Occurrence Details

Occurrence Number: 105E 002
Occurrence Name: Mars (TUV)
Occurrence Type: Hard-rock
Status: Prospect
Date printed: 6/14/2025 4:57:12 PM

General Information

Secondary Commodities: copper, fluorite, gold, lead, magnetite, molybdenum, silver
Aliases: TUV
Deposit Type(s): Porphyry Cu-Mo-Au
Location(s): 61°17'25" N - -134°49'21" W
NTS Mapsheet(s): 105E07
Location Comments: Location from map in AR 096984
Hand Samples Available: No
Last Reviewed:

Capsule

Work History

Discovered during a 1971 stream sediment sampling program by United Keno Exploration (a consortium representing United Keno Hill Mines Ltd, Falconbridge Nickel Mines Ltd , and Canadian Superior Exploration Ltd), which staked TUV cl 1-24 (Y66799) in Jul/72 and explored with soil sampling and mapping in 1972 and 1973 and three hand trenches in 1973.
Restaked as DDH cl 1-16 (YB67058) by B. Sauer in Jun/96 and optioned to Camdan Exploration Inc in Aug/96. Camdan surrounded the occurrence with Mars cl 1-272 (YB96047) between August and Oct/96. In 1996 the company prospected and established a grid over the northern portion of the DDH claims. Later in the year a magnetics survey and limited soil sampling was carried out on the grid. The DDH and Mars claims were optioned to Placer Dome Canada Ltd in Jun/97. Placer Dome flew an airborne gamma ray and magnetic geophysical survey over both claim groups and carried out line cutting, soil sampling, geological mapping and an IP geophysical survey over portions of the DDH claims. In Sept/2000 Placer Dome dropped its option and the DDH and Mars claims were transferred to R. Doherty and B. Sauer.
In Sep/2001 the DDH and remaining Mars claims were optioned by Saturn Ventures Inc which carried out grid based rock and soil sampling in Sept and Oct/2001. The company carried out a small excavator trenching and compilation program in 2003.
In May/2004 Saturn Ventures reorganized and changed its name to Saturn Minerals Inc. The company initiated a helicopter-supported diamond drilling program on the property (7 holes, 827 m) in Jul/2004. In Oct/2004 the company canceled the option agreement and returned the claims to Doherty and Sauer.
In 2007, ATAC Resources Ltd. staked the STARS claims adjacent to the DDH claims, and in 2009 it purchased B. Sauer's 50% stake in the DDH claims. In 2010, Strategic Metals Ltd. purchased ATAC Resources' interests in the DDH and STARS claims, and A. Doherty's 50% holding in the DDH claims. That year, Strategic Metals carried out a helicopter-borne magnetics and radiometrics survey, which identified a northwestly trending magnetic anomaly that corresponds to anomalous soil geochemistry (Fu, 2010). In 2011, Strategic Metals optioned the property to New Dimension Resources Ltd., which performed a two hole, 635.5 m diamond drill program designed to test the northwestly trending geochemical and geophysical anomalies identified by previous workings. Two intersections from one of these holes were particularly interesting: 23.07 m from 179.83 m to 202.90 m assayed 0.27 g/t gold, 0.16% copper, 1.22 g/t silver and 0.028% molybdenum; and 14.75 m from 224.23 to 238.98 m graded 0.17 g/t gold, 0.25% copper, 2.03 g/t silver and 0.028% molybdenum (Unger, 2011).

