Occurrence Details

Occurrence Number: 115O 068
Occurrence Name: Mitchell
Occurrence Type: Hard-rock
Status: Prospect
Date printed: 12/16/2025 3:20:31 PM

General Information

Primary Commodities: copper, gold, lead, silver, zinc
Secondary Commodities: antimony
Aliases: KSD, King Solomon's Dome
Deposit Type(s): Vein Au-Quartz
Location(s): 63°53'4.67" N - -138°56'50.39" W
NTS Mapsheet(s): 115O15
Location Comments: Coordinates provided by Klondike Gold Corp. in 2019.
Hand Samples Available: Yes
Last Reviewed:

Capsule

Work History

Staked as Banner, etc. cl (4575) in August, 1900 by A. Wildhaber, who explored with shallow trenches. Starting in August, 1902, it was gradually re-staked and consolidated into a 27 claim property Belfast, etc. (6025) by Mrs Margaret Mitchell. In 1911, development consisted of a 15.2 m drift from the bottom of an 25.6 m shaft, and numerous trenches and shallow shafts. In 1912, the property was optioned by A.E. Garvey.

Re-staked as Agnes, etc. cl (57739) in July, 1952 by G. Murdock and G. Shaw and optioned in 1953 by Yukon Consolidated Gold Corporation Ltd., which cleaned out the shaft and re-sampled the workings. Re-staked as Alpha cl (79137) in August, 1962 by C. Henderson and associates, who bulldozer trenched, and later as Dominion cl 1-4 (86971) and King Soloman cl 1-7 (86975) in August, 1965 by Thornburg Mining Company (Orekon Syndicate), which conducted extensive bulldozer trenching in 1966-1972. The showing was re-staked in November, 1980 as Sheba cl 1 (YA55109), Dominion cl 1-4 (YA55110) and King Solomon cl 1-36 (YA55114) by Orekon and Liidex Exploration Ltd., which performed an airborne geophysical survey and mapping in 1981. Cominco surrounded the core claims in January, 1980 with KSD cl 1-44 (YA49490) and performed mapping, geochemistry and IP surveys later in the year.

Re-staked in April, 1987 as J.A.E. cl 1-27 (YA89000) by J.A.E. Resources Ltd, which hand trenched, drilled three reverse circulation holes and shipped a 2,967 kg bulk sample in 1988 and conducted a magnetometer survey in 1989. B. Hakansson tied on BH cl 1-8 (YB89946) to the west in August, 1987 and performed geochemical sampling in 1988.

In 1990, two Hughes-Lang companies (Klondike Reef Mines Ltd and Arbor Resources Ltd.) optioned the property and conducted induced polarization, resistivity and magnetometer surveys and geochemical sampling. In 1991, Wealth Resources Ltd. (another Hughes-Lang company) carried out further mapping, prospecting and geophysics. In July, 1994 J.A.E. Resources carried out 3,126 cubic metres of trenching on the claims.

In 1996, Barramundi Gold Ltd. optioned the J.A.E claims and in June, 1986 staked fractional J cl 1-13 (YB88033) around the J.A.E. claims. Barramundi staked Mojo cl 1-18 (YB94599) to the west in September, 1996. From May to late September, 1996, the company carried out mapping and geochemical sampling along road cuts, old trenches, and 1,000 m of new trenches on various claims in the area. The company also completed regional silt sampling, mapping, prospecting, and rock sampling programs over much of the Klondike region. At the end of 1997, Barramundi dropped the option on the J.A.E. claims.

In March, 1999 Barramundi completed a regional airborne magnetometer and VLF-EM survey over a 16 km x 24 km area centered about King Solomon Dome, an area which included this occurrence.

In 2000, J.A.E. Resources carried out further trenching and sampling around this occurrence. In 2006, Klondike Star Mineral Corp. (KSMC) performed prospecting near the Mitchell shaft as part of an option agreement with J.A.E. Resources. Work by KSMC and J.A.E. Resources consisted of detail mapping, further trenching, and bulk sampling from in 2007 and mapping and prospecting in 2008.

