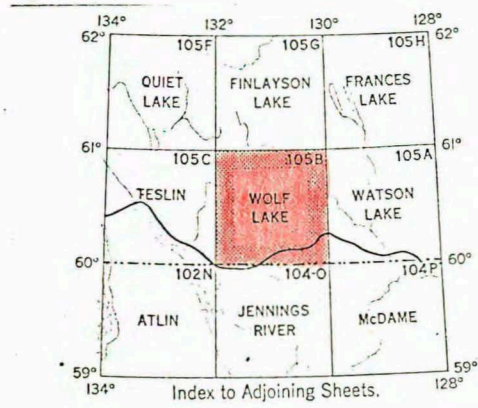


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WOLF LAKE Y.T.
SHEET 105B
FIRST EDITION

L O D D I O C C C U R R I E N C I E S

#1

Dale Mountain Property (60°01'N, 130°29'W)References: Poole, Roddick, and Green (1960).

Dale Mountain Mines Limited held 16 claims covering the showing in 1958 and did about 525 feet of underground work at that time (Financial Post Survey of Mines 1959, p. 332). The property has been held by a number of individuals subsequently but little serious work has been done. The showing is on a ridge east of Freer Creek at an elevation of about 5,250 feet and the adit is on the east side of the ridge at an elevation of about 4,700 feet. The camp and adit may be reached by a rough road about $4\frac{1}{2}$ miles in length leading from the bridge across the Rancheria River near mile 706 on the Alaska Highway. The property was visited in late August 1965.

1965

On the showing, silver-lead mineralization, occurring in granodiorite of the Cassiar batholith (Poole, Roddick, and Green, 1960), has been traced about 50 feet in three small trenches. The trenches expose a vein, from a few to 30 inches wide, containing quartz crystals, minor siderite and galena now much altered with the production of limonite, manganese oxides and secondary lead minerals. The vein appears to strike about N 60° W and dip steeply, probably to the southwest. A chip sample taken over 30 inches to include the vein and the adjacent altered zone assayed*: 0.06 ounces of gold and 23.8 ounces of silver per ton, 23.0 per cent lead and 1.7 per cent zinc.

The adit still open, was driven about 500 feet in elevation beneath the showing, reportedly for 525 feet (Financial Post Survey of Mines 1959, p. 332) and on a bearing of about S 65°W. Rock on the dump consists of fresh, medium-grained, porphyritic biotite quartz monzonite or granodiorite with no evidence of vein matter. About 225 feet of diamond drill core has been dumped in the shed at the portal and it appears to consist of similar rock with the exception of a trace of sphalerite near 167 feet.

With the limited size and the relatively low silver to lead ratio the deposit is of little economic interest.

(Tungsten)

#2

Fiddler (Yukon Tungsten) Property (60°08'N, 130°26'W)References: Lord (1944, pp. 16-17)*; Poole, Roddick and Green (1960);

1965

A group of 6 claims covering the property is currently held by Native Minerals Limited. The property, on a ridge north of Boulder Creek at an elevation of about 5,100 feet, is reached by a secondary road, about 5½ miles long, that leaves the Alaska Highway just west of the Boulder Creek (George's Gorge) bridge at Mile 701.6.

The property was originally staked in July 1943 (Lord, 1944) for The Consolidated Mining and Smelting Company of Canada Limited. In 1951, Yukon Tungsten Corporation Limited acquired the property and were active between 1951 and 1953 at which time the underground work was done and a small mill built near the Alaska Highway.

*Reprinted in Geological Survey of Canada, Economic Geology Series No. 17 (Little, 1959, p. 37).

There was no production and the mill was later burnt. Since then only representation work has been done. The property was visited in August 1965.

Country rock of the showing is highly contorted phyllite and limy phyllite of Lower Palaeozoic age (mapped as unit 3 but more comparable lithologically to unit 4; Poole, Roddick and Green, 1960). The showing, exposed on the top of a rounded dome, consists of a quartz vein (or veins) up to 30 inches thick containing a tungsten-bearing mineral of the wolframite group. The vein, striking about N 60° E and dipping about 25° SE has been traced a total distance of about 650 feet down the south face of the dome in a series of trenches trending about S 5° W. It is not completely exposed in the lower portion and it is possible that an echelon veins rather than a single vein may be present in this part. In addition, some trenching has been done on the north face of the dome and the east flank where the extension of the vein might be expected. The vein appears to cut across the foliation of the enclosing country rock, the latter showing much evidence of internal deformation.

