Occurrence Details

Occurrence Number: 105G 040
Occurrence Name: Jay
Occurrence Type: Hard-rock
Status: Prospect
Date printed: 8/6/2025 2:17:28 AM

General Information

Secondary Commodities: barite, lead, zinc
Aliases: Fisher
Deposit Type(s): Volcanogenic Massive Sulphide (VMS) Kuroko Cu-Pb-Zn
Location(s): 61°29'23" N - -130°15'41" W
NTS Mapsheet(s): 105G08
Location Comments: .5 Kilometres
Hand Samples Available: No
Last Reviewed:

Capsule

Exploration History

Staked as Jay cl (Yl6413) by Hi-Boy Mining & Exploration Ltd in Oct/66. Restaked within Wol cl 1-239 (YB47712) and Boot cl 1-18 (YB47794), between April and Sep/ 94 by Cominco Ltd.
Between August and Oct/95, Westmin Resources Ltd surrounded the Wol claims with Foot cl 1-586 (YB45954). The claim block is comprised of full and fractional claims and extends north into topographic map sheet 105G 09 and east into 105H 05. Between September and Nov/95 Westmin staked Fyd cl 1-94 (YB62182) 3 km to the north on topographic map sheet 105G 09 and staked additional fractional Foot claims.
During the 1995 field season Westmin carried out geochemical sampling, geological mapping and ground geophysical programs and drilled 3 diamond drill holes (901.0 m) in the immediate Fisher zone area and 2 diamond drill holes (513.9 m) in between the Fisher and neighbouring Wolverine zone (Minfile Occurrence #105G 072).
Cominco staked Boot cl 19-22 (YB84457) and additional fractional Jack claims in May & Jul/96. The company explored the Wol claims with soil geochemistry, geological mapping, geophysical programs and 2 diamond drill holes (558.9 m).
In 1997 Westmin carried out a soil sampling program on the Foot claims and drill 17 diamond drill holes (6 341m) on various Foot claims underlain by favourable stratigraphy, located between this occurrence and the Wolverine-Lynx zones (located 9.5 km to southeast). At the same time Cominco carried out deatailed mapping, prospecting and ground geophysical surveys on the northwestern end of their Wol claims.
In Mar/98 Westmin was acquired by Boliden Ltd and in Apr/99 Expatriate Resources Ltd purchased all of Westmin¿s interest in the area.
In Mar/2000 Expatriate announced an agreement in principal to buy Cominco¿s neighbouring Kudz Ze Kayah (Minfile Occurrence #105G 117) deposit and most of Cominco¿s exploration properties located in the Finlayson Lake area, including the Wol claims. During the 2000 exploration season, Expatriate drilled 3 diamond drill holes (1 664.85 m) on Wol cl 219 to test the down dip extension of the neighboring Wolverine deposit (Minfile Occurrence #105G 072). In Sep/2001 the purchase agreement was canceled and Expatriate returned the affected claims to Cominco.
In 2015, BMC Minerals acquired the property from Cominco Ltd and conducted an airborne VTEM survey and, in 2018, BMC conducted property scale mapping.

