Occurrence Details

Occurrence Number: 105F 146
Occurrence Name: Groundhog - BP
Occurrence Type: Hard-rock
Status: Showing
Date printed: 6/16/2025 1:10:37 AM

General Information

Primary Commodities: lead, silver, zinc
Aliases: Groundhog
Deposit Type(s): Vein Polymetallic Ag-Pb-Zn+/-Au
Location(s): N - W
NTS Mapsheet(s): 105F10
Location Comments: Location from map in AR 095899
Hand Samples Available: No
Last Reviewed:

Capsule

Exploration History
Historical exploration in the Groundhog Creek area has about 100 mineral showings and the area has been refereed to as the Groundhog Silver Camp. The Camp is divided into two main areas of silver-lead-zinc ±gold mineralization; a northern half and southern half, separated by Groundhog Creek.
Mineral exploration in the Groundhog Creek and Seagull Lake area was first documented in 1956 after the discovery of galena veins by prospectors Harry and Pete Versluce on behalf of the British-Yukon Exploration Company (BYEC). Claims had been staked, abandoned and re-staked several times in the area, but eventually the Versluce brothers vended their property to Canol Mines Ltd. in 1966 (Fowler and Ramaekers, 1988).
Between 1966 and 1969, Canol Mines had increased its claim holdings in the area significantly and conducted surface exploration and diamond drilling programs. Several occurrences were identified; however, limited record of this work is available (Fowler and Ramaekers, 1988). No further work was completed by the company after 1969.
In 1977, Noranda Exploration Company Ltd. staked the Peak 1-16 claims between Groundhog and Seagull creeks and conducted line cutting, geological mapping, prospecting, soil geochemical sampling and a CEM geophysical survey. This work identified several boulders of mineralized float and lead-zinc anomalies in the area of Anomaly Creek (MacDonald, 1979).
In 1978, Noranda staked additional claims and completed a diamond drilling program to investigate the geochemical and geophysical anomalies identified in the previous year. Three diamond drill holes (88 m) were drilled, which returned an intercept of 42.5 g/t silver and 0.72% lead over 3.04 m.
In 1979, Noranda optioned the H claim group from Canol Mines and completed a program of prospecting, trenching and road building. Six diamond drill holes (485 m) were subsequently completed in an area of mineralized float, known as the H-Zone (Pinnacle Minfile occurrence 105F 074). The best results from this drilling came from zones of mineralized and brecciated chert, which yielded 214 g/t silver and 1.13% lead over 0.97 m; 37 g/t silver, 2.18% lead and 4.98% zinc over 1.52 m; and 145 g/t silver, 8% lead and 3.84% zinc over 1.52 m (Macdonald, 1979 and 1980a).
In 1979, silver mineralization was discovered by the Versluce brothers (H and P Holdings) approximately four kilometres southwest of the H and Peak claims. Following the discovery of several galena-rich float trains, H and P Holdings staked the Jeff, Jim and Hi Grade claims (Fowler and Ramaekers, 1988).
In 1980, Noranda completed two additional diamond drill holes at the H-Zone, but only limited samples were collected which did not yield significant results (Macdonald, 1980b).
In 1981, Great Western Petroleum Corp. and Lornex Mining Corp. formed the Seagull Joint Venture and staked the Lorne claims to cover geochemically anomalous silt samples collected in the headwaters of Groundhog Creek. These claims surrounded the Jeff and Hi Grade claims. The joint venture completed a program of geological mapping and soil and silt geochemical sampling. This work found scattered mineralized float which was all believed to have originated from the Jeff claims and a train of massive galena boulders that was followed to a snow-covered area (Eccles, 1981).
In 1986, H and P Holdings staked the HV and VER claims to expand around their Jeff and Hi Grade claims. They conducted blast trenching and exposed a three-metre wide galena vein, the PN Vein, from underneath a galena-bearing float train. Assays of broken galena and frozen gouge taken from this vein returned 3723.35 g/t silver (Fowler and Ramaekers, 1988). Later that fall, H and P Holdings optioned their claims to Yukon Minerals Corp. Yukon Mineral later staked an additional 53 claims in the surrounding area.
In 1987, Yukon Minerals Corp. did some more staking to bring the total to 403 claims, to covered most of the Groundhog Silver Camp. The project was known as the Ketza Project. Yukon Minerals Corp. subsequently entered into an earn-in agreement with Perrex Resources Inc. During the summer, a surface exploration program comprised of prospecting, geological mapping, soil and silt geochemical sampling, excavator trenching and a limited VLF geophysical survey was completed. This program evaluated known silver-lead-zinc occurrences and resulted in the discovery of numerous occurrences and showings, but no additional records of this work are available (Fowler and Ramaekers, 1988).