In 2010, Kestrel Gold Inc. optioned the J.A.E. claims from J.A.E. Resources Ltd. and performed IP ground geophysics and soil sampling in 2011.
In 2017, Kestrel performed additional soil geochemical sampling which they added to in 2019. In 2020, the company did more soil sampling, prospecting, trenching and reverse circulation drilling.

Regional & Property Geology

The Hunker Dome area 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 Mitchell shaft area is underlain dominantly by medium to dark green mafic schist (unit Psq) and tan weathering intermediate schist (muscovite and/or chlorite quartzite and quartz-muscovite-chlorite schist unit Psq). Regional foliation trends north-northwest and dips are shallow to the southwest. Numerous structurally controlled mesothermal quartz veins cross-cut foliation. The veins are commonly white bull quartz, locally rusty, mineralized and typically 0.1 to 0.5 m wide on average. A few veins, such as the Mitchell, are up to 1.5 m wide.

Mineralization & Results

Mineralization generally occurs as trace to disseminated pyrite, galena ± chalcopyrite, azurite, malachite, arsenopyrite and tetrahedrite. Alteration of the schist rock is common adjacent to most quartz veins and includes: orange-red to yellow, pyritized, silicified and bleached schists.

At the Mitchell showing, spectacular samples of free gold were reportedly found on surface in the late 1890's. The main showing consists of two parallel quartz veins striking 060 which cut chlorite and chlorite-quartz-actinolite schist (unit Psc) of the Permian Klondike Schist Assemblage and have been traced for a length of 1 km. One vein is 1.2 to 2 m wide and barren, while the other is 10 to 45 cm wide and contains trace amounts of visible gold along with rutile and pyrite. The mineralized vein is surrounded by a pyritized and sericitized alteration envelope in which pyrite has replaced euhedral magnetite porphyroblasts in the schist. MacLean collected 34 samples and all those consisting of unmineralized quartz assayed trace in gold and silver. Traces of fine free gold were seen in a few samples. Three samples containing abundant galena and pyrite averaged 21.9 g/t Au and 3.3 g/t Ag.

Yukon Consolidated found considerable bornite in a 10 m section of the shaft, from which assays varied from 5% to 25% Cu with about 685.7 g/t Ag. Orekon Syndicate located several very small, but rich sulphide pockets in the main vein and located several parallel veins. Orekon shipped 0.8 tonnes to the Tacoma smelter in 1966 which assayed 10,457 g/t Ag, 23.5% Pb and 2.9% Cu, and 3.7 tonnes to the Shelby smelter in 1969 which assayed 4,680 g/t Ag, 26.3% Pb, 0.7% Zn, 0.4% Cu and 1.4 g/t Au. Seventeen grab samples of sulphide by various geologists gave an arithmetic average of 9,943 g/t Ag, 34.2% Pb, 2.3% Zn, 2.9% Cu and 6.9 g/t Au. These pockets contain pyrite, galena, sphalerite, tetrahedrite and arsenopyrite and are separated by up to 100 m of relatively barren vein. Cathro

sampled altered pyritized schist near the shaft in 1970 and obtained assays of 4.1 g/t to 48.0 g/t Au. Apparently unpyritized schist and quartz returned assays of 0.69 g/t to 1.4 g/t Au.

The 1980 geochemical survey in an overburden-covered area south of the Mitchell occurrence gave generally low gold values, but showed a continuous arsenic anomaly which appears to be related to stratigraphy. The IP response was flat, however, in 1990 Arbor outlined IP anomalies extending north from the Sheba vein and south from the Mitchell vein, suggesting that the veins may join.

Hoymann and Friedrich (1992) analyzed gold inclusions in pyrite from the Mitchell vein and found a mean silver content of 17.58 wt%. They identified three stages of mineralization in the Mitchell and Sheba veins: (1) quartz-carbonate-gold-arsenopyrite-pyrite-pyrrhotite-chalcopyrite-galena; (2) quartz-carbonate-chalcopyrite-sphalerite-tetrahedrite-freibergite-polybasite-polyargyrite-argentite-pyrostilbnite-galena; (3) quartz-gold. Fluid inclusions contain CO_2 and have salinities ranging from 0 to 7.2 wt% NaCl equivalent. Homogenization temperatures range from 390°C down to 120°C, and show a systematic decrease from Stage 1 to Stage 3.

