Occurrence Details

Occurrence Number: 106D 092
Occurrence Name: Nick
Occurrence Type: Hard-rock
Status: Prospect
Date printed: 8/6/2025 4:31:36 AM

General Information

Secondary Commodities: arsenic, gold, molybdenum, nickel, palladium, platinum, rhenium, selenium, silver, zinc
Deposit Type(s): Sediment hosted Shale-Hosted Ni-Zn-Mo-PGE (Nick)
Location(s): 64°44'11" N - -135°12'59" W
NTS Mapsheet(s): 106D11
Location Comments: .5 Kilometres
Hand Samples Available: No
Last Reviewed:

Capsule

Work History

Discovered by Cominco Ltd in 1981 while following up stream sediment anomalies reported in GSC Open File 418. The occurrence was prospected but not staked.
Staked as Nick cl 1-126 (YB2115) in Mar/88 by Cooke Yukon Syndicate which optioned the claims in Apr/88 to Archer, Cathro & Associates (1981) Ltd which shortly afterward transferred the option to NDU Resources Ltd. NDU performed mapping, prospecting, soil sampling and additional claim staking before forming a joint venture with Pak-Man Resources Ltd and 2001 Resource Industries Ltd in Aug/88, which drilled 4 diamond drill holes (362 m) later that year. The syndicated added Nick cl 127-138 (YB02726) in Sep/88.
The claims were optioned in spring/89 to Inco Ltd which added Nick cl 139-182 (YB03207) in Aug/89 and explored by mapping, soil sampling and hand trenching and 13 diamond drill holes (891 m) later that year. Inco relinquished its option in 1990. Falconbridge Ltd optioned the property in Aug/91 and performed geological mapping, prospecting and hand trenching in 1991. In 1992, Falconbridge carried out geological mapping, geochemical sampling, selective lithogeochemical sampling of drillcore and test magnetometer and VLF geophysical surveys. Falconbridge dropped its option in Feb/93, and the claims were returned to NDU Resources Ltd. All of the original Nick claims lapsed by March 31/2002.
Restaked as Nick cl 1-336 (YC55398) in Feb/2007 by Strategic Metals Ltd. Part of the claim block extends north onto topographic map sheet #106D 14. In Feb/2007 Strategic optioned the Nicks claims to Southampton Ventures Incorporated as part of a packages of seven claim blocks collectively called the Ni-Mo Project. In April and May/2008 Southampton flew a helicopter-borne Versatile Time-Domain Electromagnetic (VTEM) and magnetic geophysical suveys over the Nick claims.

