Occurrence Details

Occurrence Number: 105G 083
Occurrence Name: Py
Occurrence Type: Hard-rock
Status: Prospect
Date printed: 12/16/2025 7:48:41 AM

General Information

Secondary Commodities: copper, gold, lead, silver, zinc
Deposit Type(s): Volcanogenic Massive Sulphide (VMS) Kuroko Cu-Pb-Zn
Location(s): 61°9'7" N - -130°8'17" W
NTS Mapsheet(s): 105G01
Location Comments: .5 Kilometres
Hand Samples Available: No
Last Reviewed:

Capsule

Work History

Staked as the PY cl 1-24 (Y84451) in Aug/75 by Cyprus Anvil Mining Corporation, which carried out grid geochemical soil sampling and IP surveying later in the year. Restaked as Lion cl 1-30 (YB15369) in Sep/88 by Northern Dynasty Explorations Ltd to cover gold and arsenic anomalies in stream sediments reported in Geological Survey of Canada Open File 1648. Restaked as the Pie cl 1-20 (YB45934) in Jul/93 by Atna Resources Ltd.
In Oct/94 Noranda Exploration Company Ltd restaked the occurrence as Wawa cl 1-12 (YB56440). In the same month A. Harman staked TY cl 1-38 (YB56230) to the northwest of the Wawa claims. In the summer of 1995, Harmon carried out prospecting and soil sampling and in Nov/95 Harmon optioned the claims to Pacific Bay Minerals Ltd which in turn optioned them to Westmin Resources Ltd.
In Nov/95 Westmin Resources Ltd staked Wika cl 1-64 (YB70879) southeast and southwest of the TY claims. Westmin then flew an airborne geophysical survey over the TY and Wika claims and the surrounding open ground. In Jul/96 Westmin began a large field exploration program consisting of soil, silt and rock sampling, diamond drilling of 3 holes (609.9 m) and ground geophysics on the TY and Wika claims.
In Aug/96 Westmin staked YT cl 1-55 (YB86723) and YT cl 56-85 (YB87290) to cover open ground around the TY, Wawa and Wika claim groups. The company expanded their field program to include the newly staked claims. A subsequent claim inspection reduced the size of the Wawa claim block and some of the surrounding YT claims, the result of which placed the occurrence within the boundaries of the YT claim block.
In Sep/96 Westmin staked YT cl 86-91 (YB87462). At the same time and before the results of the claim inspection were released, Noranda carried out a ground geophysics program consisting of magnetometer and HLEM surveying over the area originally covered by the Wawa claims.
In 1997 Westmin carried out ground geophysical and soil sampling programs on the TY and lithochemistry studies on the YT claims. Ownership of the TY claims was transferred back to Pacific Bay in Oct/98.
In Apr/2000 a debt settlement agreement between Atna Resources Ltd and Pacific Bay was negotiated. The agreement granted 30% ownership in the TY claims to Atna and included an option to earn an additional 30% through work expenditures on the claims. Atna carried out geological mapping, prospecting and geochemical rock sampling in Aug/2000.

