APPENDIX 4: MINERAL OCCURRENCES

The following section contains descriptions of many showings that were active in the md-seventies. Occurrences are numbered, named and described following the scheme of "Yukon Geology and Exploration 1979-80" (INAC, 1981). Note that property numbers may be duplicated in the two map areas. Summaries of the history and results of previous work are mostly from referenced sources. Descriptions of the geological setting are original and consistent with the terminology used throughout this report.

Abbreviations:

ppm: parts per million
cps: counts per second (scintillometer)
S.G.: specific gravity (proportion of barium minerals)
NM: Northern Miner (Canadian weekly newspaper for resource industries
MIR: Mineral Industry report published by Indian and Northern Affairs Canada

QUIET LAKE MAP AREA

105F 001. MOLLY Molybdenum, Uranium (61°11'0"N; 132°25'56"W)
(Green and Godwin 1964: p. 45-46)

Location and History

The property is 153 kilometres northeast of Whitehorse and 224 kilometres northwest of Watson Lake. The Molly Claims, 115 in all, were staked in 1962, after prospectors working for Conwest Exploration Co. Ltd. discovered molybdenite. Seventeen holes were drilled (about 750 m) on the main showing, and eight trenches were cut. Another trench cut the Saddle showing, about 1200 metres northwest of the main zone.

Racicot restaked the main zone in 1969, and in 1970 Haug staked again as the MO group. Conwest's claims on the Saddle Zone expired after June 1975.

Archer Cathro staked the Weasel claims after a siliceous intrusive rock from near the North Zone returned 80 cps, twice the radiometric background, and assayed 0.025% U_30_8. Detailed radiometric prospecting in 1975 failed to locate areas with strong radioactive response. One zone gave 1100 cps (background 150 cps) over the granitic contact in an old Conwest trench. Three silt samples are strongly anomalous indicating that further work is warranted.

Geology

The showing is in garnet-diopside-tremolite and wollastonite-garnet skarn, developed in a 15 metre thick limestone of the Askin Group, next to the Nisutlin Batholith. Porphyritic quartz monzonite intrudes a moderately south dipping sequence of the Platy Siltstone and Hogg formations and the country rocks are hornfelsed. Patches of coarsely crystalline molybdenite with pyrrhotite, chalcopyrite, fluorite and traces of scheelite are scattered through the skarn. The best drill intersection grades 1.08% MoS_2 across 4.2 metres. The sample from Conwest trench IV that gave 1100 cps assayed 30 ppm U, 66 ppm Cu, 18 ppm Mo and < 4 ppm W.

105F 002: . MOBS Zinc (61°03'N;133°48'W)[1]
(Green, 1966: p. 60-62)

Location and History

The occurrences were known before 1930 and Lees (1936, p. 23) noted that mineral claims had been staked at various times on the north side of Boswell River, 32 to 40 kilometres above its mouth. Work done before 1936 consisted of trenching and a 37 metre adit. This adit collared in biotite schist, is reported to have cut 2.4 metres of quartz with argentiferous galena and a little molybdenite near its face. Older workings include a short adit about six kilometres downstream.

Green (1966, p. 60) reported that J. Mohagen of Whitehorse held 23 claims on which he prospected for many years. These claims are now thought to be held by Boswell River Mines.

Since acquisition by Boswell River Mines Ltd. on its incorporation in 1966, geological and geophysical surveys have been made and bulldozer stripping and more than 3000 metres of diamond drilling have been done. Thirteen EM anomalies were located. Stripping on one anomaly exposed a zone carrying sphalerite over a width of twelve metres. The highest assay from this zone was 18% Zn. A second anomaly was tested with two drill holes.

Geology

The showings include carbonate lenses with sphalerite and galena. They are foliation parallel pods in quartz feldspar mica schist and gneiss of the Big Salmon Complex. The metamorphic rocks strike N75W and dip steeply. A second type of occurrence are quartz veins with argentiferous galena. The showings are reported for a distance of eight kilometres in a zone roughly two kilometres southwest of the Quiet Lake Batholith.

105F 008 TOWER PEAK Asbestos (N61°17';W133°13')[2]
(Northern Miner October 7, 1954: p. 1)
Location and History

North of Big Salmon Lake a group of 31 claims held by Prospectors airways was optioned and explored by Asbestos Corporation Ltd. during 1955. Detailed mapping was done, but no new asbestos showings were found and the property was dropped. In 1977 forty new claims were staked and in May 1980 they were transferred to B.A. Copper Mines Ltd. Although asbestos and copper occurrences are known, neither appears economic.

Geology

The property is underlain by serpentinized peridotite and quartz carbonate alteration zones that characterize the Anvil Assemblage. Very short fibre asbestos is known in outcrop, and a half centimetre vein was seen in a boulder near Rex Brook, a tributary of Caribou Creek.

[1] Yukon Minfile 2004: called McHagen-Kelly; location given as 61 1’24”N 133 39’57” W (NAD 1983)
[2] listed as 105F 008 in Yukon Minfile 2004 given as 61 16’49”N 133 11’41’W.

105F 009. STORMY Molybdenum, Tungsten (N61°29'50";W132°48'15")[3]
(DIAND Yukon Geol. and Exploration 1979-80: p. 173)

Location and History

The property is 56 kilometres south of Ross River and is reached by a 32 kilometre truck road along Upper Sheep Creek, from Mile 100 on the Canol Road. The showing was discovered by A. Racicot in 1955 and staked as the Ann claims, which lapsed. In 1956 Racicot restaked, and in 1958 he cut 11 trenches to expose disseminated molybdenite. Canol Metals, incorporated in 1958, began exploring the property in 1959 with an adit, drifts, and crosscuts totalling about 300 metres. Thirty-six underground drill holes totalling 1036 metres were completed. A detailed geological survey was made in 1960. High grade molybdenite was cut in the adit between 29 and 36.5 metres in quartz monzonite three to six metres from the contact with shaly limestone of the Ketza Group. The mineralization is 1.3 to 2.3 metres thick, 8 metres long and 15 metres deep. It grades 2.27% MoS2, based on a 100 tonne muck sample.

The property was trenched by Jason Explorers Ltd. in 1967-68. The mineralized body is described as an elongate, wedge shaped mass, 120 metres long and 2.5 metres thick on average.The company estimated reserves of 13,600 tonnes grading 0.73% MoS2, or 15,400 tonnes at 1.05% W03 (WM April 1969,p. 37).

Marvin Sherman restaked the property as the PM claims in 1975 and 1976. In 1977 Noranda Explorations Ltd. conducted a limited stream sediment geochemical survey with negative results for Cu, Pb, Zn, Mo, and W. In March 1979 Rio Alto Explorations Ltd. acquired 4 claims covering the prospect and staked a further 96 claims. Geological surveys were conducted, more than 50 kilometres of line was cut and the underground workings were reopened. The A zone was resampled and 270 to 680 kg sample grading about 5.0% MoS_2 was obtained for mill testing. Further exploration in 1980 led to the discovery of ten new, weakly mineralized showings. Soil samples from 2500 sites spaced at 25 metres, on lines 75 metres apart were analysed for Mo, W, Cu, Sn, U and Fe. Anomalous values ranged from 6 to 85 ppm Mo and 10 to 315 ppm W. No anomalies were obtained from the other analytical results. Three holes confirmed known mineralization in the B and C zones and five holes on other small showings or anomalies were discouraging with a best intersection of 0.005% MoS_2 and 0.35% $W0_3$.

Geology

The molybdenite showing is at the north contact of the Nisutlin Batholith, where it intrudes limestone, shaly limestone and phyllite assigned to the Ketza Group. A skarn in the limestone near the contact varies from about twelve metres to one metre thick depending on the orientation of bedding. Molybdenite is disseminated in the skarn and quartz monzonite near the contact. Assays of samples from a trench across the skarn averaged 0.68 MoS_2 along 6.8 metres, and 8.4% MoS_2 along 4 metres in the intrusive rock.

[3] Listed as 105F 011 in Yukon Minfile 2004; 61 29’50”N 132 48’10’W

105F 010 . **MM** Zinc , copper (N61°27'30";W132°39')
(Morin, 1977: p. 83-97)

Location and History

The showings are in a northeast facing cirque about 61 kilometres southwest of Ross River. The Zinc claims were staked in 1970 for Spartan Explorations Ltd. in joint venture with Mitsui Mining & Smelting Co. Ltd. The MM and JJ claims were staked to cover the showings for Anvil Mining Corp. Ltd. in 1973. During two following summers the property was mapped in detail, geochemically sampled, and drilled.

