Occurrence Details

Occurrence Number: 105G 072
Occurrence Name: Wolverine
Occurrence Type: Hard-rock
Status: Deposit
Date printed: 6/14/2025 4:51:35 PM

General Information

Primary Commodities: copper, gold, lead, silver, zinc
Aliases: Fetish
Deposit Type(s): Volcanogenic Massive Sulphide (VMS) Kuroko Cu-Pb-Zn
Location(s): 61°25'36" N - -130°8'2" W
NTS Mapsheet(s): 105G08
Location Comments: Location from map in 2007 NI43-101 report and satellite imagery
Hand Samples Available: Yes
Last Reviewed:

Capsule

Work History

Staked as Fetish cl 1-20 (Y73634) in Jul/73 by Finlayson Joint Venture (Chevron Canada Ltd; Union Oil Company of Canada Ltd; and Marietta Resources International Ltd), which conducted grid soil sampling, mapping and trenching later in the year. The Company drilled 2 holes (24.9 m), performed more soil sampling and added Fetish cl 21-34 (Y83176) in Aug/74.

Restaked as Kink cl 1-8 (YA69007) in Sep/82 by Archer, Cathro & Associates (1981) Ltd and optioned briefly to Esso Minerals Canada which conducted ground magnetic and Max-Min EM surveys later in the year.
The Foot 1-20 claims (YB45954) were staked around the sole remaining Kink claim (cl 3, YA69009) in Jul/93 by Atna Resources Ltd. Atna explored with prospecting, geological mapping, and soil and silt geochemistry in Sep/93. Atna added Foot cl 21-94 (YB51532) to the northwest in Aug/94.

In Jan/95 Atna optioned the Foot property together with its Pak and Toe claim blocks to Westmin Resources Ltd and together formed the Wolverine Joint Venture (JV). In May/95 Archer Cathro transferred Kink cl 3, which covers much of the Wolverine deposit, to Atna which in turn transferred the claim to Westmin Resources. In the same month Atna transferred Foot cl 1-20 (YB45954) to Westmin. In Jun/95 Westmin staked Toe cl 17-36 (YB59962) and Foot cl 180-214 (YB59982) to the northwest. In Aug/95 Westmin Resources staked fractional Foot cl 215-231 (YB60944) along the boundary between the Foot claims and adjacent claims held by a competitor. In Sept/95 Westmin staked Foot 233-586 (YB61298) to the northwest.

In 1995 the Wolverine JV carried out geological mapping, geochemical sampling, conducted various geophysical surveys and drilled 24 diamond drill holes (6 442 m). The first drill hole in the program intersected massive sulphides and led the joint venture group to move two additional drill rigs onto the property. Fifteen consecutive holes intersected massive sulphides in the newly defined Wolverine zone. The other holes in the program tested various targets located along strike including two holes which lead to the discovery of the Fisher zone, 8 kilometres to the northwest. In November and Dec/95 Westmin flew a 3660 km Dighem V multi-parameter airborne survey over various claim blocks in the area including the Foot claims. By the end of 1995, Westmin had fully vested its 60% interest in the joint venture (Atna held the remaining 40%).

The 1996 exploration program focused on continued definition drilling of the Wolverine deposit and a regional stratigraphic drill program. Total drilling consisted of 18 810 m in 64 holes. Regional geological mapping, geochemical surveys and construction of a 1 000 m airstrip were also completed. In 1997 the joint venture group completed 53 diamond drill holes (15 330 m) in and around the Wolverine deposit. Twenty-two of the holes were collared on the Wolverine-Lynx zone deposit, 20 holes on targets located along 14 km of favorable stratigraphy, and 10 holes on the adjoining Puck claims located southeast of the deposit and optioned from Expatriate Resources Ltd.

In Mar/98 Westmin Resources was acquired by Boliden Ltd. In Apr/99 Expatriate Resources Ltd purchased all of Westminżs interest in the Wolverine Joint Venture, from Boliden, resulting in Expatriate becoming 60% owner (and operator) of the Wolverine deposit (Atna owns the remaining 40%). No physical work was carried out on the property in 1998 or 1999 but the joint venture did conduct metallurgical studies for the treatment of selenium mineralization present in the Wolverine deposit.

