



Occurrence Details

Occurrence Number: 105B 099

Occurrence Name: Logan

Occurrence Type: Hard-rock

Status: Deposit

Date printed: 8/5/2025 6:34:00 PM

General Information

Primary Commodities: silver, zinc

Secondary Commodities: copper, lead, tin

Deposit Type(s): Vein Polymetallic Ag-Pb-Zn+/-Au

Location(s): 60°30'5" N - 130°28'12" W

NTS Mapsheet(s): 105B09

Location Comments: 1 Kilometres

Hand Samples Available: Yes

Last Reviewed:

Capsule

Work History

Staked as Logan cl 1-6 (YA45047) in Jul/79 by Regional Resources Ltd, which explored with mapping and geochem, mag, EM and IP surveys in 1979 and added Logan cl 7-36 (YA46254) in Oct/79. The company carried out geochem surveys in 1980, and mapping, hand trenching and sampling in 1982.

In 1984 Regional entered into a joint venture with Getty Canadian Minerals Ltd which carried out mapping, geochem, IP and mag surveys and trenching and staked Logan cl 37-94 (YA71027) and line-cutting and geophysics in 1985.

Regional's interest was transferred in May/86 to Fairfield Minerals Ltd and the property was expanded to include Logan cl 95-168 (YA91214) and explored with geological mapping and 15 diamond drill holes (1898 m). In 1987 an airstrip was constructed, the property was expanded to include Logan cl 169-200 (YA 10686) and 44 drill holes (7770 m) and numerous trenches were completed. In 1988 additional geochem and IP geophysical surveys, excavator trenches and 44 drill holes (6771 m) were completed.

In May/90 Total Energold Corporation acquired Getty's interest and exercised an option to increase its interest in the property to 60%. In Feb/2002 Fairfield Minerals and Almaden Resources Ltd amalgamated to form Almaden Minerals Ltd.

In Apr/2003 Expatriate Resources Ltd acquired Total Energold's 60% interest in the Logan property. Expatriate announced plans to evaluate the joint development of the Logan deposit with its Wolverine deposit (Minfile Occurrence 105G 072) located approximately 170 road kms to the north.

A technical report by Hatch dated March 2004 lists estimates for an inferred resource at a range of cut-off grades.

In Dec/2004 Expatriate reorganized and transferred most of its exploration projects outside the Finlayson district to its subsidiary Pacifica Resources Ltd and then changed its name to Yukon Zinc Corporation.

Capsule Geology

Zinc and silver occur in a tabular fault-bounded body 1 100 m long and 50 to 140 m wide within an 8 km long fault zone. The fault zone trends northeast and cuts graphic granite and pegmatitic phases of the mid-Cretaceous Marker Lake Batholith. The main zone contains drill-indicated reserves of 12.3 million tonnes grading 6.17% Zn and 26.4 g/t Ag. Of these reserves, 90% lie within 200 m of the surface and could be recovered by open pit mining. The deposit is still open to depth and has excellent potential for additional reserves. Metallurgical tests have showed that 93 to 95% of the zinc and 85% of the silver could be recovered in a 50 to 54% zinc concentrate.

The property was initially staked in 1979 to cover a kill zone associated with a transported gossan which returned high zinc-silver-tin-copper values. Mineralization was first uncovered by trenching above the kill zone. Sulphide minerals include sphalerite (80%), pyrite (12%), arsenopyrite (5%), chalcopyrite (2%), silver-bearing lead sulphosalts (<1%), cassiterite (<1%) and rare pyrrhotite, covellite, galena, chalcocite, tetrahedrite, stannite, jamesonite, kobellite and native copper.

Mineralization is concentrated in multiple phase quartz and quartz-ankerite veins, breccia bodies, stockworks and silicified zones which cut bodies of highly altered granodiorite and latite and andesite dikes. Sericite, biotite and silica are the predominant alteration minerals. Drilling has demonstrated the existence of a high grade core, which averages 14.4% Zn and 26 g/t Ag. The higher grade mineralization consists of sulphides brecciated and remobilized by the late stage formation of a diatreme breccia pipe in the centre of the deposit.

