



## Occurrence Details

**Occurrence Number:** 115P 007

**Occurrence Name:** Mahtin

**Occurrence Type:** Hard-rock

**Status:** Prospect

**Date printed:** 6/14/2025 4:52:45 PM

## General Information

**Secondary Commodities:** antimony, arsenic, bismuth, copper, gold, silver, tin

**Aliases:** Sprague

**Deposit Type(s):** Skarn Au

**Location(s):** 63°55'11" N - -136°49'37" W

**NTS Mapsheet(s):** 115P15

**Location Comments:** .5 Kilometres

**Hand Samples Available:** Yes

**Last Reviewed:**

### Capsule

#### Work History

Hand trenching was reportedly carried out in this vicinity prior to 1948 and the area east of the occurrence was likely staked during this period due to the presence of old claim posts on the ridge east of the occurrence. The first record of staking in the area was Ram cl 1-37 (YA40026) and Wolf cl 1-16 (YA40068) which were staked approximately 3.5 km east of the occurrence location in May/79 by E. Weiz and L. Havranek. The two are reported to have carried out bulldozer trenching later in the year.

The Cortin Joint Venture (Billiton Canada Ltd, CCH Resources Ltd, Inco) staked the occurrence as Mahtin cl 1-24 (YA47192) in Aug/79 and carried out reconnaissance stream sediment sampling later that year. CCH Resources changed its name to CCH Minerals Ltd in 1980 and carried out geological mapping, geochemical soil sampling, before staking Mahtin cl 25-32 (YA52928) contiguously to the east in Aug/80.

M. Zeiler is reported to have carried out additional bulldozer trenching on the Wolf claims in 1981 and 1982.

Restaked as Mahtin cl 1-20 (YB17426) in Jul/88 by J. Moreau, who carried out geological mapping and geochemical rock, silt and soil sampling in 1989. During this period, Total Erickson Resources Ltd restaked the Ram and Wolf claims as Spr cl 1-69 (YB17672) in Aug/88 and carried out prospecting, limited geological mapping and geochemical sampling in 1989. Moreau staked Brent cl 1-12 and Mahtin cl 21-31 (YB47805) contiguously to the west and south, respectively, in Oct/93.

B. Lueck staked Asp cl 1 and 3 (YB44877) and the Asp cl 2 and 4 (YB42221) immediately to the southeast in Jun/93. The claims were respectively staked in the Dawson and Mayo Mining Districts, accounting for their non-consecutive numbering.

R. Wondga staked SP cl 1-9 and 12-31 (YB48141) and SP cl 10-11 and 35-58 (YB42475) around the occurrence in both the Dawson and Mayo Mining Districts in Feb/94 and BJ cl 1-6 (YB52715) in Sept/94.

Moreau restaked the Mahtin claims as Dickson cl 1-31 (YB52967) in Nov/94 and restaked the Brent claims as Brent cl 1-12 (YB52995) and the Asp claims as Gord cl 1-4 (YB43873) in Dec/94. In Nov/99, Copper Ridge Explorations Inc optioned the Brent and Dickson claims from Moreau and carried out geological mapping and geochemical rock sampling during Aug/2000.

Restaked as Mahtin cl 1-15 (YC23544) in Jan/03 by S. Ryan, who carried out a ground magnetometer and I.P. geophysical survey later in the year. Ryan staked Mahtin cl 16-34 (YC28827) to the north and south and Mahtin cl 36-37 (YC10944) to the east (in the Mayo Mining District) in Sep/2003. In Apr/2005 Ryan added Mahtin cl 37-120 (YC30423). Later in the summer Ryan carried out a magnetic geophysical survey and soil sampling program over the entire claim block. Ryan also hand trenched on one of the magnetic anomalies.

In Oct/2004 Ryan optioned the Mahtin claims to International Gold Resources Incorporated for a series of cash and share payments and certain work commitments. In 2006 the company flew a versatile time domain electromagnetic (VTEM) and cesium magnetometer geophysical survey over the claims. In 2007 International Gold drilled 7 diamond drill holes (998.83 m) on the claims.