In Mar/2000 Expatriate announced a purchase agreement to acquire 100% of the Kudz Ze Kayah deposit (Minfile Occurrence #105G 117) and surrounding mineral claims from Cominco Ltd. Later in the year Expatriate drilled seven drill holes (958 m) on the Lynx zone and 1 hole (344.12 m) on the Sable zone.

In Nov/2000 Hatch and Associates delivered a prefeasibility study on the Finlayson Project that included the development of the Kudz Ze Kayah deposit with the Wolverine deposit. An indicated and inferred resource estimate for both deposits was calculated by Nilsson Mine Services in 2000 as well as a problable reserve estimate.

In Sept/2001 Expatriate announced that it was terminating its agreement to acquire the Kudz Ze Kayah property, mainly due to its inability to raise the required funds to cover the purchase price.

In Oct/2004, Expatriate announced plans to move the development of the Wolverine deposit to bankable feasibility and a production decission. 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.

During 2005, Yukon Zinc Corporation carried out definition drilling on the Lynx Zone, drove a decline and began test mining the deposit.
2005-2010 not updated yet.
Feasiblility studies were released in 2006 (Hatch) and 2007 (Wardrop).

Mill commissioning commenced in late 2010 and operations started in 2011. In March 2012, commercial production was achieved and in Q1 2013, full design capacity was reached. The majority of the concentrate from Wolverine is trucked to the British Columbia port at Stewart.
In January of 2015, the mine shut down due to low metal prices and company dept. Shortly there after Yukon Zinc declared bankcruptcy and the site has been under the control of the Governement of Yukon.

Capsule Geology

This occurrence is commonly referred to as the Wolverine deposit. It is regionally underlain by a Mississippian to Permian age, mixed volcano-sedimentary package belonging to the Yukon-Tanana Terrane (YTT). The YTT is a volcanic-plutonic, pericratonic arc assemblage that was strongly deformed and metamorphosed by late Triassic time. Volcanic hosted massive sulphide deposits exist at different stratigraphic positions within the YTT including the Fyre Lake deposit (Minfile Occurrence #105G 034) in Devonian to Early Mississippian Fire Lake mafic meta-volcanic unit (DMf), the Kudz Ze Kayah deposit (Minfile Occurrence #105G 117) in the Mississippian Kudz Ze Kayah felsic meta-volcanic unit (Mk), the Wolverine deposit (this occurrence) within the Carboniferous Wolverine Lake succession, and the Ice deposit (Minfile Occurrence #105G 118) within Pennsylvanian to Permian Campbell Range basalts.

Recent geological mapping by Murphy et al., (2001), shows that the Wolverine deposit is hosted within a Carboniferous aged package of felsic metavolcanic and metasedimentary rocks, of lower greenschist metamorphic rank, referred to as the Wolverine Succession. Unit MWcl, coarse feldspathic meta-sandstone and grit defines the base of the succession. It is overlain by unit MWcp, carbonaceous phyllite and quartz sandstone. Unit MWcp is overlain by unit MWf. Unit MWf is comprised of muscovite-quartz phyllite and quartz-feldspar augen phyllite (meta-porphyry) of felsic

volcanic and subvolcanic intrusive protolith. In most places the succession is capped by unit MWt, massive to granular siliceous rock and light colored phyllite (metatuff and exhalite).This unit is locally massive and bedded on a metre-scale at the base where it is associated with baritic iron formation. One band of platy brown limestone, was observed in the upper part of the unit. In a few locations, the succession is capped by unit MWb, a chloritic phyllite which occurs discontinuously beneath unit Plc, a overlap succession of Pennsylvanian age carbonaceous pyllite, grey chert, diamictite and quartzofeldspathic sandstone, grit and local conglomerate.