During the 1996 field season, Barramundi excavated, mapped and sampled several older trenches, as well as 5 of their own trenches, including: Sheba East, JAE Road, Orekon, Lower Road, and Mitchell North. Anomalous rock samples were taken from quartz veins and altered schists adjacent to quartz veins. The best rock sample returned 32.0 g/t Au over 0.1 m from an old trench of the Sheba Vein. A soil grid covering most of the JAE claims revealed several gold anomalies; the best of which returned 500 ppb Au near the Mitchell Vein. Barramundi's regional silt program indentified anomalous gold results in basins to the immediate northeast and southwest draining the J.A.E. claims. The best silt sample returned 46 ppb Au and came from the southwest side of the claims located at the head of Sulphur Creek.

Barramundi's airborne geophysical survey covered their intensive claim holding in the Klondike region. Although a report was filed for assessment it contained only general results. Results on specific anomalies/conductor were retained by the company.

J.A.E. Resources' 2000 field program was focused on newly discovered and known mineral showings surrounding the Mitchell and Sheba (MINFILE occurrence 115O 188) veins. The best results were returned from trench #3 located 50 m north of the Mitchell shaft. Seventeen 1.5 m chip/channel samples collected across the vein and adjacent hanging wall returned an average value of 6.1 g/t Au. Further trenching was completed in 2005 by J.A.E. Resources and three trenches near the Mitchell shaft that returned anomalous gold values of up to 802 ppb Au over 5.2 m in trench 12 to the south; 3733 ppb Au over 3.0 m in trench13 in the center; and 1510 ppb Au over 4.0 m in trench 14 to the north.

Prospecting in 2006 by Klondike Star Mineral Corp. (KSMC) returned grab samples of up to 840.6 ppb Au. In 2007, KSMC performed further trenching in the area and chip samples from trench 07-TR-02 returned 0.258 g/t Au.

In 2011, Kestrel Gold performed soils as part of an option agreement with J.A.E. Resources that returned up to 4 g/t Au with an average of 23.9 ppb Au.

Work History

Date	Work Type	Comment
7/1/2020	Trenching	
7/1/2020	Geochemistry	
7/1/2020	Geochemistry	
7/1/2020	Drilling	6 holes, 291.1 m
7/1/2020	Other	
12/31/2000	Geochemistry	Samples mainly collected near known veins and showings.
12/31/2000	Trenching	
12/31/1999	Airborne Geophysics	Also VLF and magnetic surveys. Regional survey.
12/31/1996	Geology	
12/31/1996	Geochemistry	
12/31/1996	Trenching	
12/31/1996	Other	
12/31/1988	Drilling	Three holes,
12/31/1988	Trenching	
12/31/1981	Geochemistry	
12/31/1981	Geology	
12/31/1981	Airborne Geophysics	No details located.
12/31/1980	Geochemistry	
12/31/1980	Geology	
12/31/1980	Geochemistry	
12/31/1980	Ground Geophysics	
12/31/1966	Trenching	
12/31/1962	Trenching	
12/31/1952	Geochemistry	Resampled workings.
12/31/1911	Trenching	
12/31/1911	Development, Underground	Drove a 15.24 m drift, sunk a 25.60 m shaft.
12/31/1900	Trenching	

12/13/2011	Geochemistry	
12/13/2011	Ground Geophysics	
12/13/2008	Geology	
12/13/2007	Lab Work/Physical Studies	
12/13/2007	Geology	
12/13/2007	Trenching	
12/13/2006	Other	
12/13/2005	Trenching	Three trenches.
12/13/1990	Geochemistry	
12/13/1990	Ground Geophysics	Also resistivity and magnetic surveys.
12/13/1989	Ground Geophysics	
12/13/1988	Lab Work/Physical Studies	
12/13/1988	Geochemistry	

