Occurrence Details

Occurrence Number: 115O 182
Occurrence Name: O'Neil
Occurrence Type: Hard-rock
Status: Prospect
Date printed: 6/14/2025 4:54:50 PM

General Information

Primary Commodities: gold
Deposit Type(s): Orogenic Au
Location(s): 63°53'60" N - -139°14'41.42" W
NTS Mapsheet(s): 115O14
Location Comments: Coordinates provided by Klondike Gold Corp. in 2019.
Hand Samples Available: No
Last Reviewed:

Capsule

Work History

The O'Neil occurrence was included within the DE cl (YA55250, etc) staked by Dawson Eldorado Exploration 1981 who performed soil sampling and an orthophoto survey that year. Geological mapping and soil geochemistry was carried out during 1983-1984.

In June 1986, Arbor Resources Inc. optioned the property and performed airborne magnetics, VLF-EM and VTEM and ground VLF-EM and IP geophysical surveys over the Lone Star property, including the O'Neil claims, in 1987. Mechanical trenching and soil sampling were also performed, as well as rotary drilling of four holes (87-R-53 to 87-R-56). Rock sampling and geological mapping was performed over the O'Neil occurrence claims in 1988.

In 1990, Arbor performed further ground IP, magnetic and resistivity geophysical surveys over the Lone Star claims, including the O'Neil claims. A follow-up rotary hole (90R39) was also drilled at O'Neil during the 1990 program.

In August 1992, Kennecott Canada Inc. optioned the Lone Star properties, including the O'Neil claims. In 1994, they carried out a reconnaissance assessment of the entire Lone Star property consisting of geological mapping, rock sampling, trenching and backpack soil augering. Soil samples were collected across the entire property. The soil auger was able to penetrate up to 1 m in depth and samples were collected every 25 m on approximately 1 km spaced lines.

In January 1995, Kennecott terminated the option and in January 1996 Arbor changed its name to Klondike Gold Corp. No further work was performed on the O'Neil claims until 2004 when Klondike Gold performed trenching, soil and rock sampling, and geological mapping.

Klondike Gold Corp. optioned a 50% interest to Klondike Star Mineral Corp. (KSMC), which became a 50/50 joint venture in 2005. Klondike Star Mineral Corp held a 55% interest in the Lone Star claims in 2005 and performed trenching on the O'Neil claims. The on-site bulk sampling gravity mill was also upgraded during this time, however, no bulk samples from O'Neil were analyzed. In 2006, KSMC drilled 3 NQ diamond drill holes, as well as performed trenching and ran a ground IP geophysics survey over the property.

Klondike Gold Corp. resumed work in 2011 and purchased Klondike Star Mineral Corp. in 2015 to restore a 100% interest. In 2011, Klondike Gold and Klondike Star performed soil sampling across the O'Neil claims. Work performed in 2012 consisted of surficial terrain mapping by AECOM Consulting based on 1996 1:25000 aerial photographs, as well as rock and soil sampling.

Klondike Gold Corp. performed ground magnetics and orthophoto surveys over the Lone Star area in 2015, including the O'Neil claims. Work performed in 2017 consisted of three NQ diamond drill holes (LS17-97 to LS17-99), 35 line kilometers of ground 3D-IP survey, prospecting, and soil sampling. In 2018, Klondike Gold ran an airborne magnetics survey over the entire property, including the O'Neil claims, and conducted detailed regional and structural mapping using SRK Consulting Inc.

Regional & Property Geology

The O'Neil occurrence, similar to the Lone Star (MINFILE occurrence 115O 072) and Pioneer (MINFILE 115O 150) occurrences along trend, is located within the Klondike region, which is underlain by the Permian Klondike Schist Assemblage of the Yukon-Tanana terrane (YTT). The Klondike Schist represents a transition from plutonism to arc volcanism that has undergone greenschist facies metamorphism and consists of metaplutonic Sulphur Creek orthogneiss in the west that transitions eastward to a package of metavolcanic and metasedimentary units including: felsic to mafic (quartz-mica ± chlorite) schist, graphitic schist, and quartz augen schist (PKf and PKs). Evidence of five deformation events (D1 to D5) are present in within the Klondike Schist Assemblage as a result of obduction and regional thrusting and faulting related to uplift, which have produced a visible S2 and S3 foliation fabric in the schist units.