Geology

The showings are in the Felsic Volcanic Formation, below the MM thrusts which have placed a discontinuous slice of Askin Group beds and a second, higher sheet with the Ketza Group above the Seagull Group. Three discontinuous sulphide lenses, about 100 metres long and several tens of metres thick, are in pyritic quartzite. The quartzite lies between intermediate and felsic volcanic rocks. Footwall beds are dark grey to green feldspar-quartz-actinolite-biotite schist, in which mafic layers, a few millimetres thick, alternate with lighter quartzo-feldspathic laminae. Pyrrhotite laminae, veinlets and disseminated grains are common throughout. Pyrite is a minor component and chalcopyrite is rare. Above the mineralized zone the rocks are pale greenish grey quartz-feldspar-muscovite-calcite-zoisite-biotite schist with minor disseminated pyrite and pyrrhotite. The schist is a metamorphosed felsic breccia with felsic volcanic clasts in a sericite-chlorite-quartz matrix.

The mineralized zone, 13.5 metres thick, is a sulphide-silicate gneiss with lenses of quartzite, massive sulphide, barite and massive pyrite. The gneiss has alternate silicate and sulphide layers: silicates are quartz, actinolite and sericite and the sulphides include sphalerite, pyrrhotite, pyrite with rare chalcopyrite. Quartzite has layers of quartz, pyrite, rare sphalerite and galena alternating with quartz and sericite. Locally it contains no sulphides. A 0.6 metre thick massive sulphide, about the middle of the mineralized zone, has poorly layered, fine to medium grained sulphides with about 10% andalusite, quartz and sericite. The massive sulphide varies upward from copper rich, to lead rich, to iron rich, with constant zinc.

Two barite beds, about 1.5 metres thick, are near the top of the mineralized zone. They contain fine grained, poorly layered, sucrose, pale grey barite with minor disseminated pyrite and galena. Massive pyrite beds alternate with the barite in the upper part. They contain fine grained, massive to poorly layered pyrite.

Silver and lead concentrations are low in the bottom and increase upward to 37.3 gm/t and 4.2% in the massive sulphide bed, about the middle of the zone. Silver and lead are concentrated in the two upper barite units. The silver/lead ratio differs in the two barite units, indicating that silver varies independently of galena. Zinc concentration is more constant than that of other metals in the sulphide silicate gneiss and barite; it is between 1.9 and 3.8%. Copper averages about 0.05% and is slightly higher in the base (0.17%). The massive sulphide contains about 10% Zn and 0.4% Cu. Zinc and copper are lowest in the massive pyrite at the top. Morin (1977) has summarized evidence for an exhalative volcanic origin for the occurrences. He considers that the deposits are proximal and related to their felsic volcanic host rocks.

105F 01l. **CPA** Gossan (N61°27'; W132°26')
(DIAND MIR 1977: p. 80-81)

Location and History

The twelve CPA claims of Charta Mines Ltd., were staked in 1969 by R.G. Hilker. They are 61 kilometres south of Ross River. Limited work was done on the property after it was geochemically sampled in 1969-70. The claims were optioned to United Keno Hill Mines in 1977 and the 24 adjoining GAG claims were staked. Further geochemical soil sampling, prospecting and mapping were done that year.

Geology

The claims cover rusty weathering, light coloured, felsic breccia and tuff with minor light green chert and some crinoidal limestone of the Felsic Volcanic Formation. The rocks are intruded by a large syenite stock, considered coeval with the volcanics. Three gossans are developed in the felsic volcanics. The largest, 1200 x 400 metres, trends northeast across the claims. Coincident copper and lead soil geochemical anomalies about 600 x 200 metres were outlined. A magnetic high on the east part of the CPA claims may indicate a buried intrusive. Veins with minor sphalerite, galena and chalcopyrite were noted on the property.

105F 013. **KAY** Silver, lead, zinc (N61°30';W132°10')
(DIAND Min. Ind. Rept. 1980: p. 38)

Location and History

The property is 53 kilometres south-southeast of Ross River on the north side of White Creek. The Kay group of 32 claims was staked in October 1954 by British Yukon Exploration Co. Ltd. In 1955 the showings were trenched and mapped and 27 more claims were staked. Northwest Explorers Ltd. staked 153 claims over the area in 1967 and prospected and soil sampled the claims. Float with lead-silver mineralization was found near some geochemical anomalies.

Geology

The mineralization on the claims is galena with less sphalerite, chalcopyrite and tetrahedrite. It occurs as vein and fracture fillings, as irregular replacements and in breccias that cut the McConnell Formation. It is commonly associated with the secondary orange dolomite that replaces the limestone locally. Quartz, barite, manganiferous siderite, pyrite and pyrrhotite are the gangue minerals. Some veins that consist chiefly of galena contain up to 1866 gm/t Ag. The showings are small, discontinuous and irregular although the mineralization is spectacular.

105F 015. **OXO** Silver, lead, zinc (N61°31';W132°13')
(Green, 1965: p. 42-43)

Location and History

This showing is at the head of a branch of Cache Creek, a tributary of Ketza River, 52 kilometres south-southeast of Ross River. The property was staked in 1955 by E. Erickson and P. Versluce. The Oxo 1-10 claims were recorded in 1955 and acquired by Oxo Mining and Smelting Co. Ltd. By 1964 the showing had been trenched to reveal a sulphide rich lens, about 20 metres long and 3 metres wide. A sample taken by Green from a four metre trench assayed 0.63 gm/t Au, 317.2 gm/t Ag, 12.7% Pb,0.4% Zn and 0.03% Cu. In 1968 Trans-Yukon Exploration Ltd. optioned the property. They did an EM survey and diamond drilled in 1968-69.

Geology

A pyrrhotite lens, three to twelve metres thick, with minor pyrite, galena, sphalerite and chalcopyrite follows the foliation of limestone in the McConnell Formation. The lens is in a zone that can be traced for about 350 metres in drill holes and in the EM survey. Quartz veins with minor chalcopyrite are 150 metres southwest of the main showing.

105F 017. **BOOM (WOODCOCK)** Gold N61°32'20";W132°16'10")
(Skinner, 1960: p. 39)

Location and History

The property is on Cache Creek, a tributary of upper Ketza River at an elevation of 5300 feet, 51 kilometres southeast of Ross River. Gold was discovered in the fall of 1954 by Conwest Exploration Company Limited. In 1955 the company explored the showing with 14 trenches, sampled the mineralized zone and made a geological survey near the showings. In 1956 the company explored the deposit to a depth of about 30 metres with a packsack drill, doing about 600 metres of drilling. In 1958 and 1959 they explored the deposit to a depth of 60 metres, drilling about 1500 metres of AX core and 500 metres of EX core. A deposit, about 200 metres long, 60 metres deep and averaging about 4 metres wide was out lined. In 1960 the company drilled a 300 metre BX hole to test the zone at depth. No economic mineralization was cut and the country rock differs from that in the shorter holes. Exploration was discontinued in June that year because the deposit appeared small and of modest grade. At the time the property consisted of 90 claims held by Ketza River Mines Limited, which was controlled by Conwest.

In 1974 Nordev Resources Limited acquired the shares of Ketza River Mines held by Conwest in return for a comparable number of shares of Nordev. This gave Nordev Resources a 72.8% interest in Ketza River Mines. Previous work had outlined 67,000 tonnes grading 10.85 gm/t Au in one shoot (NM 09/02/78, p. A13). The company was reorganized into Vedron Limited in 1979.

Geology

The showing is about 150 metres long and 30 metres wide: it consists of irregular shaped sulphide bodies with barren lenses of limestone in a 150 metre thick limestone (White Creek Limestone) along a steep dipping fault. Beneath the host rock is limy phyllite of the McConnell Formation. Mineralization consists of subhorizontal pyrrhotite, auriferous arsenopyrite, pyrite and minor chalcopyrite as replacements along the fault. Its irregular shape may be controlled by bedding.

105F 019. **BOX (MAT, GULL)** Silver, lead, zinc (N61°311;W132°35')
(DIAND, Min. Ind. Rept. 1978, p. 79-80)

Location and History

The property is on the east side of Seagull Creek, about 40 kilometres south of Ross River. A four wheel drive road that leaves the Canol Road at Groundhog Creek provides access.

Conwest Exploration staked the ground as the Box Group in 1963 and trenched the main showing for about 60 metres. Quiet Lake Syndicate restaked as the MC Group in 1966, and the claims were optioned to Tay River Mines Ltd. The main trench was sampled at intervals over a length of 43 metres. Values up to 600 gm/t Ag, 12% Pb, and 3.73 gm/t Au were obtained over widthsup to 60 centimetres. Conwest then optioned the ground and mapped and trenched in 1969.

Nithex Development and Exploration Ltd. restaked as the Mat and Gull claims in 1974 and mapped and trenched further. Welcome North Mines Ltd. optioned the property in 1976; they mapped and soil sampled. Assays of grab samples of pyritic material from the main showing ranged from 0.05% to 0.25% Zn, 0.68% to 21.0% Pb, 2.80 to 8.40 gm/t Au, 38.88 to 1437.44 gm/t Ag. Seagull Joint Venture (Dupont, Rosario, and Aquitaine) optioned the property in 1977 and mapped, soil sampled, trenched and drilled the ground (5 holes, 460 m).

Geology

Felsic volcanic rocks and intercalated black slate assigned to the Seagull Group underlie the claims. A range of fine to coarse grained volcanic tuff and tuff breccia are seen. The rocks dip gently to moderately southwest and they overlie dolostone and quartzite of the Askin Group.