Also in 1987, McCrory Holdings Ltd. staked the Whistler 1-8 claims, which adjoined Yukon Minerals Corp.'s claim package, to cover several silver-lead-zinc soil geochemical anomalies and an arsenopyrite-pyrite-quartz vein near Anomaly Creek identified by Noranda in 1977. A limited program of bulldozer trenching and prospecting was conducted in conjunction with geological mapping by a geologist from Yukon Minerals Corp. Grab samples collected from one of the trenches returned up to 0.72 g/t gold, 190 g/t silver and 2.59% lead (Davidson, 1988).
In 1988, McCrory Holdings optioned the Whistler claims to Yukon Minerals Corp., which subsequently performed a property wide program of geological mapping, geochemical sampling, excavator trenching and diamond drilling to follow up targets identified across the Groundhog Silver Camp. A total of 53 galena-bearing showings and 22 quartz-freibergite showings were documented during this program. Diamond drilling in the southern half of the Groundhog Silver Camp was focused on the PN Vein, which was tested by six diamond drill holes (totalling 204 m). This drilling yielded a highlight assay of 512.6 g/t silver, 9.78 % lead, 9.55 % zinc and 0.341 g/t gold over 0.77 m and blocked out 3480 tons of probable and drill indicated ore grading 471 g/t silver, 9.90% lead and 5.25% zinc (Fowler, 1988). A 52.56-tonne bulk sample was taken from the PN Vein, which reportedly returned grades of 4106.7 g/t silver, 5.45% lead and 3.45% zinc, but few details are available. An 18.81-tonne bulk sample was also collected at the nearby Jill Vein (also known as the Hi Grade Occurrence) and shipped to a smelter in Trail, BC. This bulk sample graded 4354 g/t silver, 75% lead, 0.5% zinc and 1.2 % copper (Berdahl, 1995). No additional work was carried out by previously mentioned operators after 1988 and all claims in the area were allowed to expire.
In 1994, G. Macdonald staked the Bro claims to cover the area previously staked by Noranda and optioned them to Lucky Seven Resources, which later changed its name to Brett Resources Inc. The company conducted a program of geological mapping, soil geochemical sampling and trenching at the H-Zone in 1995. Results from this program confirmed historical surface and soil results from work completed by Noranda, and included a grab sample that returned 744 g/t silver, 26.13% lead, 1.3% zinc, 2.19% copper, 1607 ppm arsenic and over 2000 ppm antimony (Olfert, 1995)
Also in 1995, Whitehorse prospector R. Burdahl staked the Pete claims to cover the Jill, PN and Lucky veins, which were previously covered by the Jeff and Hi Grade claims. Composite sampling of remnant hand cobbed ore from the Jill Vein averaged 3755 g/t silver, 66.9% lead, 0.481% zinc and 1.25% copper (Berdahl, 1995). The Pete 1 claim, which covers old workings on the PN and Lucky veins, is still currently held by Berdahl.
Also in 1995, Whitehorse prospector B. Kreft staked the Rob 1, 2 and 3 claims to cover isolated showings around the Pete claims. At the Rob 1 claim, located on the north side of Pass Peak, hand trenching exposed at least four narrow but strongly mineralized veins. The best of these veins, the Rob #1 Vein, returned up to 18,120 g/t silver and 81.8% lead (Kreft, 1996a). At the Rob 2 claim, located roughly 100 m south of the Pete claims, two mineralized veins were exposed by hand trenching. The best of these veins, the Rob #14 Vein, returned up to 13,028 g/t silver and 73.7% lead while a chip sample of sheared and brecciated dolomite near this vein returned 2.375 g/t gold over 2.2 m (Kreft, 1996b). At the Rob 3 claim, located approximately 1700 m northwest of the Pete claims, a strongly mineralized shear zone (up to two metres wide) was exposed by hand trenching. A chip sample taken along this shear zone returned 13,038 g/t silver and 23.4% lead over 1.5 m (Kreft, 1996c)
In 1997, Brett Resources optioned the Bro claims to Aros Resources Inc., which completed a program of soil geochemical sampling, geological mapping and prospecting. This work defined two lead-zinc soil anomalies located uphill of the H-Zone (Tulk and Tucker, 1998). In 1998, geological traverses were made to confirm the nature of mineralization at this zone. No additional work was completed by Aros or Brett Resources and the claims were allowed to expire.
In 2007, the southern part of the Groundhog Silver Camp was staked by Strategic Metals, which sold the property to Rockhaven Resources Ltd. later that year.
In 2008, Rockhaven contracted Geotech Inc. to complete a helicopter-borne versatile-time domain electromagnetic (VTEM) and magnetic survey over the property, and subsequently completed a program of geological mapping, prospecting, silt sampling and claim staking. The following year, Rockhaven performed prospecting, hand trenching and geochemical sampling and in 2011, they staked the CYRX and CYR claims on the east side of the Sea claims.
In 2015, Rockhaven transferred the Groundhog project claims to Strategic Metals as part of a multi-project transaction agreement.
In 2018, Strategic Metals completed a prospecting, hand pitting and geochemical sampling program.
In 2019, Strategic Metals conducted a program of prospecting and soil geochemical sampling.

