



Occurrence Details

Occurrence Number: 1150 181

Occurrence Name: Gay Gulch

Occurrence Type: Hard-rock

Status: Prospect

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General Information

Primary Commodities: gold

Deposit Type(s): Orogenic Au

Location(s): 63°52'27.81" N - -139°15'54.61" W

NTS Mapsheet(s): 115014

Location Comments: Coordinates provided by Klondike Gold Corp. in 2019.

Hand Samples Available: No

Last Reviewed:

Capsule

Work History

Similar to the nearby Buckland occurrence (MINFILE occurrence 1150 077), the Gay Gulch area was heavily staked in 1898-1905 and explored with shallow shafts and trenches. Several claims in the Eldorado Reef group, immediately southeast, were later surveyed and taken to lease. Re-staked in March, 1960 as Hope, etc cl (78766) by Klondike Lode Gold ML, which conducted limited bulldozer trenching in 1960 and 1961 and drilled one hole (43 m) in 1962.

Re-staked as Rod cl (Y65296) in May, 1972 by R.G. Hilker on behalf of Sullivan and Rogers, who carried out mapping and geochemical sampling later in the year and bulldozer trenching in 1973. The adjoining Joe cl (Y65536) to the southeast was staked in July, 1972 and May, 1975 by J. Lamontagne, who trenched in 1976, and transferred them in May, 1978 to G. Hakonson, who trenched in 1980. The Rod group was re-staked as Ron cl (YA 10300) in July, 1977 by G.J. McGinn and transferred in May, 1978 to Klon ELC, which performed mapping in 1979.

Klondike Ken Ventures Inc. tied on the ND cl (YA49724) to the east in May, 1980 and optioned the claims to Dawson Eldorado Gold EL in 1981. Dawson Eldorado explored with geochemical soil sampling and rock sampling of old workings nearby in 1984. In June, 1986 the property was optioned to Arbor Resources Inc., which explored with linecutting and diamond and percussion drilling in 1986; an airborne magnetics and EM survey, grid geochemistry, EM and IP surveys, bulldozer trenching, and diamond drilling in 1987; and geochemistry, prospecting, and trenching in 1988.

Faith ML optioned 50% of Arbor's interests in June, 1989 and performed geochemical surveys and trenching later that year. In 1990, Arbor performed an IP survey, drilled seven rotary holes in the vicinity of Gay Gulch, and trenched in the area of the 1987 drilling. In 1991, Arbor Resources performed trenching in the area, as well as rock and soil geochemistry. In December, 1992, the Joe claims were transferred to Klondike Reef ML.

Kennecott Canada Inc. optioned the property in 1992 and carried out a reconnaissance assessment of the entire Lone Star property (MINFILE occurrences 1150 073, 131, 146, 147, 148, and 150) in 1994. The program included digitizing of previous exploration data, geological mapping, rock sampling, trenching and backpack soil augering. In January, 1995 Kennecott terminated the option agreement. In January, 1996 Arbor Resources changed its name to Klondike Gold Corp.

Klondike Gold Corp. optioned a 50% interest to Klondike Star Mineral Corp. in 2005 who performed trenching on the Gay Gulch area in 2006. Klondike Gold resumed work in 2011 and purchased Klondike Star Mineral Corp. in 2015 to restore a 100% interest.

Klondike Gold performed regional surficial mapping and soil sampling in 2012 and performed regional orthophoto and ground magnetics surveys over the Lone Star claims in 2015, including the Gay Gulch area. Six NQ holes were also drilled in 2015 at Gay Gulch and regional prospecting and geochemistry was performed over the area. During the 2018 program, SRK Consulting Inc. was contracted to perform detailed structural and lithological mapping on the Lone Star property, including the Gay Gulch area. Airborne magnetics and prospecting were also performed in 2018 on the Lone Star property, including Gay Gulch. Infill sampling of the 2015 diamond drill core was also performed during the 2018 season.

Regional & Property Geology

The Gay Gulch occurrence, similar to the Buckland prospect (MINFILE occurrence 1150 077), 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 and consists of metaplutonic Sulphur Creek orthogneiss in the west that transitions to a package of felsic to mafic (quartz-mica) schist, graphitic schist and quartz augen schist (PKf and PKs) to the east. 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 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 in the Klondike region 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.

Mineralization & Results

Mineralization at the Gay Gulch occurrence is commonly noted as coarse visible gold and pyrite associated gold contained in quartz vein arrays crosscutting brittle and fractured felsic to intermediate (quartz-mica) schist. The quartz vein arrays correspond to a magnetic low in the area interpreted to be a large, 2.6 kilometer fault zone (Eldorado Fault) associated with gold mineralization. This fault is intersected by a younger, north trending fault that creates a kink in the Gay Gulch area where gold-bearing quartz veins are potentially focused.

Historical assays by Klondike Lode Gold in the Gay Gulch area ranged up to 96.0 g/t Au over 0.7 m. A grab sample collected by Gleeson (1970) assayed 62.7 g/t Au and 13.7 g/t Ag. The 1987 diamond drill holes at Gay Gulch cut quartz-muscovite schist, as well as sections of highly broken and faulted ground. No quartz veining or shears were intersected.

The percussion drilling in the Oro Grande Gulch and Gay Gulch areas returned inconclusive results. The 1987 work reaffirmed that mineralization is best developed in the previously known area further east on Gay Gulch.

