



Occurrence Details

Occurrence Number: 105G 027

Occurrence Name: Leo

Occurrence Type: Hard-rock

Status: Prospect

Date printed: 6/15/2025 11:41:34 AM

General Information

Secondary Commodities: arsenic, copper, gold, lead, zinc

Deposit Type(s): Vein Polymetallic Ag-Pb-Zn+/-Au

Location(s): 61°29'11" N - -131°4'57" W

NTS Mapsheet(s): 105G06

Location Comments: .5 Kilometres

Hand Samples Available: No

Last Reviewed:

Capsule

Work History

Staked as Leo cl 1-30 (Y13087) in Jun/66 by Northlake Mines Ltd (Augustus Exploration Ltd, Copper Ridge Mines Ltd, Silver Standard Mines Ltd, Transcontinental Resources Ltd, North Pacific Mines Ltd) over an airborne EM anomaly located earlier in the year. The anomaly was designated Area 11 and was explored by Ronka and gravity surveys, mapping and grid soil sampling in 1966 and 1967.

Restaked as Lion cl (Y74663) in Mar/74 by M. Jimmy. Restaked as QC cl 1-48(YB14263) in Jul/88 by Welcome North Mines Ltd, which added QC cl 49-116 (YB15169) in Aug/88 and explored by mapping, prospecting and soil sampling later that year and in 1989.

Restaked as Tape cl 1-26 (YB77085) in Feb/96 by Expatriate Resources Ltd, which carried out prospecting, geological mapping and a reconnaissance soil sampling program later in the year.

Capsule Geology

Geological mapping (Murphy et al., 2001) shows the region is dominantly underlain by a layered sequence of Devonian to Early Mississippian metavolcanic and metasedimentary rocks of the Yukon-Tanana Terrane (YTT) that have been intruded by Mississippian granitic intrusions and later Jurassic intrusions. 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.

The Leo and Lion claims are underlain by Devonian to Mississippian chloritic and carbonaceous phyllites, siliceous and carbonaceous siltstones and felsic volcanoclastics of the Fire Lake metavolcanic unit (Murphy et al., 2001). Mississippian granitic metaplutonic rocks of the Grass Lakes Succession have intruded to the south, and Jurassic granitic intrusions occur to the east.

Grid soil sampling located an anomalous area with peak values of 409 ppm Cu, 100 ppm Pb and 660 ppm Zn. The QC claims covered a strong magnetic anomaly caused by ultramafic rocks of probable Pennsylvanian to Permian age.

On the QC claims, sub-economic gold mineralization occurs with sulphides in quartz-carbonate alteration zones developed in the hanging wall of thrust faults near the contact with ultramafic intrusions. Two mineralized areas were outlined by coincident gold-arsenic anomalies in soil, with values as high as 5300 ppb Au and 23 000 ppm As. The south anomaly covers an irregular 50 by 200 m area of quartz-carbonate outcrop and talus. Chip samples from trenches in this area contained up to 1240 ppb Au and 2125 ppm As over 3m.

Expatriate Resources staked the Tape claims to follow-up regional geochemical anomalies identified in a privately funded regional geochemical survey undertaken in the 1970's.

Reconnaissance soil samples were collected along claim lines and two contour lines. A 300 m long zone of weakly to moderately anomalous Cu, Co and Mo values was outlined on a steep cirque wall along the northern edge of the property. Two other anomalous areas were delineated in the eastern portion of the property. Each is roughly 300m long and consists of weakly to strongly anomalous Pb, Zn and Mo values.

References

BOND, J.D., MURPHY, D.C., COLPRON, M., GORDEY, S.P., PLOUFFE, A., ROOTS, C.F., LIPOVSKY, P.S., STRONGHILL, G., AND ABBOTT, J.G., 2002. Digital compilation of bedrock geology and till geochemistry, northern Finlayson Lake map area, Southeastern Yukon (105G), Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Open File Report, 2002-7(D) and Geological Survey of Canada Open File 4243.

EXPATRIATE RESOURCES LTD, Feb/98. Assessment Report #093684 by A. Burgert.

HUNT, J.A., 2001. Volcanic-associated massive (VMS) mineralization in the Yukon-Tanana Terrane and coeval strata of the North American miogeocline, in the Yukon and adjacent areas. Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Bulletin 12, 107 p.