The main showing is in black slate and foliated quartz eye tuff: it consists of a 1.5 metre section of massive galena exposed in a northwest flowing creek. Fine grained pyrite is disseminated in the host rock around the massive galena.Veinlets of medium to coarse grained galena are found for 23 metres along the creek.

About 120 metres west of the main showing is a gossan, traced intermittently along strike for 360 metres. Pale green felsic volcanics with minor disseminated pyrite and pyrrhotite make up the gossan.

The showings are genetically associated with their host rocks, perhaps as exhalative fracture fillings (Morin, 1980, p. 88-90).

105F 020 .GRAYLING (CONE) Lead (N61°36'30";W132°36'45")
(Green and Godwin, 1964: p. 41-42)

Location and History

The property is 43 kilometres southwest of Ross River, near the head of McConnell River. Pelly Minerals Syndicate (Canex, Kerr-Addison, Noranda and Homestake) staked the 16 claims in 1962. All but six claims had lapsed by 1963.

"Three to five men, working from 30 June to 20 July, 1963 examined a showing on cone No. 1 claim and some showings on the Cone No. 11 claim (lapsed Nov. 1963). Work included hand trenching and pitting, magnetometer surveying and sampling." (Green and Godwin, 1964, p. 42).

A galena-rich grab specimen, taken by Green and Godwin, assayed 0.62 gm/t Au, 830.4 gm/t Ag, 79.0% Pb and 0.2% Zn.

In 1968, Canol Mines Ltd. optioned the claims. During 1969 they trenched and drilled the property (443 m). Good silver, lead and zinc values were returned from the sulphide zone. Copper assays are below 0.1% and gold values are also generally low, although one sample from a drill hole assayed 9.95 gm/t.

Geology

The showings are lenses up to 3 metres thick and 25 metres long in dolostone assigned to the Askin Group, immediately below the Seagull Group. Massive pyrite and pyrrhotite, with disseminated galena, sphalerite and minor chalcopyrite are the main minerals. A drill intersection of massive sulphides in altered breccia at 38.3 to 31.7 metres averaged 199.0 gm/t Ag, 8.95% Pb,

and 5.0% Zn over 3.6 metres. The sulphide bodies are discontinuous, irregular, steep dipping fracture fillings, that may be localized close to the unconformable contact of the Askinand Seagull groups.

105F 024.GROUNDHOG Silver, lead, zinc (N61°38';W132°49'20")
(Findlay, 1968: p. 46-47)

Location and History

The property, between Seagull Lakes and upper Groundhog Creek, lies 42 kilometres southwest of Ross River, west of Seagull Creek. A 20 kilometre tote road from mile 98 on the Canol Road, reaches the claims.

Mineralization was discovered in 1963 and Canol Mines Ltd. was formed in 1966 to explore these showings and the Grayling (Cone, 20). Between 1966 and 1969 the company mapped, prospected and soil sampled the ground, with bulldozer trenching and surface diamond drilling. Canol Mines held up to 521 claims in the area during the late sixties. The No. 1, No. 2, and No. 6 veins were drilled. They contain rich, but small silver-lead ore shoots. The No. 1 zone is 59 metres long and 0.5 to 1 metre wide: it contains 1412 gm/t Ag and 71.1% Pb (NM 14/03/68) and is reported to hold 1800 tonnes (CMJ Oct./68). The No. 2 zone is 61 metres long and 5.3 metres wide with 267.5 gm/t Ag and 14.71% Pb (NM 05/12/68). Exploration showed that the veins are shallow.[4]

Geology

Dolostone and sandy dolostone included in the Barite Formation are the host rocks to the showings, but the Platy Siltstone and Groundhog formations are also exposed on the property. The showings are irregular fracture and breccia zone fillings developed along small breaks with minor displacement. They contain coarsely crystalline galena, sphalerite and siderite, and minor pyrite. The No. 1 zone is a steep dipping breccia about 1.5 metres wide that trends north, followed for about 60 metres. A chip sample across one metre from the centre of the exposure (including 38 centimetres of massive galena) assayed 2.2 gm/t Au, 762 gm/t Ag, 45.2% Pb, and 5.1% Zn.The No. 2 zone, 2.3 kilometres south of the first, pinches out immediately below surface where it was intersected in drilling.

105F 026. **PONY** Lead (N61°36';W133°02')
(Kindle, 1946: p. 24)

Location and History

A vein with galena, jamesonite and arsenopyrite is reported just east of the Canol Road, about two kilometres northeast of Upper Sheep Creek. Hand specimens assayed 0.16 gm/t Au, 47.89gm/t Ag and 3.82% Pb. The country rock is greenish siltstone that belongs in the Pass Peak Formation. No work has been done on this property.

105F 027. **HAM** Tungsten (N61°45';W133°17')

Location and History

The property, nine kilometres west of Lapie Lakes, was optioned from P. Risby in 1968 by Atlas Explorations Ltd. The claims cover a zone of tungsten mineralization about 5 metres

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[4] This occurrence has been extensively worked as the Tay-Lp (Yukon Minfile 105F ___; Dekerk and Traynor, 2004)

wide and traced for 300 metres. Grab samples run from 0.71% to 4.06% $W0_3$. Schist of the Big Salmon Complex underlies the property .

105f 028. **RISBY** Tungsten (N61°51';W133°24')(DIAND MIR 1969 & 70: p. 125-6)

Location and History

This occurrence, discovered in 1968 by P. Risby is roughly 50 kilometres southwest of Ross River. Atlas Explorations Limited optioned the property in 1968 and sampled and mapped the property that year. According to the company nine million tonnes grading 0.5 to 1.0% $W0_3$ are present.

In 1971 about 750 metres of diamond drilling was done as joint venture with Caltor Syndicate. Hole 1 cut 5.5 metres grading 0.665 $W0_3$ and hole 4 cut 4 metres of 1.26%. Four other holes intersected scheelite of subeconomic grade.

Geology

Two diopside-garnet-tremolite skarns with pyrrhotite and scheelite are developed in limy horizons near a small quartz monzonite. The limy host rocks are part of the Ketza Group. The larger skarn has two separate bands, each about 5 metres thick, separated by a 3 metre thick intrusive sill and traced for about 1200 metres. The smaller zone is roughly perpendicular to the larger.

105F 031. **EVA** Tungsten (N61°56';W133°24') (DIAND Yukon Geol. and Exploration 1979-80: p. 173)

Location and History

The claims are 56 kilometres west of Ross River on the northern side of the Fox Batholith. They were staked in 1978 following sampling and prospecting by J.M. Bremner for Atlas Explorations Ltd. A chip sample assayed 1.66% $W0_3$. Geological and ground magnetic surveys were done in 1979 and trenches dug. Six skarns were identified in a length of 780 metres. Two are low scheelite calcsilicate skarns, two contain pyrrhotite with traces of scheelite and the others are of scheelite in massive pyrrhotite. The best grab sample assayed 2.92% $W0_3$. The best chip sample from trenches in the skarn contains 1.70% W03,0.10% Cu, 0.37% Pb, and 1.03 gm/t Au over an area 1 metre x 9 metres.

Geology

The claims are near the contact of quartz monzonite with limy schist assigned to the Ketza Group overlain by phyllite grouped in the Kechika Group. The rocks dip northeastward at moderate angles. Dikes of aplite and quartz monzonite cut the metamorphosed beds.

105F 032. **BARITE MOUNTAIN** Barite (N61°50'W133°01') (Green and Godwin, 1964: p. 41-42)

Location and History

Barite Mountain is about 32 kilometres southeast of Ross River. The barite veins were discovered in 1944 by Kindle's GSC field party during reconnaissance mapping along the Canol Road. During the year the Norma Lucky Lu claims were staked to cover the showings. Kindle (1946) estimated that about 45,000 tonnes of proved barite was present. In 1967 P. Versluce, who held 3 claims, built a 2.5 kilometre tote road to the property from the Canol Road. He hand sorted

about three tonnes of barite from the talus near the thrust fault. Green (1964, p. 41) considered the potential limited as the veins are steep, narrow and widely separated.

Geology

On Barite Mountain dolostone and quartzite of the Barite Formation are thrust above black slate and greywacke included in the Seagull Group on the Porcupine Thrust. At least 12 barite veins are known in the carbonate rocks immediately above the thrust, between elevations of 4800 and 6100 feet. Kindle described the veins as between 30 centimetres and 3 metres wide in brecciated carbonate 10 metres wide. Two assays reported by him (Kindle, 1946, p. 25-26), returned values of 99.2% to 99.7% BaS04, 0.17 to 0.23% SrS04, and 0.1 to 0.23% CaO.

105F O37. LAPIE; 105F 038. WATERFALL; **105F 039. DANGER**
Barium (N61°55';W132°37')
(Kindle, 1946: p. 26-27)

Location and History

These occurrences, reported by Kindle (1946), are on the steep slope west of the Canol Road at Mile 130 about 4600 and 4700 feet elevation. The occurrences are small and no work has been dome on them.