The Wolverine massive sulphide deposit and nearby mineralized zones (Fisher, Lynx, Sable) occur near the contact between unit MWcp, carbonaceous phyllite and quartz sandstone and unit MWt, massive to granular siliceous rock and lightly-colored phyllite. The baritic iron formation located near its base is employed as a marker. The massive sulphide body is zoned, polymetallic, and displays banded, clastic and massive replacement textures. Exploration to date suggests that it has a tabular morphology. The deposit is located stratigraphically above the Kudz Ze Kayah deposit (Minfile Occurrence #105G 117) located 20 kilometres to the west.
Commonly, sulphide intersections have Mg-chlorite footwall alteration zones enveloping pyrite/chalcopyrite/pyrrhotite stringer mineralization. The main sulphide minerals, in order of decreasing abundance, are pyrite, sphalerite, chalcopyrite, and galena. Argentian tetrahedrite contains more than 90% of the silver in the deposit, the remainder occurring in solid solution with galena and in Au-Ag solid solution series. Au is present as Ag-rich native gold and Au-rich native silver. Gangue minerals associated with the massive sulphide are comprised of quartz, muscovite, calcite and dolomite-ankerite. Texturally the sulphide minerals are generally fine to medium grained. Ore minerals occur either interstitial to pyrite or as a matrix for disseminated pyrite (Tucker et al., 1997).
Exploration work undertaken by the Finlayson Joint Venture group led to the discovery of the first traces of mineralization. The group found traces of chalcopyrite and galena in strongly leached and limonite-stained chlorite schist and quartz float. Two drill holes, drilled 244 m apart intersected thin bands (up to 0.64 cm) of chalcopyrite and sphalerite in a soft, contorted talc-sericite-chlorite schist zone ranging from 12.2 to 20 m thick. The best intersection returned 0.24% Cu and 0.22% Zn across 4.72 m.

Geophysical surveys completed in 1982 by Esso Minerals outlined magnetic anomalies which could be produced by bands of iron formation, but the EM response was attributed to graphitic sedimentary rocks rather than sulphides.

Atna's 1994 work program revealed high base metal values in silt samples collected 8 km along strike from the original Fetish showing. Mapping carried out in 1995 defined a thick sequence of felsic volcanic rocks interbedded with argillaceous and epiclastic sedimentary rocks. The sequence includes several altered and mineralized horizons characterized by widespread pyrite-sphalerite-chalcopyrite-barite-carbonate mineralization. These strata dip moderately to the northeast and have been defined over a 12 000 m strike length. The favourable horizons are generally poorly exposed due to overburden and talus cover. However they can be defined by magnetic iron formation, geophysical marker horizons and by anomalous soil (Au, Ag, Cu, Pb, Zn, Ba) geochemistry.

The discovery hole (WO-95-1) intersected 3.9 m of massive and semi-massive sulphides that assayed 0.34 g/t Au, 59.6 g/t Ag, 10.2% Zn, 0.3% Cu and 0.49% Pb. The highest grades obtained in 1995 occurred in WO-95-4 which assayed 7.62 g/t Au, 1 349 g/t Ag, 14.22% Zn, 0.56% Cu and 3.45% Pb over a true thickness of 8.3 m. The remaining 13 holes drilled into the Wolverine deposit all intersected economic mineralization.

Hole WO-95-6, one of two holes drilled on the Fisher Zone returned 2.4 m of semi-massive sulphide that graded 0.14 g/t Au, 66.3 g/t Ag, 0.12% Cu, 1.41% Pb and 2.84% Zn. Follow-up drilling undertaken in 1995 and 1996 intersected low grade mineralization over a thick interval of coarse rhyolite fragmental rocks. The remaining holes drilled in 1995 tested various targets located along a 10 km long favourable horizon. Although the holes intersected sulphide mineralization, none returned economic grades.

Drilling in 1996 resulted in the discovery of the Lynx Zone. The zone adjoins the Wolverine Zone to the west at the same stratigraphic level. The Lynx Zone is on average thicker and higher grade than the Wolverine, contains an upper massive sulphide lens and remains open to the south and west. The thick, massive sulphide lens thins, up dip to surface. Drilling on the Lynx zone in 1997 extended the zone an additional 50 metres up dip over a 200 metre strike length.

