October 1966. Surface exploration on the claims was carried out by Glenlyon Mines Limited who subsequently optioned the claims to McIntyre Porcupine Mines Limited. In 1968 McIntyre diamond drilled one 550-foot hole to test exposed copper mineralization. The claims were restaked as the END claims in October 1974.

Description:

The property lies within an area of Anvil Range Group volcanics and sediments of Mississippian age or later (Unit 15, Campbell, 1967). Rocks exposed on the property consist mainly of chlorite schist trending at approximately 100° and dipping moderately to the south. Chalcopyrite in quartz veins is exposed on a small bluff in the eastern corner of the property.

Current Work and Results:

Geological mapping and soil sampling were undertaken on the property in 1975. The soil sampling outlined a number of zinc and copper anomalies generally parallel to the regional foliation. Two grab samples of float taken from the copper showing along the bluff assayed 0.75 per cent and 0.57 per cent copper respectively.

SUE
MacMillan Joint Venture

105 L 14, 15
(62°48'N, 135°00'W)

References: Campbell (1967); Findaly (1967, p. 34).

Claims: SUE - a total of 955 claims

Location and Access:

The claims form a single west-northwest trending block between the Pelly and MacMillan rivers, centred roughly 24 miles east of their junction. Access in 1975 was by fixed wing aircraft to Oz Lake from Whitehorse, 148 miles to the south, or from Mayo, 60 miles to the northwest. During the winter, supplies were hauled in over a winter tote road from Pelly Crossing. This road, originally constructed in 1966 to Detour Lakes, was extended in 1975 to the main base camp at Oz Lake in the north central part of the claim group.

History:

The property was originally staked by Conwest Exploration Company Limited in 1966 following the Anvil discovery. Work in 1966-1967 consisted of airborne magnetic and electromagnetic surveys followed up by ground magnetic and electromagnetic surveys and some diamond drilling. The property was restaked by Conwest in August 1974 as the SUE claims. The claims are currently held by MacMillan Joint Venture, a consortium between Conwest and U.S. Steel Western Hemisphere Inc.

Description:

Outcrop on the property is scarce and geological data is generally lacking. According to Campbell (1967) the property straddles the Tintina Fault which strikes roughly northwest. Northeast of the fault the property is underlain by volcancics and sediments of the Proterozoic to Paleozoic Anvil Range Group (Unit 15, Campbell, 1967). Silurian (?) and Devonian (?) sediments (Unit 15, op. cit.) occur southwest of the fault on the southwestern boundary of the property. Although occurrences of copper mineralization have been reported from the general area, no showings have been described on the property itself.

Current Work and Results:

Early in 1975, detailed ground electromagnetic, magnetic and gravity surveys were carried out. A large number of electromagnetic anomalies were encountered and zones warranting further exploration were outlined. Magnetic relief was generally low although a number of anomalies were found. Some of the magnetic anomalies were associated either directly or closely with electromagnetic anomalies but the greater portion were independent. Gravity surveys carried out over the eastern part of the claims outlined five bedrock highs or contrasting lithologies.

Geological mapping of the property and limited soil sample profiling of the gravity anomalies were conducted during part of the summer field season. Completion of the gravity surveys is scheduled for 1976.

WHITE RIVER COPPER
Silver City Mines Limited

Copper
115 F 15
(61°47'N, 140°47'W)

References: Muller (1967); Findlay (1967, pp. 51-52; 1969a, pp. 68-70; 1969b, pp. 40-41); Craig and Laporte (1975, pp. 62-63); Sinclair et al (1975, pp. 138-139).

Claims: MARK; NUK; GOLDEN HORN; SLAGGARD; HANNA; total of 58 claims

Location and Access:

The property is situated on the east side of the Upper White River about 18 miles south of Mile 1168 of the Alaska Highway. Access in 1975 was by float plane to Rifle Lake, the local name for a small lake near the centre of the property.

History:

Native copper has been known in the area since the turn of the century and was first staked in 1905. Detailed surface and underground exploration was carried out by Silver City Mines Limited in the late 1960's and early 1970's.

Description:

Native copper and chalcocite with minor bornite occur as irregular stringers and lenses in fractured, dark green amygdaloidal basalt and andesite of the Triassic Mush Lake Group.

Current Work and Results:

Work on the property in 1975 consisted of detailed geological mapping and examination of diamond drill core and mineralogical studies.

M
Brascan Resources Limited

Copper
115 F 16
(61°53'N, 140°20'W)

Reference: Muller (1967).

Claims: M 1-14, 19-61

Location and Access:

The claims are situated two to three miles south of Pickhandle Lake at the base of the Kluane Range. Access in 1975 was by helicopter, by a winter road from Mile 1151 (KM 1852) of the Alaska Highway or by boat along the Koidern River to small lakes near the northern corner of the property.

History:

The property was first staked as the MM and GG claims in 1968. A portion of these claims were restaked as the M 1-14, 19-51 claims in 1973 by P. Versluce and trenching carried out in 1973 and 1974. The M 52-61 claims were added in 1974 and 1975. Brascan optioned the claims in 1975.

Description:

The property lies on the southwest side of the Shakwak Trench, a major, northwest-trending fault. The underlying rocks are volcanics and related sediments of the Permian Cache Creek Group (Unit 10, Muller, 1967). Copper sulphides are reported to occur in the volcanic rocks.

Current Work and Results:

Geological mapping, prospecting and bulldozer trenching on the property in 1975 is reported to have located a small showing of chalcopyrite in the volcanics.

HUESTIS MINE*
Nount Nansen Mines Limited

Gold, Silver, Lead, Zinc
115 I 3
(62°03'N, 137°09'W)

References: Bostock (1936a); Green and Godwin (1963, pp. 23-24; 1964, pp. 26-28); Green (1965, pp. 32-34; 1966, pp. 34-38); Campbell (1965; 1966); Findlay (1967, pp. 30-31; 1969a, pp. 35-38; 1969b, pp. 23-25); Craig and Laporte, (1972, pp. 88-89); Tempelman-Kluit (1974a).

Claims: Approximately 300 claims in the Mount Nansen area

Location and Access:

The Huestis Mine is situated 6 miles southeast of Mount Nansen, roughly 30 miles west of Carmacks and 116 miles northwest of Whitehorse. Access is via a 40-mile gravel road which leaves the Carmacks-Freegold Road about one mile west of the Nordenskiold River bridge west of Carmacks.

History:

The Huestis veins were first staked by H.H. Huestis in 1947. Surface exploration was carried out between 1962 and 1964 by the Mount Nansen Exploration Syndicate and its successor, Mount Nansen Mines Limited. In 1965, an adit was collared at the 4,295 foot level and extensive underground exploration was carried out in 1965 and 1966. In 1967, a second adit was driven on the 4,100 foot level. From September 1968 until April 1969, the Huestis and Webber veins were mined at an initial production of 70 tons per day and later 100 tons per day. Operations ceased largely as a result of the inability of the mill to obtain adequate gold recoveries without installation of a cyanide circuit.

Description:

Gold-silver vein structures up to 4 feet wide and dipping 85° to the northeast cut Proterozoic and/or Paleozoic schist and gneiss and highly altered feldspar porphyry plugs of Eocene age (Tempelman-Kluit, 1974a). The veins consist of quartz lenses containing arsenopyrite, pyrite, sphalerite, galena, stibnite and native gold. In addition, various silver-bearing minerals including freieslebenite, acanthite, native silver, andorite and argentiferous tetrahedrite have been identified (Green, 1966, p. 36).

Current Work and Results:

In September, the Huestis Mine was reopened with the idea of mining year-round at approximately 75 tons per day and stockpiling ore for operation of the mill approximately eight months out of the year. Initial work consisted of opening up the 4,100 level adit, blocked by roughly 900 feet of ice, re-timbering where necessary and general rehabilition of the underground operation. A re-evaluation of the ore body was also carried out. Up to 5 men were employed in the operation.

FOX, BEAR*
Klotassin Joint Venture

Copper
115 I 5
(62°25'N, 137°36'W)

References: Craig and Laporte (1972, p. 75); Tempelman-Kluit (1974a); Sinclair et al (1975, p. 112); Jensen (1975).

Claims: FOX 1-40; BEAR 1-40

Location and Access:

The FOX and BEAR claims straddle Big Creek roughly six miles east of Prospector Mountain and completely surround the CAR 57-72 claims. Access in 1975 was by helicopter from Carmacks, 50 miles to the east-southeast and from the airstrip on the Revenue Copper property, 10 miles southeast.

History:

The property covers the old JOHNNY and CASH claims, originally staked in 1969 by E. Schiller and explored by Atlas Explorations Limited in 1969 and 1970. The claims subsequently lapsed and were restaked in 1974 by Klotassin Joint Venture, a consortium of Newconex Canadian Exploration Limited, Molycorp Inc. and Marietta Resources International. Soil sampling in 1974 outlined a significant copper and molybdenum anomaly extending onto the FOX and BEAR claims from the CAR claims. Hand trenching in the area of the anomaly revealed traces of chalcopyrite and pyrite associated with float of feldspar porphyry and quartz monzonite.

Description:

Along the valley of Big Creek, the geology is obscured by a blanket of alluvial sediments up to 5,000 feet wide and 150 feet thick. Outcrop is scarce above the alluvial terrace except along ridges and distribution of the various rock types has been determined mainly by mapping float and rock chips in the residual soil (Jensen, 1975). In the central and northwestern part of the property, the underlying rocks consist mainly of quartz-muscovite schist and gneiss containing banded quartzite. These rocks belong to the Yukon Metamorphic Complex of Proterozoic and/or Paleozoic age and are intruded by granodiorite and hornblende monzonite belonging to the Mesozoic Klotassin Batholith. The granodiorite is typically medium-grained, equigranular and low in mafic content. It occurs mainly on the north side of Big Creek and to the southwest of the property. The hornblende monzonite ranges from coarse-grained and porphyritic to medium-grained and more equigranular. This unit occurs predominantly in the southern and southeastern parts of the property. The metamorphic rocks are also intruded by gabbro plugs of Paleozoic and/or Mesozoic age; by tuff and tuff-breccia of the Mount Nansen Group of Eocene age, in two places, north of Big Creek in the northeastern part of the claim group, and to the northwest on Prospector Mountain; and by two small stocks of feldspar porphyry of probable Eocene age and possibly contemporaneous with the

Mount Nansen Group. One stock straddles the south boundary of the CAR 57-72 group while the other, which is very poorly exposed and has been mainly defined by geophysics, straddles the east boundary. Both stocks are approximately 2,500 by 4,000 feet in size.

Structure in the area is dominated by a major tectonic lineament, referred to as the Big Creek lineament, trending northwest along the valley of Big Creek and extending to the northwest along Hayes Creek. To the southeast, extensions of the Big Creek lineament have been traced in northwest-trending faults on the Revenue Copper property and on the Laforma property on the southeast side of Freegold Mountain. Other faults observed on the property include: a southwest-trending fault with 1,000 feet of left-lateral displacement following the Big Creek valley on the west side of the property; a north-south fault with 2,000 feet of right-lateral displacement and intersecting the Big Creek lineament; and a northeast-trending fault in the southeast part of the property, parallel to the Big Creek lineament and with 1,000 feet of inferred left-lateral displacement.

Only minor sulphide occurrences have been observed on the property. Disseminated chalcopyrite and pyrite, associated with hydrothermally-altered, fine-grained porphyritic dyke rocks and unaltered quartz monzonite, were found in test pits put in near the centre of the property in the area of a pronounced copper-molybdenum soil geochemical anomaly, that corresponds roughly with a zone of metamorphic rocks on the northwest side of Big Creek and up to 5 per cent pyrite is present in the outcrop of gabbro on the north side of Big Creek. Magnetite is abundant in the metamorphic rocks and in calc-silicate skarns within the metamorphic rocks, commonly disseminated but one outcrop, within the hydrothermally-altered zone, consists of massive magnetite.

Current Work and Results:

In 1975, a time domain induced polarization survey using a pole-dipole array was conducted jointly by Klotassin Joint Venture on the FOX and BEAR claims and by Western Mines Limited on the CAR 57-72 claims. On the second separation apparent chargeability map, several anomalous areas were outlined by the 30 millisecond contour. One anomalous area on the FOX and BEAR claims occurs in the eastern part of the property and is bisected by the north-south fault. A second area, roughly 2,000 feet long and 800 feet wide and trending east-west along Big Creek, corresponds with a pronounced magnetic high and probably outlines a plug of gabbro as represented in the outcrop on the north side of Big Creek.

In addition, work began on an airstrip located on the north side of Big Creek.

CAR*
Western Mines Limited
Cream Silver Mines Limited
Belmoral Mines Limited

Copper, Molybdenum
115 I 5
(62°25'N, 137°37'W)

References: Craig and Laporte (1972, p. 75); Tempelman-Kluit (1974a); Sinclair et al (1975, p. 111); Jensen (1975).

Claims: CAR 57-72

Location and Access:

The property is on the south side of Big Creek roughly 5 miles southeast of Prospector Mountain. Access in 1975 was by helicopter from Carmacks, 50 miles east-southeast.

History:

The property was originally staked in 1969 as part of the CASH claims to cover a weak silt anomaly discovered in 1965 by Coranex. The claims were optioned in 1969 by Atlas Explorations Limited which carried out soil and stream sediment sampling in 1970. An anomalous copper value in stream silt was found in the central portion of the area now covered by the CAR claims but was not investigated. The CAR 57-72 claims were staked in March 1974 to cover an aeromagnetic anomaly shown on Geological Survey of Canada Aeromagnetic map 3297 G and thought to be related to a magnetite outcrop located by Atlas in 1970. Staking was prompted by the work of Dynasty Explorations Limited on a potentially gold-bearing magnetite skarn in the Freegold Mountain area, about 20 miles to the southeast. The CAR group was optioned in 1974 by Cream Silver Mines Limited, Belmoral Mines Limited and Western Mines Limited and a soil geochemical survey was subsequently carried out. Although the CAR claims actually missed the magnetite outcrop found by Atlas, the geochemical survey outlined a copper-molybdenum anomaly 5,000 by 4,000 feet on the southeast portion of the claims.

Description:

The northern half of the property lies along the valley of Big Creek, which is filled with a blanket of alluvium up to 150 feet thick. The southern half is underlain by residual soils with a scarcity of outcrop, although the distribution of lithological units has been determined from rock chips and float by Earl Jensen (1975). Further interpretation of the underlying geology has been made possible by the diamond drilling carried out in 1975.

The property is underlain primarily by metasedimentary rocks of the Yukon Metamorphic Complex of Proterozoic and/or Paleozoic age. These consist mainly of finely laminated, pale grey to green quartz-plagioclase gneiss and schist. Massive interbeds of quartzite with little or no banding are common. Sericite, formed by the alteration of plagioclase is common and locally abundant. Biotite, often altered to chlorite, is the most common mafic mineral.

The metasediments are intruded by granodiorite and hornblende monzonite of Klotassin Batholith of Mesozoic age. The granodiorite is medium- to coarse-grained and equigranular except where it intrudes or is closely associated with the metasedimentary rocks in which case it is commonly foliated or gneissic in appearance. The hornblende monzonite varies from coarse-grained and porphyritic to medium-grained and equigranular. It occurs mainly south of the CAR 57-72 claims and has not been observed in drill core.

The metasediments are also intruded by quartz-feldspar porphyry consisting of phenocrysts of rounded quartz eyes and pink feldspar up to 1 cm. long in a fine-grained, grey groundmass. It occurs in one small stock intersected by drill hole 10 near the southern boundary of the claims. A second stock, defined mainly by geophysics, is postulated to straddle the eastern boundary of the CAR 57-72 claims with the FOX and BEAR claims of Klotassin Joint Venture. Elsewhere, feldspar porphyry has been observed in drill core as dykes cutting metasediments. The feldspar porphyry is probably Eocene (?) in age and may be contemporaneous with Eocene (?) Mount Nansen Group volcanics.

Volcanics of the Mount Nansen Group of Eocene (?) age were encountered in diamond drill hole 15, in the northwestern portion of the property. The volcanics consist of dark green tuff breccia, comprised mainly of angular fragments of dark grey-green, porphyritic andesite, chloritized hornblende and plagioclase in a green, fine-grained matrix. The volcanics occur north of a northeast-trending fault postulated to cross the northwest sector of the claims and probably fill a graben formed on the down-dropped side of the fault. Dykes of andesite porphyry, related to the Mount Nansen Group volcanics, were also noted in several drill holes cutting metasedimentary rocks.

Hypogene alteration and mineralization are developed in both the quartz-feldspar porphyry and the intruded schist and gneiss. Propylitic alteration of mafic minerals to chlorite is widespread. Phyllic alteration characterized mainly by sericitic alteration of plagioclase, pervades the metasediments and is associated with pyritized fractures in quartz-feldspar porphyry, according to thin section descriptions provided by Archer, Cathro and Associates Limited. Argillic and potassic alteration are not as well-developed but occur locally around fractures. Pyrite is abundant and widespread, occurring as disseminations and fracture fillings. Chalcopyrite and molybdenite, much less abundant than pyrite, occur as fine disseminations, as very thin veinlets along hairline fractures and as occassional grains in quartz veinlets.

Supergene alteration consists mainly of oxidation and, in bedrock, ranges in depth from 30 to nearly 200 feet. Limonite and jarosite are commonly developed along fractures and gypsum is locally abundant. Secondary copper oxides, malachite and azurite, are scarce and secondary enrichment appears to have been negligible although sooty films of chalcocite have been observed in places beneath the zone of oxidation.

Current Work and Results:

In 1975, Western Mines Limited carried out a time domain induced polarization survey employing a pole-dipole array and a drilling program of 12 holes totalling 3,368 feet. The I.P. survey, conducted jointly with Klotassin Joint Venture, found two anomalous areas outlined by the 30 millisecond contour on the second separation chargeability map. One anomaly roughly 2,500 feet by 2,000 feet and centered near the southern boundary of the claims was tested by drill holes 9, 10 and 11, which intersected abundant disseminated pyrite and minor amounts of chalcopyrite and molybdenite. The second anomaly, in the northwestern corner of the property, was not tested by drilling although there are two limonitic gossans in the vicinity.

The mineralization encountered by the diamond drilling occurs mainly in a northeast-trending zone in the southeast portion of the property. Copper content ranges from less than 0.10 per cent up to 0.38 per cent with molybdenum content averaging 0.02 per cent MoS_2, although higher values, ranging up to 0.06 per cent MoS_2, were encountered in three holes. The best mineralization encountered is disseminated in metasedimentary rocks, associated with

pervasive phyllic alteration and the patchy potassic and phyllic-argillic envelopes around fractures. The second quartz-feldspar porphyry stock, on the eastern boundary of the claims and lying mainly on the FOX and BEAR claims of Klotassin Joint Venture, was not tested.