Geology

A 20 centimetre thick witherite vein and several millimetres thick stringers are found in black slate included in the Harvey Group. One occurrence is reported to be a one metre thick bedded lens, ten metres long, in black slate. Kindle (1946) reports the results of two assays from the occurrences.

105F 041. TRENCH Coal (N61°57';W132°36')
(Kindle, 1946: p. 21)

Location and History

Several coal seams, a few centimetres thick are exposed in Eocene shale and sandstone in the bluffs along the lower Lapie River, roughly midway between the two bridges across the river. Long and Hughes (1980, p. 6) described the outcrops, but did not note the coal. The writer observed coal partings up to a centimetre thick, but these occurrences are minor.

105F 042. WHISKEY LAKE Coal (N61°57'30";W132°30')
(Findlay, 1967, p. 89; Long and Hughes, 1980, p. 6-8)

Location and History

The property consists of two coal seams near Whiskey Lake, just north of the road into Ross River, three kilometres west of the settlement. Two coal seams 3 metres and 1.2 metres thick are exposed in trenches near the road. Coals from here are high volatile bituminous A rank. Long and Hughes give analyses of the coal.[5]

Geology

[5] These deposits were mined by Anvil Range Mining Corp between 197X and 198x. and used in the concentrator t Faro to dry the zinc-lead concentrate before trucking to Skagway.

Coal occurs in the Eocene sandstone and conglomerate preserved in a fault block in Tintina Trench. The enclosing rocks are an immature, coarse clastic, fluviatile sequence, about 400 metres thick.

105F 043. **BRUCE LAKE** Nickel (N61°47'30";W132°03')
(Green and Godwin, 1964: p. 42-43)

Location and History

Nickel bearing pyroxenite float was discovered near Brucelake, 29 kilometres southeast of Ross River. After the aeromagnetic maps of this area were published Newmont explored here with discouraging results. In 1968 Frobex Ltd. drilled 4 holes for a total of 425 metres and abandoned the project. The area is underlain by serpentinized ultramafic rocks included in the Anvil Assemblage from which the float was probably derived. No nickel is known in these rocks elsewhere, but they contain asbestos at several places.

105F 044. **MOUNT MISERY** Copper, lead, silver (N61°34';W132017')

Location and History

The Tom claims are west of the Ketza River, 20 kilometres upstream of the Pelly River. The claims cover Mount Misery. The claims were optioned to Northern Mountain Prospecting Syndicate in 1956, following discovery of the showings. Work consisted of mapping and trenching.

Geology

A succession through the Askin Group, including the Platy Siltstone and Barite formations (dolostone and quartzite) underlies the claims. The rocks are cut by the north trending Ketza Fault-1, and the showings are in shattered carbonate in the walls of this structure. Massive galena (60.5% Pb, 1138.3gm/t Ag) occurs as lenses to 15 centimetres wide and 50 centimetres long in a zone of disseminated galena. This zone is four metres wide and assayed 18% Pb and 280 gm/t Ag. Galena, siderite and pyrite are the main vein minerals. Another showing has quartz with tetrahedrite, and a third is a 9 metre long, 45 centimetre wide quartz vein with chalcopyrite. A selected sample assayed 17% Cu and 150 gm/t Ag. A 1.4 metre quartz vein traced for 100 metres was sampled and returned 3.2% Cu and 10 gm/t Ag over the best 1.4 metres.

105F 045 . **KEY 3(SILVER RIDGE)** Silver, lead, zinc (N61°34'20";W132°12'40"1)
(Findlay, 1969, p. 44-46; DIAND MIR. 1978, p. 61)

Location and History

The Key 3 (45), Lap 10 (46), F 2 or Hoey (47), Stump (48), and K 18 (49) showings are close together near the head of Ketza River. Their history of exploration overlaps as they have become part of one property. The showings are 47 kilometres south-southeast of Ross River. A 37 kilometre long road, which leaves the Campbell Highway about 16 kilometres east of the Canol Road. reaches the property, and a gravel airstrip in the valley of Ketza River also provides access.

Mineralization was discovered in the area in 1947 by Hudson Bay Exploration and Development Co. The Galena vein (Hoey) was found then, G. Fairclough, E. Erickson and associates of Whitehorse discovered the Silver Ridge (Key 3) showing in 1954, and staked the Key group of 39 claims. In 1954-55 the property was optioned to Conwest Exploration Co. Ltd. who drove a six metre adit above the main showing. A second adit, nine metres long, was driven

S20W from a point two metres above and ten metres southeast of the first. Neither adit cut important mineralization. In 1959 R.R. Kirwan of Cassiar, B.C., who had acquired a controlling interest in the property, drove a ten metre adit collared two metres below and immediately east of the first adit. He intersected mineralization near the portal.

Ketzakey Silver Mines Ltd. was organized to develop the prospect further in 1960. They built a 56 kilometre winter road from Jackfish Lake on the Canol Road to the Conwest camp, about a kilometre from the Key 3. In 1961 the company exposed the Key 3 a vein for 30 metres or more and mined and shipped about 14 tonnes of ore. Smelter returns were reported as $2800.

Silver Key Mines Ltd. was incorporated in 1966. The company acquired the 44 Key claims and staked and optioned theremainder of the 132 claim group they eventually held.Geochemical soil testing, bulldozer stripping, diamond drillingwere done in 1964-1966. In 1967 the company joined with StumpMines Ltd. to explore their adjoining properties. Trenching ona geochemical anomaly in 1968, exposed a new mineralized zone(Key 18).

In 1972 Silver Key Mines Ltd. was reorganized as Nordev Resources Ltd. In 1976 Iona Silver Mines Ltd. was formed to develop the property which consisted of 86 claims in 1978.

Geology

Mineralization on the property occurs along fractures in a variety of host rocks, including phyllite of the Kechika Group, dolostone and quartzite of the Askin Group and black slate with cherty tuff included in the Seagull Group. The mineralization is similar in the showings, but the host rocks differ from one to the other. Host rock lithology and age is not correlated to the grade and width of mineralization.

The Key 3 showing is in black slate with interbedded pale green cherty tuff; low in the Seagull Group. Immediately above it is a klippe of phyllite and volcanics of the Cloutier Formation emplaced on the Porcupine Thrust. Stripping has exposed mineralization for about 82 metres on the Key 3. The mineralized zone runs northwest and the adits were driven on small structures across it. Galena occurs in blocks up to 60 centimetres across, but is generally in narrow veinlets. Other minerals in the showing include sphalerite, pyrite, tetrahedrite and chalcopyrite. Quartz and siderite are the main gangue minerals. The structures are best developed where they cut competent quartzose beds, but where they intersect slate they peter out to discontinuous stringers. Sampling has shown erratic values over widths to one metre with si1ver:lead ratios between one and five. One sample of massive galena from surface assayed 0.31 gm/t Au, 2385 gm/t Ag, 67.4% Pb with a trace of Zn.

105F 046. **LAP 10** Silver, lead (N61°33'45";W132°12'50")
(Findlay, 1969: p. 46)

Location and History

The Lap 10 is 1.2 kilometres south of the Key 3 (45), near the headwaters of Ketza River. The claims were staked in 1966 by Silver Key Mines Ltd. During 1967-69 the adjoining properties of Stump Mines and Silver Key Mines were worked as a joint venture (see Key 3: #45). The showing has been tested with 72 metres of drift and 15 metres of raise, but the structure is weak andmineralization discontinuous.

Geology

This vein is in the same host rocks as the Key 3; felsic volcanic rocks with slate and greenish cherty tuff of the Seagull Group. The vein strikes northeast and dips moderately northwest. Like the Key 3 it is not far below the Porcupine Thrust on the opposite side of the same klippe of Cloutier Formation. Massive galena and siderite fill veins from 5 to 50 centimetres wide, which are exposed for about 125 metres. A chip sample across 2.1 metres of vein and altered wallrock assayed 768 gm/t Ag and 29.7% Pb.

105F 047. **HOEY, F 2** or **GALENA VEIN** Silver , lead (N61°32'40": W132°10'50") (Findlay, 1969: p. 46)

Location and History

This vein was discovered by F. Hoey in 1954. He staked eight claims, which he subsequently optioned to Cyprus Exploration and Development Corp. Between 1964 and 1966 Silver Key Mines Ltd. drilled nine holes and trenched the Galena Vein.The upper Galena zone was stripped for a length of 250 metres. Mineralization assayed 556.7 gm/t Ag and 23.7% Pb across eleven metres. From 1967 to 1969 the adjoining properties of Stump Mines and Silver Key Mines were explored as a joint venture. A 54 metre long drift was driven at an elevation of 4850 feet.

Geology

Six parallel veins are seen in a four metre wide section of a ten metre wide shear zone. The shear cuts orthoquartzite correlated with the Barite Formation; it strikes N1OE and dips 60E. The zone has been traced for 300 metres and carries quartz and siderite with massive galena lenses and tetrahedrite. A chip sample across 2.1 metres of the mineralized zone with discontinuous galena was taken where the zone was tested by drilling. It assayed 0.31 gm/t Au, 702.8 gm/t Ag, 35.6% Pb with trace zinc and 0.01% Cu. The zone proved weak underground and silver values were low, but an interesting shoot (9 m by 0.8 m) with gold values was intersected.

