



Occurrence Details

Occurrence Number: 115G 025

Occurrence Name: Arch

Occurrence Type: Hard-rock

Status: Prospect

Date printed: 8/6/2025 12:42:40 AM

General Information

Primary Commodities: cobalt, copper, gold, iridium, nickel, osmium, palladium, platinum, rhenium, rhodium

Aliases: Airways

Deposit Type(s): Ultramafic Mafic Gabbroid Cu-Ni-PGE

Location(s): 61°28'56" N - -139°35'47" W

NTS Mapsheet(s): 115G05

Location Comments: GPS of site, July 22, 2021

Hand Samples Available: No

Last Reviewed:

Capsule

Work History

Staked as Enger cl 1-7 (63064) in Jul/52 by Prospectors Airways Company Ltd on behalf of a syndicate including Noranda Mines Ltd and Kerr Addison Gold Mines Ltd, which carried out geological mapping, geophysical surveying and drilled 14 shallow holes (143.3 m) between 1953-55. Hudson Bay Mining and Smelting Company Ltd staked Arm cl 1-8 and Bev cl 1-12 (64046) in Aug/52, adjoining the northwest side of the Prospectors Airways claims.

Restaked as Nico cl 1-8 (91300) in Dec/64 by W. Green for J. Brown; and as Jiffy cl 1-8 (Y10791) in Oct/66 and Tippy cl 1-16 (Y18060) in May/67 by C. Gibbons, who carried out geological mapping, EM and magnetometer surveying in 1967 and trenching in 1968 and 1970.

In 1972, the property was briefly optioned by the Nickel Syndicate (Canadian Superior Exploration Ltd, Aquitaine, Home Oil Company Ltd and Getty Mines Ltd), which carried out geological mapping, geochemical sampling, magnetometer and EM surveying and bulldozer trenching. Green added Jiffy cl 9 (Y80206) in Aug/74, restaked the showing as AMC cl 1 (YA8272) in Oct/76, and carried out minor hand trenching in 1977 and 1980. In Nov/82, C. Smalley staked Di cl 1-4 (YA75329) to fringe the AMC cl 1. The AMC cl 1 was transferred to J.T. Doey in Dec/82. In Jun/84, N. Smalley fringed the showing by staking D cl 1-8 and N cl 1-2 (YA82485).

The showing was restaked by Archer, Cathro and Associates (1981) Ltd on behalf of the Klauene Joint Venture (Chevron Minerals Ltd and All-North Resources Ltd) as Barney cl 1-50 (YA94968) and Mus cl 1-16 (YA94962) in Jun/86. G. Davidson tied on the AMP cl 1-10 (YA95100) to the west in Jul/86 and optioned them to the Klauene Joint Venture, which carried out geochemical sampling in 1986.

In Dec/86 the claims were optioned to Rockridge Mining Corporation and Pak-Man Resources Inc (Arch Joint Venture) which staked Eugene cl 1-44 (YB8097) in Sep/87 to the northeast and carried out geological mapping, geochemical sampling, magnetometer and VLF-EM surveying and bulldozer trenching in 1987 and diamond drilling of 3 holes (173 m) in 1988. In 1997, Northern Platinum Ltd under an agreement with International All-North Resources Ltd (the manager of the Arch Joint Venture) carried out prospecting, geochemical sampling and trenching. All North's interest was subsequently purchased by Northern Platinum in Jan/98, at which time Northern Platinum took over as the project manager.

Northern Platinum carried out prospecting and geochemical rock sampling in 2000 and self potential geophysical surveying, prospecting, geological mapping, bulldozer trenching, road maintenance, diamond drilling of one hole (63.4 m) and geochemical rock sampling in 2001.

Capsule Geology

The claims cover an extension of the Quill Creek complex of the Klauene Ultramafic Suite which hosts the Wellgreen deposit located 5 km to the east-southeast (Minfile occurrence #115G 024). A differentiated ultramafic sill consisting of variably serpentinized peridotite with a basal gabbro phase intrudes Pennsylvanian to (?) Lower Permian Hansen Creek formation sedimentary and pyroclastic volcanic rocks of the Skolai Group of the Wrangellia Terrane. The main showing is a zone 60 m long and 15 m wide consisting of narrow widths of massive chalcopyrite and nickelliferous pyrrhotite at the contact of the 1 m wide basal gabbro phase with cherty argillite. The overlying serpentinized peridotite contains disseminated, interstitial chalcopyrite and pyrrhotite. Stringer sulphides occur as fracture fillings in the cherty argillite adjacent to the massive sulphide.