Following the drilling program, Western, Cream Silver and Belmoral terminated their option agreement. The CAR 57-72 claims were subsequently optioned by Klotassin Joint Venture.

ROC, JEN, SKUNK
Klotassin Joint Venture

Tungsten, Fluorite, Copper
115 I 5, 6
(62°22'N, 137°25'W)

References: Craig and Laporte (1972, pp. 83-84, 87-88); Tempelman-Kluit (1974).

Claims: ROC 1-125; JEN 1-12; SKUNK 1-75

Location and Access:

The claims form a northwest-trending belt 10 miles long and two miles wide along the valley of Big Creek. The southeast end of the claims, roughly six miles northwest of Mount Freegold, adjoins the Revenue Copper property. Access in 1975 was by helicopter from Carmacks or from the airstrip on the Revenue Copper property.

History:

The ROC claims were staked in December 1974 and the JEN claims in January 1975 for Klotassin Joint Venture, a consortium comprised of Newconex Canadian Exploration Limited, Marietta Resources International Limited and Molycorp, Inc. The ROC claims on the southeast end of the belt cover a portion of the lapsed COM claims, staked in September 1969 by Cominco, who carried out soil sampling and geological mapping in 1970. The SKUNK claims were staked in December 1975 to cover some recently lapsed KLAZAN claims. The original KLAZAN claims were staked in 1965 by Coranex Limited and optioned to Atlas Explorations Limited in 1969. In 1970, Atlas carried out geochemical and geophysical surveys on the KLAZAN claims and drilled five holes totalling 2,171 feet.

Description:

Along the valley of Big Creek, the bedrock geology is obscured by a blanket of alluvial till up to 5,000 feet wide covering the valley floor. On the east end of the property, schist and gneiss of the Yukon Metamorphic Complex are exposed above the valley floor on the northeast and southwest sides of Big Creek and in a fresh cutbank on the south side of Big Creek. The schist and gneiss are intruded by granodiorite and hornblende monzonite of the Klotassin Batholith of Triassic (?) age. The granodiorite is light-coloured, medium-grained and equingranular, with a low mafic content consisting mainly of biotite. It occurs predominantly, although not exclusively, on the northeast side of the valley. The hornblende monzonite outcrops on the southwest side of the valley. This rock varies from fine-grained to coarse-grained and porphyritic and is dark-coloured due to abundant hornblende and biotite. It is weakly to distinctly foliated due to subparallel alignment of the mafics. Both the Yukon Complex and Klotassin rocks are intruded by irregular bodies of feldspar porphyry of probable Eocene age. The feldspar porphyry is light-

coloured and very fine-grained, with fine- to medium-grained phenocrysts of feldspar, quartz, biotite and hornblende comprising up to 10 per cent of the rock. On the southeast end of the property, the feldspar porphyry is probably related to the copper-bearing porphyry and breccia on the adjacent Revenue Copper property. On the central part of the property, feldspar porphyry has been traced in float on the southwest side of the valley of Big Creek.

The feldspar porphyry contains weak to moderate phyllic alteration and local areas of potassic and argillic alteration. Weak potassic alteration surrounded by moderate to strong argillic alteration is associated with the feldspar porphyry near the northwestern edge and near the middle of the property, on the southwest side of Big Creek. In the southwest corner of the property, potassic alteration is associated with brecciation of the feldspar porphyry.

Sulphide content within the altered phases of the feldspar porphyry consists of pyrite and is generally low although there is no evidence of any leaching. Minor banded and disseminated fluorite float from a gravel bar on big Creek contained coarse grains of scheelite associated with quartz and minor fluorite. The source of this float, probably a greisen, was not located.

Current Work and Results:

Geological mapping, soil sampling and magnetic surveys were carried out over the northwest and southeast portions of the property on ROC and JEN claims. No work was carried out on the SKUNK claims in 1975.

Soil sampling on the northwest part of the property outlined only scattered spot high anomalous copper values although several areas of coincident lead and zinc anomalies were found. One of these areas corresponded with feldspar porphyry and another coincided with a pyritic shear zone. To the southeast, a weak copper anomaly outlined was partially coincident with relatively strong lead and zinc anomalies that overlie a contact between hornblende monzonite to the south and schist to the north. Eight shallow bulldozer pits cut in the area of the anomalies revealed traces of malachite in schist. Soil sampling for tungsten and fluoride failed to outline any significant anomalies, even in the area of known fluorite mineralization, probably due to the thick alluvial cover in the area.

The magnetic surveys revealed low-order, irregular, northwest-trending anomalies on the northwest end of the property. No significant anomalies were found on the southeast part of the property.

AU, AG
Cyprus Anvil Mining Corporation

Copper
115 I 6
(62°17'N, 137°09'W)

References: Johnston (1937); Tempelman-Kluit (1974a); Sinclair et al (1975, pp. 115-116).

Claims: AU 1-44; AG 1-36

Location and Access:

The claims are situated on Mount Freegold, 30 miles northwest of Carmacks. Ready access is provided by short, four-wheel drive roads connecting with the Carmacks-Freegold Road.

History:

The claims were staked in 1973 and subsequently optioned by Dynasty Explorations Limited who carried out surface exploration in 1974. In 1975, Dynasty was amalgamated with Cyprus Anvil Mining Corporation.

Description:

The property is underlain by slightly altered granite and quartz monzonite of Tertiary (?) age which intrudes Proterozoic and/or Paleozoic metasediments. Minor malachite, azurite, chalcopyrite and pyrite occur in two subparallel zones 100 and 500 feet wide, respectively, in slightly altered granitic rocks.

Current Work and Results:

An I.P. survey carried out in 1975 over the two mineralized zones failed to outline any significant anomalies in the area of known mineralization. Elsewhere, two anomalous zones were outlined although subsequent soil sampling and a magnetic survey failed to detect either anomalous copper geochemical values or any high magnetic readings in these zones.

ZIT
Klotassin Joint Venture

115 I 6
(62°17'N, 137°13'W)

References: Green (1966, pp. 31-33); Tempelman-Kluit (1974a).

Claims: ZIT 1-24

Location and Access:

The property is situated 5 miles west of Freegold Mountain on Bow Creek near its junction with Seymour Creek. Access to the property is via the Carmacks-Freegold Road, the extension of which passes through the eastern edge of the property.

History:

Part of the area covered by the ZIT claims was covered by the M and MERG claims staked in 1964 by Canex Aerial Exploration Limited to tie on to the Revenue Copper property. These claims subsequently lapsed and were restaked as the PORPHRY claims in 1968 and the KOOK claims in 1969. Some bulldozer trenching was carried out on the KOOK claims, north of the current ZIT group, in late 1969 by Montana Mines Limited. The ZIT claims were staked in January 1975 on behalf of Klotassin Joint Venture, a consortium composed of Newconex Canadian Exploration Limited, Marietta Resources International Limited and Molycorp, Inc.

Description:

The property is underlain primarily by granodiorite of Jurassic (?) age. Near the north boundary of the claims the granodiorite intrudes schist and gneiss of Proterozoic and/or Paleozoic age and near the south boundary the granodiorite is overlain by Eocene volcanics of the Mount Nansen Group. Argillic alteration was observed in one outcrop of quartz-biotite porphyry located near the west boundary of the property. Pyrite is present in a northwest-trending shear zone near the southeastern corner of the property.

Current Work and Results:

Soil sampling in 1975 outlined four zones of weakly anomalous copper and molybdenum response and one zone of anomalous lead response.

LAFORMA*
Rayrock Mines Limited
Ashland Oil Canada Limited

Gold, Silver
115 I 6
(62°16'N, 137°07'W)

References: Johnston (1937); Green (1966, pp. 29-31); Findlay (1967, p. 29); Tempelman-Kluit (1974a); Sinclair et al (1975, pp. 116-117).

Claims: DONALDA 1-9; MILL 1-3; GOOSE; JIM; BILL (Fr); CONNIE; BAKER; NEIL; MONA; PAL; KEY (Fr); YUKONIA 1-6; MAYFLOWER; LOON (Fr); LIZ (Fr); KIM (Fr): total of 32 claims and fractions.

Location and Access:

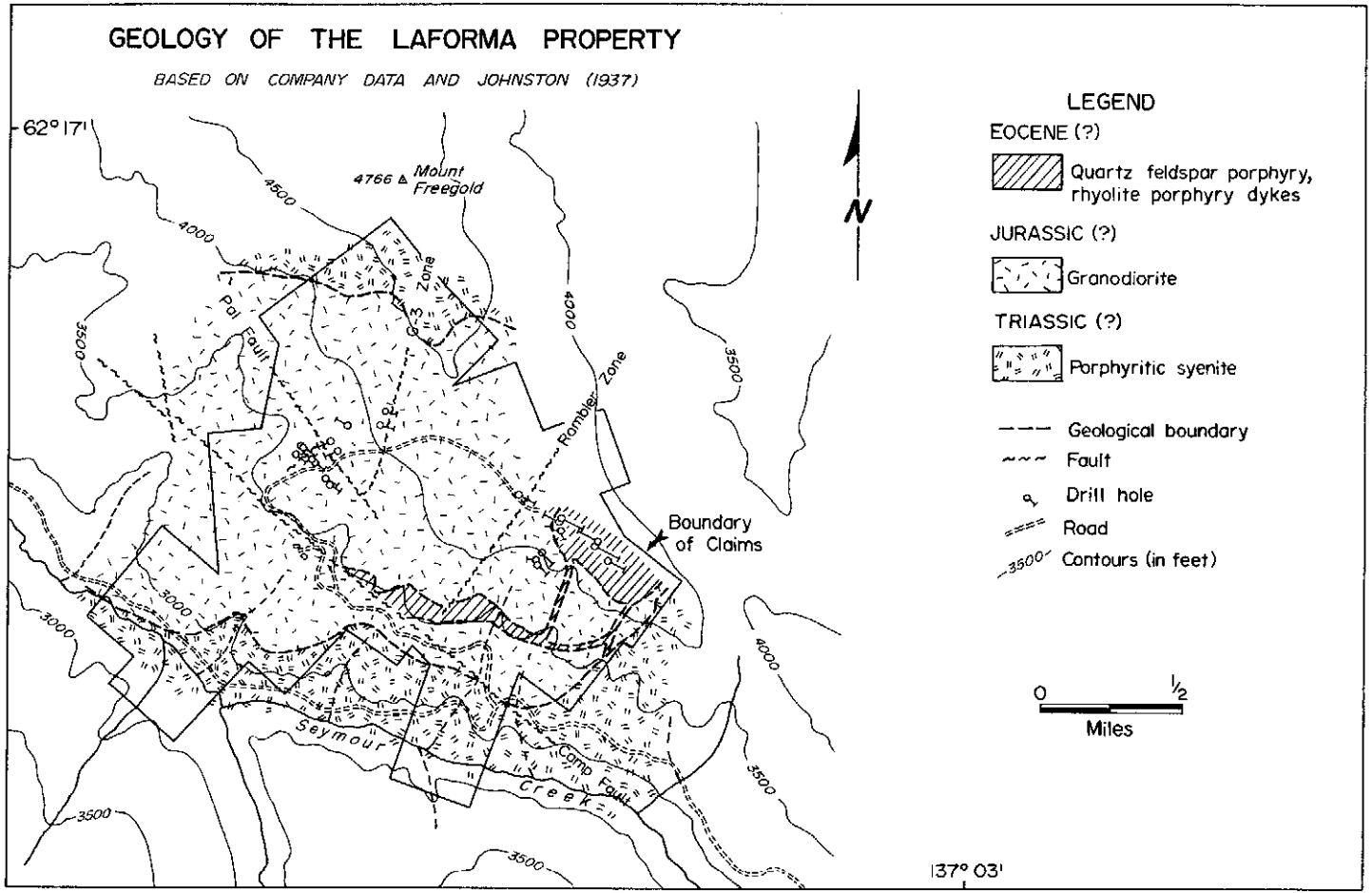
The property is situated 28 miles west-northwest of Carmacks on the southeast slope of Mount Freegold at elevations ranging from 3,000 to over 4,500 feet. Access to the property is by a road about one mile long that connects with the Carmacks-Freegold Road near Mile 41.

History:

The property was originally staked in the rush following the discovery of gold on Freegold Mountain in 1930 (the name of the property, LAFORMA, is a contraction of the names of the original owners, Langham, Forrest and Major). In 1934, the property was optioned by the N.A. Timmins Corporation and underground development began in 1935. Additional work was done by Yukon Consolidated Gold Corporation during the winter of 1935-36. In 1938, T.C. Richards of Whitehorse optioned the property and erected a small mill. From January 1939, to June 1940, Mr. Richards produced approximately 1,437 ounces of gold from 1,414 tons of ore. Ormsby Mines purchased the property in 1960 and began a re-examination in 1961. Discovery Mines Limited, formed by amalgamation of Consolidated Discovery Yellowknife Mines Limited and Ormsby Mines Limited in March 1964, operated the mine and a new mill from June 1965 to February 1966, during which period about 1,610 ounces of gold and 570 ounces of silver were produced. Operations were suspended due to rising labour costs, poor recovery and lower grades than originally estimated. In 1974, Rayrock Mines Limited and Ashland Oil Canada Limited began a re-evaluation of the property, starting with geochemical surveys which outlined a number of arsenic and gold anomalies.

Description:

The property is underlain mainly by granodiorite of Jurassic age or older (Tempelman-Kluit, 1974a) and closely related hornblende syenite. The granodiorite is grey, medium- to coarse-grained and composed of approximately 50 per cent plagioclase, 30 per cent quartz, 15 per cent potash feldspar and 5 per cent hornblende with accessory sphene and magnetite noticeable in hand specimens. The granodiorite underlies much of the central portion of the property. The hornblende syenite is conspicuously coarse-grained and porphyritic. It is composed of about 50 per cent potash feldspar, occurring mainly as salmon-pink phenocrysts varying from 2 to 6 cm in length, 20 per cent hornblende, 20 per cent plagioclase and up to 10 per cent quartz with sphene as a noticable accessory. The hornblende syenite occurs mainly along the margins of the property. Although contacts between the granodiorite and hornblende syenite are often gradational, regional evidence suggests that the granodiorite intrudes the hornblende syenite.


GEOLOGY OF THE LAFORMA PROPERTY
BASED ON COMPANY DATA AND JOHNSTON (1937)
62° 17'
4766 Mount Freegold
4500
4000
3500
3000
Pal Fault
Pal Zone
Pal Extension
Ramble Zone
Boundary of Claims
Seymour Creek
Camp Fault
137° 03'
N
LEGEND
EOCENE (?)
Quartz feldspar porphyry, rhyolite porphyry dykes
JURASSIC (?)
Granodiorite
TRIASSIC (?)
Porphyritic syenite
Geological boundary
Fault
Drill hole
Road
Contours (in feet)
0
1/2
Miles

The granodiorite and hornblende syenite, in turn, are intruded by andesite porphyry, quartz-feldspar prophyry and rhyolite porphyry dykes of probable Tertiary age (Tempelman-Kluit, 1974a). The andesite porphyry is fine-grained and dark grey-green with minor white feldspar phencorysts. The quartz-feldspar porphyry consists of euhedral hornblende, quartz and potash feldspar phenocrysts in a dark grey-green, microcrystalline matrix. The rhyolite porphyry is dark grey to creamy white, typically very fine-grained with minor small phenocrysts of rounded quartz and subhedral feldspar. The rhyolite porphyry appears to be gradational with rhyolite breccia composed of angular fragments of granodiorite and syenite porphyry in a fine-grained matrix of quartz and sericite. The fragments are typically 1 to 2 cm in diameter but in one drill hole, near the eastern corner of the property, fragments were up to 3 m across, separated by short sections of fine-grained rhyolite breccia. Rhyolite porphyry and rhyolite breccia occur in numerous dykes in the east corner of the property where they are observed mainly in drill core and in a prominent rhyolite porphyry dyke that trends east-west across the southeast portion of the property.

Two sets of steeply-dipping faults are present on the property, one trending northwest and the other northeast. One prominent northeast-striking fault, visible on air photos and referred to locally as the Camp Fault, is probably related to a major, northwest-trending lineament extending to the northwest along Big Creek. Two important north- to northeast-striking faults or shear zones, the G-3 and Rambler Zones, contain the gold-bearing quartz veins, the object of much of the earlier exploration and development.

The granodiorite and hornblende syenite have undergone varying degrees of hydrothermal alteration. Propylitic alteration, characterized by chloritization of hornblende and biotite, is widespread and may be due, in part, to supergene processes. Argillic alteration is more local and generally occurs in proximity to rhyolite porphyry and rhyolite breccia, and in the wall rocks of mineralized shear zones. The most conspicuous features of this are alteration of plagioclase to a greenish-white, fine-grained mixture of clay minerals and pervasive pyritization. Disseminated arsenopyrite is abundant locally. Quartz and chlorite veinlets and associated silicification mark the most intense alterations and generally occur in close proximity to rhyolite porphyry and rhyolite breccia.

Two types of mineralization occur on the property. The first consists of gold-bearing quartz veins in north- to northeast-trending shear zones cutting granodiorite. Sulphides associated with these veins include pyrite, present both in the veins and in the altered wall rocks, as well as arsenopyrite, minor galena and sphalerite and rare chalcopyrite and pyrrhotite. The second type of mineralization consists of disseminated pyrite and arsenopyrite in altered granodiorite and hornblende syenite, and in rhyolite breccia. Pyrite and arsenopyrite also occur, to a lesser extent, in cross-cutting fractures. Chalcopyrite, bornite, chalcocite and tetrahedrite are associated with this pyrite and arsenopyrite but are relatively rare.

Current Work and Results:

Work in 1975 was aimed primarily at locating and evaluating the possible extension of the G-3 Zone, terminated to the south by the Pal Fault, and at testing the broad arsenic and gold geochemical anomalies outlined east of the Rambler Zone near the eastern corner of the property. The work consisted of 23 diamond drill holes totalling 7,828 feet.

A northeast-trending shear zone in granodiorite, thought to represent the faulted extension of the G-3 Zone was located on the southwest side of the Pal Fault roughly 1,400 feet northwest of the G-3 Zone. Assay results for gold and silver from holes drilled on this zone were generally low. Similar results were obtained from holes drilled on the northern part of the G-3 Zone.