Drilling in 1997 resulted in the discovery of the Sable zone located 1.6 km southeast of Wolverine zone, adjacent to Expatriate Resources' Puck claims. The zone hosts chlorite alteration with stockwork chalcopyrite and pyrrhotite mineralization typical of footwall alteration observed at the Wolverine zone. The drilling intersected two narrow massive sulphide zones with ¿Wolverine grade¿ mineralization (WV97-106, 108). The joint venture reported results of 2.26 g/t Au, 183 g/t Ag, 0.65% Cu, 0.62% Pb, and 15.70% Zn over a true thickness of 0.6 m in hole WV97-106, and 1.92 g/t Au, 416 g/t Ag, 0.80% Cu, 0.79% Pb, and 13.3% Zn over a true thickness of 0.6 metres from hole WV97-108.

Preliminary metallurgical studies of the Wolverine deposit identified high levels of selenium, which creates problems during the smelting and refining processes due to the difficulty in separating it from metal and/or sulphur products. Following the change in ownership, the joint venture group appointed a team of metallurgists to investigate various metallurgical processes to eliminate the selenium. Preliminary results suggest that several economically attractive options are available to produce a readily saleable product.
The single hole collared on the Sable zone failed to intersect economic mineralization. The seven holes collared on the Lynx zone targeted the proposed path of an underground drift, which was included in the feasability study released in 2001. Overall drilling confirmed a previous interpretation of the deposit based on wider spaced drilling conducted in earlier years.

In Nov/2000, based on reports by Nilsson Mine Services (2000), Hatch Associates Ltd., estimated that the Wolverine Deposit (including the Lynx Zone) hosted an INDICATED resource of 4.94M tonnes grading 13% Zn, 1.58% Pb, 1.43% Cu, 379.4 g/t Ag and 1.76g/t Au and a PROBABLE RESERVE of 3 470 000 tonnes grading 1.37% Cu, 1.44% Pb, 12.43% Zn, 1.59 g/t Au and 336.6 g/t Ag. This figure was calculated using only resources from the Lynx and Wolverine lenses where the massive sulphide mineralization is greater than 4 m thick.

Following the termination of the Kudz Ze Kayah option, Expatriate returned its exploration focus to its own claim holdings.

In 2005, an advanced exploration program was conducted to provide access for test mining. This program consisted of developing a portal and 450 m of decline into the ore zone. At the end of 2005, the decline was allowed to fill with water over the winter season. In 2006, the access decline was dewatered and several areas of the tunnel required extensive rehabilitation.

A feasibility study carried out by Hatch in 2006. An Optimized Feasibility Study was completed by Wardrop Engineering Inc for Yukon Zinc Corporation in January 2007, and an amended report was released in October 2007.

Mine activities in 2012 focused on the ramping up of the underground mine operations toward full production, reaching the commercial production threshold in March, continued ramp-up of milling operations, and continued underground development.The total amount of waste and ore removed from the mine in 2012 was 441,095 tonnes and 53,566 tonnes, respectively. 174,099 tonnes of ore were from the Wolverine Zone and 266,995 tonnes were from the Lynx Zone. At the end of 2012 approximately 15,519 tonnes of ore were stockpiled, with grades of 7.56% Zn, 0.70% Cu, 1.03% Pb, 1.24 g/t Au and 250.46 g/t of Ag. Of the 441,095 ore tonnes extracted from the underground, 428,956 tonnes were milled with the average head grades of 7.72% Zn, 0.71% Cu, 1.00% Pb, 1.33 g/t Au and 248.5 g/t Ag (Yukon Zinc Corp, 2012 Annual Report).

Predictions for 2013 production were as follows: Total of 684,764 tonnes mined, including 646,160 tonnes of ore, and projected production of 146,779 Dry Milled tonnes of concentrate, comprised of 109,892 tonnes of zinc concentrate, 16,686 tonnes of lead concentrate and 20,200 tonnes of copper concentrate.

An update provided by Yukon Zinc in February 2014 lists a total of 1,250,000 tonnes mined to date, 1,102,000 milled tonnes to date, with an average head grade od 8.7% Zn, 0.88% Cu, 1.15% Pb, 249g/t Ag and 1.16g/t Au. full production (1,700 tonnes/day) was reached in the second quarter of 2013.