Regional Geology
The Groundhog property is located 30 km southwest of the Tintina fault in the Ketza-Seagull District (Pelly Mountains) of the Cassiar terrane.
The upper Neoproterozoic to Lower Cambrian Ingenika Group and Rosella formation are the oldest rocks in the region. The rocks of the Ingenika Group and the Rosella formation outcrop in the western portion of the Groundhog region, in the hanging wall of a northwest-striking thrust fault and within the exhumed areas of the Seagull and Ketza uplifts. The Ingenika Group consists of up to 200-700 m of green to tan coloured shale, siltstone and quartzite. These rocks are overlain by up to 800 m of calcareous mudstone and siltstone, archeocyathid bearing carbonate mounds, and black pyritic slate assigned to the Rosella formation. The upper contact between the Rosella formation and the overlying Kechika Group is not well-exposed; however, a mid-Cambrian fossil gap suggests an unconformity (Tempelman- Kluit, 2012).
The Kechika Group consists of Upper Cambrian to Ordovician siliciclastic and volcanic rocks found in the central part of the Groundhog area. Kechika Group rocks are either structurally overlain by or unconformably overly rocks of the Ingenika Group and Rosella formations in the western and central parts of the region. In other areas, the Kechika Group is conformably to disconformably overlain by the younger Askin Group or thrust over Devonian to Mississippian Earn Group. The Kechika Group consists of northwest striking belts of laterally interfingering strata characterized by calcareous slate and thin-bedded platy limestone, tuffaceous phyllite, greenstone and andesitic tuff, basalt flows and volcaniclastics rocks. These rocks appear to be capped by a thin discontinuous black slate that has been correlated with the Road River Group.
Conformably to disconformably overlying the Kechika Group is Silurian to Devonian shallow water, marine strata of the Askin Group. Rocks of the Askin Group form much of the larger mountains within the Groundhog region due to the resistive nature of the stratigraphy. These rocks are unconformably overlain by Earn Group rocks in the central part of the Groundhog region and are faulted against rocks of the Ingenika Group, Rosella formation and Earn Group to the west. The Askin Group consists of a basal, platy, dolomitic siltstone 100 to 500 m thick, overlain by well-bedded, shallow water carbonate rocks and massive dolostone with varying amounts of quartz-sand and silt. Mafic to intermediate volcanic rocks are found locally within the lower platy siltstones. Rapid lateral variations in stratigraphy occur within the carbonate rocks and locally dolomitic, quartz, sandstone dominates. A blueish-grey coloured, thin-bedded limestone is found locally at the top of the Askin Group and overlies most stratigraphy within the group.
Siliciclastic and volcanic rocks of the Devonian to Mississippian Earn Group outcrop in the central to western parts of the Groundhog region. These rocks are conformable to discordantly overlying the Askin Group and are structurally overlain by rocks of the Kechika Group. Tempelman-Kluit (2012) included these rocks in the Seagull Group, but they have since been correlated with Earn Group strata. Earn Group rocks in the Groundhog region consists of slate, greywacke and felsic volcanic rocks. The lower part of the Earn Group in this region is dominated by thin-bedded, black, fissile slate.
Thin beds of greywacke composed of chert, feldspar and quartz grains are interbedded with the slate and locally form beds of granule to pebble conglomerate. Thin-bedded barite is found in the upper parts of the slate and can reach thicknesses of 200 m near the top of the unit. A grey to greenish cherty tuff unit overlies the black slate and consists of rusty orange weathered cap.
Thin argillaceous layers, between one and ten centimetres thick, separate beds of the cherty tuff. The tuff is roughly 100 m thick and is overlain by a laterally and vertically heterogeneous unit of volcanic and volcaniclastic rocks. The volcanic and associated volcaniclastic rocks are up to 500 m thick and include a variety of light coloured tuff, volcanic breccias and flows, dykes sills and subvolcanic plugs of felsic to intermediate composition. Individual beds are difficult to follow laterally for any distance and also have rapid vertical facies changes.
Late Devonian plutonic rocks of the Pelly Mountains suite intrude into the Earn and Askin groups in the eastern part of the Groundhog region. These rocks are, at least in part, time equivalent with the Earn Group volcanic rocks and are genetically related. Rocks of the Pelly Mountain suite consist of massive, medium to fine-grained, sub-volcanic syenite to trachyte.
Early Cretaceous monzo-granite to granodiorite of the Cassiar suite outcrop in the extreme western part of the Groundhog area (Figure 6; Table I). The suite ranges in age from 117-104 Ma and includes large, regional batholiths such as the Nisutlin, Quiet Lake and Big Salmon batholiths. Smaller buried intrusions of the Cassiar suite are thought to underlay both the Ketza and Seagull uplifts and likely play a role in the mineralization found in both areas (Abbott, 1986).
Structure across the district has a pronounced northwesterly trending fabric that is dominated by northeast verging thrusts and parallel to sub-parallel horsts and grabens related to normal faults. Thrust faults are associated with wide-spread mid-Cretaceous compression that affected the entire western margin of North America (Tempelman-Kluit, 2012). The horst and graben structures have been attributed to uplift caused by doming above a large buried intrusion (Abbott, 1986). Two of these dome-like structures have been identified, the Ketza uplift, centred around the Ketza mine, and the Seagull uplift which is centred on the Groundhog property. Abbott (1986) combined the two uplifted areas to encompass the Ketza-Seagull Arch, a regionally exhumed area containing hornfels and schists in the two core areas. It is suspected that there is a direct relationship between the two uplifted regions and the epigenetic vein hosted deposits and occurrences in this region.