#### Capsule Geology

The area surrounding this occurrence was mapped at 1:50 000 scale in the early to mid-1990s by D. Murphy et. Al. (1996, 1997) who was employed by the Canada/Yukon Geoscience Office which was later absorbed into the Yukon Geology Program which became the Yukon Geological Survey in April 2003. The Mahtin claims are situated on the southern flanks of the Lost Horse Syncline, a syncline of folded Upper Proterozoic to Devonian metasediments intruded by the 91 +/- 0.2 million year Cretaceous Sprague Creek stock.

The occurrence hosts skarn and hornfels zones in limestone, chert and shale of Upper Cambrian to Ordovician Rabbitkettle Formation, adjacent to the early Late Cretaceous (91.0 +/- 0.2 Ma) Sprague Creek stock, consisting of a hornblende-biotite quartz monzonite stock and related dykes of the Tombstone intrusive suite. The skarn is composed of diopside, quartz, chalcopyrite, arsenopyrite, pyrite and pyrrhotite with minor silver values and is located in an area of poor exposure with talus, float and subcrop located over a 500 by 200 m area. A tourmaline-arsenopyrite-stibnite-pyrite breccia enriched in silver cuts quartz veins within the central part of the stock, approximately 1.25 km to the east-southeast of the occurrence location, and steeply dipping, quartz-arsenopyrite veins occur near the margin.

Moderately anomalous tin values were obtained near the intrusive contact and highly anomalous tin values were reported from stream silts and heavy mineral concentrates. In 1989, Moreau obtained values up to 3 741 ppb gold, 50.6 ppm silver, 98 207 ppm arsenic, 12 411 ppm antimony, 637 ppm bismuth and 10 559 ppm copper from quartz-arsenopyrite vein float on his Mahtin claims. Contour soil sampling around the head of Bolivia Creek returned values up to 1 213 ppb gold and 16.5 ppm silver with anomalous arsenic, antimony and copper. Similar quartz-arsenopyrite float is widespread on the south part of the Sprague claims, and skarn at the margin of the stock contains up to 6 085 ppm arsenic, 327 ppm antimony, 721 ppm lead and 30 ppb gold.

Float samples of skarn material containing disseminated chalcopyrite and arsenopyrite collected in 2000 returned values up to 6 499 ppb gold, while samples collected in the vicinity of the breccia and composed of hornfelsed argillite returned anomalous levels of arsenic, antimony, gold and bismuth.

Ryan's exploration programs for 2003 & 2004 were summarized in a Technical Report by R.A. Doherty and C.H. Ash prepared in May/2006 for International Gold Resources and available on their web site. The company is registered in Colorado, USA thus is not listed in the SEDAR database. The 2003 ground magnetometer survey was carried out over the original 15 Mahtin claims. The grid covered approximately 1 claim length north and 4 claim lengths south of the northern contact between the stock and the intruded metasediments. Results outlined an area of magnetic high on the northeast portion of the grid and an area of magnetic low on the southwest side of the grid. The sharp break between the two domains most likely represents a fault zone.

Soil sampling by Ryan outlined a 1 500 by 200 m zone of anomalous gold, arsenic and bismuth following the northern contact of the Sprague Creek stock with the Rabbitkettle formation calcareous phyllite. The arsenic and gold have a fairly good correlation with bismuth, arsenic = 0.671 and gold = 0.567, while copper and silver also correlate with bismuth. The IP survey was carried out along the northern contact between the stock and metasediments. An analysis of the pseudo sections shows chargeability high and a resistivity low following the contact between the stock and metasediments. The IP anomalies are also coincident with the defined gold, arsenic, bismuth and copper soil anomalies. A number of rock samples collected along the intrusive-metasediment contact returned anomalous gold along with arsenic, bismuth and antimony.

The 2006 airborne magnetometer and VTEM survey outlined the location of the main intrusive body and a number of northwest trending structures that crosscut the claim block. The 2007 diamond drill program was centered on the northwest end of the northern intrusive-metasediment contact and coincident to the best gold in soil and geophysical anomalies. The holes were collared from two pads that were approximately 275 m apart. Quartz monzonite was intercepted in five of seven holes and areas of strong quartz-pyrite-sericite alteration were intersected in two holes but failed to return any significant zones of anomalous gold. Pyrite-pyrrhotite sulphide skarn horizons were intersected in four holes measuring up to 3 m of core

thickness and returned assay values of between 0.16 and 0.39 g/t gold. The best values were returned from hole MT-07-04 which returned 2.4 g/t gold from 0.5 m of metasediment, 1.44 g/t gold from 0.5 m of banded calc-silicate and 1.0 g/t gold from 2 m of meta-limestone. Hole MT-07-03 returned 0.19 g/t gold from 1.83 m of quartz monzonite. This intersection was preceded by the interval directly above which contained quartz vein with arsenopyrite that returned an assay of 0.56 g/t gold over 1.25 m.