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YUKON EXPLORATION & GEOLOGY 1994, p. 8; 11; 1995, p. 11; 17; 1996, p. 15; 31; 1997 p. 14-15; 37-38; 1998, p. 18; 1999, p. 21; 2000, p. 7-9, 25-27; 2001, p. 9; 2002, p. 18.

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Work History

Date	Work Type	Comment
12/31/2005	Drilling	Sixty-one holes, 11,713 m.
12/31/2000	Drilling	Eight holes, 1,302 m.
12/31/2000	Studies	Hatch, Nov/2000. For joint Kudz Ze Kayah and Wolverine mining plan.
12/31/1999	Studies	Joint venture undertook metallurgical studies for treatment of selenium mineralization present in Wolverine deposit.
12/31/1998	Studies	Joint venture did undertake metallurgical studies for treatment of selenium mineralization present in Wolverine deposit.
12/31/1997	Drilling	Fifty-three holes, 15,330 m. Twenty-two holes collared on Wolverine deposit, 20 holes on 14 km of favorable stratigraphy and 10 holes on adjoining Puck property.

12/31/1996	Development, Surface	
12/31/1996	Drilling	Sixty-four holes, 18,810 m.
12/31/1996	Geology	
12/31/1996	Geochemistry	
12/31/1996	Airborne Geophysics	Also magnetic and VLF surveys.
12/31/1995	Drilling	Twenty-four holes, 6,442 m.
12/31/1995	Geology	
12/31/1995	Airborne Geophysics	Also magnetic survey.
12/31/1993	Geology	
12/31/1993	Geochemistry	
12/31/1993	Geochemistry	
12/31/1993	Other	
12/31/1982	Ground Geophysics	Also Max-min-EM survey.
12/31/1974	Drilling	Two holes, 214.9 m.
12/31/1974	Geochemistry	
12/31/1973	Geology	
12/31/1973	Geochemistry	
12/31/1973	Trenching	
12/1/2000	Studies	
12/1/1999	Lab Work/Physical Studies	
12/1/1997	Studies	
10/22/2007	Studies	Wardrop Engineering Inc., amended from Feb 2007 technical report.

Assessment Reports that overlap occurrence

Report Number	Year	Title	Worktypes	Holes Drilled	Meters Drilled
097243	2018	2018 Geological and Geochemical Program Report on the Pelly Property	Orthophoto - Airphotography, Rock - Geochemistry, Detailed Bedrock Mapping - Geology		
096998	2016	2016 Geophysical Report on the Pelly Property	Magnetic - Airborne Geophysics, VTEM - Airborne Geophysics		
095144	2009	2009 Diamond Drilling Report for the Wolverine Project Claims in the Watson Lake Mining District Yukon Territory Canada	Diamond - Drilling	29	4717.46
094827	2006	Assessment Report on the 2006 Drilling for the Wolverine Deposit	Diamond - Drilling	11	767.70
094676	2005	Assessment Report for Diamond Drilling Performed on the Wolverine Deposit Between January 10 and November 15, 2005	Diamond - Drilling	58	11712.50
094236	2000	Finlayson Project Description Report	Environmental Assessment/Impact - Studies, Geotechnical - Studies, Heritage/Archeological - Studies		
094184	1999	Wolverine Report Metallurgical Scoping Study	Metallurgical Tests - Lab Work/Physical Studies		
093779	1997	1997 Summary Report on the Foot 1-20, 37-80, 83-94, 180-188, 215-231, 11A-12A, Kink 3, Low 13-14	Diamond - Drilling, Resource Estimate - Studies	40	11853
093815	1997	1997 Assessment Report Strike & Era Properties	Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Prospecting - Other		
093671	1996	1996 Assessment Report Wol, Boot and Jack Properties Linecutting, Soil Geochemistry, Geological Mapping, Geophysical Surveys and Diamond Drilling	Diamond - Drilling, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, EM - Ground Geophysics, Gravity Survey - Ground Geophysics, Magnetics - Ground Geophysics, Line Cutting - Other, Prospecting - Other	3	601.10
093590	1996	1996 Summary Report on the Foot 1-20, 37-80, 83-94, 180-188, 215-231, 11A-12A, Kink 3, Low 13-14	Diamond - Drilling	48	16926.20
093584	1996	Dighem V Survey for Westmin Resources Limited Wolverine Lake Project Yukon	Electromagnetic - Airborne Geophysics, Magnetic - Airborne Geophysics		
093404	1995	1995 Summary Report on the Foot 1-80, 83-174, 180-231, Kink 3, Toe 1-16, 26 Claims	Diamond - Drilling, Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Detailed Bedrock Mapping - Geology, Prospecting - Other	24	6440.90
093402	1995	1995 Assessment Report Go and Nad Properties Soil Geochemistry and Geological Mapping	Soil - Geochemistry, Bedrock Mapping - Geology		
093400	1995	1995 Assessment Report Boot Property Soil Geochemistry and Geological Mapping	Soil - Geochemistry, Bedrock Mapping - Geology		