Capsule Geology

This occurrence is now commonly referred to as the Fisher Zone. It is regionally underlain by a Mississippian to Permian age, mixed volcano-sedimentary package belonging to the Yukon-Tanana Terrane (YTT). The YTT is a volcanic-plutonic, pericratonic arc assemblage that was strongly deformed and metamorphosed by late Triassic time. Volcanic hosted massive sulphide deposits exist at different stratigraphic positions within the YTT including the Fyre Lake deposit (Minfile Occurrence #105G 034) in Devonian to Early Mississippian Fire Lake mafic meta-volcanic unit (DF), the Kudz Ze Kayah deposit (Minfile Occurrence #105G 117) in the Upper Devonian to Early Mississippian Kudz Ze Kayah felsic meta-volcanic unit (DK), the Wolverine deposit (Minfile Occurrence #105G 072) within the Early Mississippian Wolverine Lake succession, and the Ice deposit (Minfile Occurrence #105G 118) within Early Permian Campbell Range basalts.
Geological mapping by Murphy et al., (2001) of the Yukon Geology Program, shows that the Fisher Zone, located on the Foot claims, is hosted within a Early Mississippian aged package of felsic metavolcanic and metasedimentary rocks, of lower greenschist metamorphic rank, referred to as the Wolverine Succession. The Fisher Zone and neighbouring mineralized zones (Wolverine, Lynx, Sable) occur near the contact between unit MWcp, carbonaceous phyllite and quartz sandstone and unit MWt, massive to granular siliceous rock and lightly-colored phyllite. A baritic iron formation located near the base of unit MWt is employed as a marker. The massive sulphide body is zoned, polymetallic, and displays banded, clastic and massive replacement textures. Exploration to date suggests that it has a tabular morphology. The deposit is located stratigraphically above the Kudz Ze Kayah deposit (Minfile Occurrence #105G 117) located 20 kilometres to the west. The following occurrence description and summary of recent work is largely from Hunt (2001).
Exposure in the occurrence area is generally poor with outcrops limited to creeks and upper elevations. The stratigraphy generally trends northwest with moderate to steep northeast dips. Four rock packages are recognizable on the property.
The uppermost unit, of the Early Permian Campbell Range Succession, is exposed along the eastern property margin and is comprised of well foliated, medium to dark green, chloritic, intermediate to mafic pillowed flows, tuffs, lapilli tuffs and minor pillowed flow breccia locally containing grey limestone fragments or interpillow fillings (unit PCb, Murphy, et al., 2001)(Unit 4 of Plint, 1994). Locally the flows and flow fragments are vesicular/amygdaloidal and spherulitic. Minor chloritic phyllite, chert/cherty tuff and siltstone interbeds, plus massive serpentinized ultramafic bodies are locally present.
Structurally below the mafic volcanic rocks at the northern end of the property are light to medium green fine-grained, massive, variably calcareous chloritic phyllite and schist with minor intercalated carbonaceous mudstone and siltstone. This unit is likely unit PCc (Murphy et al., 2001) (Unit 1, Plint 1994). Locally this unit is underlain by a thick sequence of foliated, locally rodded, laminated to thin bedded, light grey to white quartzite interbedded with dark green-grey to black, phyllitic, chloritic mudstone/argillite layers which are locally rusty due to weathered pyrite.
In the area peripheral to the Fisher Zone a sequence of mixed felsic volcanic and argillite/mudstone units 200 to 300 m thick are found below the quartzite/argillite unit (unit Mwt) (Murphy et al., 2001). The uppermost felsic unit is fragmental-textured quartz-chlorite-sericite feldspar schist underlain by quartz-sericite ankerite-barite schist (exhalite). The exhalite unit can be distinguished from other felsic units by its thin layered nature, the presence of iron carbonate and pyrite and the lack of green chlorite. This exhalite is laterally equivalent to the regional quartz-magnetite barite- hematite-pyrite iron formation which forms a marker horizon in the hanging wall of the Wolverine Deposit. This iron formation can be traced for up to 8 km along strike and is up to 40 m thick. The iron formation consists of fine-grained, disseminated to massive banded magnetite with trace to 10% fine pyrite and minor biotite defining a laminated to thin banded/bedded texture within quartz/silica rocks (recrystallized exhalite?). Rock samples collected in 1996 returned up to 5.3% Zn, 0.56% Pb and 45% Ba.
Mineralization associated with the iron formation consists of magnetite, pyrite, sphalerite and rare chalcopyrite in a siliceous gangue. Hydrozincite is common where the mineralization is laminated. There are several iron formation horizons in this area. In a creek cut at the Fisher Porphyry two additional horizons are exposed 3-4 m and 9 m below the main iron formation.
Below the exhalite horizon are a sequence of interlayered felsic volcanic rocks and carbonaceous argillite/mudstone with minor mafic sills. Near the base of this mixed sequence is a thin unit of quartz-feldspar-chlorite felsic tuff which hosts minor galena-pyrite-sphalerite mineralization and is likely related to the Fisher Porphyry. Surface mineralization at the Fisher Zone occurs within this sequence.
The lowermost unit in the Fisher Zone (unit MWcp of Murphy et al., 2001) is a thick package of poorly exposed, recessive silvery grey weathering dark blue grey to black carbonaceous phyllitic mudstone locally with minor thin siltstone/sandstone interbeds. Sampling of this unit in drill core returned consistently high Ag (1.1-3.6 ppm) and elevated Cu-Zn values. These mudstones are strikingly similar to Selwyn Basin shales of the Late Devonian Earn Group. The mudstone is intruded by the Late Devonian-Early Mississippian Fisher feldspar-quartz porphyry.
The Fisher Zone consists of numerous narrow sulphide bands or lenses made up of sphalerite, pyrite and minor galena in an intensely sericite, carbonate+/- chlorite altered tuff or sediment (Baknes and Weber, 1996; Expatriate Resources Ltd., 1999). Bedrock in the area consists of black, carbonaceous phyllitic argillite overlain by massive quartz-feldspar metaporphyry at least 150 m thick, which is in turn overlain by about 200 m of interlayered argillaceous and rhyolitic rocks (Baknes and Weber, 1996).
This area is partly underlain by gossanous, variably sericite-calcite-pyrite altered, megacrystic, alkali feldspar-quartz metaporphyry, 1 to 50 m thick, with textural and compositional similarities to feldspar-quartz phyric units in the Wolverine zone (Baknes and Weber, 1996); Piercey et al., 2001). However in the Fisher Zone the mineralized interval is overlain by thick accumulations of baritic iron formation and massive barite which are unknown in the Wolverine Zone (Baknes and Weber, 1996). Baknes and Weber (1996) suggest that the felsic flow dome complex is thicker at the Fisher Zone but at a similar stratigraphic position to the felsic metavolcanic rocks in the Wolverine Zone. The section between the base of the massive sulphide mineralization and the graphitic footwall phyllite is