Capsule Geology

The occurrence is located near the headwaters of the northeastern most branch of Hart Creek approximately 15 km northwest of Hart Lake, north-central Yukon. The area was regionally mapped by L. Green (1972) of the Geological Survey of Canada in 1961 as part of a helicopter-supported party known as Operation Ogilvie. Although the area has not yet been remapped by the Yukon Geological Survey, C. Roots of the Geological Survey of Canada under contract with Exploration and Geological Services Division (now part of the Yukon Geological Survey) remapped topographic map sheets 106D/8 and 106D/7 (east half) to the southeast in 1990. D. Thorkelson (2000) also under contract with Exploration and Geological Services Division remapped topographic map sheet 106D/16 to the northeast as part of a larger bulletin. The work of these geologists was incorporated into a geological compilation of the Yukon released by Gordey and Makepeace of the Geological Survey of Canada in 2003.
Based on the work of these geologists it is believed that the occurrence area is underlain black calcareous and graphitic shales assigned to the Ordovician to Lower Devonian Road River Group. The Road River Group grades conformably into overlying slate, chert-quartz arenite, thick members of chert pebble conglomerate, siltstone, nodular and bedded barite and limestone of the Upper Devonian to Mississippian Earn Group. The Earn Group is conformably (?) overlain by dolomite, quartzite, bioclastic limestone, shale, chert and chert pebble conglomerate of Gordey's Carboniferous to Permian Tsichu assemblage (or Upper Earn Group).
The occurrence consists of stratiform vaesite (nickel disulphide) in Upper Devonian to Mississippian shale in an outlier of Selwyn Basin rocks preserved in an east-west graben. The narrow (up to 10 cm) massive sulphide horizon lies at the contact between Upper Devonian phosphatic black chert and a distinctive concretionary unit (named the Limestone Ball member) of Lower Devonian age which forms the lower portion of the Earn Group in this area. The concretionary unit consists of limestone balls 5 cm to 1.5 m in diameter in a matrix of black siliceous mudstone. A Transition member consisting of calcareous fetid black silty shale and black chert shale (named the Transition member) marks the bottom boundary of the Earn Group.
Deposits of this type are believed to form from low temperature organic-rich fluids in Red Sea-type brine pools in a rift environment. A vaesite deposit of this type is presently being mined in southern China. Hulbert et al. (1992) proposed a metallogenic model in which nutrient-rich hydrothermal fluids became enriched in base and precious metals scavenged from underlying organic-rich Ordovician to Devonian strata, where the metals were adsorbed on decaying organic material.
The massive sulphides consist of vaesite, pyrite and minor sphalerite, and are associated with bitumen. They form disrupted concretions, disseminations, framboids and pellet aggregates. The vaesite-pyrite assemblage indicates a sulphide crystallization temperature of about 138° C. Specimens grade up to 5.8% nickel, 1.56% zinc and 0.395% molybdenum and are associated with a distinctive suite of trace metals including platinum (up to 1000 ppb), palladium (up to 390 ppb), silver (up to 16.4 ppm), gold (up to 98 ppb), rhenium (up to 61 ppm), and selenium (up to 4500 ppm). All 16 drillholes in 1988 and 1989 had nickel grades which ranged from 0.37 to 5% nickel over narrow intervals. The widest drill intersection in 1988 was 2.9% nickel, 0.7% zinc, 0.16% molybdenum, 70 ppb platinum, 70 ppb palladium and 0.8 ppm silver over 10 cm.
The 1991 work traced the metalliferous horizon over the northern and western parts of the property, and 31 hand trenches were cut in weathered bedrock.
Detailed geochemistry outlined three areas where the metalliferous horizon may be of mineable widths.

References

2001 RESOURCE INDUSTRIES INC, Dec/91. Assessment Report #093002 by R.C. Carne.

FALCONBRIDGE LTD, Apr/93. Assessment Report #093096 by S.M. Miller.

GEOLOGICAL SURVEY OF CANADA OPEN FILE 2175, 1990. Regional Stream Sediment and Water Geochemical Data Eastern Central Yukon, (106D; Parts of 106C, 106E and 106F). Update Report to Open File 418.

GEORGE CROSS NEWSLETTER, 4 Nov/88; 2 Mar/90; 19 Aug/91.

GORDEY, S.P. AND MAKEPEACE, A.J. 2003: Yukon Digital Geology, version 2.0, S.P. Gordey and A.J. Makepeace (comp); Geological Survey of Canada, Open File 1749 and Yukon Geological Survey, Open File 2003-9 (D).

GREEN, L.H. 1972. Geology of Nash Creek, Larsen Creek and Dawson Map-Areas, Yukon Territory. Geological Survey of Canada, Memoir 364.

HULBERT, L., CARNE, R.C., GREGOIRE, D.C. and PAKTUNC, D., 1992. Sedimentary nickel, zinc and platinum group element mineralization in Devonian black shales at the Nick property, Yukon, Canada: a new deposit type. Exploration and Mining Geology, Vol. 1, p. 39-62.

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SOUTHAMPTON VENTURES INC, News Releases, 27 Feb/2007; 16 Nov/2007; 13 May/2008.

SOUTHAMPTON VENTURES INC, Apr/2009. Web Site: www.southamptonventures.com. (has summary of NiMo project).

THORKELSON, D.J. AND WALLACE, C.A., 1998. Geological Map of Slats Creek map area, Wernecke Mountains, Yukon (106D/16). Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Geoscience Map 1998-9, 1:50,000 scale.