105F 048. **STUMP** Silver, lead (N6l°31'50";W132°09'40") (Findlay, 1969: p. 44-46)

Location and History

The Al vein is about 5.5 kilometres southeast of the Key 3(45) showing. Stump Mines Ltd. acquired the Eva claims in 1965 and staked the Tip and Marion claims. A soil survey and bulldozer trenching led to the A vein's discovery. It was drilled in 1967 (5 holes totalling 290 m).

In 1968 an adit designed to cut the A zone about 50 metres below surface was crosscut to the vein. A raise to surface on the mineralized structure averaged 724.6 gm/t Ag and 23.6% Pb over an average width of 1.5 metres for the first 20 metres and 326.6 gm/t Ag with 9.2% Pb over 1.2 metres for the last 20 metres. A second adit was started about 50 metres below the first. The underground work proved 40,8000 tonnes averaging 466 gm/t Ag above the upper level. In 1969 Acres Western Ltd. and MacDonald Consultants Ltd. reported a proven 36,300 tonnes at 320 gm/t Ag and 8.35% Pb over an average width of 1.9 metres above the upper level.

Stump sold the property to Nordev Resources Ltd. and in 1976 Iona Silver Mines Ltd. was formed to develop the property.Underground sampling results from the upper drift rehabilitated in 1978 are 476 gm/t Ag and 19.3% Pb over a width of 1.2 metres and a length of 58.5 metres. The lower portal on the A1 zone was also rehabilitated and in 1979 the Al vein was

intersected across a width of 1.5 metres about 250 metres from the portal. It contains siderite and minor galena where crossed.

Geology

Grey phyllite of the Cloutier Formation is overlain by the Platy Siltstone Formation and the Al vein cuts these rocks. The structure strikes north and dips west at 60 degrees; it is followed on surface for 820 metres. Sulphide minerals are galena freibergite with minor arsenopyrite in siderite gangue. In places the vein contains "steel" galena over widths of 1.5metres. Elsewhere the galena is coarsely crystalline. The vein was sampled on surface. Assays of samples from a 250 metre length and an average width of 1.2 metres returned 774 gm/t Ag and 22.2% Pb.

105F O49. **K 18** Silver, lead (N61°33'20";W132°09'15")
(DIAND Min. Ind. Rept. 1978: p. 61)

Location and History

The history of this showing is closely connected to that of the Key 3 (45) and other showings in the Ketza River area. In1968 boulders of sulphide float were uncovered over the Key 18 A geochemical anomaly. Trenching about 200 metres northeast revealed a NNE trending structure carrying galena. Two adits were driven in 1968; the 700 level adit and the 800 level 100 feet lower. About 300 metres of drifts and crosscuts were completed.

Geology

The K 18 is a siderite vein with massive galena, minor tetrahedrite, and some pyrite and sphalerite. It occurs in phyllite with interbedded volcanics (the Cloutier Formation) and is stratigraphically below other nearby showings. The vein contains about 9000 tonnes grading 620 gm/t Ag and 12% Pb between the lower level and surface (NM 18/05/78, p. 23A). The upper level was sampled underground as follows: 31.7 metres by 1.6 metres at 12.4% Pb and 628 gm/t Ag. The lower level assayed 448 gm/t Ag over an area 25 metres by 1.5 metres. In 1977-79 work on the property included EM surveys, soil sampling, trenching, diamond drilling and underground development. A raise between the 700 and 800 adit levels was completed. It assayed 11.0% Pb and 560 gm/t Ag over 24 metres by 3 metres.

105F 054. **DIRK** Barite (N61°56'45";W132°58'00")
(Morin et al., 1980: p. 38)

Location and History

The property is 32 kilometres west of Ross River. It was staked in 1977 following its discovery by Tempelman-Kluit (1975). The claims were acquired by Welcome North Mines Ltd.and Getty Mining Pacific Ltd. Mapping and sampling in 1978 indicates almost direct shipping grade barite (90.4% $BaSO_4$;SG=4.12) over a thickness of 18 metres or more and beneficiate grade (73.28% $BaSO_4$;SG= 3.76) for 66 metres thickness.

Geology

Black slate with chert and minor volcanics (Seagull Group) are host to the barite, which occurs as laterally discontinuous lenses up to 50 metres thick and several hundred metres long in a stratigraphic interval of 100 metres. The barite represents a particularly well developed part of the Barite Member which can be followed here for eight kilometres to the northwest.

105F 059. **GUANO-GUAYES** Rare earth elements (N61°29';W132°25')
(Chronic and Godwin, 1981)

Location and History

The Guano Guayes is about 50 kilometres south of Ross River. Geological and rock chip geochemical surveys were carried out in 1979. Rock chips were analyzed for K, U, Th, Nb,W, Au and 16 REE.

Geology

Rare earth elements occur in dykes that cut a skarn about 300 metres wide, 70 metres thick and 1100 metres long. The skarn is developed in dolostone and quartzite of the Barite Formation next to a syenite stock; part of the Seagull Group (Mississippian). Syenite and the contact metamorphic rocks contain REE in near-normal crustal concentrations and the REE reach levels of about 1% in mafic dykes related to the syenite.The showing is not economic.

FINLAYSON LAKE MAP AREA

105G 001. **MONT** Copper
(N61°01';W130°40')
(Findlay, 1967: p. 64-65)

Location and History

The prospect, about 5 kilometres east of Old Gold Creek, is in a cirque at an elevation of 5500 feet. It was staked at 1955 as the Mont Group. Newmont Mining Corporation of Canada Ltd. explored the property between 1955 and 1957. The showings were at an elevation near 5300 feet, 100 to 200 metres below the showings. Quartz with minor pyrrhotite and chalcopyrite was seen in the holes, but none was economic. "Exploration of this showing proved discouraging because of the low copper values and the narrow width and lens-like nature of the mineralized quartz" (Green, 1966, p. 84).

In 1965 the showing was restaked by G.E. Stephen of Watson Lake. He is reported to have located a new copper showing on the left limit of the Liard River, about 1.5 kilometres downstream from the mouth of Old Gold Creek (105B/15). Atlas Explorations Ltd. optioned the property in 1966 and carried out an electromagnetic survey.

Geology

Limy phyllite of the Kechika Group, horn felsed because it is about two kilometres south of the Black River Batholith, is the host for the showings. A series of en échelon lenses of white quartz with minor calcite, pyrrhotite and chalcopyrite constitute the showings. The lenses trend northwest and dip steeply; their thickness and number varies across the area. A chip sample from the most westerly trench assayed 6.2 gm/t Ag, 180% Cu and trace Zn over a width of 3.5 metres (Green, 1966,p. 83).

105G OO2. **BLUEBERRY** Lead, silver (N61°04';W130°50')
(DIAND Assessment File: Asbestos Corp. Ltd. 1962 by W.G. Stevenson)

Location and History

The showings, near the headwaters of the Liard River, were staked in 1961. Later that year the 48 claim block was optioned by Asbestos Corporation Ltd. Several showings are known. The Pole contains lenses and crusts of galena in quartz and quartz breccia for 600 metres along a northwest trending fault. A sample from the showing assayed 345.2 gm/t Ag, 74.0% Pb and trace Au over a width of 1.4 metres. Galena and sphalerite forms pods and stringers in a three metre wide quartz vein in the Camp showing northwest of the Pole. A 5.5 metre wide chip sample from the Camp showing assayed 96.4 gm/t Ag, 16.0% Pb, 12% Zn, traceAu and nil Cu.

Geology

Galena, sphalerite, chalcopyrite, pyrrhotite, pyrite andscheelite occur in quartz veins that cut thermally metamorphosed phyllite (Kechika Group) next to the Black River Batholith. The hornfels locally contains scheelite, and one specimen from near the granite assayed 0.07% $W0_3$.

105G 004. **TINTINA** Silver, lead, zinc (N61°08';W131°10')
(DIAND Min. Ind.Rept. 1974: p. 156-158)

Location and History

The Eagle showings are in the St. Cyr Range, 113 kilometres southeast of Ross River. "The first discoveries (No. 1 to 4 veins) were made by prospector Nels Hal of Conwest Exploration Company in July and August 1961 in a small northerly trending cirque valley at an altitude of 5300 feet. During August and September 1961, Conwest trenched, packsack diamond drilled, surveyed and sampled eight of the nine cirque showings on the Eagle claims and discovered and prospected six other showings that lie 4000 feet (1220 m) to the northwest. In December 1961and January 1962 the company built a 110 mile (177 km) winter road to the property from a point on the Alaska Highway about 15 miles (24 km) southeast of Teslin and freighted camp and mining equipment to the property. In February 1962 an adit was collared at an altitude of about 5375 feet" (Skinner, 1962, p. 37). By July 1962, when underground development was halted, the adit had been advanced 300 metres from the portal, and crosscuts had been started: altogether 558 metres of underground work had been completed. About 975 metres of underground drilling in 22 holes and 190 metres of surface drilling in 6 holes was completed on zones 5, 6 and 8. The #8 zone, 84 metres above the adit, strikes northwest and dips southwest at about 20 degrees. It was sampled and averages 1057.4 gm/t Ag.