Capsule Geology

The Finlayson Lake district is underlain by the Yukon-Tanana Terrane: a Late Proterozoic to Paleozoic metamorphosed volcanic sedimentary assemblage. It is regionally bounded to the southwest by the Tintina Fault. This terrane hosts several known volcanogenic massive sulphide (VMS) deposits and occurrences, including Kudz Ze Kayah (Minfile Occurrence #105G 117), Wolverine (Minfile Occurrence #105G 072) and Ice (Minfile Occurrence #105G 118).
Recent mapping of the area by the Yukon Geological Survey (Murphy et al, 2004) indicates that it is underlain by schist and phyllite of the Upper Devonian Waters Creek Formation (Dwc). Mineralization in the area generally consists of several percent disseminated to stringer pyrite hosted by felsic to intermediate meta-volcanic rocks which were previously thought to belong to unit DMF, Fire Lake mafic metavolcanic unit. Late Devonian to Early Mississippian aged granitic to monzonitic intrusions (MSg) belonging to the Simpson Range Plutonic Suite commonly intrude the sequence.
The occurrence covers an area of copper-bearing float and large gossans overlying pyrite-rich layers in quartz-sericite schist. Subsequent mapping revealed a sequence of layered, medium to fine grained, schistose to massive, predominantly felsic rocks described as quartzites, quartz sericite schists and quartz-feldspar augen schists. The mineralized layers are up to 12.1 m thick, and contain up to 15% coarse pyrite along with minor chalcopyrite, sphalerite and rare galena. Assays of the pyrite material returned up to 0.03% Cu, 0.20% Pb and 0.98% Zn. Quartz veins are common and locally contain pyrite and chalcopyrite. A grab sample collected from a 10 cm wide quartz vein in a locally derived creek boulder and containing 7% chalcopyrite assayed over 3% Cu and 815 ppb Au. Soil sampling outlined a large Cu anomaly (highest assay > 1% Cu) with spotty Pb, Zn and Ag values. A second, less intense Cu anomaly was outlined 1 km to the south.
Prospecting carried out on the TY claims by Harmon outlined numerous outcrops of felsic to intermediate metavolcanic rocks, suggesting the area held potential for volcanogenic massive sulphide mineralization. Five lines of reconnaissance soil samples collected in the southeast corner of the claim block, north of the occurrence, returned anomalous values in Cu, Pb, Zn, Ag, As and Au. After optioning the claim group from Harmon, Pacific Bay conducted one day of reconnaissance exploration which verified earlier results and outlined a favorable metavolcanic stratigraphy.
Westmin¿s airborne geophysical survey generally returned a flat magnetic response displaying little variability. Several individual discrete EM conductors were detected by the survey. A follow-up ground magnetometer and VLF survey was carried out over parts of the TY, Wika and newly staked YT claim groups. The magnetometer survey returned a flat response while the quality of the VLF data was too poor to use.
Geological mapping completed on the TY, Wika and YT claim groups by Westmin generally matches Murphy and Pierce¿s earlier mapping and confirmed the presence of Devonian metavolcanic and metasedimentary rocks. Black argillaceous mudstone interbedded with the felsic volcanic rocks were noted in the northern portion of the TY claims. The southern portions of the Wika and YT claim blocks are underlain by large outcrops of the K-feldspar augen schist, representing sheared intrusive rocks belonging to unit MSg, Simpson Range Plutonic Suite.
Westmin collected soil samples over most of their claim groups, with the southern portion of the TY and the northern portions of the Wika and YT claims receiving particularly detailed sampling. Several large Cu-Zn soil anomalies were identified in this area, within which were several scattered polymetallic highs. Westmin used these results to plan a 6 hole (1 331 m) diamond drill program. Three holes (721.1 m) were drilled on the southern portion of the TY claims, 2 holes (341.7 m were drilled on the YT claims and 1 hole (268.2 m) was drilled on the Wika claims. All 6 holes tested the intermediate to felsic volcanic unit which hosts the original occurrence.
All of the holes were drilled to the south at an inclination of 45 degrees. Hole TY 96-1 was drilled to better understand stratigraphy and test the down-dip extension of the original occurrence. Hole WK96-2 was drilled 1.5 km southwest of the occurrence to test the western extension of mineralized felsic units which host the occurrence. The remaining four holes were drilled to test various Cu-Zn soil anomalies.
All of the drill holes cored felsic volcanic and pyroclastic stratigraphy consisting of grey aphyric to fragmental textured rhyolite and green to grey rhyolite to dacite tuff and crystal tuff. The grey aphyric rhyolites are ¿cherty¿ and massive-textured, containing no discernable phenocryst phase; the tuffaceous rocks are heterogeneously textured. The felsic package is typically 40 to 60 metres thick, and is underlain by K-feldspar augen schist. This distinctive unit is characterized by heterogeneously concentrated subhedral to euhedral pink colored K-

