Holt-Holloway Property, Ontario, Canada

Updated NI 43-101 Technical Report

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Report Addressed to St Andrew Goldfields Ltd

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SUMMARY

This National Instrument 43-101 technical report was triggered by the disclosure of the Annual Information Form (AIF) for the year 2012 (section 4.2 (1) (f) of the Instrument) and the disclosure of an increase in mineral resources that constitutes a material change for SAS (i.e. greater than 100% increase, as per section 4.2 (1) (j) (ii) of the Instrument).The updated mineral resources and mineral reserves (as of December 31, 2012) are presented in Summary Table 1 and Summary Table 2 respectively.

	Measured			Indicated			Measured + Indicated			Inferred		
	Tonnes (000)	Grade (g/t)	Gold (oz) (000)	Tonnes (000)	Grade (g/t)	Gold (oz) (000)	Tonnes (000)	Grade (g/t)	Gold (oz) (000)	Tonnes (000)	Grade (g/t)	Gold (oz) (000)
Holt	1,947	3.80	238	2,512	4.12	333	4,459	3.98	570	1,713	4.72	260
Holloway	209	3.57	24	1,178	4.29	163	1,386	4.18	187	3,067	4.67	461
Total	2,155	3.77	262	3,689	4.18	495	5,845	4.03	757	4,779	4.69	721

Notes
CIM definitions (2010) were followed in the calculation of Mineral Resource
Mineral Resource estimates were prepared under the supervision of D. Cater, P. Geo.
Mineral Resource estimates were undertaken according to SAS Policy for Mineral Reserve and Resources
Mineral Resources were estimated at a block cut-off grade of 2.5g/t
Mineral Resources are estimated using a long term gold price of US$1,500/oz
A minimum mining width of 3m was applied
A bulk density of 2.84 t/m^3 was used
Totals may not add exactly due to rounding

Summary Table 1: Mineral resources at Holt and Holloway mines (as of Dec 31, 2012).

	Proven			Probable			Proven + Probable		
	Tonnes (000)	Grade (g/t)	Gold (oz) (000)	Tonnes (000)	Grade (g/t)	Gold (oz) (000)	Tonnes (000)	Grade (g/t)	Gold (oz) (000)
Holt	1,174	4.66	176	1,820	5.38	315	2,993	5.10	490
Holloway	110	4.07	14	187	4.38	26	298	4.26	41
Total	1,284	4.61	190	2,007	5.29	341	3,291	5.02	531

Notes
CIM definitions (2010) were followed in the calculation of Mineral Reserves
Mineral Reserves estimates were prepared under the supervision of P. Rocque, P. Eng.
Mineral Reserves estimates were undertaken according to SAS Policy for Mineral Reserve and Resources
Cut-off grades were calculated for each stopes
Mineral Reserves were estimated using a long term gold price of US$1,400/oz and currencies at par, except for stopes that were included in the 2013 mining plan where a gold price of $1,600/oz was used
Totals may not add exactly due to rounding

Summary Table 2: Mineral reserves at Holt and Holloway mines (as of Dec 31, 2012).

1.0 INTRODUCTION

This National Instrument 43-101 technical report was triggered by the disclosure of the Annual Information Form (AIF) for the year 2012 (section 4.2 (1) (f) of the Instrument) and the disclosure of an increase in mineral resources that constitutes a material change for SAS (i.e. greater than 100% increase, as per section 4.2 (1) (j) (ii) of the Instrument).

The technical report was prepared by employees of SAS and under the supervision of Pierre Rocque, P. Eng. and Douglas Cater, P. Geo., both qualified persons (QP) who are not independent of SAS, as allowed under section 5.3 (3) of the Instrument.

Information was obtained through operation and technical work related to the Holt and Holloway mines over the past few years.

The two QPs frequently visited the Holt and Holloway mines throughout the year.

The units of measures used in this report conform to the metric system. Unless stated otherwise, the Canadian Dollar (CDN$) is the currency used in this technical report. A list of abbreviations is displayed in Table 1-1.