References

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INTERNATIONAL GOLD RESOURCES INC. Apr/2008. Assessment Report #094922 by R.A. Doherty.

INTERNATIONAL GOLD RESOURCES INC. May/2006. Technical report on the Mahtin Property Red Mountain Area, Yukon. By R.A. Doherty and C.H. Ash. Available from International Gold Resources Web Site, May 8, 2006.

INTERNATIONAL GOLD RESOURCES INC. Sep/2007. Review and Preliminary Evaluation of International Gold Resources Properties in Yukon Territory, Canada. Available from International Gold Resources Web Site, Sep. 25, 2007.

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MURPHY, D.C., AND HÉON, D., 1996. Geological Map of Sprague Creek Map Area, western Selwyn Basin, Yukon (NTS 115P/15). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Geoscience Map 1996-2, scale 1:50 000.

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YUKON EXPLORATION 1989, p. 132-133.

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Work History

Date	Work Type	Comment
12/31/2007	Drilling	Seven holes, 998.83 m. Assessment Report #094922 contains drill logs.
12/31/2006	Airborne Geophysics	Also cesium magnetometer survey.
12/31/2004	Geology	No assessment report filed.
12/31/2004	Geochemistry	No assessment report filed.
12/31/2003	Geochemistry	
12/31/2003	Ground Geophysics	Also magnetic survey.
12/31/2000	Geochemistry	
12/31/2000	Geology	
12/31/1989	Geochemistry	Also soil and silt sampling.

12/31/1989	Geology	
12/31/1988	Other	
12/31/1980	Geology	
12/31/1980	Geochemistry	
12/31/1979	Geology	
12/31/1979	Geochemistry	
12/31/1979	Trenching	
12/31/1979	Other	
12/31/1948	Trenching	

### Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
<a href="#">097151</a>	2017	Assessment Report describing RAB drilling, Geological Reconnaissance and Geochemical Surveys at "The Mahtin Group"	RAB (Rotary Air Blast) - Drilling, Rock - Geochemistry, Bedrock Mapping - Geology	9	843
<a href="#">096401</a>	2013	Geological and Geochemical Report, Mapping and Soil Surveys on the Mayo Properties	Rock - Geochemistry, Rock - Geochemistry, Soil - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Detailed Bedrock Mapping - Geology, Prospecting - Other, Prospecting - Other		
<a href="#">096024</a>	2011	Geochemical and Geophysical Report on the Mahtin Property	Gamma-Ray Spectrometry - Airborne Geophysics, Gamma-Ray Spectrometry - Airborne Geophysics, Magnetic - Airborne Geophysics, Magnetic - Airborne Geophysics, Soil - Geochemistry, Soil - Geochemistry		
<a href="#">094818</a>	2006	Assessment Report on the Airborne Magnetics and VTEM Survey, Mahtin Property, Red Mountain Area, Yukon	Magnetic - Airborne Geophysics, VTEM - Airborne Geophysics		
<a href="#">094715</a>	2004	Geophysical/ Geochemical Report, Mahtin 1-34 and 37-120 Claims	Soil - Geochemistry, Magnetics - Ground Geophysics, Line Cutting - Other, Hand - Trenching		
<a href="#">094462</a>	2003	Geophysical Report, Mahtin 1-15 Claims	IP - Ground Geophysics, Magnetics - Ground Geophysics		
<a href="#">094252</a>	2000	Prospecting, Mapping and Sampling, Mahtin Property	Rock - Geochemistry, Regional Bedrock Mapping - Geology		
<a href="#">092793</a>	1989	Geological and Geochemical Assessment Report on the Mahtin 1-20 Claims	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology		
<a href="#">090808</a>	1980	Geological and Geochemical Surveys Mahtin Claims 1 to 24	Silt - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology		

### Related References

Number	Title	Page(s)	Reference Type	Document Type
<a href="#">ARMC016644</a>	Geology map - 11SP/15 - Sprague Creek		Property File Collection	Geoscience Map (Geological - Bedrock)