In the main trench near the summit, the vein consists of white, coarsely crystalline quartz with open vugs between some of the crystals, patches and lenses of fine muscovite, and scattered crystals of wolframite. About 75 feet south of the cliff face, a small vein, about 5 feet beneath the main one and approximately 10 feet long and 1 foot thick, contains galena and some secondary copper minerals near the top and coarse crystals of wolframite to several inches in size near the base. Other minerals present in this vein in minor amounts include scheelite, muscovite, and pale green fluorite. Small cross-cutting veinlets with small quartz crystals, pale purple fluorite, and muscovite are also present in this part of the cut. Small amounts of pyrrhotite is common in the country rock adjacent to the veins. Farther down the slope little mineralization was observed with the exception of about 150 feet from the main cut where some wolframite was present and fractures in the quartz were coated with tiny crystals of cassiterite. Cassiterite crystals to 1/4 inch were panned from the frost-heaved material overlying the vein in this area.

The adit was driven from a point about 700 feet SE of the showing and 180 feet lower in elevation. It was driven about 530 feet and then an inclined raise 235 feet in length driven to the surface breaking through about 65 feet SE of the trenches. Material on the dump consists mainly of phyllitic limestone and phyllite with little evidence of vein quartz. A specimen taken from the ore bin was composed mainly of crystalline quartz cut by a stringer about 1 inch thick containing coarse muscovite, fluorite, and minor cassiterite.

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RANCHERIA RIVER AREA

Spencer Creek

NTS 105 B 1

(Silver-Lead)

#3 Kodiak and Dee Groups (Canex Aerial Exploration Limited) (60°11'N,
1964 130°25'W)

Reference: Poole, Roddick, and Green (1960).

During the summer of 1964, Canex Aerial Exploration Limited optioned the Kodiak and Dee groups, totalling 12 claims, from K. Armstrong and J. Kubiak of Watson Lake, Yukon. An additional 92 claims were staked in the vicinity of the showing and an access road, about 15

miles in length was built from near mile 693 on the Alaska Highway. The option was dropped later in the year.

The showings are located at an elevation of about 4,500 feet on the ridge north of Spencer Creek and are reported to consist of galena-bearing veins up to 1 foot wide occurring in limestone of probable Lower Cambrian age (Poole, Roddick, and Green, 1960). A number of other silver-lead showings occur within rocks of this map-unit in the general area. During the field season, a crew of up to 8 men carried out an exploration program of prospecting, stripping, and soil geochemistry. The property was not visited.

CASSIAR MOUNTAINS AREA

Rancheria River

NTS 105 B 1

#4 Luck Group (60°06 1/2'N, 130°25'W)
1962

During the 1962 field season, Scurry-Rainbow Oil Company Limited, of Calgary, Alberta, optioned and explored a silver-lead showing on the Luck Group. The showing is in the valley of Boulder Creek, a tributary of Rancheria River, and is reached by a 3-mile access road, which leaves the Alaska Highway near Mile Post 701. The group consists of 15 claims and is owned by E. Krysko and J. Poykans both of Edmonton, Alberta.

When the writers visited the prospect in mid-July, 9 large open-cuts had been excavated and a diamond-drilling program commenced. Previous to this, self-potential and EM geophysical surveys and a geochemical survey were made of the group. During the season, a diamond-drill program of 13 holes with a total length of 2,591 feet was completed. Up to 13 men were employed.