A chip sample taken in 1987 assayed 2.51% Ni, 0.57% Cu, 1.8 g/t Pt, 3.2 g/t Pd and 0.07 g/t Au while a sample of similar material from the same location that was assayed in 1955 returned values of 1.5 g/t Pt, 1.5 g/t Pd and 0.4 g/t Rh.

The mineralized gabbro is intermittently exposed in trenches and creek cuts over about 800 m of strike length. Two 1988 drill holes that tested the gabbro returned up to 1.44% Ni, 0.75% Cu, 0.7 g/t Pt and 1.5 g/t Pd over 2.6 m but a third hole that tested a strong geophysical anomaly 2000 m to the west cut only weakly mineralized, sheared peridotite.

The 1997 program was conducted to determine the extent of the mineralization along the mineralized trend and focused on relocating and sampling known occurrences within the claim group. High Ni and Cu assay values were reported from grab samples collected during the program, but sample locations for the highest values were not included in the assessment report. Other values for samples with location information were generally lower than those previously reported.

Prospecting in 2000 located high grade sulfide rich float approximately 300 to 400 m south of the original showing. Followup work in 2001 identified the S.P. showing which consists of semi-massive to massive sulfides comprised of pyrrhotite, pentlandite and chalcopyrite which occur as lenses near the lower contact of a sill, also composed mainly of peridotite with a lower gossanous weathering basal gabbro phase and siliceous tuffaceous siltstone of the volcano-sedimentary country rock package. Chip sampling of the largest sulfide lense exposed in trenching returned 3.02% Cu, 3.01% Ni, 2.4 g/t Pt and 3.5 g/t Pd over 3.5 m (estimated true width of 2 m).

Drilling of the S.P. showing revealed peridotite weakly mineralized throughout with pyrrhotite and chalcopyrite over the first 50 m of the hole, followed by nearly 6 m of gabbro containing 1.6 m of irregular, elongated masses of semi-massive to massive sulfide mineralization associated with silicified and bleached sections of the gabbro just above the contact with the local country rock. Continuous sampling of 2 m intervals of the peridotitic section returned anomalous values throughout, ranging from 251 ppm to 2 730 ppm Cu, 2 108 ppm to 3 595 ppm Ni, 79 ppb to 353 ppb Pt and 85 ppb to 518 ppb Pd. Analysis of the sulfide rich section of the gabbro returned 4.18% Cu, 1.98 % Ni, 1.68 g/t Pt and 2.33 g/t Pd over 1 m from massive sulfide mineralization and 8 371 ppm Cu, 8 023 ppm Ni, 678 ppb Pt and 1 155 ppb Pd over 0.6 m of semi-massive sulfide mineralization.

References

CAMPBELL, F.A., 1956. Nickelliferous Sulphide Deposits at Quill Creek and White River, Yukon. Unpublished M.Sc. thesis, Queen's University.

CAMPBELL, S.W., 1976. Nickel-copper sulphide deposits in the Klauene Ranges, Yukon. Exploration and Geological Services Division, DIAND; Open File 1976-10.

CAMPBELL, S.W., 1981. Geology and genesis of copper deposits and associated host rocks in and near the Quill Creek area, Southwestern Yukon. Unpublished Ph.D. thesis, University of British Columbia, 1981.

GEOLOGICAL SURVEY OF CANADA Open File 381, p.54

GIBBONS, C., Oct/67. Assessment Report #019085 by R.G. Hilker.

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).

HULBERT, L.J., 1997. Geology and Metallogeny of the Kluane Mafic-Ultramafic Belt, Yukon Territory, Canada: Eastern Wrangellia ¿ A new Ni-Cu-PGE Metallogenic Terrane. Geological Survey of Canada Bulletin 506, 265 p.

NORTHERN PLATINUM LTD, Jul/98. Assessment Report #093870 by J.P. McGoran.

NORTHERN PLATINUM LTD, Feb/2002. Assessment Report #094254 by J.P. McGoran.

PAK-MAN RESOURCES INC, ROCKRIDGE MINING CORP and KLUANE JOINT VENTURE, Jan/88. Assessment Report #092007 by W.D. Eaton.

PAK-MAN RESOURCES INC, ROCKRIDGE MINING CORP and KLUANE JOINT VENTURE, Feb/89. Assessment Report #092645 by W.D. Eaton.

PROSPECTOR AIRWAYS COMPANY LTD, Sep/54. Assessment Report *#092019 by G. Ehrlich.

YUKON EXPLORATION 1984, p. 179; 1987, p. 238-240; 1988, p. 167-168.