The holes drilled east of the Rambler Zone encountered altered granodiorite and rhyolite breccia containing disseminated pyrite and arsenopyrite. Pyrite and arsenopyrite are also present in fractures, as veinlets up to 5 mm across. Gold and silver assays from one hole ran 0.067 ounces of gold and 0.34 ounces of silver per ton over a core length of 69 feet but, in general, assays from other holes were lower. One hole carried 0.018 ounces of gold and 0.08 ounces of silver per ton for over 500 feet. The gold and silver content appears to increase with the degree of alteration of the granodiorite which, in turn, appears to be related to rhyolite porphyry and rhyolite breccia. There is no clear relationship between gold and silver values and the relative abundance of either pyrite or arsenopyrite. Copper mineralization is very weak, only minor copper sulphides have been observed, but appears to increase slightly to the east. Iron oxides and manganese staining are locally abundant along fractures and may extend to several hundred feet below surface. Some secondary chalcocite on pyrite grains has been observed but, in general, there is no evidence of intense leaching or development of a secondary enriched zone.

PANTHER
D.C. Syndicate

Gold
115 I 12
(62°31'N, 137°47'W)

Reference: Tempelman-Kluit (1974a).

Claims: PANTHER 1-6

Location and Access:

The claims are situated on the northeast side of Hayes Creek, roughly four miles north of Prospector Mountain. Helicopter was the normal mode of access in 1975.

History:

The claims were staked in June 1975 on the basis of reconnaissance exploration done in 1974.

Description:

The property is generally underlain by granitic rocks of the Triassic Klotassin Batholith which are overlain to the north and east by Eocene volcanics of the Carmacks Group (Tempelman-Kluit, 1974a). Gold values as high as 0.03 ounces per ton have been reported from a north-trending, silicified shear zone similar to that found on the RAINBOW claims to the north.

Current Work and Results:

A limited amount of geological mapping and soil sampling was carried out on the property in 1975.

RAINBOW*
D.C. Syndicate

Gold
115 I 12
(62°34'N, 137°45'W)

Reference: Tempelman-Kluit (1974a).

Claims: RAINBOW 1-20

Location and Access:

The claims lie near the headwaters of Wolverine Creek, four miles west of Mount Pitt. Access in 1975 was by helicopter from Minto, 27 miles to the east.

History:

The claims were staked in May 1975 by D.C. Syndicate following reconnaissance exploration in the area in 1974.

Description:

Much of the area is underlain by metasedimentary rocks of Proterozoic and/or Paleozoic age intruded to the south by granitic rocks of the Klotassin Batholith of Triassic age (Tempelman-Kluit, 1974a). The granitic rocks exposed on the property consist of a fine- to medium-grained, equigranular quartz monzonite composed of approximately equal portions of plagioclase, potash feldspar and quartz. Less than one per cent biotite is present as small, interstitial grains.

The quartz monzonite and the metasediments are cut by a steeply-dipping north-trending shear zone up to 550 feet wide. The shear zone locally contains fine- to medium-grained, angular breccia fragments, highly silicified and generally within a very fine-grained, siliceous matrix. Elsewhere, the shear zone is composed of closely-spaced fractures filled with fine-grained silica. Iron and manganese staining is abundant; some fresh grains of disseminated pyrite were noted locally. Alteration of the quartz monzonite, consisting mainly of alteration of plagioclase to white clay minerals, is evident for up to 100 feet on either side of the shear zone. Surface samples from the shear zone assayed as high as 0.02 ounces of gold per ton.

Current Work and Results:

Following detailed geological mapping and geochemical soil sampling, a series of four bulldozer trenches were cut east-west across the north-trending shear zone. Most of the samples taken from the trenches assayed less than 0.01 ounces of gold per ton although one sample of sheared schistose granite assayed 0.16 ounces of gold per ton.

RAND
D.C. Syndicate

115 I 12
(62°35'N, 137°47'W)

Reference: Tempelman-Kluit (1974a).

Claims: RAND 1-2

Location and Access:

The claims are on a ridge between two east-flowing tributaries of Wolverine Creek, 5 1/2 miles west of Mount Pitt. Access in 1975 was by helicopter.

History:

The claims were staked in July 1975.

Description:

The area is underlain by metasedimentary rocks of Proterozoic and/or Paleozoic age (Tempelman-Kluit, 1974a). A north-trending silicified shear zone is reported to occur on the property.

Current Work and Results:

A limited amount of geological mapping and soil sampling was carried out in 1975.

NADA
D.C. Syndicate

Copper, Gold
115 I 12
(62°38'N, 138°00'W)

References: Tempelman-Kluit (1974b); Sinclair et al (1975, pp. 95-96).

Claims: NADA 1-24

Location and Access:

The claims are situated on and west of Hayes Creek immediately above the mouth of Klines Gulch. Access in 1975 was by helicopter from Minto, 36 miles to the east.

History:

Placer gold was discovered in Klines Gulch in 1898 and quartz veins were found in 1899. Lode exploration was carried out in the 1960's and early 1970's by a number of companies (Sinclair et al, 1975, pp. 95-96). The NADA claims were staked in 1974 by D.C. Syndicate who carried out geological and geochemical surveys on the property.

Description:

The property is underlain by metasedimentary rocks of Proterozoic and/or Paleozoic age (Tempelman-Kluit, 1974b) which are intruded by a small stock of quartz monzonite of Triassic or Jurassic (?) age. Traces of chalcopyrite and molybdenite associated with disseminated pyrite and locally pyrrhotite occur in the quartz monzonite and in the bleached, quartz-veined contact zone of the metasediments.

Current Work and Results:

Detailed geological mapping and geochemical sampling carried out in 1975 yielded discouraging results; the best values obtained from rock samples were 0.1 per cent copper and 0.005 ounces of gold per ton. The claims have subsequently been allowed to lapse.

AS*
D.C. Syndicate

115 I 12
(62°39'N, 137°57'W)

References: Craig and Laporte (1972, pp. 70-71); Tempelman-Kluit (1974a).

Claims: AS 1-16

Location and Access:

The claims are situated on the east side of Hayes Creek, immediately south of Selkirk Creek. Elevations on the property range from 2,100 feet to slightly over 4,700 feet. Access in 1975 was by helicopter from Minto, 36 miles to the east.

History:

The property was originally staked in 1969 as the HAYES claims and subsequently acquired by Delta International Minerals Limited who conducted geological and geochemical surveys in 1970. The property was restaked in July 1975 by D.C. Syndicate as the AS claims.

Description:

The property is underlain primarily by metasediments consisting of quartz-mica schist, chlorite schist and quartz-mica gneiss of Proterozoic and/or Paleozoic age (Tempelman-Kluit, 1974a). A northwest-trending band of limestone float about 3,000 feet long is present in the northeastern corner of the property. In the central part of the claim group the metasedimentary rocks are intruded by a brown-weathering quartz monzonite porphyry of probable Jurassic age that forms a northwest-trending body about 6,000 feet long. This unit contains 5 to 10 per cent quartz phenocrysts, slightly rounded and up to 6 millimetres across; 30 to 40 per cent white, plagioclase phenocrysts, equant and up to 5 millimetres across, and up to 5 per cent green sericite phenocrysts (altered plagioclase?) 3 millimetres or less in size. The matrix is a grey, aphanitic mixture of quartz and potash feldspar. In the southwest portion of the property the metasedimentary rocks are also intruded by a light-coloured, porous and possibly miarilitic, quartz-feldspar porphyry.

A prominent air photo linear trends approximately 050° across the northeastern part of the property.

The metasedimentary rocks and locally the quartz monzonite porphyry are reported to contain from 1 to 3 per cent of finely disseminated pyrite (Craig and Laporte, 1972, pp. 70-71).

Current Work and Results:

Geological mapping and soil sampling carried out in 1975 by D.C. Syndicate outlined a number of arsenic, lead and silver anomalies. Three bulldozer trenches put in during the summer exposed mainly barren quartz monzonite porphyry and quartz-mica schist.

SAM
Canadian Superior Exploration Limited

115 I 12
(62°43'N, 137°39'W)

Reference: Tempelman-Kluit (1974a).

Claims: SAM 1-29

Location and Access:

The claims are situated on the north side of Wolverine Creek 28 miles west-northwest of Minto. Access in 1975 was by helicopter.

History:

The claims were staked in August 1974 following reconnaissance exploration by Canadian Superior Exploration Limited. Detailed soil geochemical, I.P. and magnetic surveys were carried out later in the season.

Description:

Outcrop on the property, although scarce, consists of biotite-quartz-feldspar gneiss, locally with minor amphibolite and feldspathic gneiss on the northern portion and of amphibolite containing some feldspathic and biotite schist bands on the southern portion. Foliation strikes roughly east-west and dips steeply to the north. No mineral showings have been discovered.

Current Work and Results:

In 1975, although hindered by permafrost, a bulldozer trench was cut across a weak copper geochemical anomaly. Biotite-quartz-feldspar gneiss, locally containing some iron oxides was exposed. No copper minerals were observed.

PATT
Amoco Canada Petroleum Company Limited

Copper, Molybdenum
115 J 10
(62°32'N, 138°38'W)

References: Tempelman-Kluit (1974b); Sinclair et al (1975, p. 94).

Claims: PATT 1-48

Location and Access:

The claims lie near the headwaters of Pattison Creek, 15 miles south-southeast of the Casino copper-molybdenum deposit. Access in 1975 was by helicopter.

History:

The claims were staked in 1974 at which time geological mapping and soil sampling outlined a copper-molybdenum soil anomaly.

Description:

Minor copper and molybdenum sulphides have been reported in association with a small body of alaskite intruding granodiorite and monzonite.

Current Work and Results:

An I.P. survey was crried out on the property in 1975 and several areas of anomalous chargeability were outlined.

DOYLE
Amoco Canada Petroleum Company Limited

Copper, Molybdenum
115 J 11
(62°39'N, 139°13'W)

References: Tempelman-Kluit (1974b); Sinclair et al (1975, pp. 93-94).

Claims: DOYLE 1-40

Location and Access:

The claims are situated at the headwaters of Doyle Creek, roughly 12 miles west-southwest of the Casino copper-molybdenum property. Access to the property in 1975 was by helicopter.

History:

The claims were staked in 1974 during a regional geochemical and mapping program. Detailed mapping and sampling carried out later in the season outlined a copper-molybdenum soil anomaly.

Description:

Outcrop on the property consists mainly of Triassic hornblende granodiorite of the Klotassin Batholith (Tempelman-Kluit, 1974b). Minor copper and molybdenum sulphides were found in a locally altered stock of quartz monzonite that intrudes the granodiorite.

Current Work and Results:

An I.P. survey carried out on the property in 1975 failed to locate any areas of anomalous chargeability.

CC
Amoco Canada Petroleum Company Limited

115 J 11
(62°41'N, 139°11'W)

References: Tempelman-Kluit (1974b); Sinclair et al (1975, p. 93).

Claims: CC 1-36

Location and Access:

The claims are situated in the area of Coffee Creek, roughly ten miles west-southwest of the Casino Copper-molybdenum property. Access in 1975 was by helicopter.

History:

The claims were staked in 1974 during a regional geochemical survey. Subsequent geological mapping and detailed soil sampling outlined a small copper-molybdenum soil anomaly.

Description:

Outcrop is lacking on the property although float in the general area suggests it is underlain by Triassic hornblende granodiorite of the Klotassin Batholith (Tempelman-Kluit, 1974b).

Current Work and Results:

An I.P. survey carried out on the property in 1975 outlined several areas of anomalous chargeability.

DEA*
Great Bear Mining Limited

Gold, Silver, Lead, Zinc
115 N 2
(63°05'N, 140°53.5'W)

References: Tempelman-Kluit (1974b); Morin (1975).

Claims: DEA 1-48, 50, 51, 55F, 56F

Location and Access:

The DEA group of 52 claims is located about 45 miles north of Beaver Creek, and is accessible by helicopter from that point. A winter tote road connects the property to the Alaska Highway in Alaska. In addition, float-equipped fixed wing aircraft can land at Wienerwurst Lake (local name), about 5 miles southwest of the property.

History:

The occurrence was found by float prospecting in 1970 when Quintana Minerals personnel discovered galena and sphalerite-bearing boulders of vein quartz that carried visible gold. The area was staked as the SIL claims, but was allowed to lapse and was subsequently restaked by A. Harman in 1972 and transferred to Great Bear Mining Limited. Claymore Resources Limited staked the LORI (1-58) group in January 1975, adjoinging the DEA group to the west and south.

Description:

A pluton of undefined outline underlies the DEA and LORI claim groups. It consists of massive medium- to coarse-grained equigranular biotite-hornblende granodiorite which weathers to a white colour and is made up of 10-20 per cent quartz, 20-40 per cent of biotite and hornblende in varying proportions and the remainder white feldspar. Plagioclase, the dominant feldspar, occurs as medium- to coarse-grained, euhedral to subhedral, strongly zoned grains. The zoning is normal to normal oscillatory and convolute patterns and resorption features are common. Sericitization is present in trace to moderate amounts. Quartz occurs as coarse-grained (up to 1.5 cm) interstitial lensoid aggregates of medium-sized, unstrained grains with sutured interlocking boundaries. K-feldspar is present as medium- to coarse-grained, subhedral to anhedral, microcline perthite, mainly of an interstitial habit. Hornblende consists of subhedral stubby poikilitic green grains ranging up to 1 cm in size. Biotite is present as subhedral medium-grained laths which are commonly chloritized. Accessory minerals include fine-grained epidote, magnetite, apatite and sphene.

Locally inclusions of amphibolite are common within the granodiorite and, where they occur, the latter rock is enriched in hornblende, suggesting that some, if not all, of the hornblende-rich phases may be due to assimilation.

*Visited by J.A. Morin

Chemical analyses of these rock types and porphyritic rocks discussed below are presented in the accompanying table.

Porphyritic granitic rocks are common in the southern portion of the Moosehorn Range. Their field relations are not obvious, but they are probably intrusive dykes into the granodiorite of the Moosehorn Range. Locally, however, the porphyritic phase does appear to grade into equigranular hornblende granodiorite over short distances. In addition, rounded xenoliths of porphyritic andesite occur in places within the porphyry, suggesting that the intrusions are hypabyssal.

The porphyries weather dark grey and consist of coarse-grained hornblende and white feldspar phenocrysts (0.5-1.5 cm) set within a fine- to medium-grained matrix of feldspar, biotite and quartz. The dominant phenocrysts are strongly zoned euhedral crystals of plagioclase ranging from 1 to 8 mm in size, with the average about 2 to 4 mm. More than 80 zoning shells were observed in a plagioclase phenocryst from one sample. K-feldspar phenocrysts are rare, but where present, consist of coarse euhedral grains of microcline perthite. Biotite forms stubby equant medium-grained, phenocrysts of green hornblende are locally altered to felted masses of actinolite. Quartz is present as fractured, equant, euhedral grains ranging from 1 to 8 mm diameter. Accessory fine-grained magnetite, apatite and sphene are commonly associated with the mafic phenocrysts and to a minor extent, are disseminated within the matrix. The matrices are very fine-grained and consist of varying amounts of anhedral plagioclase, K-feldspar, quartz and biotite.

Jointing is common in the massive granodiorite of the Moosehorn Range and occurs to a lesser extent in the other rock types. The quartz vein-bearing joints commonly trend about 150 to 175° with shallow dips to the east. This trend coincides with that of the aeromagnetic anomaly over the Moosehorn Range.

Miarolitic cavities occur within the quartz veins cutting the Moosehorn Range granodiorite. These cavities, while common, are up to several centimetres long and about one centimetre wide, and are typically lined with quartz crystals along with minor amounts of sulphide minerals.

Over the Moosehorn Range granodiorite, a north-northwest-trending elongate elliptical anomaly coincides with the pluton and the trend of the Range. The values vary from 57,340 to 57,580 gammas.

Mineralization in the Moosehorn Range consists of auriferous quartz veins in granodiorite on the DEA claim group of Great Bear Mining Company Limited and the LORI group of Claymore Resources. Milky white quartz veins of variable thickness (0.1-0.5 metres) occur mainly along north-northwest-trending joints with shallow dips of 20 to 40°. Gold occurs as coarse grains up to 2 mm in size, commonly associated with sphalerite. In addition, galena, arsenopyrite and boulangerite occur as coarse-grained crystals and as streaky fine-grained bands within the quartz veins. The wall rock alteration consists of pale green sericitized and silicified granodirotie with disseminated medium-grained crystals of arsenopyrite. Widths of the alteration zone vary from a few centimetres up to half a metre and they are not proportional to the widths of the quartz veins themselves.

Weathering of the granitic rocks and quartz veins has resulted in local concentrations of gold in residual soils. Through the processes of solifluction, much of the sand and gravel from the slopes of the Moosehorn Range has moved into the upper reaches of local creeks.

During the summer of 1975, there was much interest in the gold-bearing potential of the eluvial and alluvial material derived from the Moosehorn Range. This is discussed in the placer section of this report.

CHEMICAL ANALYSES OF GRANITIC ROCKS, MOOSEHORN RANGE

	1	2	3	4
SiO_2	66.10	72.70	65.70	70.40
Al_2O_3	16.40	14.50	16.80	14.80
Fe_2O_3	2.46	1.03	1.93	1.09
FeO	2.81	1.84	2.96	3.85
MgO	1.58	0.35	1.42	0.70
CaO	4.65	1.90	4.50	2.40
Na_2O	2.70	3.05	3.20	2.85
K_2O	2.46	3.75	2.50	3.10
TiO_2	0.37	0.14	0.37	0.25
MnO	0.10	0.04	0.06	0.06
P_2O_5	0.16	0.57	0.14	0.11
L.O.I.	0.36	0.13	0.66	0.01
Total	100.05	100.00	100.34	99.62

Note: #1 - hornblende-biotite granodiorite, LORI claims group
#2 - biotite-hornblende quartz monzonite, DEA claim group
#3 - quartz diorite porphyry, LORI claim group
#4 - granodiorite porphyry, LORI claim group

Analysts - Bondar-Clegg and Company Limited, Vancouver, B.C.

Current Work and Results:

In 1974-1975, the company conducted grid soil geochemical and geophysical surveys (ground Magnetometer, EM 16), detailed geological mapping (1 inch = 200 feet), hand and bulldozer trenching and bulk sampling. In 1974, a total of 461 soil samples were collected on a 100 foot by 100 foot grid and analyzed for lead, zinc, silver and arsenic. In 1975, 567 samples were collected on an extension of the grid and analyzed for the same elements. In general, the anomalous silver and lead values corresponded with the known quartz veins. Several trenches have been cut on the property and seven main quartz veins carrying gold have been discovered.