feldspar megacrysts (porphyroblasts?) up to several centimeters in size. Less common phases contain rounded quartz concentrations up to several centimeters, either with or without feldspar. The megacrysts occur in a fine to medium-grained dark green colored chloritic matrix.
All the holes were systematically sampled from top to bottom. Mineralization consisted of trace to several percent disseminated pyrite, lesser pyrrhotite and trace chalcopyrite and sphalerite within the felsic volcanics. No significant anomalous zones were detected. The most interesting mineralization was observed in hole WK96-03, from 42.7 to 42.9 m, where 20 cm of massive pyrite returned assays of 90 ppb Au, 1.4 ppm Ag and 1 170 ppm Cu and from 56.6 to 59.2 m where 2.6 m of massive to fragmental rhyolite with 5-10 % disseminated pyrite and <1 % sphalerite returned 2.9 ppm Ag, 571 ppm Pb and 3 165 ppm Zn.
Noranda centered their 1996 geophysical program of the Wawa claims over the showing in an effort to identify near surface conductive bodies and to delineate geological units based on their magnetic properties. The results indicate a broad low relief magnetic signature that has no direct association with the interpreted geology. The HLEM survey outlined a weak conductive anomaly on a single line that is not coincident with any magnetic response. The anomaly¿s response is too poor to evaluate quantitatively but the nature of the signature does not reflect a broad flat lying body.
Whole rock analysis of samples collected from outcrops in the vicinity of the 3 diamond drill holes collared on the southern portion of the YT claims indicate that the rocks are rhyolite to rhyodacite-dacite in composition. Westmin concluded that the apparent lack of depositional breaks in the volcanic sequence limits the potential for massive sulphide accumulation in this area.
Westmin¿s 1997 exploration program outlined a multi-element geochemical anomaly and coincident EM conductor on the northern portion of the TY claims. Geological mapping in the northwest corner of the claims outlined a 50 m thick quartz-sericite schist unit after felsic tuffaceous rocks interlaced with graphitic to siliceous black argillite, hosting a 4 m thick unit of barite. This exhalative barite horizon, located approximately 4.8 km northwest of the occurrence location marker, outcrops over a strike length of 30 to 40 m. While no sulphide minerals were observed in the barite unit itself, boudinaged pods of medium grained, anhedral to subhedral pyrite agreegates up to 25 cm in size are present along the basal contact of the barite with the underlying quartz sericite schist. Along strike from the barite showing the contact between the schist and the argillite is rusty, presumably due to oxidized sulfides, and may be the source of the multi-element geochemical anomaly in outined in this area.
Structural mapping carried out in 2000 indicated that exposed lithologies on the TY claims are flat lying to gently dipping suggesting that favourable stratigraphy may preserved at depth. Two phases of folding are evident, although the area of detailed mapping was not large enough to define major fold axes. Expansion of the area of detailed mapping is required to determine the geometry of potential VMS bearing horizons underlying the claims, particularily the weakly mineralized, probably distal horizon associated with the bedded barite lenses near the northern edge of property.

References

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MURPHY, D.C., KENNEDY, R. and TIZZARD, A., 2004. Geological map of part of the Waters Creek and Fire Lake map area (NTS105G/1, part of 105G/2), southeastern Yukon (1:50 000 scale). Yukon Geological Survey, Open File 2004-11.

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WESTMIN RESOURCES LTD, Mar/97. Assessment Report #093592 by D.A. Terry et al.

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WESTMIN RESOURCES LTD, May/98. Assessment Report #093801 by D.A. Terry

WESTMIN RESOURCES LTD, Jun/98. Assessment Report #093822 by D.A. Terry and D. Gale.

YUKON EXPLORATION 1988, p. 93, 1989, p. 48.

YUKON EXPLORATION AND GEOLOGY 1996, p.15, 32, 1997, p. 16-17, 37.

Work History

Date	Work Type	Comment
12/31/2000	Geochemistry	
12/31/2000	Geology	
12/31/2000	Other	
12/31/1997	Geochemistry	
12/31/1997	Geochemistry	
12/31/1997	Ground Geophysics	Also HLEM survey.

12/31/1996	Geology	
12/31/1996	Geochemistry	Also rock and silt sampling.
12/31/1995	Geochemistry	
12/31/1995	Other	
12/31/1975	Geochemistry	
12/31/1975	Ground Geophysics	
12/13/1996	Drilling	Three holes, 609.9 m.
12/13/1996	Ground Geophysics	
12/13/1995	Airborne Geophysics	Also magnetic survey.

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
093816	1997	1997 Assessment Report Expo/Xpo/Pop/Fly (Including Areas of Base, Ball, Bat, Home & Run Blocks) Properties	Diamond - Drilling, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Prospecting - Other	2	368
093563	1996	Geophysical Report PIE-VMS Project Wawa Claims Property	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics, Line Cutting - Other		
093584	1996	Dighem V Survey for Westmin Resources Limited Wolverine Lake Project Yukon	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		
090106	1975	Py Mineral Claim Group Report on 1975 Field Work (Geology, Geochemistry, Geophysics)	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Line Cutting - Other		
090107	1975	A Report on an Induced Polarization Survey, Fire Lake Area, Yukon Territory	IP - Ground Geophysics		

Related References

Number	Title	Page(s)	Reference Type	Document Type
ARMC016571	Geochemical map - 105G/1 - Waters Creek		Property File Collection	Geochemical Map
ARMC013799	Memo re: Py group - NE Tilei Lake - Brodell examination		Property File Collection	Miscellaneous Company Documents
ARMC013800	Air photo overlay - A12326-452 of Py Group		Property File Collection	Geoscience Map (General)
ARMC016570	Structural geology map - 105G/1 - Waters Creek		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC016572	Geochemistry map - 105G/1 - Waters Creek		Property File Collection	Geochemical Map
ARMC016569	Geology map - 105G/1 - Waters Creek		Property File Collection	Geoscience Map (Geological - Bedrock)