The lithological units of the Klondike region commonly contain both large, foliaform quartz veins associated with D3 folding and thrusting and discordant quartz veins possibly associated with D4 brittle faulting. Mineralization is generally hosted in the discordant quartz veins, however, the exact mineralization age and timing in the Klondike region is currently unknown. A structural mapping program completed by SRK Consulting Inc. in 2018 on the Klondike claims in the Lone Star property area identified a newly defined "D4" fault system interpreted to be the primary conduit for gold mineralization fluids that suggests a younger mineralization age than previously assumed. The white to locally oxidized, discordant veins are generally mineralized with sulphides (pyrite, rare galena, chalcopyrite), as well as visible gold, and are rarely more than 2-3 metres thick. Where present, visible gold is commonly noted along the selvages of both fresh and oxidized pyrite grains and can also occur as free grains within the quartz veins.

The O'Neil occurrence is currently encompassed within the Lone Star zone, consisting of three known mineral occurrences: Lone Star (MINFILE occurrence 115O 072) in the centre, Pioneer (MINFILE occurrence 115O 150) to the east and O'Neil to the west for a total strike length of approximately 4 kilometres. Similar to the Lone Star occurrence, 2017 holes drilled at O'Neil by Klondike Gold intersected zones of pyritic intermediate schist crosscut by quartz veining.

Mineralization & Results

Mineralization at the Lone Star zone is commonly noted as visible gold contained in crosscutting, discordant quartz veins or disseminated within intermediate (quartz-mica ± chlorite) schist units. The presence of finely disseminated gold within large intervals of intermediate to mafic schist (quartz-mica ± chlorite schist) units in the nearby Lone Star (MINFILE occurrence 115O 072) area above and directly adjacent to the "D3" Bonanza Fault was first noted in 2016 by Klondike Gold and M. Grimshaw (2018). Grimshaw (2018) attributes disseminated gold deposition to porosity in the schist unit developed in pressure shadows around pyrite formed during greenschist metamorphism in the region. Disseminated gold mineralization and gold mineralization within veins can occur across widths of up to 130 meters and depths of 50 to 100 meters in the Lone Star zone, which encompasses the O'Neil occurrence.

Soil sampling work performed on the DE claims hosting the O'Neil occurrence in 1981 by Dawson Eldorado Exploration returned Au anomalies up to 2000 ppb Au. Smaller soil anomalies were returned in the 1984 soil sampling program at O'Neil, ranging from 15 ppb to 100 ppb Au. Trenching performed by Arbor Resources in 1987 returned significant Au samples in iron oxide altered muscovite schist two trenches: 0.069 oz/ton over 5 feet in 87TR16 and 0.011 oz/ton over 5 feet.

No significant results were returned in the 1990 rotary hole drilled by Arbor Resources at O'Neil, however, a resistivity low was noted in the geophysical survey that likely corresponds to a fault structure. Arbor's 1994 regional soil sampling survey returned anomalous gold values ranging from 101 ppb to 205 ppb Au at O'Neil.

Three trenches, TR04-09 to TR04-11, were excavated by Klondike Gold Corp. (formerly Arbor Resources) in 2004. One of the trenches, TR04-10, returned up to 19 g/t Au.

One trench (06-TR-07) and three diamond drill holes (06-ON-14 to 06-ON-16) were completed in 2006 by Klondike Star Mineral Corporation (KSMC). Trench 06-TR-07 returned several anomalous Au results, including 279.3 ppb Au over 5 m. All three drill holes also returned elevated gold intersections, including: 0.9 g/t Au over 4.0 m in 06-ON-14; 0.355 g/t Au over 17 , including 0.646 g/t Au over 7.65 m in 06-ON-15; and 0.66 g/t Au over 13.7 m in 06-ON-16.

Klondike Gold Corp. drilled three NQ holes at O'Neil in 2017 that returned anomalous gold intercepts of 0.6 g/t Au over 13.7 m and 0.3 g/t Au over 52.6 m (including 0.5 g/t Au over 13.3 m) in holes LS17-97 and LS17-98, respectively. A large soil sampling survey in 2017 identified a 4 km strike length anomaly that includes the O'Neil occurrence with gold values ranging from 75 ppb Au to 2,891 ppb Au in the anomaly core. Prospecting results from the 2017 program returned samples of quartz veins in subcrop with gold values of 4 g/t Au and 0.5 g/t Au.