During summer 1975, 19 diamond drill holes were drilled for a total footage of 2,283.5 feet (BQ core). In most instances, the auriferous quartz veins were intersected at depths less than 40 feet and, in general, the veins were narrow with low, erratic gold values. Some of the higher values obtained from the trenching and drilling are presented below (Northern Miner, August 28, July 31, 1975:

Zone	DDH	Au oz/ton	Ag oz/ton	Width
B	#16	7.49	1.16	6 inches
D	# 1	0.07	0.10	12 inches
D	# 2	1.6	12.4	3 inches
C	# 5	3.62	8.75	6 1/2 inches
C	# 6	0.65	1.22	4 inches

A consulting geologist recommended that further work on the property consist of additional geological mapping, prospecting, closely spaced soil sampling for silver, bulldozer trenching and a minimum of nineteen drill holes totalling about 6,000 feet.

LORI*
Claymore Resources Limited

Gold, Silver
115 N 2
(63°05'N, 140°55'W)

References: Tempelman-Kluit (1974b); Morin (1975).

Claims: LORI 1-58; CARL 1-14; GEO 1-18

Location and Access:

The LORI group is located about 45 miles north of Beaver Creek and is accessible by helicopter. A winter tote road connects the property to the Alaska Highway in Alaska.

History:

The occurrence was discovered by M. Kenyon in August 1974 during a regional porphyry copper prospecting program for Rio Tinto Limited. In January 1975 the property was staked by Claymore Resources.

Description:

The area is underlain by granitic rocks of the Klotassin Batholith which intrude schists and gneisses of uncertain age (see description of DEA property). At least two quartz veins, ranging from 1 1/2 to 2 feet in thickness, have been traced in float for a distance of about 800 feet on the top of Moosehorn Range and on its western flank. The float locations indicate that the veins trend approximately north-south and are sub-parallel with the quartz veins on the adjacent DEA group to the east.

The mineralogy of the veins consists of milky white quartz with minor boulangerite (the dominant sulphide), sphalerite, arsenopyrite, galena, pyrite and visible traces of gold. The sulphide minerals are typically aligned in discontinuous bands parallel to the strike of the vein. Minor pale green sericite and limonite alteration is also present within the quartz vein. The vein on the ridge top was sampled along its length by two independent samplers and their assay results are consistent; ranging from trace to 40 ounces of gold per ton and trace to 20 ounces of silver per ton. No correlation was observed between the gold and silver values.

Current Work and Results:

In June 1975, I.P., S.P., E.M. and magnetometer grid surveys were performed over the area where the quartz veins occur. It is reported that none of the methods were of use in delimiting the veins. In addition, a grid geochemical survey was carried out, and a diamond drilling program was undertaken to test the main ridge top vein. The best values obtained from drilling are the following (Northern Miner, July 31, 1975):

DDH	Au oz/ton	Ag oz/ton	Width
#1	0.16	1.14	several sections less than 12 inches
#2	0.19	0.14	4 feet
#3	0.18	0.33	4 feet

At the time of the release, eight diamond drill holes had tested 100 feet of the vein strike length over a confirmed length of 2,000 feet.

*Visited by J.A. Morin

A total of 18 holes were drilled with a cumulative footage of 2,050 feet. Results from the balance of the holes, most drilled on the 'M' vein, must be considered disappointing.

Emphasis was diverted toward the discovery of placer gold in the creeks to the west of the veins. This aspect of the property is discussed in the Placer section of this publication.

WATSON LAKE MINING DISTRICT

* - Properties visited by W.D. Sinclair unless otherwise indicated.

McMILLAN PROPERTY*
Noranda Exploration Company Limited

Lead, Zinc, Silver
95 D 5, 12
(60°30'N, 127°56'W)

References: Smitheringale (1963); Green (1966, pp. 72-74); Gabrielse and Blusson (1969).

Claims: DOROTHY; SOUTH NAHANNI; M; PIC; WHI; QTZ; STRAT: total of approximately 180 claims and fractions.

Location and Access:

The McMillan showing is exposed in the valley of a small creek, at an elevation of 3,200 feet and approximately three-quarters of a mile southwest of McMillan Lake, a small lake roughly one mile west of Hulse Lake (formerly known as Quartz Lake). Access to the property in 1975 was by fixed wing aircraft to Hulse Lake from Watson Lake, 40 miles to the southwest, or by helicopter.

History:

From old records discovered at Dease Lake (R.J. Cathro, per. comm.), it is apparent that the McMillan showing was known to prospectors as early as 1892 but little is known of work on the property at that time. The showing was rediscovered and staked in 1948 by the late Ken McMillan, formerly of Lower Post, B.C., who optioned the property to Noranda. In 1949, Noranda optioned the property to New Jersey Zinc and in 1951, a joint venture was undertaken with American Smelting and Refining Company, who subsequently formed a subsidiary, Liard River Mining Company Limited, to operate on the property. From 1949 to 1956, exploration on the property included over 19,000 feet of diamond drilling in 83 holes. Results of this work indicated a massive sulphide deposit containing roughly 1 million tons of 5 per cent lead, 10 per cent zinc and 1.8 ounces of silver per ton (Smitheringale, 1963). Additional work by Liard River Mining Company has included an I.P. survey in 1967, 10 diamond drill holes totalling 3,400 feet in 1968 and geochemical surveys from 1970 to 1972. In 1975, Noranda Exploration undertook exploration on the property and staked an additional 95 claims, the STRAT group.

Description:

The property is underlain by Hadrynian sedimentary rocks consisting of maroon and green argillites containing quartzite and limestone horizons (Unit 1, Gabrielse and Blusson, 1969). The sediments strike generally to the northwest and dip 10° to 30° to the northeast. They are cut by a number of steeply-dipping, north-trending faults and by thrust faults dipping gently to the east.

The McMillan deposit is a zone of massive sulphides up to 50 feet thick and generally conformable with the enclosing calcareous argillite and limestone host rocks. The massive sulphides consist mainly of pyrite with galena, sphalerite and small amounts of arsenopyrite, boulangerite, tetrahedrite and chalcopyrite. Buff-coloured siderite gangue is abundant locally. The sulphides are in part porous with abundant quartz crystals and some sphalerite crystals lining cavity walls and, elsewhere, finely laminated to crudely banded. Polished slabs of sulphides cut from surface showing display a crude banding which is disrupted and uneven.

Both the footwall and hanging wall contacts are sharp. Hanging wall rocks are mainly massive to finely-laminated, calcareous, green and maroon argillites although limestone and limestone conglomerate are present locally. As exposed in the main showing, the massive sulphides are immediately overlain by a sideritic limestone conglomerate consisting of angular limestone fragments up to several inches across in a calcareous matrix containing fine quartz and muscovite. Footwall rocks also are mainly massive to finely-laminated argillites although 50 feet of massive limestone underlain by green argillite was observed beneath massive sulphides in at least one drill hole. Footwall rocks are cut by the Black Fault, the local name for gently-dipping thrust fault zone consisting of quartzite breccia fragments in a black, highly carbonaceous matrix. In places the Black Fault forms the footwall of the massive sulphide zone.

Current Work and Results:

The 1975 program on the McMillan property consisted of detailed rock and soil geochemical surveys, electromagnetic and gravity surveys and 27 diamond drill holes totalling roughly 8,400 feet. The gravity survey outlined at least one significant anomaly and three lesser anomalies south of the McMillan deposit. The diamond drilling program centered on the deposit, was designed to provide more data on the tonnage and grade. The size of the core, BQ, was greater than that from provious work and the recovery is reported to have been much better.

PORKER
Hyland Joint Venture

Lead
95 D 5, 12
(60°31'N, 127°52'W)

References: Gabrielse and Blusson (1969); Sinclair and Gilbert (1975, pp. 83-84); Sinclair et al (1975, pp. 153-154).

Claims: PORKER 1-74

Location and Access:

The PORKER claims lie south of Hulse (Quartz) Lake and immediately east of the McMillan Property of Liard River Mining Company Limited. Access is by fixed wing aircraft to Hulse Lake from Watson Lake, 40 miles to the southwest.

History:

The property was originally staked in 1954 as the SN claims by Liard River Mining Company, which drilled four holes totalling 1,200 feet. The PORKER claims were staked in 1973 for the Hyland Joint Venture, a consortium of Marietta Resources International Limited, Mitsubishi Metal Corporation and L.T. Harris Clay. Geological mapping and geochemical surveys were carried out in 1973 and a gravity survey in 1974.

Description:

The property is underlain by Hadrynian sedimentary rocks consisting of slate and feldspathic grit with interbedded limestone (Unit 1, Gabrielse and Blusson, 1969). The rocks strike predominantly northwest and dip northeast. Siderite-limonite gossans with disseminated pyrite and arsenopyrite occur in silicified quartzite and limonitic fault breccias associated with faults cutting quartzite and argillite. Galena and associated sulphosalt minerals have been found in widely scattered veinlets.

Current Work and Results:

Detailed gravity surveying over two anomalies outlined by 1974 surveys resulted in better location and definition of an anomaly near the northeastern edge of the property. A second anomaly was eliminated, attributed to a surveying error.

Detailed soil sampling outlined coincident lead and arsenic anomalies on the east flank of the gravity anomaly.

Four diamond drill holes totalling 994 feet were drilled to test the gravity anomaly. Two of the holes were abandoned in overburden. The other two holes encountered interbedded argillite and grit containing up to one per cent pyrite, disseminated and in fractures. Narrow quartz-calcite-siderite veinlets were also present locally.

MEL — Lead, Zinc, Barite
Granby Mining Corporation — 95 D 6
Sovereign Metals Corporation — (60°21'N, 127°25'W)

References: Gabrielse and Blusson (1969); Sinclair and Gilbert (1975, pp. 82-83); Sinclair et al (1975, pp. 152-153).

Claims: MEL 11-16; JEAN 1-10, 16, 18, 20; WET 1-32

Location and Access:

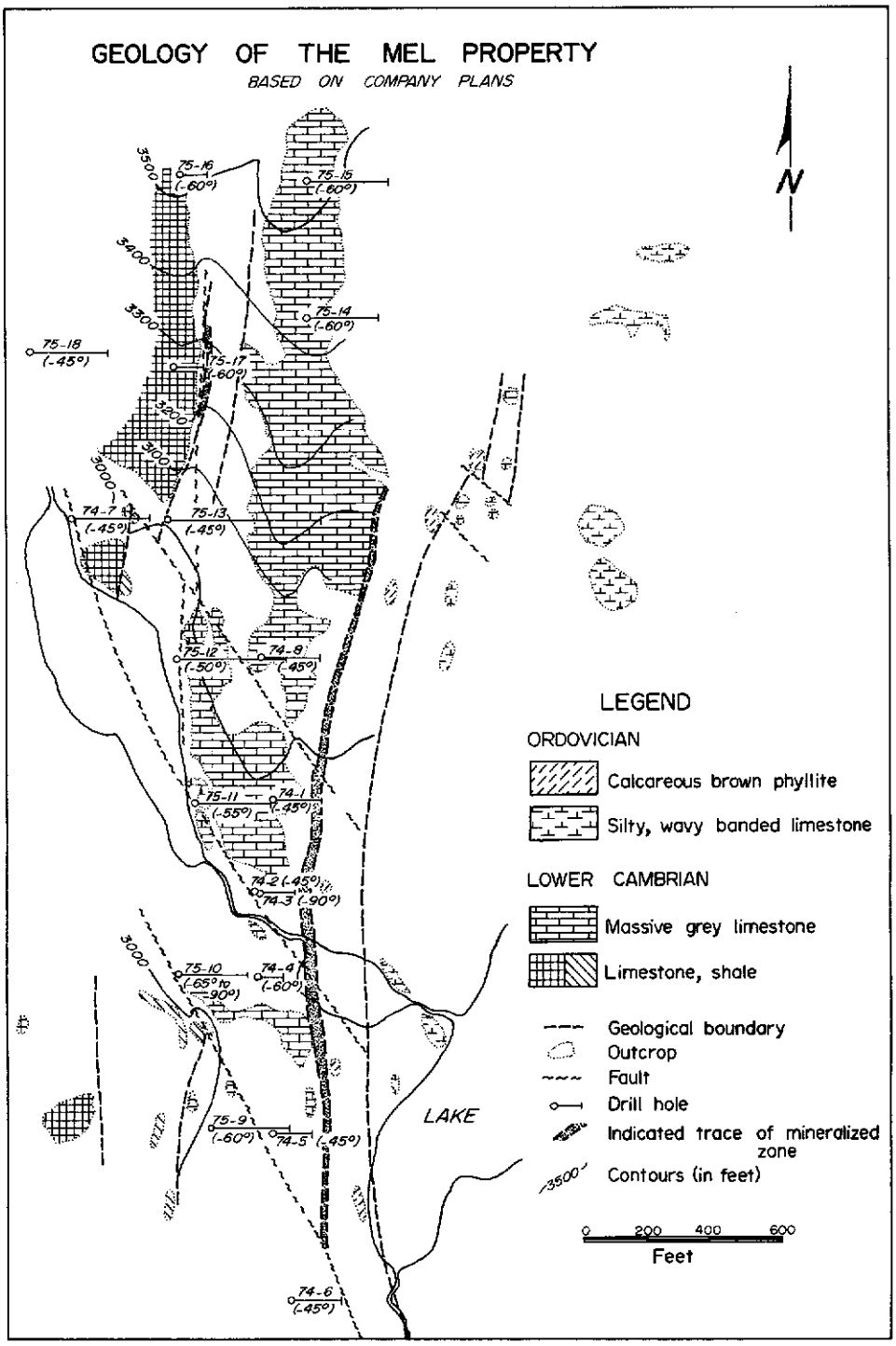
The claims are situated one and one-half miles south-southeast of Otter Lake and four miles east of the Coal River at elevations ranging from 2,900 to 3,500 feet. Otter Lake is capable of handling float aircraft from Watson Lake, 50 miles to the west-southwest. During the winter and spring of 1974-75, equipment and supplies were hauled in over a 30-mile winter road which leaves the Alaska Highway at Mile 590.

History:

The original MEL claims were staked in 1967 and optioned to Newmont Mining Corporation although the occurrence of barite with associated galena and sphalerite had apparently been known for some time. Trenching by Newmont exposed sulphides at four locations over a strike length of 1,600 feet, with assays on the order of 5.0 per cent combined lead-zinc over widths ranging from 7.5 to 30.0 feet. The claims were subsequently acquired by Empire Metals Corporation Limited (which became Sovereign Metals Corporation in 1976) and optioned to Granby Mining Corporation in 1973. In 1974, Granby drilled eight holes on the property totalling 1,799 feet.

Description:

The property is underlain by Cambro-Ordovician carbonates and argillaceous sediments which form the overturned west limb of a broad syncline. The west part of the property is underlain by massive grey limestone with interbedded shale bands of Lower Cambrian age (Unit 5, Gabrielse and Blusson, 1969). To the east, the property is underlain by calcareous brown phyllite and silty, wavy banded limestone of Ordovician age (Unit 8, op. cit.). The contact between the Lower Cambrian and Ordovician sediments appears to be conformable, striking roughly north and dipping steeply to the west.


GEOLOGY OF THE MEL PROPERTY
BASED ON COMPANY PLANS
N
75-16 (-60°)
75-15 (-60°)
75-14 (-60°)
75-18 (-45°)
75-17 (-60°)
74-7 (-45°)
75-13 (-45°)
75-12 (-50°)
74-8 (-45°)
75-11 (-55°)
74-1 (-45°)
74-2 (-45°)
74-3 (-90°)
75-10 (-65° to -90°)
74-4 (-60°)
75-9 (-60°)
74-5 (-45°)
74-6 (-45°)
3500
3400
3300
3200
3100
3000
LAKE
LEGEND
ORDOVICIAN
Calcareous brown phyllite
Silty, wavy banded limestone
LOWER CAMBRIAN
Massive grey limestone
Limestone, shale
Geological boundary
Outcrop
Fault
Drill hole
Indicated trace of mineralized zone
3500' Contours (in feet)
0 200 400 600
Feet

Drilling to date has indicated a mineralized zone 10 to 40 feet wide located at the contact of massive grey limestone on the hanging wall and limy, pyritic phyllite on the footwall. The mineralized zone is a brown, baritic, limy shale containing disseminated sphalerite and galena with minor pyrite. Barite content of the mineralized zone varies locally from traces to massive sections up to 10 feet thick of almost pure barite. Both the hanging wall and footwall contacts appear to be fairly abrupt, although the latter may be gradational over several feet.

Current Work and Results:

Early in 1975, Granby carried out a program of diamond drilling totalling 4,606 feet in 10 holes and did some detailed geological mapping. Results of the 1974 and 1975 drilling indicate the mineralzed zone contains approximately 3 million tons of about 8 per cent combined lead-zinc. A summary of the 1974 and 1975 drilling is as follows:

Hole	Footage	Interval	Ag (oz/ton)	Pb (%)	Zn (%)	$BaSO_4$ (%)
74-1	121.5-145.0	23.5	0.28	2.69	6.03	65.0
74-2	111.0-155.5	44.5	0.17	2.16	4.83	63.1
74-3	202.5-233	30.5	poor recovery - fault zone			
74-4	123.0-153.0	30.0	0.04	1.15	6.28	48.3
74-5	151.0-157.5	6.5	0.06	1.95	11.52	65.6
74-6	187.5-192.5	5.0	0.15	2.02	3.11	tr.
74-7	Drilled on west zone - no mineralization					
74-8	217.5-232.5	15.0	0.05	2.87	9.00	54.5
75-9	432.0-458.0	26.0	-	1.86	6.95	63.3
	466.5-472.5	5.0	-	2.15	3.95	-
75-10	Hole deflected - no mineralization					
75-11	363.0-417	54.0	-	2.22	3.22	53.3
75-12	477.0-497	20.0	-	1.15	5.67	35.8
75-13	650.0-652.5	2.5	-	1.15	13.50	tr.
75-14		no mineralization				
75-15		no mineralization				
75-16		no mineralization				
75-17		no mineralization				
75-18	196.0-201.5	5.5	-	0.25	0.95	-

A & B
Delphi Resources Limited

Lead, Zinc, Silver
105 B 1
(60°07'N, 130°26'W)

References: Little (1959, p. 37); Poole, Roddick and Green (1960); Green and Godwin (1963, pp. 31-32); Green (1966, pp. 80-82); Craig and Laporte (1972, pp. 134-137); Craig and Milner (1975, p. 106).

Claims: A & B 1-8

Location and Access:

The claims are located stradling the main branch of Boulder Creek approximately three miles from its junction with the Rancheria River at Mile 701.6 on the Alaska Highway. The claims are reached by 2 1/2 miles of gravel road from the Alaska Highway.

History:

The property was first explored for tungsten in 1943 and has been explored several times since, but little work done on the showings since 1962. Details in Craig and Laporte (1972) and Craig and Milner (1975) under LUCK group.

Description:

The showing consists of sphalerite, galena and pyrite in recrystalized and altered limestone and limy phyllites. A fault zone cuts through the showing.

