



Occurrence Details

Occurrence Number: 115G 099

Occurrence Name: Klwane

Occurrence Type: Hard-rock

Status: Showing

Date printed: 6/15/2025 11:45:27 AM

General Information

Secondary Commodities: copper, nickel, palladium, platinum

Aliases: Duke South

Deposit Type(s): Unknown

Location(s): 61°11'15" N - -138°58'45" W

NTS Mapsheet(s): 115G02

Location Comments: 1 Kilometres

Hand Samples Available: No

Last Reviewed:

Capsule

Work History

Old posts are present but no staking records have been found. Staked as Duke cl 1-16 and 25-28 (YB6331) in Jul/87 on a government stream sediment geochemical anomaly by Klwane Joint Venture (All-North Resources Ltd and Chevron Minerals Ltd) and optioned briefly by Rockridge Mining Corp which carried out geological mapping and geochemical sampling later in the year.

In Oct/94 Inco Ltd staked a block of 508 Klu claims on map sheet 115G 02. The staking was not carried out in a consecutively numbered basis but the lowest claim number was Klu 1013 (YB54767). The claim block covered Minfile Occurrences #115G 003, 084, 098 and 099. Inco staked a second block of 18 Klu claims (lowest number Klu 1416 (YB58156)) north of Congdon Creek in Aug/95. In the summer of 1995, Inco carried out geological mapping, lithogeochemical sampling, silt sampling, heavy mineral sampling and soil sampling on the Klu claim block. In 1996 Inco carried out an airborne EM and magnetometer survey over the entire claim block and in 1997 Inco carried out geological mapping, prospecting and ground geophysical surveying to follow up geophysical conductors identified in 1996.

In Apr/2000, Santoy Resources Ltd optioned the property from Inco and carried out geological mapping, chip sampling, prospecting, silt and soil sampling later in the year.

Capsule Geology

The occurrence is located in the eastern part of the Wrangellia, which is an accreted terrane extending 2 340 km from Alaska to southern B.C.. In the area of the occurrence the Wrangellia is bounded to the northeast by the Denali Fault System and to the southwest by the Duke River Fault. The oldest Wrangellian rocks in the region are the Pennsylvanian to Lower Permian Skolia Group. The Station Creek Formation occurs at the base of the Skolia Group and consists of tuffs, pyritic black tuffs, mafic volcanics and argillite. These rocks are overlain by the Hasen Creek formation which consists of tuffs, mafic volcanics, argillite and limestone. The Skolia Group is stratigraphically overlain by Pennsylvanian to Triassic mafic meta-volcanics, Upper Triassic Nikolai basalt and Upper Triassic McCarthy Formation Limestone and phyllite. Tertiary volcanics and sediments unconformably overlie the sequence. Quaternary surficial deposits locally cover Paleozoic, Mesozoic and Cretaceous strata.

Two major suites of intrusive rocks are present in the belt, the oldest is the mafic to ultramafic Triassic suite which includes ultramafic sills, marginal gabbro, and the Maple Creek Gabbro.

This suite is thought to be cogenetic with the Nikolai flood basalt. Cretaceous Klwane Range Intrusions are dioritic to granodioritic in composition and occur throughout northern Wrangellia. Minor Tertiary sills dykes and stocks of felsic to intermediate composition are also present.

The major Triassic ultramafic intrusions (Klwane type) are sill like bodies which intrude the Hasen Creek and Station Creek Formations. The dips of the sills range from vertical to steeply overturned to as shallow as 30 degrees. Maximum dimensions of the sills are estimated to be up to 18 km in length and 600 m in thickness.

The claims cover an area of complex geology and thrust faulting. The general setting consists of steeply dipping sedimentary rocks of the Permian Hasen Creek Formation intruded by Late Triassic peridotite and gabbro dykes.

Ni-Cu-PGE mineralization in the region is associated with basal marginal gabbro phase of the Spy Sill. Sulphide mineralization at the Spy Showing (Minfile Occurrence #115G 003) occurs in siltstone in the footwall of the sill, marginal gabbro and feldspathic peridotite.

Rockridge reported mineralized float containing nickel, copper and platinum group values. It occurs near the base of an ultramafic sill of Triassic age that intrudes Pennsylvania-Permian sedimentary and volcanic rocks. A gabbro specimen containing chalcopyrite and pyrrhotite assayed 2.04% Cu, 0.74% Ni, 420 ppb Pt and 1380 ppb Pd, but samples from a massive pyrrhotite lens and an arsenopyrite stockwork returned only background values.

Specimens containing disseminated and fracture filling malachite and chalcopyrite from a younger gabbro intrusion lying north of the ultramafic sill yielded 2.6% Cu but low values for nickel and platinum.