Capsule Geology

The occurrence is located towards the northern end of the Stikinia Terrane, the largest terrane underlying the Intermontane region of the Cordillera. Stikinia consists of an Upper Paleozoic volcanic arc basement upon which the Lewes River volcanic arc was built during the Middle and Late Triassic. Detritus from the uplifted arc accumulated up to seven kilometers of strata in the adjacent marginal basin through Middle Jurassic time. This basin, known as the Whitehorse Trough, is composed of Late Triassic volcanic rich detritus and carbonate of the Lewes River Group and Jurassic intrusive-rich clastics of the Laberge Group.
The occurrence is located within the Teslin Crossing Pluton, a slightly elliptical body which intrudes shallowly-dipping Early to Middle Jurassic Laberge Group siltstone and shale rocks assigned to the Tanglefoot Formation of the Laberge Group. Along its eastern margin the pluton is in fault contact with Upper Triassic Lewes River carbonate rocks assigned to the Hancock Member of the Lewes River Group.
The pluton consists of multiple intrusive phases of varying composition (syenite, monzonite and granodiorite) and is inferred to be emplaced at high levels. Country rocks immediately adjacent to the pluton dip steeply away from it. Contacts are irregular and locally follow (or control) topography. Incipient brecciation is found over a large area in the northern part of the stock and small areas of intense brecciation occur in the west and southwest parts. Extensive potassium metasomatism accompanied the brecciation and the surrounding monzonite exhibits weak propylitic alteration.
Lamprophyre and hornblende-plagioclase porphyry dikes cut the main pluton following brecciation but prior to completion of mineralization.
Geological mapping completed by a contractor employed by Placer Dome outlined an inlier of reddish-brown weathering, locally porphyryblastic, phyric dacite to trachyandesite near the center of the pluton (Keyser, 2002). This unit has locally strong carbonate alteration and may comprise a sequence of reworked tuff and represent either a coeval volcanic pile into which the pluton intruded or high-level volcanics associated with the intrusive event.
Minor disseminated chalcopyrite associated with pyrite, magnetite and traces of molybdenite, galena, scheelite and purple fluorite is erratically distributed throughout the brecciated and altered areas, occasionally associated with carbonate and quartz veining. United Keno Exploration¿s soil sampling program outlined isolated Cu and Mo anomalies, three of which were tested with hand trenches the following year. The trenching did not expose any significant mineralization. United Keno never tested for gold.
Camdan¿s initial exploration program verified earlier results reported by United Keno Exploration. The best results were obtained from the X-zone described as a small knob located south of the Windy Mountain peak, close to the intrusive-sediment contact. Potassic altered and mineralized rock is exposed for in an area measuring 1.5 m wide and 5 m long. Surface samples consist of orange-rust weathering, malachite stained (with minor azurite) intensely altered intrusive rock containing well developed limonitic boxworks associated with magnetite stockwork veinlets, minor carbonate and argillic alteration and manganese dendrites. The best assay from this zone returned 4 790 ppb Au, 195.7 ppm Ag and 0.28% Cu.
A total of 81 rock chip, 25 soil and one silt sample was collected by Camdan in 1996. Of the rock samples 38 samples returned values of > than 100 ppb Au and 57 samples returned values of > 500 ppm Cu. The anomalous samples were distributed throughout the DDH claims. The soil samples were collected from an area located over an intense magnetic high as outlined by a ground magnetometer survey. The survey outlined a weak Cu-Au soil anomaly over the strongest part of the magnetic anomaly. A total magnetic field survey conducted over the same grid as the soil survey outlined several areas of pronounced magnetic response which was attributed to magnetite rich rocks lying along the ridge on which the grid was centered.
Placer Dome¿s IP geophysical survey outlined a broad zone of high chargeability that is coincident with the X-zone, a zone in which Cu-Au surface mineralization was previously reported. The airborne magnetic survey confirmed the elliptical shape of the stock at surface and indicated that the intrusive continues at depth to the south-west. The survey also confirmed the zoned nature of the pluton. The potassium channel of the radiometric survey outlined several unconnected regions of high potassium counts within the pluton. The high counts were thought to be due to introduction of potassium as a consequence of hydrothermal alteration associated with a mineralization event and/or merely represent portions of the intrusion that are richer in potassic feldspar where feldspar is primary (eg. rock type may be syenite rather than monzonite). Results from the mapping and soil sampling programs were not filed for assessment credit. However later reports by Saturn Ventures show that anomalous gold and copper values in soil were restricted to the southwestern part of Placer Dome¿s grid. All known soil geochemical anomalies appear to relate to known bedrock mineralization.
Saturn Venture¿s exploration program was located adjacent to, and northeast of the area explored in detail by Placer Dome in 1977. Soil samples were only tested for copper and zinc content and did not return any significant areas of anomalous values. The majority of rock samples were collected in and around known mineralized zones. Trenching confirmed bedrock mineralization at the Kelly zone which had only been seen previously in float. The best results were obtained from grab samples of porphyry-style malachite-azurite-bornite-quartz-carbonate mineralization located at the X zone. One sample returned 240 ppb gold while a second sample returned 17 000 ppm copper.
The 2003 compilation work allowed the company to pull all of the known data together and produce the first map of alteration distribution and assemblages. Prior to drilling the company identified 9 separate zones of bedrock mineralization The 2004 drilling tested the Kelly (3 holes), the Moon Knob (3 holes) and Andrew zones (1 hole). None of the holes returned economic values and geochemical

results indicated the presence of only weak mineralization amongst elements of potential economic interest (copper, gold, molybdenum and silver). Although the results were poor, the drilling only tested a small portion of the property.