PROPERTY GEOLOGY
The property is underlain by relatively thick successions (up to 400 m) of calcareous sedimentary rocks with lesser clastic sedimentary rocks, which range in age from Lower Cambrian to Late Devonian-Mississippian. Bedding orientations mostly strike north-south, with flat to moderate dips.
Although there are no mapped exposures of intrusive bedrock on the property a number of boulders of dark green, intermediate to mafic intrusive to volcanic float have been observed.
Yukon Minerals mapped two dykes of this unit in outcrops about 400 m north of the property. These dykes range from 2 to 10 m in width and were traced over 600 m along strike. The Pass Peak Thrust Fault is the only named fault on the property and represents the southern flank of the complexly faulted arch named the Seagull Uplift. The Lower Seagull Thrust, 5 km to the northeast of the property, represents the northern flank of this arch. Both of these thrust faults strike northerly and dip shallowly to the west.
Several normal faults and shear zones have also been mapped on the property. These structures strike northwesterly and northeasterly and dip steeply. They are interpreted to be horst and graben structures within the Seagull Uplift (Abbott, 1986). These high angle faults offset the thrust fault.
Mineralization in the Ketza-Seagull Arch is thought to be related to both syngenetic and epigenetic systems (Abbott, 1986). Volcanogenic massive sulphide mineralization is believed to be associated with Earn Group volcanic rocks; however, the main mineral occurrences are epigenetic vein, manto and skarn occurrences that are generally clustered within and around both the Seagull and Ketza uplifts. Veins of galena, sphalerite, quartz, siderite, pyrite, pyrrhotite, arsenopyrite, chalcopyrite and tetrahedrite are found along well-formed faults with very minor offset (Abbott, 1986). These faults appear to have been active during mineralization and are considered to have provided the conduits for mineralizing fluids. Mantos are generally found near faults and form tube-like lenses along the contact between Lower Cambrian limestone and overlying shale (Abbott, 1986). At the Ketza and Seagull uplifts, mineralization appears to be zoned with gold-rich veins and mantos found within the core (especially in the Ketza uplift), while galena- and sphalerite-rich veins and mantos are found around the flanks of the uplift.
The Groundhog property is found within the Seagull Uplift and mineralization there appears to be associated with seven main structural trends, three of which, (the Sheep, Lucky and Pika trends) cross the property (Figure 3). These mineralized trends are oriented northwesterly and can be individually traced for up to seven kilometres along strike. They appear to lie along the flanks of grabens formed during uplift (Ramaekers, 1988) or along fluid conduits provided by thrust faults. Although the source of the mineralizing fluids is unknown, it has been postulated that the uplift and structural extension resulted from doming above an unexposed mid- Cretaceous intrusion, which may also have been the main heat source driving the fluid transfer (Abbott, 1986).
The majority of the showings on the property are fault-bounded quartz-carbonate veins and breccias hosted by the Askin Group carbonate sequence. Mineralization within the veins and breccias consists of disseminated to semi-massive, coarse grained galena, sphalerite, tetrahedrite, freibergite and pyrite. Malachite staining is common on carbonate minerals, with the copper remobilized from the weathering of tetrahedrite. Hydrozincite residue is also locally observed.
Most of the showings occur near the top of the Askin Group, just below the contact with overlying Earn Group shales and fine grained clastics. This relatively incompetent and nonreactive unit likely acts as a chemical barrier that localized mineral deposition in the underlying carbonate rocks (Fowler, 1988).
Vein and breccia zones on the property are associated with northwest-trending, steeply dipping structures, which mostly occur along the Lucky and Sheep trends, and east- to northeast-trending shear zones that cut obliquely across the primary structures. Movement along these structure features has helped produce dilatant zones that have enabled open space filling by veins.
Replacement mineralization is locally developed where structures hosting vein and breccia zones cut carbonate wallrock. Little effort was made by previous operators to assess potential for this type of mineralization. However, prospecting appears to have discovered replacement style zones and mantos (JW and Aztek Showings).
Stratiform mineralization occurs as finely banded galena, sphalerite and chalcopyrite in Cambrian-aged phyllites and tuffs in the western part of the property within the upper plate of the Pass Peak Thrust Fault. Two showings (Strat and Geo) exhibit this style of mineralization. They are located on opposite sides of a valley about 1500 m apart.
A float sample of galena-bearing brecciated and silicified dolomite, collected from the BP Showing in 2020 returned 1715 g/t silver, 20.5% lead, 9.97% zinc and 0.177% ppm copper. Approximately 70 m uphill of this float sample, a composite sample collected across outcropping dolomitic siltstone with vuggy and boxwork textures and galena-pyrite mineralization returned 0.465 g/t gold over eight metres.