093202	1993	1993 Summary Report on the Foot 1-10, 13-20 Claims	Rock - Geochemistry, Silt - Geochemistry, Soil - Geochemistry, Bedrock Mapping - Geology, Prospecting - Other		
091480	1982	Geophysical Report on E.M. and Magnetic Surveys of the Fetish Property (Kink 1-8 Mineral Claims) Wolverine Lake area, Watson Lake Mining District Yukon Territory	EM - Ground Geophysics, Magnetics - Ground Geophysics		
091160	1974	[Diamond Drill Program, Fetish 1-34 Mineral Claims]	Diamond - Drilling, Soil - Geochemistry	2	214.90
060852	1973	Report on Geology and Geochemistry Fetish 1-20 Mineral Claims	Soil - Geochemistry, Detailed Bedrock Mapping - Geology		

Related References

Number	Title	Page(s)	Reference Type	Document Type
ARMC017622	Geochemical map of Wolverine Lake - Cu, Pb, Zn, Mn, Mo.W		Property File Collection	Geochemical Map

Resource/Reserve

Year	Zone	Type	Commodity	Grade	Tonnage	Amount	Reported Amount	43-101 Compliant	Cut-off
2007	Wolverine Reserve (Underground)	Probable	zinc	9.59 %	4,588,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	Wolverine Reserve (Underground)	Probable	copper	.91 %	4,588,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	Wolverine Reserve (Underground)	Probable	lead	1.26 %	4,588,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	Wolverine Reserve (Underground)	Probable	silver	286.2 g/t	4,588,000	1313085.60	No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	Wolverine Reserve (Underground)	Probable	gold	1.37 g/t	4,588,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	Wolverine Reserve (Underground)	Proven	lead	1.24 %	564,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	Wolverine Reserve (Underground)	Proven	gold	1.24 g/t	564,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Inferred	copper	1.23 %	1,693,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Indicated	copper	1.16 %	3,968,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Measured	copper	1.18 %	493,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Inferred	gold	1.71 g/t	1,693,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Indicated	gold	1.72 g/t	3,968,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Measured	gold	1.5 g/t	493,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Inferred	lead	1.74 %	1,693,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Indicated	lead	1.59 %	3,968,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Measured	lead	1.48 %	493,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Inferred	silver	385.4 g/t	1,693,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Indicated	silver	361.8 g/t	3,968,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Measured	silver	298.8 g/t	493,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Inferred	zinc	12.16 %	1,693,000		No	Yes	US$80/tonne

Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Indicated	zinc	12.1 %	3,968,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	WOLVERINE (UNDERGROUND)	Measured	zinc	12.44 %	493,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	Wolverine Reserve (underground)	Proven	zinc	10.31 %	564,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	Wolverine reserve (Underground)	Proven	silver	246.9 g/t	564,000	139251.60	No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2007	Wolverine Reserve (Underground)	Proven	copper	.96 %	564,000		No	Yes	US$80/tonne
Wardrop Engineering Inc. Feasibility Study, Oct 2007.									
2000	Wolverine (Underground)	Indicated	zinc	13 %	4,941,000		No	No	unknown
Hatch, 2000.									
2000	Wolverine (Underground)	Indicated	lead	1.58 %	4,941,000		No	No	unknown
Hatch, 2000.									
2000	Wolverine (Underground)	Indicated	copper	1.43 %	4,941,000		No	No	unknown
Hatch, 2000.									
2000	Wolverine (Underground)	Indicated	silver	379.4 g/t	4,941,000		No	No	Unknown
Hatch, 2000.									
2000	Wolverine (Underground)	Indicated	gold	1.76 g/t	4,941,000		No	No	Unknown
Hatch, 2000.									
2000	Wolverine (Underground)	Inferred	zinc	13.61 %	498,000		No	No	Unknown
Hatch, 2000.									
2000	Wolverine (Underground)	Inferred	lead	1.7 %	498,000		No	No	Unknown
Hatch, 2000.									
2000	Wolverine (Underground)	Inferred	copper	1.36 %	498,000		No	No	Unknown
Hatch, 2000.									
2000	Wolverine (Underground)	Inferred	silver	365.3 g/t	498,000		No	No	Unknown
Hatch, 2000.									
2000	Wolverine (Underground)	Inferred	gold	1.51 g/t	498,000		No	No	Unknown
Hatch, 2000.									
2000	WOLVERINE (UNDERGROUND)	Probable	copper	1.37 %	3,470,000		No	No	Unknown
Hatch, 2000. Probable reserve figure calculated using only resources from Lynx and Wolverine lenses where massive sulphide mineralization is greater than 4 m thick..									
2000	Wolverine (UNDERGROUND)	Probable	gold	1.59 g/t	3,470,000		No	No	Unknown
Hatch, 2000. Probable reserve figure calculated using only resources from Lynx and Wolverine lenses where massive sulphide mineralization is greater than 4 m thick.									
2000	WOLVERINE (UNDERGROUND)	Probable	lead	1.44 %	3,470,000		No	No	Unknown
Hatch, 2000. Probable reserve figure calculated using only resources from Lynx and Wolverine lenses where massive sulphide mineralization is greater than 4 m thick.									
2000	WOLVERINE (UNDERGROUND)	Probable	silver	336.6 g/t	3,470,000		No	No	Unknown
Hatch, 2000. Probable reserve figure calculated using only resources from Lynx and Wolverine lenses where massive sulphide mineralization is greater than 4 m thick.									
2000	WOLVERINE (UNDERGROUND)	Probable	zinc	12.43 %	3,470,000		No	No	Unknown
Hatch, 2000. Probable reserve figure calculated using only resources from Lynx and Wolverine lenses where massive sulphide mineralization is greater than 4 m thick.									
1998	Wolverine measured + indicated + inferred (undergroud)	Historical Estimate	zinc	12.66 %	6,237,000		No	No	unknown
Westmin Resources, Jan 1998, quoted in Expatriate News Release March 01 2001.									
1998	Wolverine measured + indicated + inferred (Underground)	Historical Estimate	lead	1.55 %	6,237,000		No	No	Unknown
Westmin Resources, Jan 1998, quoted in Expatriate News Release March 01 2001.									
1998	Wolverine measured + indicated + inferred (Underground)	Historical Estimate	copper	1.33 %	6,237,000		No	No	unknown
Westmin Resources, Jan 1998, quoted in Expatriate News Release March 01 2001.									
1998	Wolverine measured + indicated + inferred (Underground)	Historical Estimate	silver	370.9 g/t	6,237,000		No	No	unknown
Westmin Resources, Jan 1998, quoted in Expatriate News Release March 01 2001.									
1998	Wolverine measured + indicated + inferred (Underground)	Historical Estimate	gold	1.76 g/t	6,237,000		No	No	unknown
Westmin Resources, Jan 1998, quoted in Expatriate News Release March 01 2001.									

Drill core at YGS core library

Number	Property	Year Drilled	Core Size	Photos	Data
FETISH-74-1	Fetish	1974	AQ	6	3
FETISH-74-2	Fetish	1974	AQ	4	2
DDH-T1	Fetish		BQ	12	0