References

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CAMDAN EXPLORATION INC, Jun/98. Assessment Report #093835 by D.J. Ouellette.

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YUKON EXPLORATION AND GEOLOGY 1996, p.31; 1997, p. 36; 2001, p. 13, 24; 2003, p. 26; 2004, p. 24, 31, 33.

Work History

Date	Work Type	Comment
6/1/2015	Remote Sensing	
6/1/2011	Drilling	2 holes, 635.50 m
6/1/2010	Airborne Geophysics	
6/1/2010	Airborne Geophysics	
6/1/2003	Geochemistry	
6/1/1997	Other	
6/1/1997	Geochemistry	
6/1/1997	Lab Work/Physical Studies	
6/1/1997	Airborne Geophysics	
6/1/1996	Geochemistry	
6/1/1996	Geochemistry	
6/1/1996	Other	
6/1/1972	Other	
12/31/2003	Trenching	Also carried out compilation study.
12/31/2001	Geochemistry	
12/31/2001	Geochemistry	Grid based sampling program.
12/31/1997	Geology	
12/31/1997	Airborne Geophysics	Also magnetic survey.
12/31/1996	Geology	
12/31/1996	Geochemistry	
12/31/1996	Ground Geophysics	

12/31/1973	Geology	
12/31/1973	Geochemistry	
12/31/1973	Trenching	2 trenches.
12/31/1972	Geology	
12/31/1972	Geochemistry	
12/31/1971	Geochemistry	Stream sediment anomalies led to staking in 1972.
12/13/2004	Drilling	Seven holes, 827 m.
12/13/1997	Ground Geophysics	

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
096845	2015	Assessment Report Describing LIDAR Surveying at the Mars Property	LIDAR - Remote Sensing		
095726	2011	Diamond Drilling at the Mars Property	Diamond - Drilling, Drill Core - Geochemistry	2	635.50
095333	2010	Assessment Report Describing Airborne Geophysical Surveys at the Mars Property	Gamma-Ray Spectrometry - Airborne Geophysics, Magnetic - Airborne Geophysics		
094480	2004	Geology, Alteration, Mineralization - Diamond Drilling on the MARS 1-200 Claims	Diamond - Drilling, Drill Core - Geochemistry	7	827
093874	1997	Geophysical Surveys on the MARS 1-272 and DDH 1-16 Claims	Gamma-Ray Spectrometry - Airborne Geophysics, Magnetic - Airborne Geophysics, Soil - Geochemistry, Bedrock Mapping - Geology, IP - Ground Geophysics, Petrographic - Lab Work/Physical Studies, Line Cutting - Other		
093656	1996	1996 Assessment Report Geological, Geophysical and Geochemical Work on the Mars Property	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Magnetics - Ground Geophysics, Prospecting - Other		
060152	1972	Geological and Geochemical Report on the TUV 1 to 24 Mineral Claims	Soil - Geochemistry, Bedrock Mapping - Geology, Detailed Bedrock Mapping - Geology, Prospecting - Other		

Related References

Number	Title	Page(s)	Reference Type	Document Type
04-013	Geology, Alteration, Mineralization, and Diamond Drilling on the MARS 1-200 Claims		Yukon Government: Energy, Mines and Resources	YMEP Report
96-045	Summary Report on the DDH Claims		Yukon Government: Energy, Mines and Resources	YMEP Report
13-042	Geochemical Report On The APCAR Project (Alkalic Porphry Copper Gold Recon)		Yukon Government: Energy, Mines and Resources	YMEP Report
03-017	The Mars Alkalic Cu-Au Property, Laberge Map Area (105E/7), Yukon Territory, Canada: Characteristics of Geology, Alteration and Mineralization, and Exploration Potential for Alkalic Cu-Au Deposits. Includes Trenching and Sampling Results.		Yukon Government: Energy, Mines and Resources	YMEP Report

Drill core at YGS core library

Number	Property	Year Drilled	Core Size	Photos	Data
MARS-11-01	Mars	2011	BTW	0	6
MARS-11-02	Mars	2011	BTW	0	6