Current Work and Results:

During 1975, a geochemical soil survey and trenching were done on the property. A geochemical anomaly was found on a portion of the property where no outcrop exists. A 10 foot chip sample assayed 3.06 per cent zinc, 0.29 per cent lead and 0.64 ounces silver per ton while a grab sample ran 9.48 per cent zinc, 5.03 per cent lead and 3.28 ounces silver per ton. Angular float fragments have been found in the new trenches. Further work on the property is recommended.

BINGY
Hudson Bay Exploration and
Development Company Limited

Silver, Lead, Zinc
105 B 10
(60°35'N, 130°40'W)

Reference: Poole et al (1960).

Claims: BINGY 1-18

Location and Access:

The claims lie near the headwaters of Cabin Creek, 72 miles northwest of Watson Lake. Access in 1975 was by helicopter.

History:

The claims were staked in 1974 following a program of reconnaissance prospecting and soil sampling which led to the discovery of silver-lead mineralization.

Description:

The claim block area is underlain primarily by biotite-muscovite granodiorite of Jurassic and/or Cretaceous age which intrude sediments of Lower Cambrian and (?) earlier age. Galena and sphalerite, locally with high silver, are reported to occur associated with faulting in the sediments and to a lesser extent, in the intrusive rocks.

Current Work and Results:

Soil and silt sampling in 1975 outlined a number of areas warranting further work. Ground magnetic and EM-17 surveys were also conducted.

ANGIE	Silver, Lead, Zinc
Hudson Bay Exploration and	105 B 11
Development Company Limited	(60°38'N, 131°11'W)

References: Poole et al (1960); Sinclair et al (1975, p. 150).

Claims: ANGIE 1-46

Location and Access:

The claims are situated four miles northeast of Irvine Lake. Access in 1975 was by fixed wing aircraft from Watson Lake to Irvine Lake and then by helicopter.

History:

The claims were staked in July 1974 by Hudson Bay who carried out geochemical surveys and 1,485 feet of diamond drilling during the summer of 1974.

Description:

The property is underlain by muscovite and chlorite schist and gneiss of Cambrian and (?) earlier age (Unit 1, Poole et al, 1960) which are intruded by Jurassic and/or Cretaceous granodiorite (Unit 15e, op. cit.). Scattered showings of galena and sphalerite with associated silver are reported to occur in magnetite-diopside skarn developed at intrusive contacts.

Current Work and Results:

In 1975, Hudson Bay carried out detailed soil sampling, a limited I.P. survey and drilled four holes totalling 1,185 feet. The drilling is reported to have encountered scattered galena, sphalerite and associated fluorite in a partially developed limestone skarn.

SURETHING, JACKALOO
United Keno Hill Mines Limited

Copper
105 C 8
(60°20'N, 132°01'W)

Reference: Mulligan (1963).

Claims: SURETHING 1-3; JACKALOO 1-8

Location and Access:

The claims are situated on Mount McCleery in the Englishmans Range roughly 26 miles east-northeast of Teslin. The terrain is rugged and precipitous with elevations ranging from 4,500 feet to nearly 6,400 feet. Access in 1975 was by helicopter.

History:

Copper mineralization was discovered and staked early in 1974 and was subsequently optioned by United Keno Hill Mines Limited.

Description:

The property is underlain mainly by Mississippian sediments and minor volcanics of the Englishmans Group (Unit 3, Mulligan, 1963). The sequence on the property includes: limestone, tremolitic marble and dolomite; argillaceous quartzite; rusty-weathering, cherty to quartzitic and phyllitic rocks; greenish to purplish, fine-grained volcanic rocks; and light grey argillite and phyllite. The distribution and attitudes of the limestone suggest the structure is a southeast-plunging syncline complicated by faulting and minor drag folding. To the north, the Englishmans Group is intruded by Cretaceous granitic rocks of the Hake Batholith, consisting mainly of coarse-grained to porphyritic biotite granite or granodiorite (Unit 13, op. cit.).

The principal copper showings consist of bornite and chalcopyrite occurring as fracture-fillings along steeply-dipping northeast-trending fractures and as small bornite-chalcopyrite-epidote-garnet skarn zones developed at the intersection of these northeast-trending fractures and limy horizons in the sediments. Minor copper showings consist of traces of chalcopyrite and minor pyrite in quartz and calcite veins in fractures cutting argillaceous quartzite and traces of bornite and chalcopyrite with malachite in quartz veins cutting limestone and quartz-tremolite skarn.

Current Work and Results:

Field work in 1975 consisted of geological mapping and soil geochemical sampling. No significant copper occurrences were located and the three copper soil anomalies outlined were related to minor copper occurrences. Company geologists recommended termination of the option agreement.

MAT, GULL
Nithex Development and Exploration Limited

Silver, Lead, Zinc, Gold
105 F 10
(61°32'N, 132°35'W)

Reference: Wheeler et al (1960).

Claims: MAT 1-4; GULL 1-4

Location and Access:

The property consists of two claim blocks, roughly one mile apart, situated 29 miles south of Ross River between Seagull Creek and the McConnell River. Access in 1975 was by helicopter.

History:

Showings presently covered by the MAT claims were discovered and staked in 1966. The property was subsequently optioned by Conwest Exploration who conducted geological mapping and trenching in 1969. The MAT and GULL claims were staked in July and August 1974.

Description:

The claims are underlain by felsic volcanics of Mississippian (?) age or earlier (Unit 6c, Wheeler et al, 1960) which are intruded locally by small stocks of hornblende syenite (Unit 7, op. cit.). On the MAT claims, massive silver-bearing galena occurs in a five-foot vein striking north and dipping moderately east. The host rocks consist of highly altered and brecciated graphitic slate and foliated quartz-eye tuff containing disseminations and small lenses of pyrite. Mineralization on the GULL claims consists of irregular nests, clots and stringers of galena and, locally, minor sphalerite.

Current Work and Results:

A grab sample from the galena vein on the MAT claims assayed 19.40 per cent lead, 11.63 ounces silver per ton and 0.046 ounces gold per ton. Two grab samples from the associated host rocks in the area assayed 0.65 per cent lead, 1.8 ounces silver per ton and 0.02 ounces gold per ton and 8.70 per cent lead, 7.8 ounces silver per ton and 0.02 ounces gold per ton.

A grab sample from the area of mineralization on the GULL claims gave the following assay: 6.20 per cent lead, 0.70 per cent zinc and 1.8 ounces silver per ton.

HORN
Allen Carlos

105 F 16
(61°50'N, 132°03'W)

References: Lees (1936); Wheeler et al (1960a).

Claims: HORN 1-24

Location and Access:

The claims are 16 miles southeast of Ross River along the Pelly River and Campbell Highway. Access is from the highway along a bush road.

History:

The claims were staked in March 1975.

Description:

The claim group is underlain by a northwest-trending unit of limestones, cherty quartzites and argillites, with intrusive bodies of peridotite, porphyritic hornblende diorite and altered quartz diorite.

Current Work and Results:

A magnetic and EM survey were conducted over the claims. Several anomalies were outlined and a soil geochemistry survey was carried out over them. No geochemical anomalies were found. A single diamond drill hole of 200 feet encountered 152 feet of overburden. The hole was drilled down dip and the core consisted of carbonate rock that was altered in places and carried a low tenor of pyrite. Further geophysical work was recommended.

CAL GAL
Welcome North Mines Limited
Mackir Mining Limited

105 F 16
(61°51'N, 132°12'W)

Reference: Wheeler et al (1960a).

Claims: CAL GAL 1-16

Location and Access:

The claims are situated on the north side of the Robert Campbell Highway at approximately 3,000 feet elevation. Access in 1975 was via the Robert Cambpell Highway from Ross River, 25 miles to the northwest by road.

History:

The claims were staked in May 1975. No previous work on the property is known.

Description:

The property lies immediately northeast of the Tintina Trench and is underlain by metavolcanics and metasediments of undetermined age (Unit A, Wheeler et al, (1960). Company geologists have noted the following rock types on the property: greenstone of probable basaltic composition, altered felsic volcanics, graphitic phyllite and quartz-chlorite-sericite schist. No mineral showings have been reported.

Current Work and Results:

Work on the property in 1975 consisted of geological reconnaissance, soil sampling and a gravity survey. The soil sampling outlined one area of coincident lead and zinc anomalous values. A gravity anomaly was outlined extending roughly east-west across the entire property. During November and December a vertical hole drilled to a depth of roughly 750 feet to test the gravity anomaly failed to intersect sulphide mineralization. The cause of the gravity anomaly remains unexplained.

PY
Cyprus Anvil Mining Corporation

Copper
105 G 1
(61°09'N, 130°09'W)

Reference: Wheeler et al (1960).

Claims: PY 1-24

Location and Access:

The claims are situated roughly 12 miles east-southeast of Fire Lake at elevations ranging from 4,000 to over 6,000 feet. Access in 1975 was by helicopter.

History:

The PY claims were staked in July 1975.

Description:

The property is underlain by quartzite, quartz-rich schist and quartz-sericite schist of unknown age (Unit C, Wheeler et al, 1960). Some zones of massive pyrite have been observed within quartz-sericite schist and minor copper mineralization has been found in float consisting of quartz-feldspar-sericite schist.

Current Work and Results:

Soil sampling in 1975 outlined a strong copper geochemical anomaly in an area of little or no exposed outcrop. An I.P. survey outlined an anomalous area generally coincident with the geochemical anomaly. The company plans to investigate the property further.

EAGLE
Tintina Silver Mines Limited

Silver, Lead, Zinc
105 G 3
(61°08'N, 131°10'W)

References: Wheeler et al (1960); Skinner (1962, pp. 37-39); Green and Godwin (1963, pp. 26-29); Sinclair et al (1975, pp. 156-158).

Claims: EAGLE 1-58, 66, 73, 74, 77, 78, 81-85, 115-138

Location and Access:

The main showings occur four miles west of Ings River in a north-trending cirque valley at elevations over 5,000 feet. Access in 1975 was by helicopter from Ross River, 70 miles to the west-northwest or by fixed wing to an airstrip five miles southwest of the property and thence via helicopter.

History:

The claims were originally staked by Conwest Exploration Company Limited in 1961 and subsequently acquired by Tintina Silver Mines Limited who carried out extensive underground work in 1962. In 1974, Tintina conducted an extensive drilling program on the property totalling 11,899 feet in 97 holes.

Description:

The property is underlain by Cambrian sediments (Units 1c and 2, Wheeler et al, 1960) intruded by Jurassic and/or Cretaceous granodiorite (Unit 9, op. cit.). Mineral showings consist mainly of massive to disseminated galena, sphalerite and freibergite emplaced in a limestone horizon near the contact with overlying graphitic argillite.

Current Work and Results:

Geological mapping, soil sampling, and ground magnetic and electromagnetic surveys were carried out in 1975. A number of new showings are reported to have been discovered during this work.

PELLY
Sovereign Metals Corporation
Texasgulf Inc.

Lead, Zinc
105 G 6
(61°28'N, 131°20'W)

Reference: Wheeler et al (1960).

Claims: PELLY 1-32

Location and Access:

The claims are situated on the north side of Pearl Creek, a southwest-flowing tributary of the Hoole River. Access in 1975 was by helicopter from Ross River, 52 miles to the northwest.

History:

The discovery of lead-zinc mineralization in the mid 1960's led to the staking of the property as the EL claims. During 1966 and 1967, Northlake Mines Limited carried out extensive exploration including approximately 1,000 feet of diamond drilling in four holes. Drill hole No. 1 intersected 37 feet assaying 0.6 per cent lead and 0.6 per cent zinc and drill hole No. 3 encountered 0.3 per cent lead and 0.2 per cent zinc over 7 feet. The EL claims subsequently lapsed and were restaked as the PELLY claims in June 1974, and March and June 1975.

Description:

The area is underlain mainly by schistose rocks of probably Proterozoic age (Unit A, Wheeler et al, 1960). The principal rock types exposed on the property consist of chlorite-graphite schist, feldspar augen schist and quartz-sericite schist. Dunite of probably Paleozoic age (Unit D, op, cit.) is exposed northwest of the property. The regional strike of the schistosity is to the northwest, with gentle dips to the southwest. More complex structural relationships are represented locally by two or more directions of strong foliation.

Mineral occurrences on the property consist of blebs and disseminations of galena, sphalerite and pyrite within conformable bands in feldspar augen schist at or near the contact with overlying chlorite-graphite schist. One grab sample from a trench on the main showing assayed 26.8 per cent lead, 0.45 per cent zinc and 0.6 ounces per ton silver.

Current Work and Results:

Soil sampling carried out in 1975 confirmed and extended the geochemical anomaly found by earlier work. Zinc values indicate an anomalous zone up to 2,800 feet long and 400 feet wide and anomalous lead values coincide with the west-central portion.

MONEY
Cyprus Anvil Mining Corporation

Lead
105 G 8
(61°17'N, 130°11'W)

Reference: Wheeler et al (1960).

Claims: MONEY 1-32

Location and Access:

The property lies 13 miles east-northeast of Fire Lake and 4 miles south of Money Creek. Elevations on the property range from 4,500 to over 6,000 feet. Access in 1975 was by helicopter.

History:

The MONEY claims were staked in June 1975.

Description:

The area is underlain by a relatively flat-lying sequence of schists containing some magnetite-rich horizons (Unit a, Wheeler et al, 1960). Very minor galena was found in thin, discontinuous lenses of quartz-graphite schist.

Current Work and Results:

Soil sampling and a ground magnetometer survey carried out in 1975 failed to outline any anomalous areas of significant interest.

BEV
Hudson Bay Exploration and
Development Company Limited

105 G 11

Reference: Wheeler et al (1960).

Claims: BEV 1-338

Location and Access:

The claims are situated in ten separate groups lying up to several miles apart south of the Campbell Highway. Access in 1975 was by fixed wing and helicopter aircraft from Ross River and by tractor roads late in the season during the drilling program.

History:

The claims were staked during the fall of 1974.

Description:

Outcrop exposure on all the claim groups is very poor although the regional mapping indicates the area is likely underlain by metamorphic rocks of probable Lower Paleozoic age consisting of biotite and chlorite schists (Unit A, Wheeler et al, 1960). In the eastern part of the area these rocks are intruded by granitic rocks of Jurassic and/or Cretaceous age (Unit 9, op. cit.). No mineral occurrences have been reported although the underlying rocks are thought to be generally correlative to the schists and phyllites which host the massive lead-zinc deposits of the Anvil Range to the northwest.

Current Work and Results:

Airborne surveys conducted in 1974 outlined a number of electromagnetic anomalies. In 1975, ground magnetic and EM-17 surveys were carried out on all claim groups and 2,359 feet of diamond drilling in 7 holes was conducted on five of the claim groups (BEV 1-32; 151-162; 327-338; 166-181; 182-197 and 163-165; 254-309. The drilling is reported to have intersected mainly flat-lying graphitic schists with minor disseminated pyrite. One of the holes, drilled on a magnetic anomaly, encountered serpentinite with minor pyrite.

BOB
Ogilvie Joint Venture

Lead, Zinc, Copper
105 G 15
(61°56'N, 130°32'W)

Reference: Wheeler et al (1960).

Claims: BOB 1-16

Location and Access:

The claims are situated approximately one and one-half miles east of the south end of Fortin Lake. Access in 1975 was by helicopter from Ross River, 60 miles to the west.

History:

The property was originally staked as the ZN and PHIL claims to cover zinc-lead mineralization discovered in 1967. In 1967 and 1968, Atlas Explorations Limited carried out bulldozer trenching on the showing and geophysical and geochemical surveys over the property. The BOB claims were staked in August 1974.

Description:

Rocks in the vicinity of the main showings consist of quartz-sericite phyllite of probable Cambrian or Ordovician age, striking approximately east-west and dipping 25° to 55° to the south.

Two showings are present on the property. The first consists of one-quarter- to one-inch quartz veins containing small amounts of chalcopyrite, galena and sphalerite. These mineralized quartz veins occur at roughly one-foot intervals over a distance of 32 feet. The second showing consists of a vein one and one-half feet wide and 20 feet long containing 30 to 40 per cent dark brown sphalerite with minor galena and chalcopyrite.

Current Work and Results:

Work in 1975 included geological examination and a soil geochemical survey of the BOB claims. Chip sampling was carried out on the two main showings.

SUSAN
Union Carbide Canada Mining Limited

Tungsten
105 H 8
(61°26'N, 128°18'W)

Reference: Blusson (1966).

Claims: SUSAN 1-38

Location and Access:

The claims are situated roughly four miles southwest of the Hyland River bridge on the Nahanni Range Raod, approximately 96 miles north-northeast of Watson Lake. Elevations on the property range from 3,500 to over 6,000 feet. Access in 1975 was by helicopter.

History:

The SUSAN claims were staked in June and August 1975 during a regional exploration program.

Description:

The property is underlain by Cambrian and/or earlier quartz-feldspar schist and gneiss locally containing horizons of fine- to coarse-grained marble (Unit 2 and 2a, Blusson, 1966). These rocks are intruded to the west by granitic rocks of Cretaceous age (Unit 15, op. cit.) with skarn developed locally along the contact. Minor occurrences of scheelite have been observed in the skarn zones.

Current Work and Results:

Work carried out in 1975 included geophysical surveys along with two Winkie diamond drill holes totalling 492 feet. The drilling is reported to have encountered skarn carrying minor amounts of scheelite.

HOWARDS PASS*
Canex Placer Limited
United States Steel Corporation

Lead, Zinc
105 I 6, 11, 12
(62°27'N, 129°11'W)

References: Green et al (1967); Blusson (1968); Gabrielse et al (1973); Craig and Milner (1975, p. 124); Sinclair and Gilbert (1975, pp. 85-90); Ludvigsen (1975); Sinclair et al (1975, pp. 159-160).

Claims: DON; OP; R; X; Y; ANNIV: total of 444 claims

Location and Access:

The property is situated in the Selwyn Mountains along the Yukon-Northwest Territories border, 100 miles east-northeast of Ross River and 160 miles north of Watson Lake. The main showings on the property are at elevations of 5,000 to 6,000 feet. Access in 1975 was primarily by fixed wing aircraft from either Ross River or Watson Lake to an 1,800-foot airstrip on the property. Heavy equipment can be brought to the property via a winter tote road which leaves the Nahanni Range Road at Mile 101.

History:

High grade showings of lead and zinc were discovered by Canex Placer following geochemical surveys carried out in 1968 and 1971. In 1973 and 1974, the company carried out extensive surface exploration including 38 diamond drill holes totalling over 20,000 feet.