Work History

Date	Work Type	Comment
6/1/2020	Geochemistry	
6/1/2020	Geology	
6/1/2020	Geochemistry	
6/1/2012	Geochemistry	
6/1/2011	Geochemistry	
6/1/2010	Trenching	

6/1/2010	Geochemistry	
6/1/2010	Geology	
6/1/2010	Geochemistry	
6/1/2009	Geochemistry	
6/1/2009	Geology	
6/1/2009	Geochemistry	
6/1/2009	Trenching	
6/1/2009	Other	
6/1/2008	Geochemistry	
6/1/2008	Geology	
6/1/2008	Geochemistry	
6/1/2008	Airborne Geophysics	
6/1/2008	Airborne Geophysics	
6/1/2000	Geochemistry	
6/1/2000	Other	
6/1/1995	Trenching	
6/1/1995	Geochemistry	
6/1/1988	Trenching	
6/1/1988	Geochemistry	
6/1/1988	Geochemistry	
6/1/1988	Geology	
6/1/1988	Other	
6/1/1987	Geology	
6/1/1987	Geochemistry	
6/1/1987	Ground Geophysics	
6/1/1987	Ground Geophysics	
6/1/1987	Ground Geophysics	
6/1/1981	Geochemistry	
6/1/1981	Geochemistry	
6/1/1981	Geochemistry	

Related References

Number	Title	Page(s)	Reference Type	Document Type
09-161	Assessment Report describing Geological Mapping, Prospecting, Hand Trenching and Geochemical Sampling at the Groundhog Property		Yukon Government: Energy, Mines and Resources	YMEP Report
95-017	Summary of 6 Prospecting Trips to Groundhog Creek, Rain Claims, Cody\Ruby, Stewart River and Rancheria Areas		Yukon Government: Energy, Mines and Resources	YMEP Report
88-006	Ketza Project 1988 Regional Program		Yukon Government: Energy, Mines and Resources	YMEP Report
00-031	Prospecting and Soil Sampling on the Moose Creek, Tay West, Mt. Sheldon, and Brewer Creek Areas by Bernie Kreft		Yukon Government: Energy, Mines and Resources	YMEP Report
87-018	1987 Geological, Geochemical & Geophysical Report on the Ram 1-758 & Mat 1-12 Mineral Claims		Yukon Government: Energy, Mines and Resources	YMEP Report
1986GeolVol1_06	Epigenetic mineral deposits of the Ketza-Seagull district, Yukon		Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Annual Report Paper