Inco found intermittent sulphide showings over a strike of 3.6 km along the base of the 6 km long Spy Sill (located 4 km to the northeast). These sulphide showings have highly anomalous PGE grades along with significant Ni and Cu. The number and size of peridotite intrusions occurring on the claim block and in the belt suggest they are part of a very large magmatic system. No significant Ni-Cu-PGE showings have been found at intrusions other than the Spy Sill. Grab samples collected by Inco from the gabbro-siltstone contact assayed up to 3.1% Ni, 2.8% Cu, 0.2% Co, 3.1 g/t Pt, 1.4 g/t Pd and 1.0 g/t Au.

Silt samples were collected from all the streams draining the Klu claims. Numerous samples returned anomalous values (up to 673 ppm Ni) and appear to outline areas with peridotite intrusions. Heavy mineral samples were collected from all the main drainages located within the claim block. The most significant result returned 700 ppm Pt and > 10 000 Au. It was collected 400 m downstream from where the Spy Sill is cut by the south branch of Nines Creek. The high Au value may not necessarily be related to sulphide mineralization.

A small soil sample grid was established over the peridotite section of the Duke Intrusion located in the northwest corner of the claim block near the occurrence. The soil grid was centered over the peridotite-footwall sediment (Hasen Creek Formation) contact and was laid out to test for the presence of subcropping Ni-Cu-PGE mineralization. Cr +/- Ni values outlined the approximate projection of the peridotite-sediment contact but no anomalies suggestive of Ni-Cu-PGE mineralization were found.

Due to the severe terrain over much of the claim block Inco used 100 m spacing between flight lines. The geophysical survey outlined 3 coincident EM and magnetic conductors on the claim block. In 1997 Inco carried out, follow up ground magnetic and EM geophysical surveys on the three conductors. Two of the conductors were found to relate to black calcareous shale exposures. The third anomaly was interpreted to represent conductive overburden.

The bulk of Santoy's exploration work was focused on exploring and evaluating the nickel, copper and platinum group element mineralization known to exist at the basal contact of the Spy Sill and underlying footwall Hansen Creek siltstone, (Minfile Occurrence #115G 003). Four mandays were spent mapping in the vicinity of the Duke Intrusion. The focus of the mapping was to confirm previous mapping by Inco and others, to locate known mineralized showings and to prospect along the favorable footwall contact of the gabbro unit. A number of pyrrhotite +/- magnetite gossanous zones in siltstone and gabbro were sampled but none returned anomalous values. The company also spent one day mapping and prospecting in the southern area of the Bocks Brook Intrusion at the headwaters of Nine's creek (approx. 3 km to the southeast). Nothing of economic interest was found and the area was designated as a low-priority target.

References

INCO LIMITED, Jan/96. Assessment Report #093371 by C. Bell.

INCO LIMITED, Nov/96. Assessment Report #093560 by P. McGowan.

INCO LIMITED, Dec/97. Assessment Report #093726 by K. Hattie.

ROCKRIDGE MINING CORP, Feb/88. Assessment Report #092085 by W.D. Eaton.

SANTOY RESOURCES LTD, Feb/2001. Assessment Report #094164 by L.A. Tulk.

SANTOY RESOURCES LTD, Feb/2002. Web Site: www.bmts.bc.ca/san.

YUKON EXPLORATION 1987, p. 249-250.

YUKON EXPLORATION & GEOLOGY 1996, p. 23, 30. 1997, p. 24, 36.

Work History

Date	Work Type	Comment
12/31/2000	Geochemistry	Also soil and silt sampling.
12/31/2000	Geology	
12/31/1997	Geochemistry	Also silt sampling.
12/31/1997	Geology	
12/31/1997	Ground Geophysics	Also UTEM survey.
12/31/1996	Airborne Geophysics	Also magnetometer surveys were flown over entire claim block.
12/31/1995	Geology	
12/31/1995	Geochemistry	Also silt, heavy mineral, and lithogeochemical sampling.
12/31/1987	Geology	
12/31/1987	Geochemistry	

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
095058	2007	Geochemical Report	Soil - Geochemistry		
094687	2005	An Initial Field Investigation and Data Compilation on the Klu Property	Rock - Geochemistry, Process/Interpret - Pre-existing Data		
094164	2000	Report on Geological and Geochemical Surveys on the Klu Property	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology		
093560	1996	Report on 1996 Geophysical Survey	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		
093371	1995	1995 Geological and Geochemical Surveys	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology		
092085	1987	Report on Prospecting and Geochemical Program	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry		

Related References

Number	Title	Page(s)	Reference Type	Document Type
ARMC013038	Map of Destruction Bay area with field notations - Duke and Castile claims - Map sheet 115-G-2		Property File Collection	Geoscience Map (General)