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
097091	2017	Geochemical, Geophysical & Airborne Survey Assessment Report: Soil Sampling, Prospecting, Dighem & Drone aerial survey - Hunker Gold Project	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics, Orthophoto - Airphotography, Rock - Geochemistry, Soil - Geochemistry		
096818	2014	Prospecting Report on the Dominion Project	Rock - Geochemistry, Prospecting - Other		
096879	2014	Ground Magnetics, Orthophoto and Prospecting Report on the Dominion Project	Orthophoto - Airphotography, Magnetics - Ground Geophysics, Prospecting - Other		
095977	2011	2011 Soil Geochemistry Survey Program -KSD Property	Soil - Geochemistry		
096242	2011	2011 Induced Polarization Survey Program - KSD Project	IP - Ground Geophysics		
094882	2007	Geological Mapping, Trenching, Rock Sampling, Bulk Sampling, and Grid Preparation on the JAE Property	Percussion - Drilling, Drill Cuttings - Geochemistry, Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Bulk Sample - Lab Work/Physical Studies, Surveying - Other, Backhoe - Trenching	4	182.88
094782	2006	Geological Mapping, Soil and Rock Geochemical Sampling, Trenching, and Bulk Sampling on the JAE Property	Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Bulk Sample - Lab Work/Physical Studies, Backhoe - Trenching		
094681	2005	Sampling Report on the JAE 1-27 and Tom 1-2 Quartz Claims	Rock - Geochemistry, Backhoe - Trenching		
094199	2000	Trenching and Sampling Report on the J.A.E 1-27 and TM1-2 Quartz Claims	Rock - Geochemistry, Backhoe - Trenching		
094021	1999	Detailed Airborne Magnetics and VLF-EM over the Klondike District, Dawson City - 1999	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		
093711	1996	JAE Mapping Report 1996 A Geological and Geochemical Report for the Hunker Dome Project	Rock - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology		
092974	1990	Geophysical Report on Induced Polarization, Resitivity and Magnetic Surveys over Portions of the Jae and Dawson Claims	IP - Ground Geophysics, Magnetics - Ground Geophysics		
092954	1990	Geological and Geochemical Report on the Mitchell/Sheba Property	Rock - Geochemistry, Soil - Geochemistry, IP - Ground Geophysics, Magnetics - Ground Geophysics, Resistivity - Ground Geophysics		
091634	1984	Report on the 1984 Exploration Program in Klondike Gold Fields	Electromagnetic - Airborne Geophysics, Percussion - Drilling, Drill Cuttings - Geochemistry, EM - Ground Geophysics	95	6900.67
091384	1980	Geological Report on the King Solomon, Dominion and Sheba Mineral Claims	Rock - Geochemistry, Data Compilation - Pre-existing Data		
060149	1972	Geological and Geochemical Report Yukon Quartz Mineral Claims	Silt - Geochemistry, Soil - Geochemistry		

Related References

Number	Title	Page(s)	Reference Type	Document Type
1992GeolVol3_18	Gold and sulphide mineralization in the Hunker Creek area, Yukon Territory, Canada		Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Annual Report Paper
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
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 -

[1]	Districts (115N/13, 16; 115O/13, 14 and Parts of 115O/13, 16)		Development: Exploration & Geological Services Division	Bedrock)
1991Rushton	A fluid inclusion and stable isotope study of mesothermal gold-quartz veins in the Klondike Schists, Yukon Territory		University of Alberta	MSc Thesis
05-009	Sampling Report on the J.A.E. 1-27 and Tom 1-2 Quartz Claims		Yukon Government: Energy, Mines and Resources	YMEP Report

Drill core at YGS core library

Number	Property	Year Drilled	Core Size	Photos	Data
KSD-13-01	King Solomon Dome	2013	HTW	1	15
KSD-13-02	King Solomon Dome	2013	HTW	1	12
KSD-13-03	King Solomon Dome	2013	HTW	1	12