Poole, Roddick, and Green (1960) have mapped the country rock as unfossiliferous grey limestone, with minor dolomite, slate, and phyllite. They consider the unit to be of probable Cambrian age. Granitic rocks of the Cassiar batholith occur 1 1/2 miles southwest

of the showing. Much of the group is covered by overburden, but sulphides are exposed in the discovery pit and in a nearby open-cut. Rock types in this open-cut consist of brown weathering, massive, sugary-textured, grey limestone, brown weathering, platy, grey phyllitic limestone, and phyllite. Small calcite-filled fractures are common in both the massive and the phyllitic limestone. The massive limestone occurs in the upper part of the cut and is separated from the phyllitic limestone in the lower part by a calcite-filled fault, which trends east and dips steeply south. A subparallel fault cuts the phyllitic limestone less than 30 feet to the south. The sulphides occur in the phyllitic limestone between the two faults and consist of a zone 4 to 5 feet thick mineralized mainly with disseminated cinnamon-brown sphalerite and pyrite. Both sulphide minerals are fine grained. This mineral zone is overlain by a rusty weathering iron- and manganese-stained zone up to 6 feet thick, which contains minor fine sphalerite and pyrite. Massive galena frequently occurs in small lenses to 6 inches long and a few inches thick. These lenses are most common at the contact of the lower mineralized zone with the rusty-weathering capping. Within the mineralized part, much of the carbonate is believed to be dolomite. The mineralized zone appears to dip gently to the south parallel to the foliation of the enclosing phyllitic limestone. Assays were made of selected samples to determine the silver-lead ratio.

	Gold oz. ton	Silver oz. ton	Lead %	Zinc %	Copper %	Antimony %
Grab sample of relatively massive galena from a small lens	0.005	37.01	43.60	4.54	0.046	0.11
Grab sample, heavily mineralized with galena and sphalerite	0.005	27.31	36.60	14.48	0.043	0.05
Grab sample, mineralized with galena and sphalerite	0.005	4.39	11.99	16.12	0.02	0.05
Chip sample across 4 1/2 feet of the iron-stained cap	0.0025	0.58	0.45	4.28	0.023	0.05

(by Mineral Sciences Division, Mines Branch, Department of Mines and Technical Surveys)

The mineralization at this deposit appears to be similar to part of that at the Tintina Silver Mines Limited Property.

Upper Swift River

(Lead-Zinc)

#5 Bom Property (60° 8½'N, 131° 13'W)

NTS 105 B 3

References: Poole, Roddick, and Green (1960).

1965

The property, originally held by Hudson Bay Mining and Smelting Company Limited, was explored about 1946 and 1947. Zinc showings in the Crescent Lake area, some 3 miles to the north were explored about the same time and are probably similar. The Bom property has been re-staked from time to time but only minor representation work appears to have been done. The No. 1 showing, located at an elevation of about 4,200 feet, on one of the creeks forming the headwaters of Swift River, was reached by a road, about 13 miles long, leading from the Pine Lake airstrip. No. 2 and No. 3 showings, about 7,500 feet to the ENE, lie on the Smart River drainage at an elevation of about 5,000 feet. The showings were visited in August 1965.

Regionally, country rock of all three showings has been mapped as chert, hornfels, argillite, slate, phyllite, quartzite and limestone all of Upper Devonian and Lower Mississippian age (Poole et al, 1960). The showings all appear to occur in carbonate-rich bands that have undergone variable amounts of alteration to secondary silicate minerals, principally diopside.

The No. 1 showing is exposed in a trench just above creek level on the east side of the creek and two other trenches, one about 60 feet and the other an additional 340 feet up the slope. The showing is parallel to the banding of the enclosing rocks, striking about N 70° E and dipping 50° S. The lower trench about 40 feet long, exposes a well-banded hornfels with a heavily manganese-stained portion near the north end that contains a few pieces of massive sulphide minerals and some marble. A composite sample of highly manganese-stained, sulphide-rich rocks exposed in and near the lower trench assayed*: trace of gold, 5.46 ounces of silver per ton, 3.3 per cent lead, 3.7 per cent zinc and 0.03 per cent cadmium. The middle trench is now sloughed. The upper

*Assayed by G. Spalding, Whitehorse, Y.T.

trench exposes a rusty zone about 20 feet long containing pyrrhotite, galena, and lesser amounts of sphalerite. A chip sample taken across 20 feet assayed*: trace of gold, 6.34 ounces of silver per ton, 5.0 per cent lead, 5.0 per cent zinc, and 0.05 per cent cadmium. Diamond drilling, 18 holes with a total length of 6,540 feet spaced over a distance of about 2,000 feet along the strike of the showing, cut only minor mineralization. In the eastern portion, a marble band up to 150 feet thick is present but only minor limestone occurred west of the creek. Both calcite and dolomite were observed in fragments of core left on the property and in the lower trench. In the latter, much of the carbonate appears to have been altered to a secondary silicate mineral, probably diopside. Rocks enclosing the limestone range from banded brown biotite-rich to green diopside-rich hornfels to white recrystallized quartzite.