Description:

The property is underlain by Paleozoic sediments consisting of, from oldest to youngest: Upper Cambrian and (?) Ordovician limestone, locally referred to as the "wavy-banded" limestone, (Unit 7b, Green et al, 1967); up to 1,000 feet of black, graphitic and graptolitic shales of the Ordovician Road River Formation (Unit 10, op. cit.); and over 3,000 feet of siliceous shale, sandstone and chert-pebble conglomerate of Devono-Mississippian age (Unit 18, op. cit.). Extremely fine-grained galena and sphalerite occur in thin, conformable laminae in a black, graphitic horizon in the Road River Formation, roughly 200 feet above the lower contacts with the "wavy-banded" limestone. Secondary lead-zinc minerals such as smithsonite, cerussite and particularly hydrozincite have been observed in surface showings.

Current Work and Results:

The 1975 program on the property included detailed geological mapping, trenching and 14 diamond drill holes totalling roughly 13,000 feet.

KATE*
Welcome North Mines Limited

Copper, Lead, Zinc
105 J 2, 7
(62°15'N, 130°41'W)

References: Skinner (1961, p. 43; 1962, pp. 30-31); Green and Godwin (1963, pp. 30-31); Roddick and Green (1961b).

Claims: KATE 1-96

Location and Access:

The KATE claims are situated roughly 12 miles north-northwest of Traffic Mountain and 60 miles northeast of Ross River. Access in 1975 was by fixed wing aircraft from Ross River to a small lake at the northeast corner of the property. The mineral showings occur at elevations ranging from 4,200 to 5,500 feet.

History:

Copper showings were discovered in 1956 by Kennco Explorations Limited who staked the IKE claims and conducted a limited examination of the property. Yukon Canadian Mining Limited restaked the property as the NORKEN, FOOL, PEAK and RAIN groups in 1959 and subsequently carried out geochemical and geophysical surveys, trenching and roughly 4,600 feet of diamond drilling. The property was restaked in 1966 as the EM and EMU claims and optioned to Atlas Explorations Limited, who carried out soil sampling. Welcome North Mines Limited staked the KATE claims in January 1975.

*Visited by D.B. Craig

Description:

Outcrop on the property is sparse and consists mainly of chert and shale underlain by limestone. The underlying limestone, locally referred to as "wavy-banded" limestone consists of thick-bedded limestone in the lower part of the section and contains sandy lenses in the upper part of the section. Roddick and Green (1961b) include all the rocks in the area within their Unit 3 of Ordovician to Silurian age, but the "wavy-banded" limestone is considered to be older and probably belongs to Unit 1 of Cambrian age. The "wavy-banded" limestone is unconformably overlain by the Ordovician-Silurian Road River Formation comprised mainly of recessive, black, graphitic shale overlain by white, green purple and brown interbanded chert and cherty shale. The sediments have been isoclinally folded about west- to northwest-trending axes and are generally steeply dipping.

Mineral occurrences on the KATE property consist of copper showings and lead-zinc mineralization encountered in float. The copper showings consist of chalcopyrite with pyrite and pyrrhotite and minor galena and sphalerite. The sulphides occur in banded chert and cherty shale disseminated along bedding and in crosscutting fractures. Three separate showings (designated Nipple, Copter and Peak) have been recognized over a strike length of 6,000 feet and scattered occurrences of copper in float extended the probable zone of mineralization for over 8,000 feet.

Lead and zinc mineralization has been found in float only and consists of banded sphalerite and galena in black shale. The shale is thought to belong to the Road River Formation, which is recessive and largely overburden covered in the porperty area.

Current Work and Results:

Geochemical soil sampling was conducted in 1975 to further delineate the copper zone and to attempt to locate and delineate the lead-zinc mineralized zone. Coincident copper, lead and zinc anomalies 5,000 feet long were found in the vicinity of the Peak showing and strong coincident anomalies were found roughly 4,000 feet east of the Peak zone. Several discontinuous lead anomalies were outlined in areas possibly underlain by Road River shale.

COAL REPORTS

TANTALUS BUTTE MINE
Cyprus Anvil Mining Corporation

Coal
115 I 1
(62°08'N, 136°16'W)

References: Bostock (1936, pp. 59-62); Green (1966, pp. 121-124); Findlay (1967, p. 88; 1969a, p. 15; 1969b, pp. 66-67); Craig and Laporte (1972, pp. 155-156); Sinclair and Gilbert (1975, pp. 121-122); Sinclair et al (1975, p. 168).

Lots and Leases: Leases 2955, 2959; Lots 23, 24

Location and Access:

The mine is situated on the north bank of the Yukon River, four miles north of Carmacks and less than one-half mile from the Whitehorse-Mayo Road.

History:

The Tantalus Butte Mine began operation in 1923, supplying coal to Carmacks and Dawson and later the mill at United Keno Hill Mines, Elsa, until 1967. In 1969, the mine began supplying coal to the Anvil Mine where it is used for plant heating and concentrate drying.

Description:

The coal occurs in the Tantalus Formation of Upper Jurassic (?) and Lower Cretaceous age, consisting of conglomerate with lesser amounts of sandstone, shale and a few coal seams. The main seam ranges from 8 to 10 feet thick, strikes north and dips 45° to 70° west. The seam is displaced by steeply-dipping, northeast- to northwest-trending faults. Although fault displacement is only on the order of a few feet or more, mining is rendered difficult. The coal is a high volatile, bituminous coal with calorific value ranging from 11,000 to 12,700 BTU. Samples are agglomerating with a swelling index of 1 (ASTM) and are not suitable for metallurgical grade coke (Green, 1966, p. 124).

Current Activities:

During 1975, the mine produced a total of 16,123 tons from underground at a daily rate of 63 tons. In addition, 9,589 tons were mined from a surface strip roughly one-third of a mile north of the present mine workings. The coal from the surface strip has a lower calorific value than that from underground and has probably undergone some weathering. The coal was back hauled by ore trucks on their return to the Anvil Mine.

PLACER REPORTS

- Properties visited by D.B. Craig unless otherwise indicated.

SIXTYMILE AREA

(1) J. Lynch — 116 C 2
Glacier Creek — (64°02'N, 140°53'W)

J. Lynch, with one employee, using a D-7 bulldozer, a 2,500 gpm pump producing a 140-foot head, and a monitor, continued mining Grimard Discovery claim on Upper Glacier Creek, 2 miles above its mouth. The creek was extensively hand mined for years following the discovery of gold on it in 1893. During the 1940's and 1950's bulldozer mining was done. In 1975 Mr. Lynch put in a right limit cut of roughly 13,000 bedrock square feet between the earlier bulldozer tailings and a silt bank 40 feet high. Following stripping of overburden, the mining method is to monitor the gravel to remove fines, then push the material to the sluice box with the bulldozer. 1975 production was reported to be approximately 400 crude ounces of gold. The mined section is approximately 8 feet thick, consisting of fairly angular quartz-mica schist and quartzite lying on a rusty weathering, partly decomposed quartz-mica schist bedrock. The top 2 feet of this bedrock carries abundant pay and is being mined with the gravel.

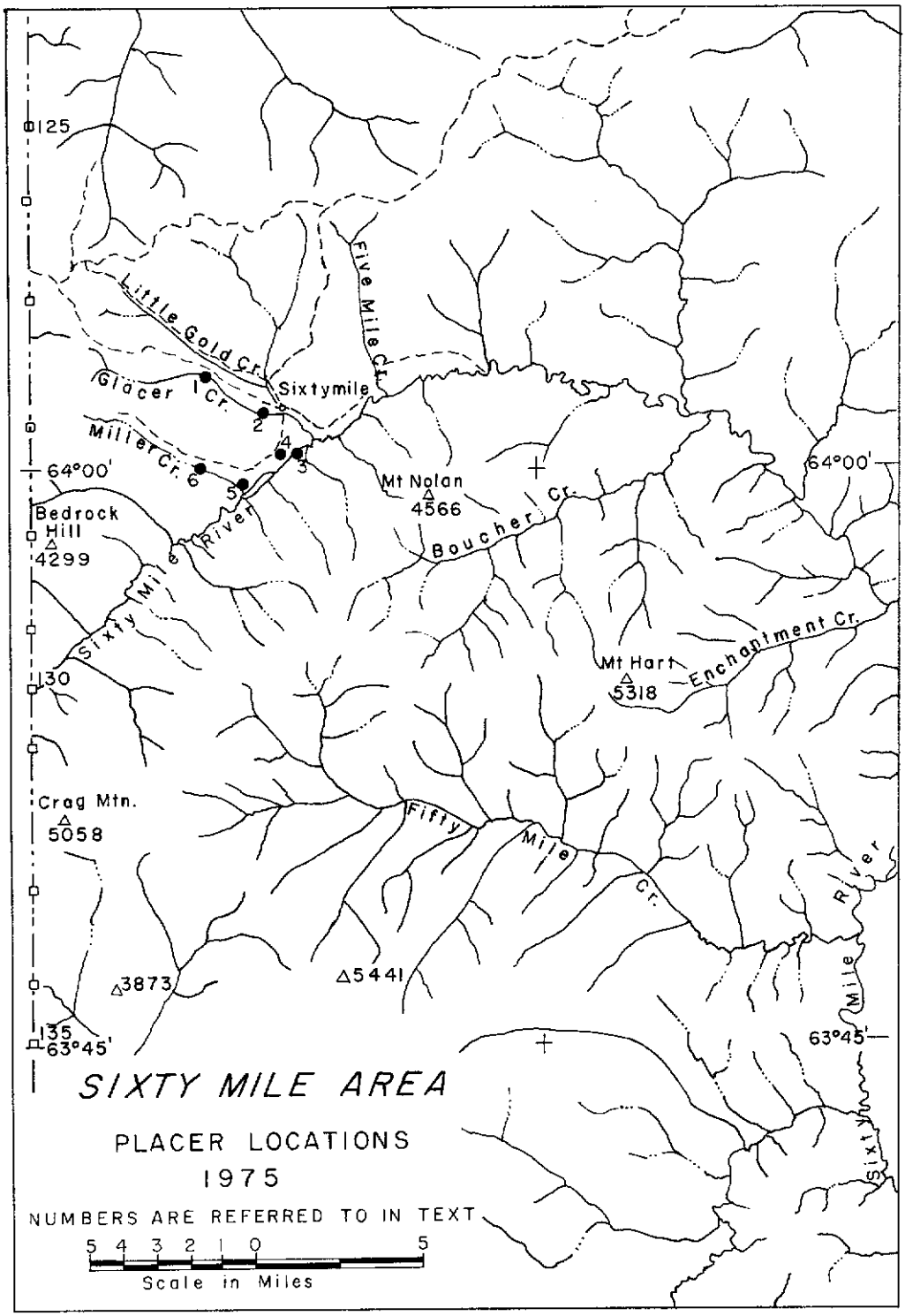
(2) Glacier Creek Placers — 116 C 2
Glacier Creek — (64°02'N, 140°49'W)

Principals L. Grimard and E. Faucher, working with one other man, mined on claims 9 and 10 on Glacier Creek, recovering 212 crude ounces gold from a cut of 10,000 bedrock square feet on claim number 9. Much of the work involves stripping of some 30 feet of fine grey silt muck before sluicing the gold bearing section of 8 feet of gravel and bedrock. They also mined on Big Gold Creek, north of their Glacier Creek workings, pumping water from a tributary, Little Gold Creek, for the operation, and recovered 80 crude ounces of gold. They normally mine the gravels with 2 D-6 bulldozers and contract much of the stripping of the silts to an operator using a D-8.

(3) Cogassa Mining Corporation Limited — 116 C 2
Sixtymile River — (64°01'N, 140°42'W)

This company holds 44 miles of placer leases on the Sixtymile River under purchase agreement with W. Hakonson of Dawson City and 5-mile leases on the lower ends of Sixtymile tributary creeks California, Fish, Enchantment, Boucher and Fifty Mile. It also holds the Canadian portion of the Fortymile River from Clinton Creek to the Alaska Border, a total of 36 miles of stream placer leases.

The 1975 operations consisted of a series of left limit cuts on the Sixtymile upstream from the mouth of Glacier Creek. Working with three International TD 25 C bulldozers and three rubber tired Payloaders of 2 1/2 and 3 1/2 yard capacity, the company put in 8 cuts, each roughly 200 feet by 200 feet, totalling 120,000 cubic yards, and recovering 2,500 crude ounces gold. Four of these cuts were side by side away from the river, demonstrating the paystreak to be 800 feet wide; it is believed to be up to 900 feet wide on this left side of the river. The unconsolidated section here consists of gravel up to 12 feet deep overlain by 3 feet of black, silty muck. Early records show production from hand mining from 1893 to 1898.


125
Little Gold Cr.
Five Mile Cr.
Glacier Cr.
Sixtymile
Miller Cr.
1
2
3
4
5
6
64°00'
Bedrock Hill
△4299
Sixty Mile River
Mt Nolan
△4566
Boucher Cr.
64°00'
130
Mt Hart
△5318
Enchantment Cr.
Crag Mtn.
△5058
Fifty Mile Cr.
Fifty Mile River
△3873
△5441
135
63°45'
63°45'
Sixty Mile
SIXTY MILE AREA
PLACER LOCATIONS
1975
NUMBERS ARE REFERRED TO IN TEXT
5 4 3 2 1 0 5
Scale in Miles

(4) Fellhawk Placers — 116 C 2
Sixtymile River — (64°01'N, 140°41'W)

G. Hakonson and J. Fellers of Dawson City, working with one TD 18 and one D-8 bulldozer mined four cuts totalling 35,000 bedrock square feet from the Sixtymile left limit bench immediately upstream from the mouth of Glacier Creek. The section consists of 15 feet of gravel overlain by 3 feet of muck. Process water is pumped from Big Gold Creek.

(5) Brisboise Brothers — 115 N 15
Miller Creek — (63°59'N, 140°49'W)

These four men hold Discovery Claim and #1 and #2 B.D. on Miller Creek. Using a D-7, D-9 and Case 1150 they mined on Discovery Claim near the junction of Miller Creek and the Sixtymile River, putting in a cut 200 feet long, 70 feet wide and to 60 feet deep. The section consists of poorly sorted gravel with a thin cross-bedded sand layer 15 feet up from the bottom. Bedrock consists of a decomposed andesite. Only the bottom 8 feet of gravel is sluiced.

(6) Sixtymile Enterprises — 115 N 15
Sixtymile River — (63°59'N, 140°47'W)

Owner W. Yaremcio, working with monitors and a D-7 bulldozer, completed mining of the Sixtymile bench between Big Gold and Miller creeks which he has mined since 1971. The 5-foot section of pay gravels is overlain by an organic rich muck section containing slide rock up to 20 feet thick.

Working with the Brisboise Brothers, the group began stripping in late September for a left limit cut 300 feet long by 150 feet wide on Miller Creek, 2 miles above the mouth. Preparation involved removal of about 10 feet of slate slide rock and overburden pushed over from earlier bulldozer mining. The paystreak on upper Miller Creek is deeply buried, but on basis of testing so far, is believed to be rich.

(7) Oak Bay Manor and Ten Mile Mining Limited — 115 N 8
Ten Mile Creek — (63°35'N, 140°05'W)

Reference: Sinclair and Gilbert (1975, p. 147).

This operation, managed by J. Edgar of Dawson City, mines on Ten Mile Creek roughly two miles up from the junction with the Sixtymile River. Operations started in 1973 on ground held by Mr. J. Sestak.

During 1975 the company put in a right limit cut roughly 500 feet wide by 700 feet long, the width being perhaps two-thirds of the mineable width of the valley. Of the section, four feet of muck and two to three feet of gravel is stripped and the lower gravel, to a maximum of 30 feet, and 2 feet of bedrock, is sluiced. Bedrock on the portion of the creek valley mined in 1975 is a white, medium grained marble. The gold at the marble bedrock is typically coarse. In the gravel a few boulders exceed three feet in largest dimension, but most material is less than one foot.

1974 operations were immediately upstream from those of 1975.

Equipment used was two D-8 bulldozers.

KLONDIKE AREA

(1) K. Tatlow — 116 B 3
Hunker Creek — (64°01'N, 139°09'W)

Reference: Sinclair et al (1975, p. 170).

During 1975, this operator mined a left limit bench about 10 feet above present creek bed level on lower Hunker Creek, close against the steeply rising hillside. A strip 600 feet long by about 60 feet wide was sluiced, using a D-8 bulldozer.

(2) Miben Mining Limited — 116 B 3
Hunker Creek — (64°00'30"N, 139°06'W)

Reference: Sinclair et al (1975, p. 170).

M. Stutter and B. Warnsby continued mining bench claims on Dago Hill on the left limit of Hunker Creek. They use pump driven monitors as the main mining equipment, supported by a D-6 bulldozer, to sluice the entire section, which in places exceeds 100 feet as mining advances into the hill. In the two cuts, the gravel near the base differs from the main white quartz gravels. The material, although quartz rich, is rusty-brown coloured and slightly cemented, thus more resistent to monitoring and also has boulders up to three feet in largest dimension, in contrast with the approximate 6-inch maximum of the White Channel boulders.

(3) I. Bremner — 116 B 3
Last Chance Creek — (64°00'N, 139°07'W)

Reference: Sinclair et al (1975, p. 171).

Mr. Bremner, using a 4-inch monitor gravity fed from a ditch and 10-inch diameter pipe, worked the same claim as in 1974. White Channel gravels up to 50 feet thick, on what is called Bryan Bench, on the left limit of Last Chance Creek, were moved to the sluice by the monitor. In one and one-half months during the season, 5,000 bedrock square feet were mined. The bench, formerly very rich, was intensively hand mined, as indicated by the numerous shafts and drifts exposed by the present monitoring.

(4) A. Kosuta — 116 B 3
Eighty Pup — (64°00.5'N, 139°05'W)

Reference: Sinclair et al (1975, p. 171).

Mr. Kosuta holds four claims on Eighty Pup, a left limit tributary of Hunker Creek, two claims on Hestor Creek and one claim on Independence Creek. During 1975 he put in one cut 80 feet long and up to 70 feet wide in the narrow canyon of Eighty Pup. The upper section consists of some 25 feet of fine silt muck which is removed by monitor. Pay gravels up to 5 feet thick lie on fractured andesite bedrock. The creek has been extensively hand mined with closely spaced cribbed shafts and drifts now being exposed by the removal of the surrounding muck. In places all the gravel section was removed by the early miners, leaving the muck resting on bedrock with no pay gravel present. Remains of Pleistocene animals are fairly common, including large ivory tusks.

On Hestor Creek, Kosuta did preparatory stripping and put down three Becker drill holes, demonstrating the gravels there to be 18 to 22 feet thick. Old workings are common on these claims also.