about 350 m in the Fisher zone compared to about 40 m in the Wolverine zone.
In the Fisher Zone part of the feeder system to the massive sulphide mineralization appears to be preserved and indicates fluids were likely focussed along a fault (Baknes and Weber, 1996).
Unaltered to weakly altered porphyritic meta-intrusive rocks spatially associated with massive sulphide mineralization in the Wolverine, Lynx, Fisher, Sable, and Puck zones are described by Piercey et al. (2001). In all zones the intrusions underlie the mineralization or iron formation and are not seen above them. Meta-intrusive rocks associated with the Wolverine and Lynx zones are K-feldspar-phyric rhyolite metaporphyry sill (Unit 1-3 of Bradshaw et al., 2001) up to 15 m thick which generally occur about 20 m below the massive sulphide horizon.
Ground geophysical HLEM/Mag gravity surveys were conducted in 1995 on the Wol claims to evaluate conductors identified by airborne geophysical surveys. The results indicate numerous HLEM conductors flanking strong magnetic features. Cominco drilled 2 diamond drill holes (558.9) in 1996 to test some of these targets. The first drill hole which targeted a HLEM conductor intersected a strongly transposed/sheared sequence of interbanded/bedded, dark grey to black variably pyritic and carbonaceous siltstone with lesser argillite. The conductor was attributed to a carbonaceous mudstone interval. Elevated Cu-Ag+/-Pb-Zn-Cd were noted throughout (Senft and Hall, Apr/97). The second hole, collared near the Foot claim boundary, tested Fisher Zone stratigraphy with associated Zn-Pb-Cu-Ag-Ba soil geochemistry anomalies. It intersected a 16 m thick exhalite, a mixed volcano-sedimentary sequence and a 4.1 m thick variably sheared, pyritized and sericite altered porphyry similar to the Fisher porphyry and the same felsic volcanic/sedimentary sequence seen at the Fisher Zone.
Results from soil surveys conducted by Cominco on the Wol and Jack claims returned several values moderately to strongly anomalous in Cu, Pb and Zn. Sampling on the main Wol grid identified three distinct linear zones highly anomalous in Cu, Pb and Zn Ba. The width and strike length of all three zones are well defined by the concentration of anomalous Pb values. The 1997 drilling tested the favourable trend of stratigraphy which strikes northwest from the Wolverine-Lynx deposit. The soil sampling program returned several moderate to strongly anomalous Cu-Pb and Zn anomalies scattered through the newly gridded area while the geophysics program outlined several prospective conductors.
The initial hole (WW00-1) of the 2000 drill program on the Wol claims, intersected a 7.4 m true thickness of massive sulphides grading 13.56% zinc, 1.16% lead, 0.68% copper, 152 g/t silver and 0.59 g/t gold. The massive sulphide mineralization was intersected approximately 100 m down dip of the nearest holes on the Wolverine deposit located across the claim boundary. Hole WW00-02 intersected weak mineralization at the Wolverine horizon 300 m down dip of hole WW00-01. The final hole, WW00-03 collared in Oct/2000, tested the Wolverine horizon approximately 100 m to the northeast of hole WW00-01. It intersected a 1.4 m true thickness of massive sulphide and a 1.1 m true thickness of copper-rich stringer zone. The entire 2.5 m true thickness interval averaged 8.33% zinc, 1.32% lead, 1.55% copper, 293 g/t silver and 1.17 g/t gold.