No. 2 showing is located in the upper valley of a creek flowing into Munson Lake and is at an elevation of about 5,000 feet. Three trenches on the showing have sloughed but the upper end of one contains heavily iron-and manganese-stained diopside-rich rock with brown sphalerite, galena, pyrrhotite, and traces of arsenopyrite. The showing is parallel to the foliation of the enclosing rocks, striking about N 70° W and dipping about 50° S. Diamond drilling, 6 holes with a total length of 1,195 feet, spaced over a strike length of 750 feet cut a marble band, up to 100 feet thick with minor mineralization, mainly near the top of the marble. Carbonate minerals in the core include both calcite and dolomite and the marble appears to be in part replaced by secondary silicate minerals, mainly diopside, with minor amounts of hornblende and garnet. Some dedolomitization with the formation of calcite and serpentine was also observed in the core. Sulphide minerals in the core are frequently disseminated in dolomite

*Assayed by G. Spalding, Whitehorse, Y.T.

rather than a diopside-rich rock as in the surface cuts. Enclosing rocks include, brown biotite-rich and green diopside-rich hornfels and white recrystallized quartzite.

No. 3 showing is located on the same creek as No. 2 but about 1,400 feet upstream (south) and very close to the divide. One small trench contained galena with lesser sphalerite, pyrrhotite, and pyrite in a rock rich in quartz but drilling 2 holes with a total length of about 875 feet did not cut sulphide minerals or marble.

CASSIAR MOUNTAINS AREA

Logjam Creek

NTS 105 B 4

- #6 Logjam Silver Property (Pure Silver Mines Limited) (60°01'N,
(Silver-Lead) 1966 131°35'W)

References: Poole, Roddick and Green (1960); Skinner (1962, p. 36); Green and Godwin (1964, pp. 47-48); Green (1966, pp. 75-76).

Formerly Logjam Silver Mines Limited, this property was reorganized under the name Pure Silver Mines Limited late in 1966. The property comprises 25 claims located near the headwaters of Logjam Creek, about 10 miles north of mile 74.8, Alaska Highway. It is reached by a 16-mile winter tote road that leaves the Highway near mile 757.

Since discovery of the silver-lead showings by W. McKinnon of Teslin in 1944, the Logjam property has been intermittently explored by various companies, mainly through surface exploration and minor diamond drilling. In 1965, Logjam Silver Mines Limited commenced underground exploration by means of an adit (crosscut) driven from an elevation 5,200 feet southwest into the steep northeast-facing slope on which the showings occur. As a part of the program six holes, totalling 2,607 feet, were drilled from the main crosscut.

The silver-lead values occur in quartz-bearing veins and lenses that cut a steep-dipping diorite sill which intrudes banded siliceous sediments of Devonian Age (unit 8 of Poole, Roddick and Green, 1960). The sediments are of uncertain derivation, but in the vicinity of the present working, they include argillaceous quartzite, more massive quartzitic members, and probably silicified limestone. The diorite is a fine- to medium-grained rock composed of plagioclase, dark hornblende, clinopyroxene, biotite and a little quartz. It is locally saussuritized. The diorite-sediment contact, as exposed in the underground workings and as shown by drill core intersections, is marked by a narrow, fine-grained, greenish hornfels zone. Diorite adjacent to the hornfels looks partly chilled. Structural relations are not clear, but the mineralized veins appear to be concentrated near the contact of the diorite sill.

When visited in mid-August, 1966, the working face of the crosscut was 870 feet from the portal. At about 590 feet from the entry, a subdrift heads southeast for 110 feet. About 60 feet back from the 870-foot working face, a sulphide-bearing quartz vein striking N 80° E and dipping vertically was intersected. The vein ranges in width from 8 inches to 1 foot and contains heavily-disseminated to massive sulphides, principally, arsenopyrite, pyrrhotite, galena and sphalerite. A chip sample over 14 inches across the vein assayed*: 0.06 ounces per ton gold, 6.54 ounces per ton silver, 1.5 per cent lead, 1.0 per cent zinc and trace copper and cobalt. A grab sample of massive sulphides from the same location assayed*: 0.52 ounces per ton gold, 16.3 ounces per ton silver, 10.5 per cent lead, and 16.1 per cent zinc.