Work History

Date	Work Type	Comment
7/1/2019	Geochemistry	
7/1/2019	Remote Sensing	
6/1/2018	Geochemistry	
6/1/2018	Airborne Geophysics	
12/13/2018	Airborne Geophysics	
12/13/2018	Geology	Structural mapping.
12/13/2017	Drilling	Three NQ diamond drill holes.
12/13/2017	Geochemistry	
12/13/2017	Ground Geophysics	
12/13/2017	Other	
12/13/2015	Airphotography	
12/13/2015	Ground Geophysics	
12/13/2015	Other	
12/13/2012	Geochemistry	
12/13/2012	Geochemistry	
12/13/2012	Geology	
12/13/2011	Geochemistry	
12/13/2006	Drilling	Three NQ diamond drill holes.
12/13/2006	Ground Geophysics	
12/13/2006	Trenching	
12/13/2005	Trenching	
12/13/2004	Geochemistry	Rock and chip sampling of trenches.
12/13/2004	Geology	
12/13/2004	Geochemistry	
12/13/2004	Trenching	
12/13/1994	Geology	
12/13/1994	Geochemistry	Power-driven auger soil survey.
12/13/1990	Drilling	One rotary drill hole.
12/13/1990	Ground Geophysics	
12/13/1990	Ground Geophysics	
12/13/1990	Ground Geophysics	
12/13/1988	Geochemistry	
12/13/1988	Geology	
12/13/1987	Airborne Geophysics	And VLF-EM.
12/13/1987	Drilling	Four rotary drill holes.
12/13/1987	Geochemistry	

12/13/1987	Ground Geophysics	And VLF-EM.
12/13/1987	Trenching	
12/13/1987	Airborne Geophysics	
12/13/1984	Geochemistry	
12/13/1984	Geology	Regional bedrock mapping was also performed.
12/13/1983	Pre-existing Data	
12/13/1983	Geology	Regional bedrock mapping was also performed.
12/13/1981	Airphotography	
12/13/1981	Geochemistry	

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
097066	2015	Report on Diamond Drilling, Prospecting, and Ground Magnetics on the Lone Star Property, Dawson Mining District, Yukon Territory, Canada	Diamond - Drilling, Rock - Geochemistry, Magnetics - Ground Geophysics	19	1369.30
096398	2012	Diamond Drilling, Trenching, Soil Sampling, Rock Sampling, and Prospecting at the Lone Star Property	All Weather Road - Development, Surface, All Weather Road - Development, Surface, Diamond - Drilling, Diamond - Drilling, Drill Core - Geochemistry, Drill Core - Geochemistry, Rock - Geochemistry, Rock - Geochemistry, Soil - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Detailed Bedrock Mapping - Geology, Prospecting - Other, Prospecting - Other, Backhoe - Trenching, Backhoe - Trenching	8	2762.20
094919	2007	Diamond Drilling, Rotary Drilling, Geological Mapping, Rock and Soil Geochemistry, IP Geophysics, Trenching and Bulk Sampling on the Lone Star Property	Diamond - Drilling, Percussion - Drilling, Drill Core - Geochemistry, Drill Cuttings - Geochemistry, Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, IP - Ground Geophysics, Bulk Sample - Lab Work/Physical Studies, Petrographic - Lab Work/Physical Studies, Resource Estimate - Studies, Hand - Trenching	11	1314.10
094638	2006	Diamond Drilling, Geological Mapping, Rock and Soil Geochemistry, IP Geophysics, Trenching and Bulk Sampling on the Lone Star	Diamond - Drilling, Drill Core - Geochemistry, Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, IP - Ground Geophysics, Bulk Sample - Lab Work/Physical Studies, Resource Estimate - Studies, Mechanical - Trenching	23	2892
094579	2005	Diamond Drilling, Geological Mapping, Rock and Soil Geochemistry, Trenching and Bulk Sampling on the Lone Star Property	Diamond - Drilling, Drill Core - Geochemistry, Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Bulk Sample - Lab Work/Physical Studies, Prospecting - Other, Backhoe - Trenching, Mechanical - Trenching	32	5429.40
094689	2004	Geological Mapping, Rock and Soil Geochemistry, Trenching and Bulk sampling on the Lone Star Property	Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Bulk Sample - Lab Work/Physical Studies, Petrographic - Lab Work/Physical Studies, Prospecting - Other, Data Compilation - Pre-existing Data, Mechanical - Trenching		
093321	1994	1994 Annual Report on the Klondike Gold Project	Magnetic - Airborne Geophysics, Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Magnetics - Ground Geophysics, Prospecting - Other, Backhoe - Trenching		
093320	1994	1994 Annual Report on the Lone Star Project	Diamond - Drilling, Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology	2	397.60
093075	1992	Geological, Geochemical and Trenching Report on the Dawson Property	Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Prospecting - Other, Mechanical - Trenching		
092162	1991	Geological, Geochemical, and Trenching Report on the Lone Star Property	Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Backhoe - Trenching		
092969	1990	Geological and Geochemical Report on the Lone Star Property	Reverse Circulation - Drilling, Drill Cuttings - Geochemistry, Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, EM - Ground Geophysics, IP - Ground Geophysics, Line Cutting - Other, Data Compilation - Pre-existing Data, Mechanical - Trenching	45	2796
092860	1989	Geological, Geochemical and Trenching Report on the Dawson Property	Drill Core - Geochemistry, Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Heavy Mineral Concentrate - Lab Work/Physical Studies, Mechanical - Trenching		
092691	1988	Geological, Geochemical, Geophysical and Trenching Report on the Dawson Property	Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, EM - Ground Geophysics, IP - Ground Geophysics, Bulk Sample - Lab Work/Physical Studies, Column Leach Test - Lab Work/Physical Studies, Heavy Mineral Concentrate - Lab Work/Physical Studies, Metallurgical Tests - Lab Work/Physical Studies, Petrographic - Lab Work/Physical Studies, Prospecting - Other, Mechanical - Trenching		
092690	1988	Geological, Geophysical, Geochemical, and Trench Report for Work Performed by Mark Management Ltd. on the REEF Grid	All Weather Road - Development, Surface, Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Magnetics - Ground Geophysics, Line Cutting - Other, Mechanical - Trenching		
091760	1987	Report on Combined Helicopter Borne Electromagnetic, Magnetic,	Electromagnetic - Airborne Geophysics, Magnetic - Airborne		