YUKON EXPLORATION AND GEOLOGY 1982, p. 195; 2001, p.20.

Work History

Date	Work Type	Comment
7/1/2021	Drilling	
12/31/2001	Geochemistry	
12/31/2001	Drilling	One hole, 63.4 m.
12/31/2001	Geology	
12/31/2001	Ground Geophysics	
12/31/2001	Other	
12/31/2001	Development, Surface	
12/31/2000	Geochemistry	
12/31/2000	Other	
12/31/1997	Geochemistry	
12/31/1997	Other	
12/31/1997	Trenching	
12/31/1988	Drilling	Three holes, 173 m.
12/31/1987	Geology	
12/31/1987	Geochemistry	
12/31/1987	Ground Geophysics	Also VLF-EM survey.
12/31/1987	Trenching	
12/31/1986	Geochemistry	
12/31/1980	Trenching	
12/31/1977	Trenching	
12/31/1972	Geology	
12/31/1972	Geochemistry	
12/31/1972	Ground Geophysics	Also magnetic survey.
12/31/1972	Trenching	
12/31/1970	Trenching	
12/31/1968	Trenching	
12/31/1967	Geology	
12/31/1967	Ground Geophysics	Also magnetic survey.
12/31/1953	Drilling	Fourteen holes, 143.3 m.
12/31/1953	Geology	
12/31/1953	Ground Geophysics	
12/13/2001	Trenching	

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
097264	2018	Exploration Assessment Report: Bird/Nest Line Cutting, Geophysics and Geology Work on the Nickel Sh�w Property	Bedrock Mapping - Geology, IP - Ground Geophysics, Resistivity - Ground Geophysics, Line Cutting - Other, Environmental Assessment/Impact - Studies		
096373	2013	Geophysical Interpretation of the Rory Claim Group, Yukon	Process/Interpret - Pre-existing Data		
095044	2008	Dighem Survey for Coronation Minerals Inc. Wellgreen Property, Yukon Territory	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		
094578	2005	2005 Exploration Summary Report	All Weather Road - Development, Surface, Prospecting - Other		
094254	2001	Summary Report	All Weather Road - Development, Surface, Diamond - Drilling, Prospecting - Other, Mechanical - Trenching	1	63.40
093870	1997	Summary Report	Silt - Geochemistry, Prospecting - Other, Mechanical - Trenching		
092007	1987	Summary Report on 1987 Exploration	Soil - Geochemistry, Bedrock Mapping - Geology, EM - Ground Geophysics, Prospecting - Other, Mechanical - Trenching		
019085	1967	Geological Mapping Magnetometer and Electro-Magnetic Survey	Bedrock Mapping - Geology, EM - Ground Geophysics, Magnetics - Ground Geophysics, Line Cutting - Other		
092019	1953	Operational Report on Quill Creek Property	Bedrock Mapping - Geology, Magnetics - Ground Geophysics, Prospecting - Other, Hand - Trenching		

Related References

Number	Title	Page(s)	Reference Type	Document Type
ARMC006844	Plan map of diamond drilling - Miles Creek		Property File Collection	Drill Logs
ARMC006850	Crone Wedge EM map - Line 0-0 on Arch Ck claims at Discovery Ni-Cu showing		Property File Collection	Geophysical Map
ARMC006851	Sketch map of Packsack drilling - Arch Ck claims		Property File Collection	Geoscience Map (General)
ARMC006764	Duplicates of drill logs - Holes S-1A to S-8 incl. - Miles Creek-Enger option		Property File Collection	Drill Logs
ARMC006774	D.D.H. log duplicates - Holes S-9 to 14 inc. - Miles Creek - Enger option		Property File Collection	Drill Logs
ARMC006775	Plan map showing claims in the vicinity of the Miles Creek-Enger option - White River		Property File Collection	Geoscience Map (General)
ARMC006776	Summary of diamond drilling for April and May 1953 - Miles Creek-Enger option		Property File Collection	Drill Logs
ARMC006777	Correspondence Re: Newly acquired ground at White River		Property File Collection	Miscellaneous Company Documents
ARMC013049	Preliminary evaluation report - Arch Creek area - Tippy-Jiffy-Legacy & Sue claims		Property File Collection	Report
ARMC013048	Property examination report on the Arch Creek area - Tippy-Jiffy-Legacy-Sue claims		Property File Collection	Report
ARMC013050	Geological map - Arch Creek area - 115-G-5, 12		Property File Collection	Geoscience Map (Geological - Bedrock)