On his Independence Creek claim, Kosuta dug a ditch from the creek to his planned sluicing location.

(5) O. and M. Lunde — 115 O 15
Gold Bottom Creek — (63°57'N, 138°59'W)

Reference: Sinclair et al (1975, p. 170).

As in previous years, Mr. and Mrs. Lunde mined their claims on Gold Bottom Creek. Working on Claims 13 and 14 above the mouth with a D-7 bulldozer and a 3 cubic yard capacity front end loader, they mined 28,000 bedrock square feet. The section consists of brown to grey silty muck 5 to 12 feet thick which is stripped. Rusty brown gravels 7 to 8 feet deep are sluiced.

(6) M. and D. Crockett — 115 O 15
Gold Bottom Creek — (63°55'N, 138°59'W)

Reference: Sinclair et al (1975, p. 172).

Mr. and Mrs. Crockett put in 5 centre cuts totalling 62,000 bedrock square feet on the upper part of Gold Bottom Creek, each about 140 feet wide. The ground has some 6 feet of muck and 4 to 10 feet of gravel, averaging 6 feet. They strip the muck and most of the gravel, sluicing the remaining gravel and the top 4 feet of bedrock. Normally, the coarsest gold is recovered in the areas of blocky fracturing gneissic bedrock. However, in the area mined in 1975 the coarsest gold occurred in an area of chlorite schist bedrock.

(7) J. Erickson — 115 O 15
Hunker Creek — (63°56'N, 138°54'W)

Reference: Sinclair et al (1975, p. 172).

J. Erickson continued mining Claim 1 A/D on Hunker Creek. Using a pump driven monitor he strips 35 feet of organic rich silt muck containing numerous Pleistocene bones. The remaining gravels, 2 to 3 feet thick are moved to the sluice box with a TD-18 bulldozer and front-end loader.

(8) G. Crawford — 115 O 15
Hunker Creek — (63°54'N, 138°54'W)

Reference: Sinclair et al (1975, p. 172).

During the 1975 season, Mr. Crawford finished his mining on the right fork of Hunker Creek, stripping 25 feet of muck and sluicing 5 feet of gravel from 4,000 bedrock square feet on claim 26. Production was 97 crude ounces gold.

(9) P. Erickson — 115 O 15
Hunker Creek — (63°54'N, 138°53'W)

Reference: Sinclair et al (1975, p. 172).

This operator mined an area of 4,000 bedrock square feet in 1975 with a paystreak 60 feet wide. Muck forms the top 12 feet of a 15 foot section of overburden. One foot of pay gravel and one foot of bedrock are sluiced using a D-4 traxcavator and a D-8 part time.

(10) A. and N. Burgelman
Dominion Creek
115 O 15
(63°50'N, 138°49'W)

Mr. and Mrs. Burgelman continued their bulldozer-sluicing mining on Caribou Creek, a right limit tributary of Dominion Creek.

(11) A. and N. Sailer
Dominion Creek
115 O 15
(63°48'N, 138°36'W)

Reference: Sinclair et al (1975, p. 173).

The Sailers put in two cuts on Dominion Creek about 2,000 feet downstream from the mouth of Nevada Creek, totalling 45,000 bedrock square feet with a D-8 bulldozer. The mined area is a left limit bench 15 to 20 feet above Dominion Creek. The section consists of 15 feet of grey silt and 12 feet of gravel of which the lower 6 feet is sluiced.

(12) R. Rintoul
Dominion Creek
115 O 15
(63°45'N, 138°31'W)

D. Rintoul with two hired men operated a dragline-bulldozer-sluice system on lower Dominion Creek. In an area where the pay gravels are well below water level and no bedrock drain is possible, Rintoul put in a right limit cut 200 feet long by 50 feet wide to 15 feet deep at right angles to Dominion Creek. The main dragline, with a crescent scraper bucket, draws out the gravels. A D-4 bulldozer then feeds these to the sluice-box; a small dragline is used to stack tailings.

(13) R. and B. Gibson
Sulpher Creek
115 O 15
(63°47'N, 138°54'W)

Reference: Sinclair et al (1975, p. 174).

Mr. and Mrs. Gibson continued mining on Friday Gulch, a left limit tributary of Sulpher Creek. They mined between earlier dredge tailings and the left bank of the gulch. Muck consisting of 10 to 15 feet of grey-brown silt is stripped by bulldozer; the lower few feet of gravel and decomposed quartz-muscovite schist bedrock is sluiced.

(14) K. Djukestein and L. Gatenby
Sulpher Creek
115 O 15
(63°50'N, 138°55'W)

Starting in 1974, using a system of 12 cubic yard highway scrapers which makes possible the economic transport of gravel up to 1,000 feet, Djukestein in 1975 mined a zone 1,200 feet long by 200 feet wide. A D-7 and D-8 bulldozer are used in preparing the ground and stacking tailings. A 1 1/2 yard dragline is also used to stack tailings. The present ground was stripped in the early 1960's by the Yukon Consolidated Gold Corporation. The present remaining section, 15 feet thick is stripped further with the scrapers and the bottom 7 to 8 feet delivered to the sluice.

(15) Ballarat Mines Limited — 115 O 14
Quartz Creek — (63°47'N, 139°06'W)

Reference: Sinclair et al (1975, p. 173).

Ballarat Mines Limited, owned by Mrs. H. Schmidt and operated by herself and sons Stewart and Craig, mined on the right limit of Quartz Creek using two D-8 bulldozers and D-8 tractor mounted elevator. The area mined, 520 feet long by 130 feet wide and up to 60 feet deep, was completely in gravel. The upper 50 feet was stripped as waste, the lower 10 to 12 feet sluiced.

(16) R. and L. Mining Company — 115 O 14
Quartz Creek — (68°48'N, 139°04'W)

Reference: Sinclair et al (1975, p. 174).

J. Lacross and W. Rasmusson continued mining on the right limit of Quartz Creek below the mouth of Little Blanche Creek, putting in three cuts, totalling roughly 125,000 bedrock square feet in a strip 550 feet long and approximately 200 feet wide. Equipment in use was two D-9 bulldozers, one D-8 and a one and one-half cubic yard capacity dragline. The section consists of some 15 feet of silt containing gravel layers, which is stripped. The lower 5 feet of gravel and one foot of strongly foliated biotite gneiss bedrock is sluiced.

(17) J. Lamontagne — 115 O 14
Eldorado Creek — (63°51'N, 139°15'W)

Reference: Sinclair et al (1975, p. 170).

Mr. Lamontagne continued mining his claims on Upper Eldorado during 1975, putting in a cut at the mouth of Chief Gulch 250 feet long by 100 feet wide. He mined a section of 15 to 20 feet of angular gravel and 2 to 3 feet of the bedrock, a muscovite-chlorite schist with abundant quartz augen. He also mined two cuts of the top foot or so of bedrock exposed between tailings piles from earlier mining farther downstream on Eldorado from Chief Gulch.

(18) R. Johnson — 115 O 14
Eldorado Creek — (63°53'N, 139°20'W)

Two Johnson brothers mined on Claim No. 11, Eldorado Creek, immediately below the mouth of Gay Gulch, beginning a sluicing operation using a pump capable of providing 700 to 800 gallons per minute at 160 psi pressure. They mined White Channel gravels on a left limit bench about 140 feet above the creek.

(19) A.M. and D. Fry — 115 O 14
Eldorado Creek — (63°55'N, 139°18'W)

This family mining operation continued during 1975 on Eldorado Creek. They put in a narrow cut 800 feet long on claims 5 and 6 above the mouth of Eldorado Creek. A left limit bench some 15 feet above the creek has 12 feet of ice rich silt overlying what had been about 6 feet of pay ground. Although thoroughly hand mined earlier in the Klondike history, remnant pillars and small patches of gravel around posts, shafts, etc, are sufficiently rich to make more modern mining possible.

Early in the season, using snow run-off, D. Fry sluiced briefly on Gold Hill. They worked on Monte Cristo and King Solomon's hills during May.

(20) B. Bryant, B. Hill — 115 O 14
Bonanza Creek — (63°55'N, 139°16'W)

Mr. Bryant holds two claims on Upper Bonanza at the mouth of Gauvin Gulch but worked the 1975 season on Gauvin Gulch claims by arrangement with Bruce Hill. Using two D-8 bulldozers, a series of right limit cuts were made in White Channel gravels which form a bench on the right limit of Gauvin Gulch.

(21) F. Perret — 115 O 14
Bonanza Creek — (63°55'N, 139°13'W)

Reference: Sinclair et al (1975, p. 170).

Mr. F. Perret continued mining at the same location as in 1974, on Lucky Claim (No. 40 on upper Bonanza) down from the mouth of Victoria Gulch. Using a TD-18 bulldozer, he sluiced the lower 2 feet of the gravel-muck section, putting in a right limit cut 100 feet long by 75 feet wide, sluicing 30 hours and stripping muck with the automatic gate system for 50 hours. Gold recovery was 120 crude ounces.

(22) D. Coombs — 115 O 14
Bonanza Creek — (63°48'N, 139°08'W)

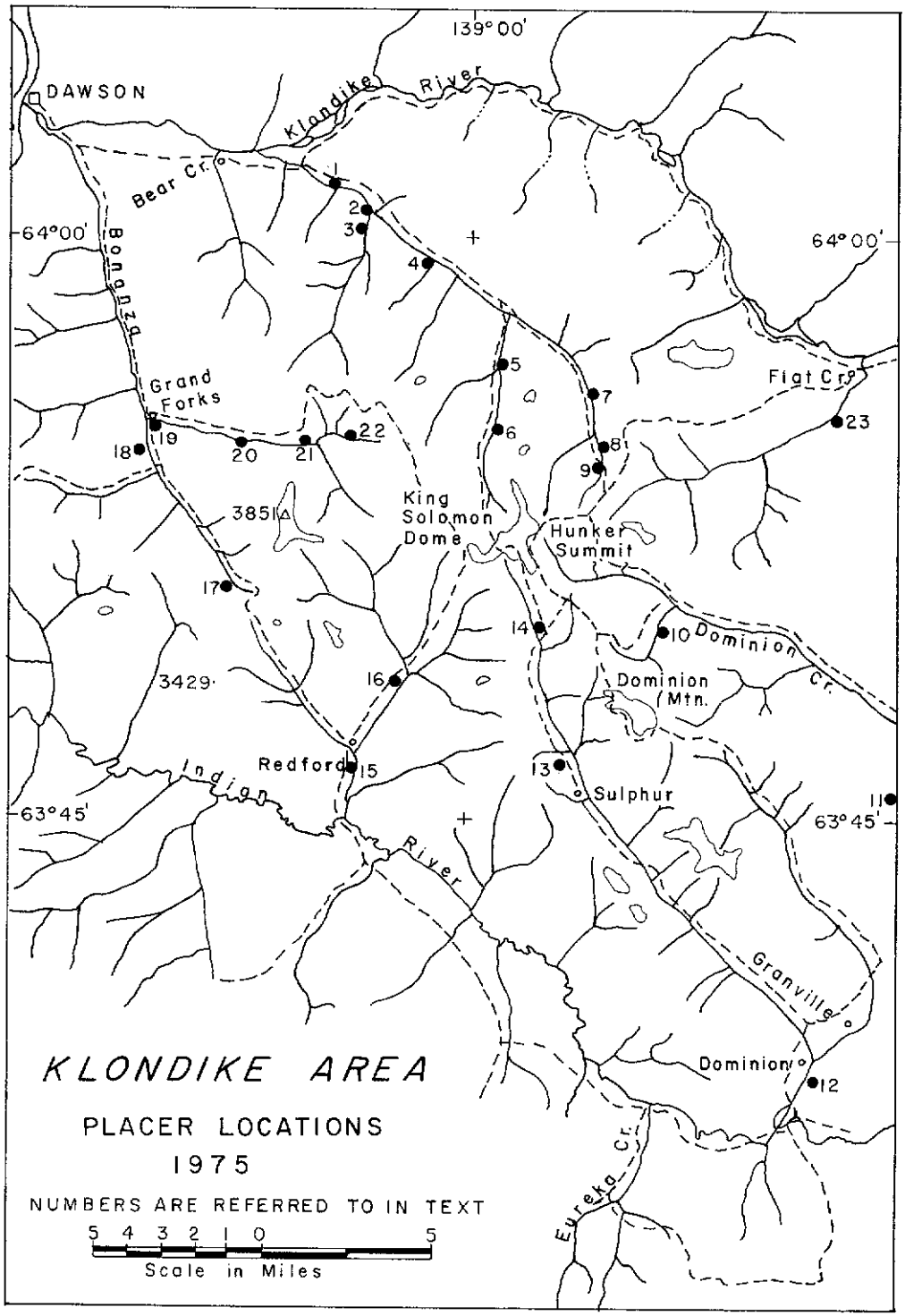
Mr. Coombs operates on Ready Bullion Gulch and Upper Bonanza Creek immediately downstream from Ready Bullion. During 1974 he staked three claims on Upper Bonanza and three claims up from the mouth of Ready Bullion. He mined partly by hand and partly with a D-4 bulldozer and concrete sluice box. In 1975 he added a further three claims on Ready Bullion and a one-mile prospecting lease on the centre fork of Upper Bonanza. During 1975 mining was at the mouth of Ready Bullion and downstream on Upper Bonanza where he put in a right limit cut 400 feet long by 20 feet wide.

The valley is narrow with little overburden and little stream gravel. The unconsolidated section consists of 3 to 4 feet of angular schist and gneiss fragments overlain by 5 feet of brown, silty soil containing slide rock fragments. Bedrock is a fractured muscovite-quartz schist. Gold is rough and coarse.

(23) K. and S. Placers — 115 O 15
Allgold Creek — (63°56'N, 138°37'W)

Reference: Sinclair et al (1975, p. 172).

Kinakins put in cuts on claims 4 and 6 above the mouth of Allgold Creek, 50 feet by 150 feet and 75 feet by 380 feet. Of the section, 20 feet of muck and the top 6 feet of gravel is stripped; the lower 5 feet of gravel is sluiced. Equipment used in one D-7 and one International TD-18.


139° 00'
DAWSON
Klondike River
Bear Cr.
64° 00'
Bonanza
Grand Forks
Flat Cr.
King Solomon Dome
Hunker Summit
3851
3429
Dominion Cr.
Dominion Mtn.
Redford
Indian River
63° 45'
Sulphur
Granville
Dominion
Eureka Cr.
KLONDIKE AREA
PLACER LOCATIONS
1975
NUMBERS ARE REFERRED TO IN TEXT
5 4 3 2 1 0 5
Scale in Miles

(24) Territorial Gold Placers Limited
Black Hills Creek

115 O 6, 7
(63°27'N, 138°50'W
& 63°24'N, 139°07'W)

Reference: Sinclair et al (1975, p. 173).

This company, formerly Leisure Gold Limited, put in the access tote road from Eureka Creek to Black Hills Creek and on to Henderson Creek in 1974. They moved in to Henderson Creek late in the 1975 season, doing a small amount of sluicing (3,900 cubic yards) at the mouth of Golden Gate Creek and digging a bedrock drain. Muck is present to a depth of about 6 feet. The gravels, 6 to 8 feet thick, are all sluiced, as well as 1 to 3 feet of the biotite schist bedrock.

A dredge operated on Henderson Creek from 1949 to 1956, mining to about four miles below the present workings.

The main operations of Territorial Gold Placers during 1975 were on Black Hills Creek. There they dug a bedrock drain and sluiced 55,000 cubic yards of gravel. The section consists of six feet of muck, which is stripped, and 5 to 10 feet of gravel, which is sluiced along with about 2 feet of the underlying schist bedrock. Two D-8 bulldozers were used for stripping and feeding gravels to the sluice-box. A dragline was used to stack tailings.

The early mining on Black Hills Creek consisted of hand mining, including some work on the bench behind the present camp. The Whitehorse-Dawson City winter stage route was along Black Hills Creek. A roadhouse operator, Mr. March, apparently did some placer mining on the creek. Later, Yukon Consolidated Gold Corporation drilled part of the valley.

MAYO-MCQUESTEN AREA

(1) Bardusan Placers Limited — 105 M 14
Thunder Gulch — (63°55'N, 135°15'W)

Reference: Sinclair et al (1975, p. 181).

H. Barchan owns 18 claims on Thunder Gulch up from Lightning Creek and a 3-mile lease on Lightning Creek from just above Keno City to McNeil Creek. 1975 mining operations were 1/2 mile up from the mouth of Thunder Gulch. The mining situation is tight since the creek is steep in gradient and narrow in section. There is very little gravel, much of the 30 feet of unconsolidated material is slide rock of platy to blocky fracturing quartzite and greenstone over bedrock of the same lithology. Working with a D-6 bulldozer and a three cubic yard front end loader, this operator puts in cuts 30 feet wide across the creek. He ground sluices the top 10 feet of slide rock, stacking the largest boulders by bulldozer. This slide rock contains appreciable fine gold which is successively concentrated during the ground sluicing. The bedrock paystreak, with the gold commonly trapped in fractures, averages $45.00 per cubic yard at current prices ($135/oz).

During 1975 he sluiced roughly 15,000 cubic yards. Sluicing a small cut 30 feet above the creek containing very little stream gravel produced 80 ounces of rough gold. Silver-bearing galena is abundant in the concentrate.

(2) E. Bleiler — 115 P 16
Highet Creek — (63°44'N, 136°08'W)

Reference: Sinclair et al (1975, p. 181).

E. Bleiler, who formerly did almost all mining using a four-inch monitor with an 80-foot gravity head through a 12-inch pipe, during 1975 used a D-8 bulldozer to strip the top 10 feet of a gravel section 27 to 30 feet deep. The remaining 17 feet of pay gravel is pushed to the head of the sluice by bulldozer then washed and forced into the sluice by monitor. Mr. Bleiler put in two cuts during the season, one of 10,000 cubic yards, measuring 140 by 70 feet; the second of 8,500 cubic yards, 120 by 70 feet.

(3) F. Erl — 115 P 9
Highet Creek — (63°45'N, 136°09'W)

Reference: Sinclair et al (1975, p. 181).

F. Erl mined for about one month on upper Highet Creek and prepared equipment for the 1976 season.

(4) F. Taylor and J. Brooks — 105 M 14
Duncan Creek — (63°52'N, 135°27'W)

Frank Taylor holds five claims on Lower Duncan Creek about 1 1/2 miles above the mouth, the ground being held since 1960. He added a 1-mile lease below the claims and J. Brooks holds a 1-mile lease above the claims. Since mining started in July on the second lowest claim, these operators put in three left limit cuts, each 250 feet long by 50 to 60 feet wide. There is very little barren overburden and the 6 to 8 feet of pay gravel, which is over a mica schist bedrock, is moved to the sluice by a 3 1/2 yard Michigan front end loader. A complicating aspect of the mining operation is the presence of boulders up to 6 feet in diameter which must be moved.