Arbor Resource's 1990 IP survey outlined a correlation between resistivity lows, chargeability highs, and mineralized zones on the Lone Star properties, including the Gay Gulch area. Twenty-two trenches were excavated along IP anomalies and quartz vein exposures during the 1990 exploration season in the Gay Gulch area with the best Au assay results ranging between 0.102 oz/ton Au (3.19 g/t) in a quartz boulder at 41.0 m in 90GGTR02 to as high as 8.29 oz/ton Au (259.06 g/t) over 2 m in 90GGTR06. A total of nine rotary holes were also drilled in 1990 in the Gay Gulch area that returned anomalous Au values, including: 0.024 oz/ton Au (0.75 g/t) over 5 feet in hole 90R2; 0.062 oz/ton (1.94 g/t) over 5 feet in hole 90R7; and 0.017 oz/ton Au (0.53 g/t) over 15 feet in hole 90R30.

1991 trenching results from Arbor Resources' three trenches in the Gay Gulch area returned elevated gold values with up to 2860 ppb in a 1 meter grab sample of highly sheared material in 91TR20.

Trenching performed by Kennecott Canada Inc. in the Gay Gulch area consisted dominantly of resampling the 1990 trench by Arbor Resources, 90GGTR-06. Trench 90GGTR-06 returned anomalous gold values in several 2 metre wide samples with the highest results ranging between 1.17 g/t Au to 3.71 g/t Au. These gold values are associated with crosscutting quartz veins containing up to 2% weathered to fresh cubic pyrite.

The trenching program in 2006 by Klondike Star Mineral Corp. returned several anomalous gold values over non consecutive intervals, including: 17,492.9 ppb Au over 5 m, 664.7 ppb Au over 5 m, 1044.3 ppb Au over 5 m, and 1482 ppb Au over 5 m. Rock samples with gold values up to 17.9 g/t Au were also noted during the 2006 exploration program.

A total of six NQ holes were drilled in 2015 by Klondike Gold Corp. to test vein targets and significant Au intercepts were noted in four of the six holes. Holes EC15-08, EC15-09, EC15-10 and EC15-13 returned anomalous Au values of 1.6 g/t Au over 4.0 m 1.9 g/t Au over 1.1 m, 75.6 g/t Au over 2.1 m including 420 g/t Au over 0.4 m, and 10.9 g/t Au over 1.55 m, respectively. In 2018, several of these holes were resampled over larger widths and hole EC15-08 returned 0.77 g/t Au over 22.75 m.

Work History

Date	Work Type	Comment
7/1/2019	Drilling	7 holes, 594.65 m
7/1/2019	Geochemistry	
7/1/2019	Geochemistry	
7/1/2019	Remote Sensing	
12/13/2018	Airborne Geophysics	
12/13/2018	Geochemistry	Infill drill core sampling.
12/13/2018	Geology	
12/13/2018	Other	
12/13/2015	Airphotography	
12/13/2015	Geochemistry	
12/13/2015	Drilling	Six NQ diamond drill holes.
12/13/2015	Ground Geophysics	
12/13/2015	Other	
12/13/2012	Geochemistry	
12/13/2012	Geochemistry	
12/13/2012	Geology	
12/13/2006	Trenching	
12/13/1994	Geochemistry	
12/13/1994	Trenching	
12/13/1991	Geochemistry	
12/13/1991	Geochemistry	
12/13/1991	Trenching	
12/13/1990	Drilling	Seven rotary holes.
12/13/1990	Geochemistry	
12/13/1990	Ground Geophysics	
12/13/1990	Trenching	
12/13/1989	Geochemistry	
12/13/1989	Trenching	
12/13/1988	Geochemistry	
12/13/1988	Trenching	
12/13/1988	Other	
12/13/1987	Drilling	
12/13/1987	Geochemistry	
12/13/1987	Trenching	
12/13/1987	Airborne Geophysics	And VLF-EM.
12/13/1987	Airborne Geophysics	
12/13/1986	Geochemistry	

12/13/1986	Drilling	
12/13/1986	Drilling	
12/13/1984	Geochemistry	
12/13/1972	Geochemistry	
12/13/1972	Geology	
12/13/1972	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
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, and VLF-EM Survey Bonaza-Eldorado Creek Area	Electromagnetic - Airborne Geophysics, Magnetic - Airborne 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
091756	1986	Geological, Geochemical and Diamond and Rotary Drilling Report on	Diamond - Drilling, Reverse Circulation - Drilling, Drill Core - Geochemistry, Drill Cuttings - Geochemistry, Rock - Geochemistry,	57	5425.14

0924730	1900	the Lone Star Property	Soil - Geochemistry, EM - Ground Geophysics, IP - Ground Geophysics, Magnetics - Ground Geophysics, Mechanical - Trenching	36	1215.17
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		
091463	1979	A Geological Report on the RON Groups Eldorado Creek	Diamond - Drilling, Percussion - Drilling, Drill Core - Geochemistry, Drill Cuttings - Geochemistry, EM - Ground Geophysics, Magnetics - Ground Geophysics, Heavy Mineral Concentrate - Lab Work/Physical Studies, Petrographic - Lab Work/Physical Studies, Line Cutting - Other	28	1215.94
090479	1978	A Geological Report on the RON Group	Percussion - Drilling, Drill Cuttings - Geochemistry, EM - Ground Geophysics, Magnetics - Ground Geophysics, Heavy Mineral Concentrate - Lab Work/Physical Studies	3	118.60
090390	1977	A Geological Report on the RON Group	Soil - Geochemistry, Magnetics - Ground Geophysics, Heavy Mineral Concentrate - Lab Work/Physical Studies, Petrographic - Lab Work/Physical Studies, Prospecting - Other		
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 Sixty mile 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)
1992Geol Vol3 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