Underground work was continued until September 1966, by which time a total of 1,100 feet of drifting had been completed. A second vein structure was intersected by the main crosscut extension, and followed to the east and west by short drifts. Results were considered sufficiently encouraging to warrant further exploration, and early in 1967 the new company (Pure Silver Mines Limited) commenced a new program of underground exploration. Additional drilling is also planned.

*Assayed by G. Spalding, Whitehorse, Y.T.

A crew of up to 5 men was employed on the property during the 1966 season.

Logjam Creek

(Silver-Lead)

NTS 105 B 4

#6

Logjam Creek Silver Mines Limited (60°01'N, 131°35'W)

References: Poole, Roddick and Green (1960); Skinner
(1962, p. 36); Green and Godwin (1964, pp. 47-48).
1965

Logjam Silver Mines Limited holds 25 claims covering the Logjam Silver property discovered by W. McKinnon, of Teslin, Yukon in 1945. Early in 1965, a winter road, about 15 miles in length, was built to the showing following the valley of Smart River from the Alaska Highway. A camp, at an elevation of about 4,300 feet, was established beneath the showing on a small creek tributary to the river. Most supplies were freighted in at this time and the camp was accessible in the summer months only by helicopter or by a precipitous trail, about 2 miles in length, leading from an earlier tote road that ends on the ridge southeast of the main showing. A relocated road to the property, following the valley of Smart River, was opened after freeze-up in late 1965. A steep route, usable by tracked vehicles, leads from the camp to the portal site. During 1965 and early 1966, an adit was driven at an elevation of about 5,200 feet, and 6 diamond drill holes with a total length of 2,607 feet drilled from underground to test the vein zones. Up to 10 men were employed. The property was visited briefly in August and again in December 1965.

The surface showing consists of several silver-bearing veins exposed in a north-facing cliff of diorite (Poole, Roddick, and Green, 1960). The diorite appears to be a sill-like body and in the vicinity of the showing is exposed from the ridge top to just above the adit, a vertical distance of about 1,000 feet. Veins in the diorite are marked by rusty zones to a few feet in width and up to 500 feet in length, locally containing lenses and ribs of quartz and varying amounts of arsenopyrite, pyrite, galena, and

sphalerite (Green, 1964, p. 47). Veins Nos. 1, 2, and 6 strike between N 50°E and N 70° E, and No. 5 strikes between N 10° E and N 25° E; all dip steep to vertical. In previous work, high silver assays were obtained from surface sampling of the veins but the steep slopes and lack of suitable drill sites precluded further surface exploration. The adit, trending about S 40° W and 680 feet in length, was collared about 50 feet below the diorite contact. It cut the diorite contact about 580 feet from the portal and a drift, 115 feet in length, was driven southeast along the diorite contact. Diamond drill holes were fanned from the end of the adit.

Specimens of the diorite and the enclosing sedimentary rocks were examined microscopically in refractive index oils. Most of the diorite specimens are unaltered with plagioclase feldspar; (probably andesine); hornblende; and lesser amounts of clinopyroxene, (probably augite). Grain size is generally 1 to 2 mm. although coarser phases, containing dark minerals, mainly hornblende, are present. In some of the specimens part of the hornblende was replaced by large flakes of biotite.

The sedimentary rocks enclosing the diorite have been altered to dense, dark gray hornfels. Many of the minerals in the hornfels are too fine grained to be determined but some quartz and feldspar is present. The dark hornfels has been cut by myriad thin white veinlets containing quartz and feldspar. Some thin bands of limestone, now altered to marble, often with diopside and tremolite along the contact, are present. Distinctive purplish-brown hornfels, close to the diorite contact, is coloured by fine metamorphic biotite.

#6

Logjam Creek Property (60°01'N, 131°35'W)

1963

References: Poole, Roddick, and Green (1960); Skinner (1962, p. 36).