(5) Elmer Friesen
Morrison Creek

115 P 16
(63°48'N, 136°06'W)

E. Friesen holds a 2-mile lease on Morrison Creek. During 1975 he put in a tote road from Rudolf Pup to the property.

(6) W. Gordon
Rudolf Pup

115 P 16
(63°46'N, 136°12'W)

W. Gordon holds a 1-mile lease on Rudolf Pup, a tributary of Highet Creek. During the 1975 season he sluiced about 1,000 cubic yards near the mouth and dug a test pit 1,500 feet upstream from the mouth. The unconsolidated section consists largely of granitic boulders in clay.

(7) Darron Placers
Dublin Gulch

106 D 4
(64°02'N, 135°50'W)

Reference: Sinclair et al (1975, p. 180).

During 1975 R. Holway and D. Duensing with a crew of three continued mining their claims on Dublin Gulch. They put in one small cut on the right limit of claim 4 but most operations were on claim 3 where 50,000 bedrock square feet were mined; the area being 100 feet wide and 500 feet long on the left limit of the creek. Eighteen feet of bouldery gravel were sluiced. The mining area is in against a steep bank. Thick, overlying muck and glacial till to 35 feet thick was stripped by bulldozer and monitor from the ground to be mined and later into the bank, providing a safety berm or bench, adjacent to the highwall of the cut. The bedrock of the mined area is irregular, with two sharp drops of approximately 15 feet each over 500 feet in the downstream direction.

Mining equipment consists of one D-7, one 955 Traxcavator, two rubber-tired front end loaders (one 4 yard, one 3 1/2 yard) and one B.E. 3/4 yard shovel. To cope with the coarse boulders, a grizzly, spring mounted on the upper side, is used above the dump box of the sluice.

(8) Clear Creek Gold Mines
Clear Creek

115 P 14
(63°48'N, 137°16'W)

Reference: Sinclair et al (1975, p. 180).

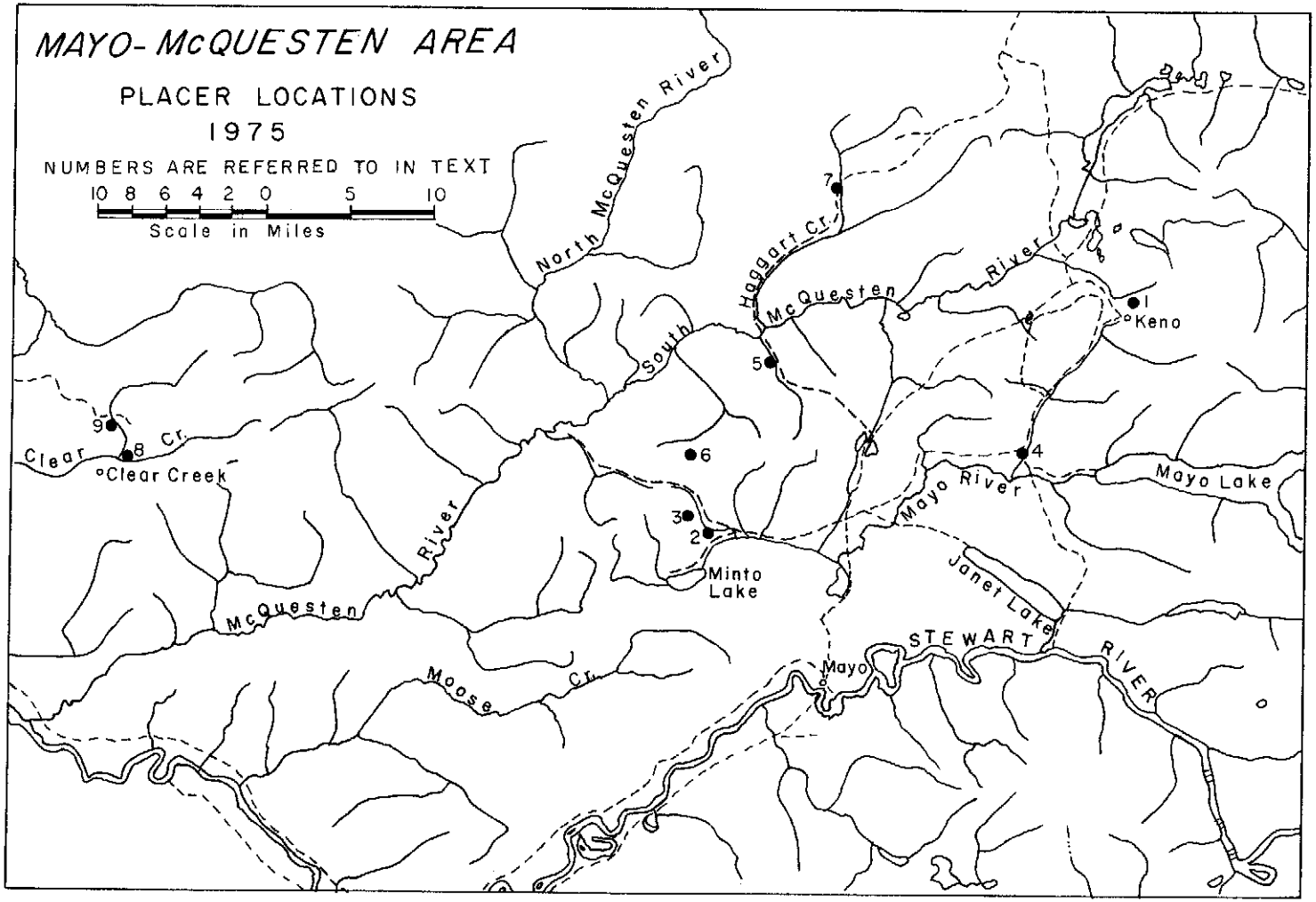
W. Scott and L. Logie continued mining on Left Clear Creek at the mouth of Barney Gulch with a crew of six men, one D-6 and one D-8 bulldozer. They put in one large cut of about 30,000 bedrock square feet on the left limit of the creek at the mouth of the gulch and did preparatory work for the 1976 season up the gulch. The section consists of roughly 15 feet of gravel above a chlorite schist bedrock. Much of the gold produced is coarse, jewellry grade material.

(9) T. Thompson and W. Genier
Clear Creek

115 P 14
(63°51'N, 137°10'W)

Reference: Sinclair et al (1975, p. 180).

These operators mined on the upper part of Left Clear Creek using one D-6 and one D-8 bulldozer. The gravel section is 10 to 12 feet thick, with about 2 feet of overburden. Much of the gold is coarse, attractive, jewellry grade material.


MAYO-McQUESTEN AREA
PLACER LOCATIONS
1975
NUMBERS ARE REFERRED TO IN TEXT
10 8 6 4 2 0 5 10
Scale in Miles
North McQuesten River
Haggart Cr.
McQuesten River
South
Keno
1
5
9
8
Clear Cr.
Clear Creek
6
4
Mayo Lake
Mayo River
3
2
Minto Lake
River
McQuesten
Janet Lake
STEWART RIVER
Mayo
Moose Cr.
7

LIVINGSTONE CREEK AREA

(1) G. Asuchak, R. Asuchak, J. Nakamura — 105 E 8
Moose Creek — (61°17'N, 134°20'W)

During 1975 these operators worked on Claims #1 - #3 above the mouth of Moose Creek, a left limit tributary of the South Big Salmon River. Work consisted of some 5,000 cubic yards of stripping in preparation for the 1976 season, and the construction of an airstrip 2,000 feet long on the gravel bench of the Big Salmon River at Moose Creek.

(2) Constellation Mines — 105 E 8
Livingstone Creek — (61°22'N, 134°20'W)

M. Furstner, R. Miller and G. McCully operated on Livingstone Creek, a right limit tributary of the South Big Salmon River, using one C-6 Terex and one D-7 bulldozer. They put in a ditch 1,300 feet long to bring water to a monitor for sluicing. Most of their work was preparatory for future mining.

KLUANE AREA

(1) Burwash Mining Company Limited — 115 G 6
Burwash Creek — (61°23'N, 139°19'W)

Reference: Sinclair et al (1975, p. 184).

This company, owned and operated by H. Besner, holds claims on Burwash and Tetamagouche creeks. Mining operations, which were in the canyon of Tetamagouche Creek for the past two years, were moved back to Burwash Creek ground where a centre cut 400 feet long by 200 feet wide and 15 feet deep was put in near the downstream end of the claims.

(2) W. Jones — 115 G 6
Burwash Creek — (61°22'N, 139°17'W)

Working on claims held by Burwash Mining Company Limited, Jones mined a bench on Burwash Creek below Tetamagouche Creek, then stripped ground on the right limit of Burwash Creek immediately above the mouth of Tetamagouche.

(3) R. Muller — 115 G 6
Burwash Creek — (61°23'N, 139°18'W)

Muller has worked on ground owned by Burwash Mining Company (H. Besner) since 1973. During 1975 he put in a cut on a right limit bench 300 feet long by 50 feet wide and 10 feet deep. The bench is about 10 feet above the main channel which had been mined previously.

(4) Greenland Explorations Limited — 115 G 6
Burwash Creek — (61°22'N, 139°21'W)

Reference: Sinclair et al (1975, p. 184).

Working with the same washing plant-bulldozer-shovel system as in 1974, this company mined part of the season, sluicing some 25,000 cubic yards. A narrow gorge in upper Burwash Creek impeded mining, where one section of the creek, 500 feet long, could be mined with a cut of about 30 feet wide.

(5) Cooper Creek Mining Company — 115 G 6
Burwash Creek — (61°22'N, 139°25'W)

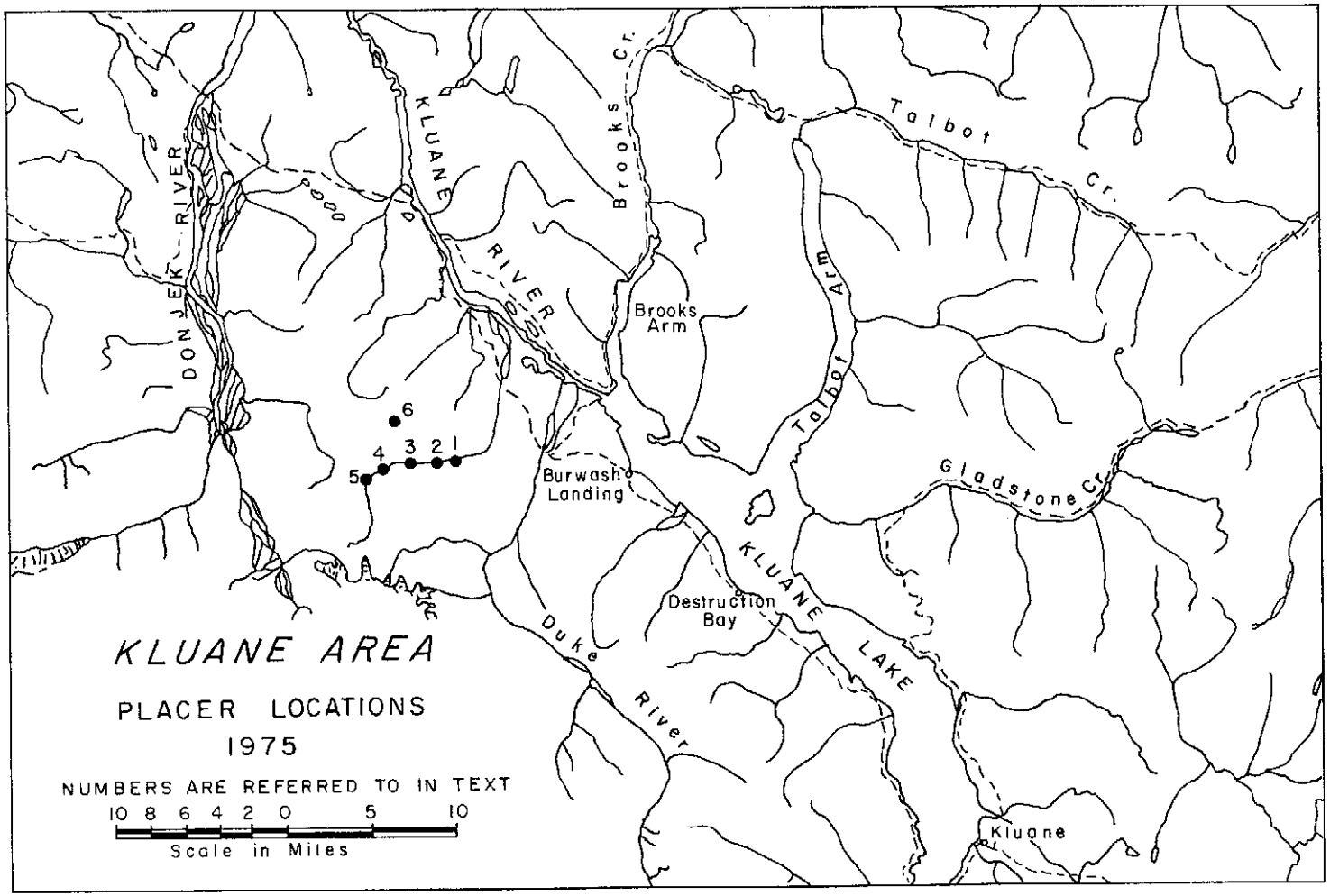
Reference: Sinclair and Gilbert (1975, p. 143).

These operators hold 31 claims on the upper part of Burwash Creek. In 1975 they worked part of the season, stripping the top 6 feet from a cut 400 by 40 feet. The remaining 2 to 3 feet of gravel is fed to a grizzly protected sluice-box by front end loader.

(6) W. Rothbauer — 115 G 6
Tetamagouche Creek — (61°24'N, 139°25'W)

Reference: Sinclair et al (1975, p. 184).

Mr. Rothbauer, operating with a D-8 bulldozer, completed his third year of mining on upper Tetamagouche Creek. He works a one-mile lease on a royalty agreement with R. Holway and owns a claim below the lease. During the season he put in one full width cut at the downstream end of the property 800 feet long by 60 feet wide, sluicing the lower 4 feet of a section 5 to 8 feet thick. On the upper end he mined a cut 300 feet long by 60 feet wide, sluicing the lower 4 feet of a section 10 feet thick.


KLUANE AREA
PLACER LOCATIONS
1975
NUMBERS ARE REFERRED TO IN TEXT
10 8 6 4 2 0 5 10
Scale in Miles
DONJEK RIVER
KLUANE RIVER
Brooks Cr.
Talbot Cr.
Brooks Arm
Talbot Arm
Gladstone Cr.
Burwash Landing
Destruction Bay
KLUANE LAKE
Duke River
Kluane
6
4
3
2
1
5

MOUNT NANSEN AREA

(1) Revenue Creek Placer — 115 I 6
Big Creek — (62°20'N, 137°16'W)

D.C. Wing holds 10 placer claims (MAC 1, DOE 1-9) up from the mouth of a right limit tributary of Big Creek, 4 miles west of Seymour Creek. With a crew of three men he put in a left limit cut 300 feet long by 75 feet wide. The gravel section is 15 feet thick with 2 feet of overburden. Equipment used is a Case 1150 D bulldozer with ripper.

(2) J. Yacklin — 115 I 6
Nansen Creek — (62°06'N, 137°10'W)

Mr. Yacklin holds a one-mile lease on the east fork of Nansen Creek and started mining there in 1974. In 1975 he put in a cut 300 feet long by 60 feet wide about 3/4 of the way up the lease. Using a D-4 tractor with an overshot bucket, in a very simple operation, he mines 8 feet of gravel above a boulder clay.

Claymore Resources Limited* 115 N 2
Discovery Creek, Moosehorn Range (63°03'N, 140°56'W)

References: Tempelman-Kluit (1974); Morin (1975).

Claims: The company hold 26 placer leases on the following five creeks draining the Moosehorn Range in the Ladue River area: Discovery Creek, Great Bear Creek, West Swamp Creek, Scottie Creek and Claymore Creek.

Location and Access:

The property is situated about 80 miles south of Dawson and 40 miles north of Beaver Creek, adjacent to the Alaska-Canada border. Access to the area was provided by both tracked vehicles and by helicopter. Land access was by means of a 40 mile tote road from Scottie Creek, Alaska.

History:

The placer leases were staked in 1975 following the discovery by M. Kenyon of Claymore Resources that the upper reaches of Discovery Creek contained abundant coarse gold up to about 2mm.

Description:

The Moosehorn Range is a north-northwest trending ridge up to 4,439 feet in elevation. It is drained by several creeks on all sides, most of which have coarse gravels associated with them. The Range itself is made up of granitic rocks with several known auriferous quartz veins. Some creeks draining this area have concentrated the gold in alluvial placers. In addition, in situ residual weathering of the granitic rocks has resulted in the formation of potential eluvial concentrations of gold.

Drilling along the banks of Discovery Creek has demonstrated the following section: a clay rich gravel with 30 to 60 per cent clay (6 to 10 feet thick); a clean gravel with less than 30 per cent clay (3 to 9 feet thick); a fine sand, which appears to be decomposed bedrock (up to 30 feet thick) and granodiorite bedrock.

Current Work and Results:

In 1975, the property was bulk sampled in the summer from pits along Discovery Creek and the creek was systematically tested by panning. According to the Northern Miner, (September 4, 1975) the five pits or trenches extend for a length of 150 feet and show the gold bearing gravels to have a thickness of about eight feet. Values in the pits ranged from one to seven ounces of raw gold per yard, with an overall average of 1.95 troy ounces.

During November and December rotary drilling was done on Discovery Creek. The drill was a Heli-Drill 500 and was mounted on a Foremost 8T vehicle and the compressor was a Schramm 425/250 mounted on a Nodwell RN-110. Thirty-two holes were drilled to an average depth of 25 feet and several to 50 feet without reaching bedrock. Most of the holes were drilled along the upper 5,000 feet of the creek at 200 foot intervals with a few profiles perpendicular to the creek.

An air flush mechanism was used to return samples. However, abundant ground water seriously hampered complete sample recovery and most of the samples assayed relatively low in gold compared to the bulk sampled pits, for example, a hole 32 feet south of Pit 2 returned 0.163 ounces of gold per cubic yard over 3 feet compared to just under 2 ounces of gold per cubic yard from the pit. The gold values obtained by the drilling program indicate a wider distribution along Discovery Creek than the limited area tested in the summer program.

In addition to work on Discovery Creek, limited pan sampling surveys were made of Swamp Creek, Claymore Creek, and Great Bear Creek, all of which yielded colours in places.

*visited by J. Morin

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