THORKELSON, D.J., 2000. Geology and mineral occurrences of the Slats Creek, Fairchild Lake, and "Dolores Creek" areas, Wernecke Mountains (106D/16, 106C/13, 106C 14), Yukon Territory. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Bulletin 10, 73p.

YUKON EXPLORATION 1991, p. 5.

YUKON EXPLORATION AND GEOLOGY 2007, p. 30; 2008, p. 26.

YUKON MINING AND EXPLORATION OVERVIEW, 1988, p. 31; 1989, p. 7.

Work History

Date	Work Type	Comment
12/31/2008	Airborne Geophysics	Also magnetic survey.
12/31/1991	Geology	
12/31/1991	Geochemistry	
12/31/1991	Trenching	
12/31/1989	Drilling	Thirteen holes, 891 m. Assessment Report #092832 has drill logs for 1988 and 1989 drilling.
12/31/1989	Geology	
12/31/1989	Geochemistry	
12/31/1989	Trenching	
12/31/1988	Drilling	Four holes, 362 m. Assessment Report #092666.
12/31/1988	Geology	
12/31/1988	Geochemistry	
12/31/1988	Geochemistry	
12/31/1988	Other	
12/13/1992	Ground Geophysics	Also VLF survey. Used to test methods.
12/13/1992	Geochemistry	Re-sampled drill core.
12/13/1992	Geology	
12/13/1991	Other	

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
095660	2009	Airborne VTEM and Magnetometer Geophysical Surveys at the Nick Property	Magnetic - Airborne Geophysics, VTEM - Airborne Geophysics		
093096	1992	Geological Mapping and Geochemical Sampling at the Nick Property	Drill Core - Geochemistry, Rock - Geochemistry, Bedrock Mapping - Geology, Magnetics - Ground Geophysics		
093002	1991	Geological Mapping, Geochemical Sampling and Hand Trenching at the Nick Property	Rock - Geochemistry, Bedrock Mapping - Geology, Prospecting - Other, Hand - Trenching		
097003	1989	A Petrographic Analysis of the Host Rock and Vaesite Bearing Horizon on the Nick Property, Yukon Territory	Petrographic - Lab Work/Physical Studies		
092832	1989	Geological Mapping, Geochemical Sampling and Diamond Drilling at the Nick Property	Diamond - Drilling, Drill Core - Geochemistry, Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Prospecting - Other, Hand - Trenching	16	1154

092666	1988	Geological Mapping, Geochemical Sampling, and Diamond Drilling at the Nick Property	Diamond - Drilling, Drill Core - Geochemistry, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Prospecting - Other	4	362.40

Related References

Number	Title	Page(s)	Reference Type	Document Type
ARMC005013	Report on Nick property		Property File Collection	Report
ARMC004985	Notes on Nick, Marg and Blende claims of NDU Resources		Property File Collection	Miscellaneous Company Documents
ARMC004987	Mineral claims map - NDU Resources		Property File Collection	Geoscience Map (General)
ARMC020120	Location map - July 1988 - Yukon properties - NDU Resources Ltd.		Property File Collection	Geoscience Map (General)
ARMC020124	News release - Assay results of drilling on Marg property and location map of Mayo M.D. properties		Property File Collection	News Release

Drill core at YGS core library

Number	Property	Year Drilled	Core Size	Photos	Data
N-89-10	Nick	1989	NQ	2	2
N-89-11	Nick	1989	NQ	2	2
N-89-12	Nick	1989	NQ	2	3
N-89-13	Nick	1989	NQ	2	3
N-89-14	Nick	1989	NQ	2	3
N-89-15	Nick	1989	NQ-BQ	2	3
N-89-16	Nick	1989	NQ	2	3
N-89-6	Nick	1989	NQ-BQ	2	3
N-89-7	Nick	1989	NQ	2	3
N-89-8	Nick	1989	NQ	2	2
N-89-9	Nick	1989	NQ	2	2
N-88-DDH-1	Nick	1988	NQ	4	1
N-88-DDH-4	Nick	1988	NQ	18	1