The Logjam Creek property, consisting of 11 claims, is owned by W. McKinnon, of Teslin, Yukon. The silver-lead-zinc showings, discovered by McKinnon in 1945, were diamond drilled by Hudson Bay Explorations and Development Limited in 1945 and 1946. In 1961, the property was optioned to Kootenay Base Metals Limited, who carried out some trenching. In 1963, W. McKinnon and T. Kitchen built a tote road to the south showing and did limited development work on the latter. The road is about .13 miles long and leaves the Alaska Highway near Mile 753. Green visited the property in September 1963, in the company of Mr. McKinnon.

Bedrock in the area consists of altered cherty rocks of Late Devonian and Early Mississippian age (unit 8, Poole, Roddick, and Green, 1960), which have been intruded by a sill-like body of fine-grained hornblende-biotite diorite (unit 14c).

On the main showing, veins Nos. 1 to 9 occur within the diorite and most are exposed on a steep north face above the head of a tributary of Smart River. Veins Nos. 1, 2, and 6 strike between N50°E and N70°E, and No. 5 strikes between N10°E and N25°E; all dip steeply to vertical. They consist of rusty zones to a few feet in width and up to 500 feet in length locally containing lenses and ribs of quartz and varying amounts of arsenopyrite, pyrite, and galena and sphalerite. A grab specimen from No. 5 vein, rich in galena and boulangerite^a, assayed^b: 0.84 ounces of gold per ton, 177.5 ounces of silver per ton, 20.6 per cent lead, and 1.7 per cent zinc. Exploration of the showing has proven difficult as the veins do not continue into the sedimentary rocks beneath the diorite and the slope is too steep to permit setting up a drill on the diorite. Consequently, most of the diamond drilling was inconclusive and much of the work to date consists of surface sampling. Underground work will probably be required to obtain suitable drill sites.

^aIdentified by X-ray powder photograph.

^bAssayed by G. Spalding, Whitehorse, Y.T.

The south showing, about 1/2 mile southwest of the main showing, is in a saddle at the head of a tributary of Logjam Creek. Bedrock, consisting of chert, argillite, quartzites, and minor limestone (unit 8, Poole, Roddick, and Green, 1960), contains thin veinlets, pods, and disseminations of galena and sphalerite with minor pyrrhotite and pyrite. The mineral zone has been traced for about 150 feet by a series of open-cuts. One specimen rich in galena assayed: 0.02 ounces of gold per ton, 52.8 ounces of silver per ton, 46.7 per cent lead, and 16.9 per cent zinc. Another specimen assayed: 0.1 ounces of gold per ton, 4.14 ounces of silver per ton, 1.1 per cent lead, and 8.2 per cent zinc.

#6 Logjam Creek Property (lat. 60° 01' N, long. 131° 34' W)References: Poole, Roddick, and Green (1960).

1961

The Logjam Creek property, owned by Wilfred McKinnon, is situated near the head of Logjam Creek. The silver-lead-zinc showings were diamond-drilled by Hudson Bay Explorations and Development Company Limited in 1945 and 1946. In 1961 the property was optioned to Kootenay Base Metals Limited who trenched three known veins and exposed two new ones. The company also built a 5 1/2-mile truck road to provide better access to the property from the Alaska Highway.

It is reported that a 500-foot section of the No. 6 vein averages 0.01 ounce of gold and 30.3 ounces of silver a ton and 3.5% lead, across an average width of 13 feet. A sample across a 2-foot width of the recently exposed No. 9 vein is reported to have assayed 83.3 ounces of silver a ton.

REPORT COVERING EXAMINATIONS AND DEVELOPMENT COMPLETED TO DATE ON THE LOG JAMB CREEK PROPERTY, TESLIN LAKE AREA, YUKON TERRITORY.

SUMMARY

The Log Jamb Creek property is well located with regard to transportation as compared to other prospects in Yukon.

A very limited amount of work has exposed 11 silver-lead veins in a distance of 1,400'. Other veins undoubtedly exist.

One drill hole cut high silver values at a depth of 1,000' below the highest vein outcrop. 53.7% oz. Silver and 14.8% lead over 1.5'.

Preliminary sampling has indicated an average grade of 0.13 oz. gold, 28.5 oz. silver, 3.58% lead and 3.09% zinc over 2.5' on a veinage length in excess of 1,000'. Fresh surfaces and close sampling could give a higher grade.

Estimates show that a profit of over \$6.00 per ton is possible from this grade of ore and that there could be in excess of 300,000 tons down to 1,000' of depth.