091706	1987	and VLF-EM Survey Bonaza-Eldorado Creek Area	Geophysics, VTEM - Airborne Geophysics		
092132	1987	Geological, Geochemical, Geophysical, Diamond and Rotary Drilling Report on the Lone Star Property	Magnetic - Airborne Geophysics, Diamond - Drilling, Rotary - Drilling, Drill Core - Geochemistry, Drill Cuttings - Geochemistry, Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, EM - Ground Geophysics, IP - Ground Geophysics, Mechanical - Trenching	50	5753.40
091807	1985	Geological, Geochemical and Geophysical Report for Work performed by Mark Management on the Dawson Property	Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, EM - Ground Geophysics, Magnetics - Ground Geophysics, Heavy Mineral Concentrate - Lab Work/Physical Studies, Petrographic - Lab Work/Physical Studies, Mechanical - Trenching		
091683	1984	Report of 1984 Exploration on the Lone Star Property of Dawson Eldorado Mines Ltd.	Rehabilitation - Development, Underground, Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Regional Bedrock Mapping - Geology, Line Cutting - Other, Surveying - Other		
091535	1983	Summary Report 1983 Mapping and Interpretation Lone Star Gold Property	Detailed Bedrock Mapping - Geology, Regional Bedrock Mapping - Geology, Process/Interpret - Pre-existing Data		
091399	1981	Gold Potential Evaluation Report Klondike District on Violet Gold - Quartz Property	Orthophoto - Airphotography, Cursory Property Visit - Other, Data Compilation - Pre-existing Data		
091064	1981	Summary Report of 1981 Exploration on the Lone Star Ridge Property	Orthophoto - Airphotography, All Weather Road - Development, Surface, Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Heavy Mineral Concentrate - Lab Work/Physical Studies, Line Cutting - Other, Prospecting - Other, Surveying - Other, Data Compilation - Pre-existing Data, Hand - Trenching, Mechanical - Trenching		
060149	1972	Geological and Geochemical Report Yukon Quartz Mineral Claims	Silt - Geochemistry, Soil - Geochemistry		

Related References

Number	Title	Page(s)	Reference Type	Document Type
1996-1(G)	Geological Compilation Maps of the Northern Stewart River Area, Klondike and Sixtymile Districts (115N/15, 16, 115O/13, 14 and Parts of 115O/15, 16)		Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Open File (Geological - Bedrock)
1992GeolVol3_15	Preliminary observations on the geology and geochemistry of quartz veins in the Klondike District, west-central Yukon		Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Annual Report Paper
1991Rushton	A fluid inclusion and stable isotope study of mesothermal gold-quartz veins in the Klondike Schists, Yukon Territory		University of Alberta	MSc Thesis