



Occurrence Details

Occurrence Number: 105G 082

Occurrence Name: Akhurst

Occurrence Type: Hard-rock

Status: Prospect

Date printed: 4/29/2025 9:35:49 PM

General Information

Secondary Commodities: barite, copper, lead, silver, zinc

Deposit Type(s): Volcanogenic Sulphide - type not determined

Location(s): 61°12'58" N - -130°12'51" W

NTS Mapsheet(s): 105G01

Location Comments: .5 Kilometres

Hand Samples Available: No

Last Reviewed:

Capsule

Work History

Staked as BL cl 1-8 (Y93573) in Aug/75 by Cyprus Anvil Mining Corporation, which carried out grid soil sampling and magnetometer surveying later in the year. Restaked as Bud cl 1-14 (YB14914) in Aug/88 by Archer, Cathro and Associates (1981) Ltd, which carried out reconnaissance soil sampling and prospecting. Welcome North Mines Ltd staked Urcu cl 1-20 (YB14914) 1 km to the south, also in Aug/88 and carried out geological mapping, prospecting and geochemical sampling later that year. In early 1994 Cominco flew an airborne geophysical survey over large parts of Yukon-Tanana Terrane. In Apr/94, Cominco staked a number of small, isolated claim blocks in the general vicinity of the occurrence, to cover anomalies identified by the airborne survey. These claims included Base cl 1-14 (YB47342), Ball cl 1-4 (YB47356), Home cl 1-6 (YB47360), Run cl 1-6 (YB47366), and Fly cl 1-18 (YB47386). In Aug/94 Cominco staked Expo cl 1-277 (YB51952) in the area to cover the occurrence and consolidate the individual claim groups into a contiguous block referred to as the Expo property. During the 1994 field season, Cominco carried out reconnaissance exploration programs on various parts of the claim block. In Dec/94 Cominco added Expo cl 278- 417 (YB56791) to the southwest. During the 1995 exploration season the company, carried out more advanced exploration work, including detailed geological mapping, soil sampling and ground geophysical surveying. Between August and Sep/95 Cominco staked Expo cl 418-714 (YB60296) to the north on map sheet 105G 08. In 1996 Cominco continued exploration work on the Expo property. The work included drilling 6 diamond drill holes (816.4m) on 4 different claim groups, detailed geological mapping, soil sampling, prospecting and ground geophysical surveys. Some detailed mapping was completed during the 1997 field season. Cominco carried out geological mapping and geochemical soil sampling of the Fly claims and nearby the nearby area in 1998. In Aug/98 Cominco transferred the Expo claims to R. Berdahl. In 2003 Berdahl prospected and soil sampled in the vicinity of this occurrence.

Capsule Geology

The Finlayson Lake district is underlain by the Yukon-Tanana Terrane: a Late Proterozoic to Paleozoic metamorphosed volcano-sedimentary assemblage. It is regionally bounded to the southwest by the Tintina Fault. This terrane hosts several known volcanogenic massive sulphide (VMS) deposits and occurrences, including Kudz Ze Kayah (Minfile Occurrence #105G 117), Wolverine (Minfile Occurrence #105G 072) and Ice (Minfile Occurrence #105G 118).

The occurrence lies within an area recently re-mapped by Murphy et al. (2004) of the Yukon Geological Survey. The occurrence is located north of the Money Creek Thrust, on the hanging wall side of the thrust. The area is underlain by the Upper Devonian Waters Creek formation (unit DWC) a siliceous felsic metavolcanic rock and lesser intermediate to mafic rock intercalated with carbonaceous phyllite and siliceous rock thought to be a meta-chert. South of the occurrence a large area has been mapped in detail as unit DWCCp, carbonaceous phyllite schist and unit DWCG, quartzite and quartz-pebble conglomerate interbedded with carbonaceous phyllite and minor marble. A small Late Devonian serpentinized ultramafic body (unit Dmum) located to the northwest is in intrusive contact with unit DWC. Several thrust faults located to the west thrust the sequence to the northwest onto a large granitic pluton assigned to Early Mississippian Simpson Range Plutonic suite (unitMSg). Several small Early Mississippian granitic intrusions, likely satellite bodies associated with the pluton intrude the sequence to the north and south.