RECOMMENDATIONS

The property warrants exploration and development. Due to the impracticability of surface drilling, it is recommended that an underground development program be undertaken. It is estimated that this will cost approximately \$80,000.00.

LOCATION AND ACCESS

The property consisting of # Eleven staked mineral claims is located on an East-West trending ridge between 5,300' and 6,000' Elevation; 1 mile north of Yukon - B.C. boundary, latitude $60^{\circ}01'$, longitude $131^{\circ}34'W$. Access is by way of an 11 mile jeep and pack trail from mile 753 on the Alaska highway approximately 50 miles east of Teslin, Yukon. A good truck road could be built to connect the property to the Alaska Highway for a reasonable cost.

HISTORY

The Silver-Lead veins were discovered by W. McKinnon working for Hudson's Bay Mining and Smelting Co. in 1945. Due to the rugged nature of the country, this Company completed a number of drill holes on the vein extensions, but none in the area of the vein outcrops. One hole on strike of the #5 vein returned an assay of 53.7 oz. Silver, 14.8% Lead over 1.5' true width at a depth of 1,000' below the highest vein outcrop. The other holes returned erratic assays up to 20 oz. on subsidiary vein structures. Core recovery was poor.

The property was allowed to lapse and was restaked by McKinnon. It was examined and sampled by Clive W. Ball on behalf of Canadian Explorations in 1958.

Five miles of jeep road and a limited amount of trenching were undertaken by Kootenay Base Metals in 1961. This program disclosed several new veins and extended the veins several hundred feet down the south slope of the ridge to a point where underground development work is practical.

GEOLOGICAL SETTING

Paleozoic Limestones and slates are intruded by granodiorite and related rocks. The main veins occur in silicified and brecciated shear zones in diorite. Veins dip vertically.

Exploration in 1961 found that veins intruding slate also carried high silver values.

DESCRIPTIONS OF SHOWINGS.

To date eleven veins, six striking N. $60^{\circ}E$ and five striking $N.30^{\circ}E$ have been found in a width of 1,400'. Ore float indicates the presence of other veins in this area.

The #5 and #6 veins are the only ones on which preliminary sampling has been undertaken. Due to the steep slope on the north face of the ridge where the veins are exposed, sampling was done on ropes and for this reason was at wide intervals. The vein exposures were leached and oxidized so there is a good chance that some of the silver (which is quite soluble under these conditions) could have been leached out.

Cont'd.....

The #5 vein was sampled over a horizontal distance of 350' and vertical distance of 450'. The five samples taken averaged 0.18 oz. Au, 30.6 oz. Ag, 2.7% Pb. and 6.5% Zn over 1.9' width. The Highgrade drill hole on strike of this vein indicates a further 250' of length.

The #6 vein was sampled over a horizontal distance of 300' and a vertical range of 400'. The six samples taken averaged 0.11 oz. Au, 25.8 oz. Ag, 4% Pb and 1.1% Zn over a 2.5' width.

Development work in 1961 exposed the #9 vein for 275' and sampling indicated that the grade would be similar to the #5 and #6 veins.

It should be noted that the veins do not terminate where exposed, but that the extensions are covered with overburden and rock talus.

ECONOMICS

The combined lengths of #5, #6 and #9 veins is in excess of 1,300'. If they extend to the 1,000' depth as indicated possible by the deep drill hole, there could be in excess of 325,000 tons of ore in these three veins alone, assuming a mining width of 2.5'.

The estimated grade of #5 and #6 veins from preliminary sampling is 0.13 oz. gold, 28.5 oz. silver, 3.58 % lead and 3.09% zinc. After allowing a 10% dilution factor this would be reduced to 0.11 oz. Au, 25.7 oz. Ag, 3.22% Pb and 2.79% zinc.

The following market prices are used in evaluation:

Gold		\$ 38.50 per ounce
Silver	-	1.10 " "
Lead		0.10 per lb.
Zinc	-	0.10 " "

(No value taken for Zinc as silver should go in Pb concentrate. Also no value allowed for cadmium content of ore.)

The following mining and milling costs are assumed to be applicable for a 100 ton per day operation in this area.