The 1962 work was disappointing and no further work was done until 1968. Tintina Silver Mines conducted soil and silt geochemical surveys over the claims that year. In 1974 more diamond drilling was done; 3146 metres of BQ core was drilled in 83 holes and 480 metres of EX core was drilled in 14 holes. Exploratory drilling near the #1, 2 and 3 showings returned good values from four intersections. One 4.5 metre drill sample assayed 2465.3 gm/t Ag, 0.82% Pb and 6.25 Zn, and a 1 metre intersection from another hole returned 1038.7 gm/t Ag, 7.2% Pb and 11.7% Zn.

Geology

The property is low in the McConnell Thrust Sheet. Veins are enclosed by limestone and argillaceous limestone assigned to the Ketza Group. The rocks are repeated on imbricate thrust faults above the Liard Thrust, so that panels of the McConnell and Pass Peak formations alternate. Tintina Stock has intruded and baked the country rocks on the north side of the claims.

Garnet-diopside skarn and hornfels are developed in a three kilometre wide zone. Strata are divided into six units on the property. The Lower Argillite is probably part of the Pass Peak Formation and the Lower Limestone, Middle Argillite, Upper Limestone, Black Argillite and Argillaceous Limestone are likely the McConnell Formation.

A northwest plunging, overturned, northeast verging anticline, outlined by the upper limestone, dominates the structure on the claims. This fold is cut by small faults and the rocks are internally folded. North trending basic dykes cut the host rocks.

Twenty-six known showings on the property are divided into four groups. Most important are massive to disseminated sphalerite, galena and freibergite replacements or mantos in the Upper Limestone. They are best developed in crests of folds, close to the Black Argillite. Small pods of massive galena with freibergite in disseminated sphalerite enclosed in the Lower Limestone constitute the second type. Third are pods of galena with minor sphalerite in secondary quartz and calcite veins.Chalcopyrite in quartz veins constitutes the fourth and least important type of showing.

Most interesting are the nine "Cirque Valley" occurrences. On surface the largest of these is the #8. Three subparallel galena, sphalerite, freibergite replacements, up to a metre thick, occur in a shear as much as 5 metres wide that was traced for 60 metres. A 15.8 metre section averaged 1091.6 gm/t Ag, 19.9% Pb and 4.9% Zn across an average width of 2 metres. The #6 vein, 120 metres northeast of #8, also contains galena, sphalerite and freibergite with 'some chalcopyrite as replacements of limestone. This vein can be followed for 30 metres, and a 21 metre section averaged 2761.7 gm/t Ag, 24.8% Pb and 4.5% Zn across an average width of 1.3 metres.

Other "Cirque Valley" veins with massive mineralization are the #5 vein, 400 metres north of the #6, the #3, 440 metres north of #8, the #4, 12 metres south of the west end of #3 and the #1 vein, about 30 north of #3. Veins 3 to 9 were sampled on surface in 1961 and averaged 1455.5 gm/t Ag, 17.6% Pb and 10.6% Zn across an average width of 1.2 metres along a length of 150.6 metres.

A second mineralized area, 600 metres northwest of the #9 vein, contains six showings in a 200 metre by 1 kilometre area. Still other mineralization is known at the Cornice, Ridge, Sidehill, West Mountain and East Boundary showings. None of this mineralization is as interesting as that in the Cirque Valley.

105G 008. **AXE** Copper (N61°28';W131°46')
(Craig and Laporte, 1972; p. 131)

Location and History

The property is 16 kilometres north of McNeil Lake and 72 kilometres southeast of Ross River. Claim posts and hand trenches dating to 1956 were found on the showing, but the first recorded work was done in 1970 by Caltor Syndicate, a consortium of Rayrock Mines Ltd., Ashland Oil Canada Ltd. and Canadian Industrial Gas & Oil Ltd.

The Bell claims were mapped, prospected, soil sampled and trenched in 1970. Showings are small and discouraging and no further work has been done.

Geology

Massive basalt and amygdaloidal basalt, included in the Cloutier Formation, underlies the claims and is host to the mineralization. Irregularly disseminated chalcocite, bornite, covellite and

minor chalcopyrite are found as veinlet and amygdule fillings in the basalt. Formerly the host rocks were considered part of the Mississippian volcanic suite included in the Seagull Group. Reassignment of the host rocks implies that similar showings may be worth looking for in the Kechika Group. Basalt like that with the showings is restricted to the Cloutier Thrust Sheet, between the headwaters of Ketza River and the head of Lonely Creek. The showings are like copper showings in basalt elsewhere, but in the Cordillera no such occurrences are known in Cambro-Ordovician rocks.

Nine small showings are found over three kilometres in a northwest trending area. Showings 1, 3 and 4 are the largest, and the most interesting is #3, where sulphide veinlets to five millimetres wide are exposed in trenches. Samples from a four metre width were reported to assay 0.76% Cu. Selected grab samples assayed to 10% Cu, but less than 1% Cu was estimated for the whole outcrop. Showing one is in talus on a steep slope. Asulphide lens 10 x 10 x 30 centimetres is seen in a trench. A sample across the lens and part of the walls assayed 0.35% Cu over 70 centimetres. A five centimetre thick lens within it assayed 1.45% Cu and 4.98 gm/t Ag.

105G 009. **H00** Zinc (N61°31';W131°33')
(DIAND MIR. 1973: p. 85-86)

Location and History

The property is 80 metres southeast of Ross River, 24 kilometres south of the Campbell Highway. A 50 kilometre winter road from Mile 169 on the Campbell Highway extends to the claims.

Float of zinc-lead sulphides in limestone and chalcopyritein quartz were discovered by prospectors working for Newmont Mining Corp. in 1955. Northlake Mines Ltd. staked the HOO claims as part of an 824 claim block. Airborne and ground magnetic and electromagnetic surveys were conducted during 1966-67. A lead-zinc anomaly was tested with 324 metres of diamond drilling in 4 holes. Minor galena and sphalerite were intersected in one hole.

After the claims lapsed the occurrence was restaked in 1972 by Archer Cathro and Associates. The company is the operator for a joint venture with Marietta Resources International Ltd., Union Oil Company of Canada Ltd., Standard Oil of British Columbia, Strauss Exploration Incorporated and L.T. Harris Clay. Further soil sampling in 1972 defined 5 anomalies over a distance of 5.5 kilometres. These were tested by trenching and 750 metres of diamond drilling in 8 holes. Several narrow sulphide zones were apparently intersected, but these are lower grade than, and different in character from, float found on surface.

Geology

The property is underlain by quartz mica schist, schist, black phyllite, chloritic phyllite and minor marble, included in the Nisutlin Assemblage. The HOO is on the southern side of, and structurally several hundred metres above, the Mink Complex, one kilometre north of the Mink Fault. The host rocks have a pervasive flaser fabric and they are protoclastic to cataclastic, metamorphosed sedimentary and intermediate volcanic
rocks. Foliation dips gently to the south.

The original float blocks are up to several tons each. They consist of cataclastic quartzite with bands of disseminated sphalerite and minor galena and pyrite strung out along the flaser fabric. Assays ranged from 6 to 9% Zn, 0.3 to 0.5% Pb, and 9 to 15 gm/t Ag, with 0.02 to 0.04% Cd. Rocks exposed on the claims are unlike the mineralized float. The source of the float

therefore remains to be found. Because the float occurs as numerous large blocks, broadly of the Nisutlin Assemblage, their source may not be far away.

105G 010. **EL** Lead (N61°28';W131°20')
(DIAND Min. Ind. Rept. 1975: p. 165-166)

Location and History

This occurrence is 84 kilometres southeast of Ross River and about 5 kilometres northeast of Tintina Trench.The winter road to the HOO property extends to this showing also. The property was staked in the mid 1960's during intensive exploration northeast of Tintina Trench to find parallels to Anvil. Minor mineralization was known. Northlake Mines Ltd. drilled four holes (300 m) during 1966 and 1967, following exploration of the claims. Hole #1 intersected 11.2 metres grading 0.6% Pb and 0.6% Zn; hole #3 cut 0.3% Pb and 0.2% Zn over 2.1 metres. The claims lapsed and the ground was restaked as the Pelly claims in June 1974 and March 1975. Soil sampling in 1975 confirmed and extended the geochemical anomaly found in earlier work. Zinc geochemistry indicates an anomaly 850 metres by 120 metres.

Geology

Quartz mica schist with chloritic phyllite, graphitic phyllite and augen gneiss are the main rocks on the property.They belong to the Nisutlin Assemblage and to the Mink Complex.The showings are on the east side of, and structurally below, the Hoole klippen, north of the Finlayson Fault. Like many other showings northeast of the Tintina Fault the EL occupies the narrow structural interval between the Anvil Assemblage and the Mink Complex.