In the occurrence area, both Cominco and Murphy noted bedded barite occurrences within unit DWC. Soil sampling across the Akhurst Creek drainage by Cyprus Anvil delineated an area of anomalous zinc and weakly anomalous copper, molybdenum and lead values overlying Upper Devonian quartzite and minor marble ? (unit DWCCq). No assessment report exists for the Cyprus Anvil work.

Cominco re-staked the Akhurst Creek area within the Expo claim block. Detailed mapping revealed the area to be underlain by felsic metavolcanic rocks and carbonaceous phyllite and schist, with interbedded mafic metavolcanic rocks (unit DWC). Cominco outlined several barite showings, including the Akhurst showing, which consist of chloritic altered felsic tuff hosting baritic and manganiferous siliceous exhalite. These showings returned zinc-silver, +/- lead and copper mineralization.

Southwest of the occurrence, on the western slope of Akhurst Creek, Cominco noted numerous massive barite showings which generally returned low zinc, lead, silver and copper values but high barite values. Geological mapping and prospecting (in the same area) also located float boulders of hornfelsed/skarned mafic flow/flow breccia containing 10-15% disseminated to massive, blebby, fine to medium-grained pyrite and 10-20% sphalerite. Grab samples returned 7.6% zinc, 3.9 g/t silver and 180 ppb gold. Follow up prospecting located subcropping mineralization and float below the ridge line, containing pyrite-pyrrhotite-sphalerite which assayed 3.4% zinc, 2.8 g/t silver and 80 ppb gold.

Contour and grid soil sampling carried out in the Akhurst Creek area identified strong lead-copper-silver-zinc anomalies and ground geophysics identified 2 HLEM conductors, one with magnetic association. In 1996 Cominco drilled a single diamond drill hole (167.6m) to test the HLEM conductor with weak magnetic association. The hole located 3 km east of the occurrence was collared within a favorable sequence of mixed pyritic, felsic volcanics and argillites. The hole intersected a mixed sequence of sericitic, aphanitic to granular textured, siliceous fine-grained felsic tuffs and lesser monolithic and heterolithic felsic lapilli tuffs interbedded with thin to laminated, medium to dark grey chert/cherty exhalite and dark grey to black, siliceous mudstone/silty mudstone. The most significant intersection assayed 0.9% zinc, 40 g/t silver, and elevated barite over 30 cm.

Cominco's Fly claims, located about 4 km southeast of the occurrence, are underlain by a sequence of felsic metavolcanic and fine metasedimentary rocks (unit DWC). Previous exploration work by Welcome North on their Urcu claims, uncovered Upper Devonian pyroclastic rocks with pyritic horizons situated adjacent to feldspar phyrlic sills/dykes and intruded by Late Devonian to Early Mississippian granodiorite. Soil sampling outlined a broad arsenic anomaly with scattered weak gold values, centered just west of the Fly claims. Prospecting by Cominco, uncovered several barite occurrences on and west of claims, consisting of quartz-barite veins and veinlets in poorly exposed rusty felsic tuffs within an epiclastic dominated interval. The barite horizons range in thickness up to 8 m and rock samples returned up to 53% barite but only minor amounts of zinc, copper and lead.

Soil sampling over the Fly grid returned several areas of elevated to strongly anomalous copper-zinc-silver and generally weaker lead values, while HLEM and magnetic surveys outlined a 1.7 km long, shallow northwest dipping HLEM conductor with a sporadic magnetic response along most of its length.

In 1996 Cominco drilled one diamond drill hole (105.4 m) to test the HLEM conductor and a coincident, single sample zinc, copper, lead and silver soil anomaly. The hole intersected a sequence of siliceous, variably pyritic and sericite/iron altered felsic tuff, flow and minor lapilli tuff intercalated with variably siliceous, black carbonaceous mudstone. Several iron-carbonate/clay(?) altered felsic dykes and mafic dykes cut the package. Although no mineralization of economic interest was encountered, sampling of the core did reveal "elevated copper-zinc-barite values and high silver values (1.0 - 6.5 ppm) and arsenic values (100 - 1424 ppm) throughout".