Mining		\$ 15.00 per ton
Milling	-	4.00 " "
Development		2.00 " "
Overhead		<u>1.50</u>
Total	-	\$ 22.50 per ton.

Metallurgical tests are necessary before recoveries and costs can be accurately estimated. For estimating purposes a concentration ratio of 20 to 1 has been assumed for the silver lead concentrate.

Cont'd.....

FREIGHT AND HAULAGE ON CONCENTRATES

Property to Whitehorse 175 miles @ 8¢ per ten mile	\$13.92
Rail haul to Skagway @ \$3.00 per ton	3.00
Freight Skagway to Vancouver @ \$13 per ton	13.00
Rail haul to Trail, B.C.	8.50
Extra handling	2.00
	<u>\$39.92</u>

Assuming 20 to 1 concentration ratio cost per ton - \$2.00 per ton of ore.

PAYMENT CALCULATIONS

Assuming an 85% recovery for Gold, Silver and Lead and no payment for zinc and Grade of ore after allowing 10% dilution to be 0.11 oz. Au, 25.7 oz. Ag, 3.58% Pb, 2.79 Zn.

Gold 0.11 x 85% x \$38.50	\$ 3.62
Silver 26.7 x 85% x \$1.10	24.91
Pb. Assuming 60% con. 85% Recovery and 3.57% Grade	
Gross Value	<u>6.60</u>
	\$ 35.13

DEDUCTIONS

Allow for smelter charge \$2.00 per ton of ore.	\$ 2.00
Mining, Milling, Development and overhead	22.50
Amortization of \$550,000 plant cost on 350,000 tons of ore	1.80
Freight and haulage	<u>2.00</u>
	\$ 28.30

Profit per ton of ore - \$6.83.

ESTIMATE PLANT COSTS

Mill	-	\$175,000
Road	-	45,000
Mine Plant	-	200,000
Housing (use trailers)		50,000
Contingency	-	<u>75,000</u>
		\$545,000

RECOMMENDED PROGRAM OF EXPLORATION.

Surface diamond drilling to evaluate the property is impractical due to the nature of the terrain, lack of water and poor core recovery. Costs would be in the neighborhood of \$10 per foot and the end result again

Cont'd.....

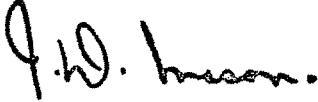
would be a widely spaced sampling job.

In order to ascertain the grade of the various veins systematic close sampling is required. This can best be done by underground development supplimented by underground drilling. By starting a tunnel at the 5300 contour on the #9 vein almost all of the work can be confined to drifting on known veins and some 300' of backs can be rapidly obtained. All mining should be contracted.

The initial program cost is estimated as follows:

1200' of drifting and x-cutting @ \$45 per ft.	\$ 54,000.00
1500' of underground flat hole drilling @ \$4	6,000.00
Assaying 300 samples @ \$5	1,500.00
Transportation and travel	1,000.00
Engineering Supervision	6,000.00
Head Office, Legal, Accounting etc.	4,000.00
Jeep truck and necessary equipment	<u>5,000.00</u>
	\$ 77,500.00

JDM:amc


J. D. Mason, P. Eng.

Old Gold Creek

NTS 105 B 15

#7 Liard Group (Atlas Explorations Limited) (about 60°58'N, 130°
(Copper) 1966 42'W)

Atlas Explorations Limited holds a total of 92 claims, in part under option from prospector G.E. Stephens, near

Liard River between Old Gold and Rainbow Creeks. The holdings cover two previously-known copper occurrences, one of which was investigated by Newmont Mining Corporation Limited in 1956.

Early in 1966, Atlas Explorations Limited carried out airborne geophysical surveys over the area, and during the 1966 season ground geophysical and geochemical follow-up surveys were made. Reconnaissance geological mapping was also done in conjunction with the geophysical and geochemical surveys. The area is underlain principally by a sequence of northwest-trending thin-bedded phyllites, locally graphitic, with intercalated greywacke, argillite, and minor limestone. In the northern part of the property, rhyolite and acidic tuffs are in contact with granitic intrusive rocks. Minor chalcopyrite mineralization occurring in quartz-calcite veins was located and some high-grade chalcopyrite float was found.

A crew of up to 9 men was employed in the operation. The property was not visited. (b)

PLACE OCCURRENCES