The rocks are ductile deformed and metamorphosed: their strong flaser fabric dips gently southwest. Galena, sphalerite and pyrite form blebs and stringers along the foliation of the metamorphic rocks. A grab sample from one trench on the main showing assgyed 26.8% Pb, 0.45% Zn and 18.7 gm/t Ag.

105G 019. **PIT and 20.ROB** Copper (N61°25';W130°55')
(DIAND, Assessment File, Exploration Services Ltd., 1955)

Location and History

The property is east of the north end of Grass Lake, about eleven kilometres from the head of Hoole River. In 1955 a magnetometer survey by Exploration Services Ltd. located four anomalies on the Pit claims and a small anomaly on the Rob 4 claim. Atlas Exploration Ltd. did airborne magnetic and electromagnetic surveys over much of the area near the claims; they staked 234 claims on the anomalies located in these surveys (Gad, Gun, Gil groups).

Geology

Mica schist and gneiss of the Nisutlin Assemblage underlies most of the claims. The Grass Plug is immediately southwest of the showings at the southwest end of the Grass Lake Fault. Foliation in the country rocks dips gently northwest on most of the property, but south of the Grass Lake Fault its orientation is opposite.

Float with pyrrhotite, chalcopyrite, minor galena and sphalerite in schist is found near the contact of the plug, but no mineralization of this type is known in place. On the Pit 4 claim is an occurrence of massive arsenopyrite a sample of which assayed trace gold and 62 gm/t silver.

105G 021 . **PACK** Copper (N61°21';W130°36'30")
(Skinner, 1962, p. 40-41; Morin, 1982, p. 92)

Location and History

This showing is 15 kilometres north of the Fyre showings, and 3 kilometres southwest of the North Lakes. In June 1961Conwest Exploration Company staked the showing discovered by Ole Hange. The eastern part of the showing was tested in August 1961 by two vertical holes drilled to 100 metres. No mineralization was intersected. The claims lapsed and the showing was restaked as the Outlaw in 1979 by Archer Cathro and Associates Ltd. for Chevron Canada. They mapped and sampled the showing.

Geology

Quartz biotite and quartz chlorite schist with a well developed, subhorizontal flaser foliation underlie the property. They are part of the Nisutlin Assemblage and are structurally 100 or 200 metres above gneiss of the Mink Complex. The showing is just northwest of the North Klippen, a few kilometres west of the North Plug and five kilometres south of the Grass Lake Fault. It is a 30 centimetre to 2.5 metre thick layer of weakly laminated to massive sulphides. Pyrite and pyrrhotitepre dominate, but the sulphides locally include chalcopyrite and sphalerite. The sulphide layer follows foliation in the country rocks and is traced for 30 metres. Assays ranged near 1% Cu, 2-3% Zn and 15 gm/t Ag. Mineralization has been found for 300 metres along strike.

Specimens of float in the cirque below the showing are brecciated and cut by quartz filled veinlets. This shows that the mineralized rocks were brecciated after the flaser fabric and metamorphism. The showing is mineralogically and texturally like the Fyre and Hoo showings. Morin (1982) considers them to be volcanic exhalative concentrations of the Besshi type that were penetratively deformed and metamorphosed and later brecciated .

105G 022. **FYRE** Copper (N61°13'30";W130°31')
(Findlay, 1969, p. 78; Morin, 1982, p. 91)

Location and History

The main showing, 5 kilometres northeast of Fire Lake is on the bottom of a 4800 feet high cirque. It was discovered in August 1960 by prospectors for Cassiar Asbestos Corp. In 1961 the company explored the showings with geological, magnetometer, and electromagnetic surveys. The main showing was trenched and 18 packsack and 10 AX holes were drilled. Six other holes drilled on a magnetometer and EM anomaly cut sulphides: one over the centre of the anomaly intersected seven metres of disseminated sulphides in chlorite schist and three metres of magnetite iron formation. No further work was done by Cassiar and in 1965 the property was acquired by Atlas Explorations Airborne and ground geophysical surveys outlined several anomalies[6].

Late in 1966 drilling was begun on the original showing, but not finished. Early in 1967 three holes totalling 365 metres were drilled to test coincident geochemical and geophysical anomalies, but this failed to explain the anomalies and work was halted. In 1977 the property was mapped and prospected by Amax Exploration.

Geology

[6] This occurrence was drilled in 1997 and 1998 (Foreman et al, ?1998).

Quartz mica schist, slate and biotite granodiorite gneiss grouped with the Nisutlin Assemblage are the host rocks on the claims. They lie structurally beneath the Money Klippe and are on its southwest side and southwest of the Simpson Block. The showings are 500 metres west of the Simpson Fault, which raised the southwest side with respect to the northeast. Structurally below the showings and a kilometre to the north is the North Plug, an intrusion related to the Mink Complex.

The host rocks have a penetrative flaser fabric that dips gently northeast. Mineralization follows a northwest trending zone, up to twelve metres wide, that dips gently northeast conformably with the fabric of the country rocks. This zone has been followed for 760 metres. The mineralization is massive pyrite with minor chalcopyrite on the southeast and consists of quartz-magnetite-chlorite-chalcopyrite iron formation on the northwest. The penetrative flaser fabric of the country rocks is duplicated in the mineralization and the sulphides are recrystallized. Skinner (1962) reported that a 1.5 metre wide band of pyrite and chalcopyrite from the southeastern end of the showing assayed 3 and 4% Cu. A drill hole from here intersected 12.5 metres of sulphides that assayed 0.81% Cu, 0.2 gm/t Au, and 5.1 gm/t Ag.

The mineralization, host rocks, textures and metamorphism of the Fyre showings resemble those of the Pack and Hoo. Like them the Fyre is probably a premetamorphic concentration that was penetratively deformed and metamorphosed in the Early Jurassic. It was presumably deposited earlier, perhaps during the Triassic. The original relations of the sulphides to their host is masked by the strain and metamorphism, but the occurrence may be a volcanic exhalative type as Morin (1981) proposed. During strain the original deposit was probably dismembered like the host rocks; it may have been larger when deposited and the Fyre showing may be a structurally disconnected remnant; other remnants have not been found.

105G 027. **BOT** Asbestos (N61°40';W130°55')
(DIAND Assessment Files, Atlas Explorations Ltd., 1969)

Location and History

The showing is on Big Campbell Creek, 92 kilometres southeast of Ross River. Minor asbestos was discovered in July1969 by Atlas Explorations Ltd. Chrysotile occurs as fibres, about 1.5 millimetres long, in serpentinized ultramafics of the Anvil Assemblage near the intersection of the Mink and Campbell faults. The serpentinized rocks follow the Campbell Fault, and have been traced for about 1.5 kilometres.

105G 032. **PHIL** Lead, zinc (N61°57';W130°30')
(DIAND 1981, Yukon Geology and Exploration 1979-80, p. 180)

Location and History

The claims on the east side of Fortin Lake were staked in 1974, for Ogilvie Joint Venture (Brinex Ltd., AM & S Canada Ltd., Ventures West Minerals Ltd., Mitex Mines Ltd. and Mitsubishi Metal Corp.). Early work on the ground is described by Morin et al. (1979, p. 89). Induced polarization, resistivity and gravity surveys were done to define drill targets in 1978. East trending anomalies that follow the strike of bedrock were identified in the IP survey and three holes (443 m) were drilled in February and March 1980 to test these and to examine extensions of known mineralization.

Geology

Dark grey and black graphitic slate of the Nasina Formation dips generally southwest on the property. Minor amounts of galena, sphalerite and chalcopyrite are disseminated through the slate and these minerals also occupy narrow quartz-calcite veinlets. The best mineralization grades 6.20% Zn, 0.51% Pb, 23.6 gm/t Ag and 0.1 gm/t Au across 1.8 metres. Host rocks and mineralization are like those at the Pay. Both properties are interesting because some of their rocks resemble those in the Anvil district and may be stratigraphically close to the host rocks there. No stratabound mineralization is known.

105G 033. **PAY** Zinc, lead (N6l°59'25";W130°28'35")
(Findlay, 1969: p. 49)

Location and History

The Pay property, on the east side of Fortin Lake, 105 kilometres east of Ross River, was staked in 1966 and 1967 by Atlas Explorations Ltd. They discovered lead, zinc and gold-bearing arsenopyrite following a reconnaissance geochemical survey.

Geological, magnetometer, electromagnetic and geochemical surveys were done in 1967, and these were followed with trenching and packsack drilling. A strong, west-northwest trending zinc geochemical anomaly, about five kilometres long, was outlined. Trenching and prospecting located zinc and lead-zinc mineralization under the anomaly. During the winter of 1967-68 22 holes were drilled as a joint venture with Mitsui Mining and Smelting Co. Ltd. Low grade mineralization, up to 20 metres thick, was intersected in all holes, but the results were not followed up. In 1969 a gravity survey was completed.