The Base showing, located 2 km north of the occurrence, lies immediately east of an apparent north-trending fault and below a mixed metasediment/felsic volcanic contact. The showing is hosted by fine-grained felsic tuffs and is described as a 1.1 metre thick, manganiferous and weakly hydrozincite stained, siliceous rock containing thin, foliation parallel fracture fillings or bands of fine-grained sphalerite-pyrite and trace galena. A single grab sample, collected in 1994, returned 0.9% zinc, 0.5% lead and 16.3 g/t silver.

The Run showings located approximately 2.5 km northeast of the occurrence consist of numerous float cobbles and boulders containing 60-80% banded to thin wispy laminated, fine to coarse-grained pyrite with lesser galena-sphalerite-chalcopryrite within a chlorite-silica gangue. This float is found scattered over about a 1 km strike length. Grab samples of the material returned 9.9% zinc, 13% lead, 0.2% copper, and 106.5 g/t silver. The float specimens are located near the contact of a quartz-barite/quartz-barite-sphalerite veined feldspar-quartz phyrlic tuff and an overlying pyrite rich aphanitic felsic volcanic bed (unit DWC). The sequence is intruded by a variably foliated, equigranular, medium-grained, granitic stock/sill (unit MSg) which is itself cut by several thin iron-carbonate veins/dykes.

Contour soil sampling carried out in 1994 returned strongly anomalous copper-lead-zinc-silver-cadmium-barite values over large parts of the area. Geological mapping in 1995 noted weak skarn mineralization consisting of calcite- quartz-epidote-amphibole-sulphide veins and disseminations in mafic volcanic rocks located near the contact with the granitic intrusion.

An HLEM/mag ground geophysical survey over the area outlined several conformable conductors with no apparent associated magnetic response. In 1996 Cominco drilled one diamond drill hole (161.5 m) to test one of conductors. The hole was located uphill of the barite float occurrences and strong zinc-lead-copper-silver soil geochemistry anomalies. The hole intersected a sequence of fine-grained, cherty, variably pyritic felsic tuffs/lapilli tuffs and flows cut by several quartz porphyry dykes underlain predominantly by calcareous argillite and siltstone and lesser felsic tuff found in the lower third of the hole. According to Cominco "pyrite-sphalerite-galena-tetrahedrite(?) in quartz Fe-carbonate veinlets and related dissemination" was encountered at three stratigraphic levels, the best of which assayed 0.8% zinc, 0.9% lead and 24.6 g/t silver over 0.6 metres.

Berdahl discovered additional barite mineralization southwest of previous finds. A line of soil samples taken approximately 1.5 km south of this occurrence returned a 500 m long zinc (up to 5 392 ppm) and gold (up to 568 ppb) anomaly. Chromium, vanadium and beryllium values were also slightly elevated.

References

BERDAHL, R., 2003. Assessment Report #094474 by R. Berdahl.

COMINCO LTD, Feb/96. Assessment Report #093338 by P.A. MacRobbie.

COMINCO LTD, Apr/96. Assessment Report #093426 by P.A. MacRobbie.

COMINCO LTD, Apr/96. Assessment Report #093427 by I. Jackish.

COMINCO LTD, Apr/97. Assessment Report #093581 by L.A. Tulk.

COMINCO LTD, May/99. Assessment Report #093972 by P. MacRobbie and D.A. Senft.

HUNT, J.A., 2002. Volcanic-associated massive sulphide (VMS) mineralization in the Yukon-Tanana Terrane and coeval strata of the North American miogeocline, in the Yukon and adjacent areas. Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Bulletin 12, 107 p.

MURPHY, D.C., AND PIERCEY, S.J., 1999. Finlayson project: Geological evolution of Yukon-Tanana Terrane and its relationship to Campbell Range belt, northern Wolverine Lake map area, southeastern Yukon. In: Yukon Exploration and Geology 1998, C.F. Roots and D.S. Emond (eds.), Exploration and Geological Services Division, Indian and Northern Affairs Canada, p.47-62.