µ	micron	kVA	kilovolt-amperes
°C	degree Celsius	kW	kilowatt
°F	degree Fahrenheit	kWh	kilowatt-hour
µg	microgram	L	litre
A	ampere	L/s	litres per second
a	annum	m	metre
bbl	barrels	M	mega (million)
Btu	British thermal units	m^2	square metre
CDN$	Canadian dollars	m^3	cubic metre
cal	calorie	min	minute
cfm	cubic feet per minute	MASL	metres above sea level
cm	centimetre	mm	millimetre
cm^2	square centimetre	mph	miles per hour
d	day	MVA	megavolt-amperes
dia.	diameter	MW	megawatt
dmt	dry metric tonne	MWh	megawatt-hour
dwt	dead-weight ton	m^3/h	cubic metres per hour
ft	foot	opt, oz/st	Troy ounce per short ton
ft/s	foot per second	oz	Troy ounce (31.1035g)
ft^2	square foot	oz/dmt	Troy ounce per dry metric tonne
ft^3	cubic foot	ppm	part per million
g	gram	psia	pound per square inch absolute
G	giga (billion)	psig	pound per square inch gauge
Gal	Imperial gallon	RL	relative elevation
g/L	gram per litre	s	second
g/t	gram per tonne	st	short ton
gpm	Imperial gallons per minute	stpa	short ton per year
h	hour	stpd	short ton per day
ha	hectare	t	metric tonne
hp	horsepower	tpa	metric tonne per year
in	inch	tpd	metric tonne per day
in^2	square inch	US$	United States dollar
J	joule	USg	United States gallon
k	kilo (thousand)	USgpm	US gallon per minute
kcal	kilocalorie	V	volt
kg	kilogram	W	watt
km	kilometre	wmt	wet metric tonne
km/h	kilometre per hour	yd^3	cubic yard
km^2	square kilometre	yr	year
kPa	kilopascal		

Table 1-1: List of abbreviations.

2.0 RELIANCE ON OTHER EXPERTS

Material information contained in this report was prepared by, or under the direct supervision of Pierre, Rocque, P. Eng. and Doug Cater, P. Geo. As a result, no other experts were relied upon.

3.0 PROPERTY DESCRIPTION AND LOCATION

The following sections are copied (and updated) from the previous technical report (SWRPA, 2008).

3.1 Location

The Holloway-Holt Project is located in northeastern Ontario, adjacent to the Quebec border (Figure 3-1). The property package involved stretches through NTS areas 42D9 and 42D12 and includes an irregularly shaped, east-west elongate assemblage of claims, patents, and mining leases that more or less straddles Ontario Provincial Highway 101 east for 40 km, beginning 32 km east of Matheson and extending to the Quebec border. The main assets, the adjacent Holt and Holloway Mine properties, are centered approximately 45 km northeast of Kirkland Lake, 96 km northwest of Rouyn-Noranda, and 58 km by road east of Matheson. The UTM coordinates for the Holloway headframe are 592,505 E and 5,374,929 N.

Figure 3-1: Location map.

3.2 Mineral Tenure and Encumbrances

On November 1, 2006, St Andrew purchased 100% of the shares of Holloway Mining Company, a wholly owned subsidiary of Newmont Canada Limited. Holloway Mining Company's assets consisted of the property, facilities and equipment of the Holloway Mine and the Holt Mine and Mill, including 48 separate property groups extending from eastern Marriott Township west into eastern Michaud and McCool townships in northeastern Ontario.

The land package comprises 48 separate property groups totalling 691 claims distributed as 257 mineral claims, 176 leased claims, and 258 patented claims. The aggregate area is 15,172 ha. There are at least 16 different property agreements with individuals or corporate entities. Titles to the leased and patented claims mostly include both surface and mineral rights. Included in the land package is the Holloway-Holt Mine and Mill complex and tailings facility.

Property groups and individual claims location are shown in Figure 3-2 and Figure 3-3. Details of the land tenure are listed in Appendix A. The claim list is a tabulation of the relevant claim information including claim group, township, claim number, parcel number, surface right (SR) or Mineral Right (MR) Owner, percentage owned, area (hectares), pin number and relevant royalty schedule.

The single most significant royalty is a sliding scale royalty on all production from the Holt and Holloway mines payable to Franco-Nevada (that was assigned by Newmont, the former owner, effective 2008). The royalty rates vary along a gold price sliding scale, as shown in Table 3-1.