Geology

Dark grey and black slate of the Nasina Formation, with lenses of dolostone and sandstone (Mt. Hogg Formation) underlie the claims. Stratigraphically below is phyllite of the Kechika Group, and above is black slate assigned to the Seagull Group. The succession strikes northwest and dips moderately southwest. Fortin Stock, in the core of the faulted Fortin Arch, intrudes the succession northeast of the claims. The rocks are folded and internally transposed on a southwest dipping cleavage.

On a knoll in an area devoid of other exposures is the discovery outcrop. It is brecciated, silicified dolostone with quartz and carbonate stockworks and erratically distributed lenses of sphalerite with minor galena. The mineralization is coarsely crystalline and spectacular, but discontinuous; lenses are less than a metre long. A grab sample of stockwork, carrying galena, assayed 3.1 gm/t Au, 113.2 gm/t Ag, 17.2% Pb, and trace Zn. Mineralization in the drill holes is like that in the discovery outcrop.

105G 041 . **HARMAN** Zinc (N61°46' ;W130°15')
(DIAND MIR. 1973, p. 113)

Location and History

The property, on the south side of McEvoy Lake, about 110 kilometres east of Ross River, was staked in 1972-73 by Vestor Explorations Ltd. Geochemical sampling in 1973 outlined several lead-zinc anomalies.

Geology

A small skarn next a felsite dyke contains chalcopyrite and minor galena. The host rock is phyllite that belongs to the Kechika Group. Northeast of the claims is the fault bounded Fortin

Arch, with its granitic core, the Fortin Stock. The felsite dyke is probably connected with the stock genetically.The stock is a mid-Cretaceous quartz monzonite eroded so that its top is just exposed; much of the rock is crowded porphyry. The Spud (35) showing, though not directly associated with a dyke, is similar to the Harman.

105G 043. **MYDA** Tungsten (N61°24';W130°30')
(DIAND 1981, Yukon Geology and Exploration 1979-80, p. 180)

Location and History

This property is 5 kilometres east of North Lake and 120 kilometres southeast of Ross River. It was staked in August 1973 for the Finlayson Joint Venture (Marietta Resources International Ltd., Standard Oil Co. of B.C., Union Oil Co. of Canada and L.T. and Harris Clay). The claims were mapped in 1973 and limited sampling was done. In 1980 a proton magnetometer survey was run along six lines to explore for iron rich skarns that might carry tin or tungsten.

Geology

Minor scheelite occurs in skarn developed in a limy horizon near the contact of the North Plug, a mid-Cretaceous granite.The intrusion is concordant with gneiss and schist of the Nisutlin Assemblage and the contact is gradational. The showing is just north of the northern most of the North Klippen and south of the Grass Lake Fault. Host rocks are gneiss and schist like that elsewhere in the Nisutlin Assemblage. Foliation is well developed and dips gently southward. The limy horizon with the skarn is the same one traced through much of this area and marks the top of the Mink Complex. Sampling in 1973 indicates that the mineralization grades below 0.15 WO_3.

105G 044. **FETISH** Copper, zinc (N61°25';W130°07')
(DIAND Min. Ind. Rept. 1975, p. 155)

Location and History

This showing is 135 kilometres southeast of Ross River near the southeast end of Wolverine Lake. The claims were staked in 1973 for the Finlayson Joint Venture (Marietta Resources International Ltd., Standard Oil Co. of B.C., Union Oil Co. of Canada and L.T. and Harris Clay). Two holes (215 m) were drilledin 1974, but results were discouraging and no further work was done.

Geology

The showing is south of the Wolverine klippen, about 200 metres structurally below the Anvil Assemblage. Its host is a structural stack of (from the base up) black siliceous slate, chlorite schist, quartzite and granule grit, all considered members of Nisutlin Assemblage. The rocks are sheared, but the flaser fabric is not as penetrative as elsewhere, so that primary features are preserved. Foliation dips gently southward.

Chalcopyrite and sphalerite occur as thin bands along the foliation of the chlorite schist. In one intersection the mineralized zone is 19.8 metres thick with 4.0 metres of 0.2% Cu and 0.26% Zn. In the second, the zone is 12.5 metres thick with 4.7 metres of 0.24% Cu and 0.22% Zn.

Morin (1981) suggested that the deposit is a stratabound exhalative Besshi type sulphide that was sheared and metamorphosed following deposition. Because the fabric is Early Jurassic the mineralizing event is older.

105G 052. **FOG** Tungsten (N61°34';W131°03')
(DIAND 1981, Yukon Geology and Exploration 1979-80, p. 181)

Location and History

The Fog showing is a tungsten skarn discovered during a reconnaissance stream sediment survey, and staked in 1978. It is 88 kilometres southeast of Ross River and 17 kilometres north of Grass Lake. Geological, soil and soil pan concentrate geochemical surveys were done in 1979. Samples collected in the geochemical survey were analysed for tungsten, tin and gold. Proportions of scheelite in pan concentrates were visually estimated. Weak tungsten anomalies were identified where mineralization is known.

Geology

Like the Myda (43) the fog is in limy schist of the lower Nisutlin Assemblage, near a mid-Cretaceous intrusion. It is on the northeast side of the Mink Plug in the gently south dipping panel south of the Mink Fault. Structurally it is a few hundred metres above the top of the Mink Complex and 300 to 500 metres below the Anvil Assemblage. As at the other tungsten skarns near here the intrusive contact is gradational and conforms with the fabric of the host. Host rocks are garnet mica schist with lenses of coarsely crystalline marble. It is uncertain if the rock represent metamorphosed Lower Cambrian autochthonous strata, or if they are a distinctive slice in the transported sequence. Their continuity favours the first alternative.

Two mineralized areas are known. In one scheelite is disseminated in banded garnet-vesuvianite-pyroxene skarn. Samples assayed 0.20% $W0_3$ across 1 metre and 0.23% $W0_3$ across 1.5 metres. The second area has disseminated, coarsely crystalline scheelite and thin scheelite veinlets in gneiss.

105G 055. **BOOT** Tungsten (N61°26';W131°10')
(DIAND 1981, Yukon Geology and Exploration 1979-80, p. 181)

Location and History

The showing is 90 kilometres southeast of Ross River and 8 kilometres southwest of Grass Lakes. It was discovered by U. Schmidt of Archer Cathro and Associates in 1977 through night lamping, following reconnaissance stream panning. The Boot and Marmot claims were staked in 1977 and 1978, and the showing was drilled in 1979-80. Ten BQ holes were drilled in 1979 for a total of 1410 metres. Drilling focused on the A and B zones. The deepest hole was 263 metres. A further eight BQ holes were drilled in 1980 for a total of 900 metres with one hole 293 metres deep. The geology of the claims was mapped in detail and soils were panned on a grid over part of the ground.

Geology

Strongly foliated mafic schist, considered part of Anvil Assemblage underlies much of the claims. The rocks include amphibolite, amphibolitic gneiss, chlorite schist and augen gneiss. These occur in a structural sequence with augen gneissat the base and the more mafic rocks above. Lithologic units are laterally discontinuous and have sharp boundaries with adjacent units on surfaces parallel to foliation. The rocks lack primary igneous and sedimentary features, and a closely spaced flaser that dips moderately southwest is their dominant fabric.

A porphyritic biotite quartz monzonite body, at least one kilometre across, invades the regionally metamorphosed, sheared rocks in the Boot cirque. It is probably mid-Cretaceous. The intrusion has sharp contacts with the country rocks; it invaded them forcefully and

metamorphosed them thermally. Skarn is developed locally from the amphibolite. Scheelite occurs in this skarn and in calc-silicate rocks near the margins of the plug. The scheelite is scattered irregularly through the rocks and shows no control by the relic foliation commonly visible in the skarn. Scheelite occurs without sulphides and the rock has excellent grade locally.

Mineralization occurs in the A and B zones on the northernside of the small plug. The A zone is enclosed by the granitic rocks, and lies just below a small screen of biotite schist. The B zone, 42 by 82 metres on surface, is immediately next to the intrusion's north side.

105G 056. **HOWDEE** Tungsten (N61°15';W130°35')
(DIAND 1981, Yukon Geology and Exploration 1979-80, p. 182)

Location and History

The Howdee is 125 kilometres southeast of Ross River and 5 kilometres north of Fyre Lake. A soil geochemical survey was done over part of the claims in 1979, and 169 soil samples were analyzed (for tin and tungsten) and panned. Several anomalous areas were identified; one corresponds to a known showing.

Geology

The property is between the Money and North klippen. Structurally it lies several hundred metres below the Anvil Assemblage and above granitic gneiss equivalent to the Mink Complex. The showing is on the west side of the North Plug, which is exposed in the valley north of Fyre Lake. Host rocks are schist and gneiss of the Nisutlin Assemblage. Scheelite, without sulphides, is disseminated through the metamorphic rocks next to quartz veins and to the silicified margins of fractures.

This showing is in the same structural interval as most other occurrences (tungsten and massive stratabound sulphide) in this region. It does not resemble the Boot which is a skarn developed in the Anvil Assemblage.