MURPHY, D.C. AND PIERCEY, S.J., 2000. Syn-mineralization faults and their re-activation, Finlayson Lake massive sulphide district, Yukon-Tanana Terrane, southeastern Yukon. In: Yukon Exploration and Geology 1999, D.S. Emond and L.H. Weston (eds.), Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 55-66.

MURPHY, D.C. ET AL., 2001. Preliminary bedrock geological map of northern Finlayson Lake area (NTS 105 G), Yukon Territory (1:100 000 scale). Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, Open File 2001-33.

MURPHY, D.C. ET AL., 2002. Finlayson Lake Targeted Geoscience initiative (southeastern Yukon), Part 1: Bedrock geology. In: Yukon Exploration and Geology 2001, D.S. Emond, L.H. Weston and L.L. Lewis (eds.), Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 189-207.

MURPHY D.C., 2004 Devonian-Mississippian metavolcanic stratigraphy, massive sulphide potential and structural re-interpretation of Yukon-Tanana Terrane south of the Finlayson Lake massive sulphide district, southeastern Yukon (105G/1, 105H/3, 4, 5). In Yukon Exploration and Geology 2003, D.S. Emond and L.L. Lewis (eds.), Yukon Geological Survey, p. 157-175.

MURPHY, D.C., ET AL. 2004. Geological map of part of Waters Creek and Fire Lake map areas (part of NTS 105G/1 and 2), southeastern Yukon (1:50 000 scale).

YUKON EXPLORATION AND GEOLOGY 1996, p. 17, 1997, p. 12.

YUKON MINING AND EXPLORATION OVERVIEW 1988, p. 25.

Work History

Date	Work Type	Comment
12/31/2003	Geochemistry	By Berdahl.
12/31/2003	Other	By Berdahl.
12/31/1998	Geology	
12/31/1998	Geochemistry	
12/31/1997	Geology	Detailed mapping caried out in a few areas.
12/31/1996	Drilling	Six holes, 816.4 m.
12/31/1996	Geology	
12/31/1996	Geochemistry	
12/31/1996	Ground Geophysics	Also HLEM survey.
12/31/1996	Other	
12/31/1995	Geology	
12/31/1995	Geochemistry	
12/31/1995	Ground Geophysics	Also HLEM and gravity surveys.

12/31/1994	Airborne Geophysics	Also magnetic survey .
12/31/1994	Other	
12/31/1988	Geology	
12/31/1988	Geochemistry	Reconnaissance scale.
12/31/1988	Other	
12/31/1975	Geochemistry	
12/31/1975	Ground Geophysics	
12/13/1994	Ground Geophysics	Also HLEM and gravity surveys over selected areas.

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
096745	2014	Report on a Helicopter-Borne, Versatile Time Domain Electromagnetic (VTEM) and Aeromagnetic Geophysical Survey, Expo Block and Ellen Creek Block	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		
096178	2012	Airborne Geophysical Survey Report on the Expo Block	Gamma-Ray Spectrometry - Airborne Geophysics, Magnetic - Airborne Geophysics		
093816	1997	1997 Assessment Report Expo/Xpo/Pop/Fly (Including Areas of Base, Ball, Bat, Home & Run Blocks) Properties	Diamond - Drilling, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Prospecting - Other	2	368
093581	1996	1996 Assessment Report Expo Property (Including the Pop, Home, Run and Fly Properties) Picketting, Ground Geophysics (HLEM/MAG), Soil Geochemistry and Geological Mapping	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics, Diamond - Drilling, Silt - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, EM - Ground Geophysics, Magnetics - Ground Geophysics, Prospecting - Other	6	816.40
093426	1995	1995 Assessment Report Expo Property (Including the Pop, Home, Run, Fly and Bat Properties) Linecutting, Ground Geophysics (HLEM/Mag and Gravity), Soil Geochemistry and Geological Mapping	Soil - Geochemistry, Bedrock Mapping - Geology, EM - Ground Geophysics, Magnetics - Ground Geophysics, Line Cutting - Other		
093338	1994	1994 Assessment Report, Pop, Base, Home, Run, Ball, Fly and Bat Properties (Expo Property)	Gravity - Airborne Geophysics, Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, EM - Ground Geophysics, Magnetics - Ground Geophysics		