A study by Germann (1992) showed that inclusions in quartz contain low salinity fluid (3-4% NaCl equivalent) indicative of a mixed (not purely magmatic) source. Arsenopyrite geothermometry returned maximum formation temperatures ranging from 335 to 385 C.

A technical report by Hatch dated March 2004 lists estimates for an inferred resource at a range of cut-off grades.

Work History

Date	Work Type	Comment
12/31/1988	Drilling	Forty-four holes, 6,771 m.
12/31/1988	Ground Geophysics	
12/31/1988	Trenching	
12/31/1987	Development, Surface	

12/31/1987	Drilling	Forty-four holes, 7,770 m.
12/31/1987	Trenching	
12/31/1986	Drilling	Fifteen holes, 1,898 m.
12/31/1986	Geology	
12/31/1985	Geochemistry	Also rock sampling.
12/31/1985	Ground Geophysics	
12/31/1984	Geology	
12/31/1984	Geochemistry	
12/31/1984	Ground Geophysics	Also magnetic survey.
12/31/1984	Trenching	
12/31/1982	Geology	
12/31/1982	Geochemistry	Also rock sampling.
12/31/1982	Trenching	
12/31/1980	Geochemistry	
12/31/1979	Geology	
12/31/1979	Geochemistry	Also rock sampling.
12/31/1979	Ground Geophysics	Also EM and IP surveys.
12/13/2004	Studies	Hatch, 2004.

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
094525	2004	Logan Mineral Resource Report and Environmental Baseline Study	Environmental Assessment/Impact - Studies, Resource Estimate - Studies		
092828	1989	1988 Summary Report of Exploration on the Logan #1-200 Claim Group	All Weather Road - Development, Surface, Reclamation - Development, Surface, Soil - Geochemistry, IP - Ground Geophysics, Line Cutting - Other, Backhoe - Trenching		
097018	1986	[drill logs and maps for drilling on the Logan Property]	Diamond - Drilling	18	3253.21
062259	1985	Yukon Mineral Properties of Fairfield Minerals Ltd.	Research/Summarize - Pre-existing Data		
091601	1984	Geological, Geochemical & Trenching Report on the Logan #1-88 Mineral Claims	Rock - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, IP - Ground Geophysics, Magnetics - Ground Geophysics, Line Cutting - Other, Prospecting - Other, Hand - Trenching		
091400	1982	Geochemical Report on the Logan Claim Group	Rock - Geochemistry, Soil - Geochemistry, Handblast - Trenching		
090876	1981	Assessment Report Geological, Geochemical and Geophysical Report on the Ursus 1-164 Mineral Claims	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Magnetics - Ground Geophysics		
090571	1979	Geological, Geochemical and Geophysical Report on the Logan Claim Group	Soil - Geochemistry, EM - Ground Geophysics, IP - Ground Geophysics, Magnetics - Ground Geophysics, Resistivity - Ground Geophysics		
060884	1971	Preliminary Report on the Red Claim Group of Boswell River Mines Ltd. in Liard River Area, Yukon Territory	Process/Interpret - Pre-existing Data		

Related References

Number	Title	Page(s)	Reference Type	Document Type
ARMC007644	Summary report on the Logan Property		Property File Collection	Report
YEG198586	Yukon Exploration 1985-86	127	Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Annual Report
YEG1987	Yukon Exploration 1987	80-81	Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Annual Report
YEG1982	Yukon Exploration and Geology 1982	98	Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Annual Report
YEG1983	Yukon Exploration and Geology 1983	147	Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Annual Report