Work History

Date	Work Type	Comment
7/1/2020	Geochemistry	
7/1/2020	Geology	
7/1/2020	Ground Geophysics	
7/1/2020	Other	
7/1/2018	Airphotography	
7/1/2018	Geochemistry	
7/1/2018	Geology	
7/1/2015	Airborne Geophysics	
7/1/2015	Airborne Geophysics	
7/1/1997	Ground Geophysics	
7/1/1996	Airborne Geophysics	
7/1/1996	Airborne Geophysics	
7/1/1995	Ground Geophysics	
7/1/1995	Ground Geophysics	
7/1/1995	Geochemistry	
7/1/1994	Geochemistry	
7/1/1994	Geology	
7/1/1994	Geochemistry	
7/1/1993	Geochemistry	
7/1/1993	Geology	
7/1/1993	Geochemistry	
7/1/1993	Geochemistry	
7/1/1993	Other	
12/31/2000	Drilling	Three holes, 1,665 m. Expatriate drilled 3 holes on Wol claims to test down dip extension of Wolverine Mineralization.
12/31/1997	Drilling	Seventeen holes, 6,341 m.
12/31/1997	Geochemistry	Soil sampling carried out on Foot and Wol claims.
12/31/1997	Ground Geophysics	Also HLEM and gravity surveys.
12/31/1996	Drilling	Two holes, 558.9 m.
12/31/1996	Geology	
12/31/1996	Geochemistry	
12/31/1996	Ground Geophysics	Also HLEM and gravity surveys.
12/31/1995	Drilling	Five holes, 1,414.9 m.

12/31/1995	Geology	
12/31/1995	Geochemistry	Also rock and silt sampling.

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
097243	2018	2018 Geological and Geochemical Program Report on the Pelly Property	Orthophoto - Airphotography, Rock - Geochemistry, Detailed Bedrock Mapping - Geology		
096902	2015	2015 Geophysical Report on the Pelly Property	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		
093864	1997	1997 Assessment Report Wol Property Geochemistry and Geophysics	Soil - Geochemistry, Detailed Bedrock Mapping - Geology, EM - Ground Geophysics, Magnetics - Ground Geophysics		
093671	1996	1996 Assessment Report Wol, Boot and Jack Properties Linecutting, Soil Geochemistry, Geological Mapping, Geophysical Surveys and Diamond Drilling	Diamond - Drilling, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, EM - Ground Geophysics, Gravity Survey - Ground Geophysics, Magnetics - Ground Geophysics, Line Cutting - Other, Prospecting - Other	3	601.10
093584	1996	Dighem V Survey for Westmin Resources Limited Wolverine Lake Project Yukon	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		
093404	1995	1995 Summary Report on the Foot 1-80, 83-174, 180-231, Kink 3, Toe 1-16, 26 Claims	Diamond - Drilling, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Prospecting - Other	24	6440.90
093384	1995	1995 Assessment Report Wol Property Soil Geochemistry and Geological Mapping	Soil - Geochemistry, Bedrock Mapping - Geology, EM - Ground Geophysics, Magnetics - Ground Geophysics		
093337	1994	1994 Assessment Report, Wol Property	Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology		

Related References

Number	Title	Page(s)	Reference Type	Document Type
ARMC016590	Geochemical map - 105G/8 - Wolverine Lake		Property File Collection	Geochemical Map
ARMC013856	Air photo field sheets from 1970 - A12326-227, 300 and others unmarked		Property File Collection	Geoscience Map (General)
ARMC013815	Sketch maps of Fyre Lake		Property File Collection	Geoscience Map (General)
ARMC016578	Geology map - 10G/8 - Wolverine Lake		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC017622	Geochemical map of Wolverine Lake - Cu, Pb, Zn, Mn, Mo.W		Property File Collection	Geochemical Map
93-055	1993 Prospector Assistance Program, YTG Mineral Incentive Program, Prospecting Report on Caribou Lake, Swan Lake, North Lake and Wolverine Lake Areas		Yukon Government: Energy, Mines and Resources	YMEP Report