MURPHY, D.C. and PIERCEY, S.J., 1999. Geological map of parts of Finlayson Lake (105G/7, 8 and parts of 1, 2, and 9) and Frances Lake (parts of 105H/5 and 12) map areas, southeastern Yukon (1:100 000-scale). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1999-4.

MURPHY, D.C. AND PIERCEY, S.J., 2000. Syn-mineralization faults and their re-activation, Finlayson Lake massive sulphide district, Yukon-Tanana Terrane, southeastern Yukon. In: Yukon Exploration and Geology 1999, D.S. Emond and L.H. Weston (eds.), Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 55-66.

MURPHY, D.C., COLPRON, M., GORDEY, S.P., ROOTS, C.F., ABBOTT, G., AND LIPOVSKY, P.S., 2001. Preliminary bedrock geological map of northern Finlayson Lake area (NTS 105 G) Yukon Territory (1:100 000 scale). Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Open File 2001-33.

MURPHY, D.C., COLPRON, M., ROOTS, C.F., GORDEY, S.P. AND ABBOTT, J.G., 2002. Finlayson Lake Targeted Geoscience Initiative (southeastern Yukon) , Part 1: Bedrock geology. In: Yukon Exploration and Geology 2001, D.S. Emond, L.H. Weston and L.L. Lewis (eds.), Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 189-207.

NORTHLAKE MINES LTD, 1966. Assessment Report #019115 by P.H. Sevensma

NORTHLAKE MINES LTD, Apr/67. Assessment Report #060250 by P.H. Sevensma.

NORTHLAKE MINES LTD, 1967. Assessment Report #060586 by P.H. Sevensma.

NORTHLAKE MINES LTD, Mar/66. Prospectus Report by P.H. Sevensma.

WELCOME NORTH MINES LTD, May/89. Assessment Report #092739 by R.G. Potter.

YUKON EXPLORATION 1989, p. 48.

Work History

Date	Work Type	Comment
12/31/1996	Geology	Reconnaissance level program.
12/31/1996	Geochemistry	Reconnaissance level program.
12/31/1996	Other	Reconnaissance level program.
12/31/1989	Geology	
12/31/1989	Geochemistry	
12/31/1989	Other	
12/31/1966	Geology	
12/31/1966	Geochemistry	
12/31/1966	Airborne Geophysics	Conducted airborne EM prior to staking.
12/13/1967	Ground Geophysics	

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
095508	2011	Report on the 2011 Geological, Geophysical and Geochemical Exploration Work on the River Property	Gamma-Ray Spectrometry - Airborne Geophysics, Magnetic - Airborne Geophysics, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology		
095326	2010	Report on the 2010 Geological and Geochemical Work on the Rivier Property	Silt - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Prospecting - Other		
093684	1996	Assessment Report Describing Geological Mapping, Prospecting, Geochemistry and Claim Surveys on the Tape Property	Soil - Geochemistry, Bedrock Mapping - Geology, Prospecting - Other		
060250	1966	Geological, Geochemical, Geophysical & Physical Work Report on the Hoo, EL, Gee Leo, P.S., P.G., C.W. and Z Claim Groups	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics, Diamond - Drilling, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, EM - Ground Geophysics, Backhoe - Trenching	4	486.46
019114	1966	Report on the Hoo, EL, Gee Leo, P.S., P.G., C.W. and Z Group of Mineral Claim Groups	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics, Diamond - Drilling, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, EM - Ground Geophysics, Backhoe - Trenching	4	486.46
060253	1966	Northlake Mines Limited Gee, El and Hoo Groups, Summary Report and Recommendations	Silt - Geochemistry, Soil - Geochemistry, EM - Ground Geophysics, Gravity Survey - Ground Geophysics, Magnetics - Ground Geophysics, Line Cutting - Other		
019115	1966	Northlake Mines Limited, Gee Group of Claims: Report on Airborne Geophysical Surveys	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		

Related References

Number	Title	Page(s)	Reference Type	Document Type
ARMC008064	Pelly project 1977 summary - Geochemical map - Figure 15b		Property File Collection	Geochemical Map
ARMC008065	Geophysical survey map - Upper Hoole River		Property File Collection	Geophysical Map
ARMC020352	Elevation data - Notes - Mye, Sark, and Leo grids		Property File Collection	Miscellaneous Company Documents
ARMC020353	Gravity data - Notes - Mye, Sark, and Leo grids		Property File Collection	Miscellaneous Company Documents