YEG1988_OV	Yukon Mining and Exploration Overview 1988	27	Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Annual Report
YEG1979_80	Yukon Geology and Exploration 1979-80	156	Indian & Northern Affairs Canada/Department of Indian & Northern Development: Exploration & Geological Services Division	Annual Report
ARMC02_0068	Notes on drilling in the main zone - Logan		Property File Collection	Miscellaneous Company Documents
ARMC02_0069	An investigation of the recovery of zinc and silver from Logan project samples submitted by Strathcona Mineral Services Ltd. - Progress Report No. 1 - Project No. L.R. 3654		Property File Collection	Report
ARMC02_0070	Annual report 1989 - Total Energold Corporation		Property File Collection	Report
ARMC02_0071	Facts summary - Logan Zinc-Silver project		Property File Collection	Report
ARMC02_0072	Annual report 1988 - Total Energold Corporation		Property File Collection	Report
ARMC02_0073	1988 Summary report of exploration on the Logan #1-200 claim group - Watson Lake Mining District - Volume I		Property File Collection	Report
ARMC02_0074	1988 Summary report of exploration on the Logan #1-200 claim group - Watson Lake Mining District - Volume II (Appendices D, E)		Property File Collection	Report
ARMC02_0075	Diamond drill section 310W - DDH 86-L-10, DDH 87-L-24 - Logan project - Main zone - Plate 31		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0076	Diamond drill section 200W - DDH 86-L-9, DDH 87-L-19, DDH 87-L-20, DDH 87-L-21, DDH 88-L-101, TR 88-L-813 - Logan project - Main zone - Plate 32		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0077	Diamond drill section 140W - DDH 87-L-52 - Logan project - Main zone - Plate 33		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0078	Diamond drill section 105W - DDH 86-L-6, DDH 86-L-7, DDH 86-L-8, DDH 87-L-22, DDH 87-L-23, TR 88-L-805 - Logan project - Main zone - Plate 34		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0079	Diamond drill section 055W - DDH87-L-51 - Logan project - Main zone - Plate 35		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0080	Diamond drill section 005W - DDH 86-L-5, DDH 86-L-15, DDH 87-L-16, DDH 87-L-17, DDH 87-L-18, DDH 87-L-54, DDH 87-L-99, TR 88-L-804 - Logan project - Main zone - Plate 36		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0081	Diamond drill section 040E - DDH 87-L-50 - Logan project - Main zone - Plate 37		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0082	Diamond drill section 095E - DDH 86-L-14, DDH 87-L-25, DDH 87-L-26, DDH 87-L-3 4, DDH 88-L-103, TR 88-L-802 - Logan project - Main zone - Plate 38		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0083	Diamond drill section 145E - DDH 87-L-49 - Logan project - Main zone - Plate 39		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0084	Diamond drill section 195E - DDH 86-L-2, DDH 86-L-4 , DDH 87-L-3 l, DDH 87-L-32, DDH 87-L-33, DDH88-L-100, TR 88-L-801 - Logan project - Main zone - Plate 40		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0085	Diamond drill section 275E - DDH 86-L-1, DDH 86-L-3, DDH 87-L-35, DDH-L-36, DDH-88-L-102, TR 88-L-814 - Logan project - Main zone - Plate 41		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0086	Diamond drill section 395E - DDH 86-L-11, DDH 87-L-37, DDH 87-L-38, DDH 87-L-39 - Logan project - Main zone - Plate 42		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0087	Diamond drill section 490E - DDH 87-L-40, DDH 87-L-41, TR 88-L-809 - Logan project - Main zone - Plate 43		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0088	Diamond drill section 580E - DDH 87-L-42, DDH 87-L-43 - Logan project - Main zone - Plate 44		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0089	Diamond drill section 630E - DDH 87-L-55 - Logan project - Main zone - Plate 45		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0090	Diamond drill section 685E - DDH 87-L-44, DDH 87-L-56, TR 88-L-812 - Logan project - Main zone - Plate 46		Property File Collection	Geoscience Map (Geological - Bedrock)
ARMC02_0091	Diamond drill section 735E - DDH 87-L-57 - Logan project - Main zone - Plate 47		Property File Collection	Geoscience Map (Geological - Bedrock)
				Geoscience Map