Price of gold	Holt	Holloway
Less than US$500/oz	2%	2%
Less than US$600/oz	3%	2%
Less than US$700/oz	4%	2%
Less than US$800/oz	5%	2%
Less than US$900/oz	6%	3%
Less than US$1,000/oz	7%	4%
Less than US$1,100/oz	8%	5%
Less than US$1,200/oz	9%	6%
Less than US$1,300/oz	10%	7%
Less than US$1,400/oz	10%	8%
Less than US$1,500/oz	10%	9%
Less than US$1,600/oz	10%	10%
Less than US$1,700/oz	10%	11%
Less than US$1,800/oz	10%	12%
Less than US$1,900/oz	10%	13%
Less than US$2,000/oz	10%	14%
Less than US$2,100/oz	10%	15%
Over US$2,200/oz	10%	15%

Table 3-1: Royalties sliding-scale by property (includes most significant royalties only).

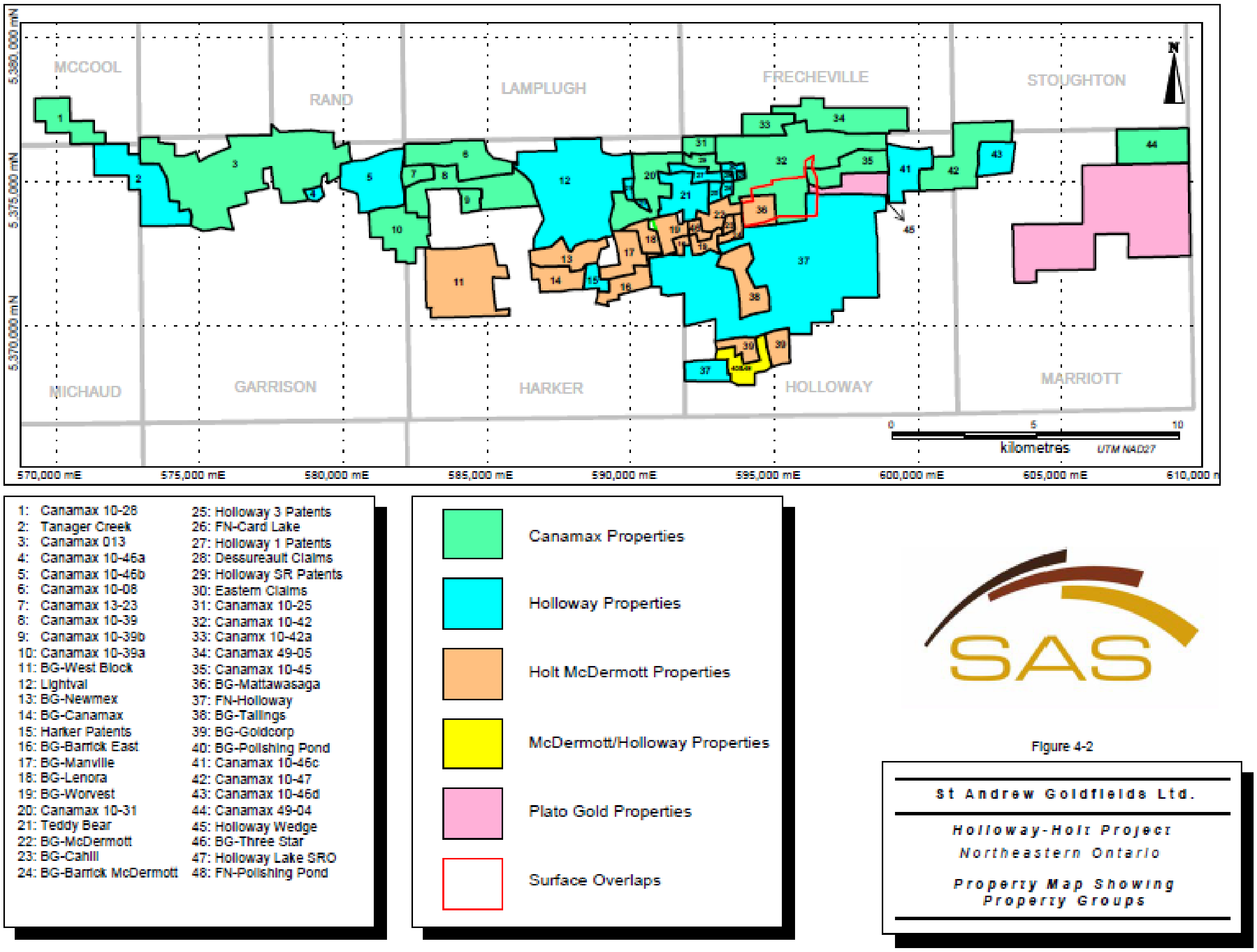

Figure 3-2: Group of properties map.

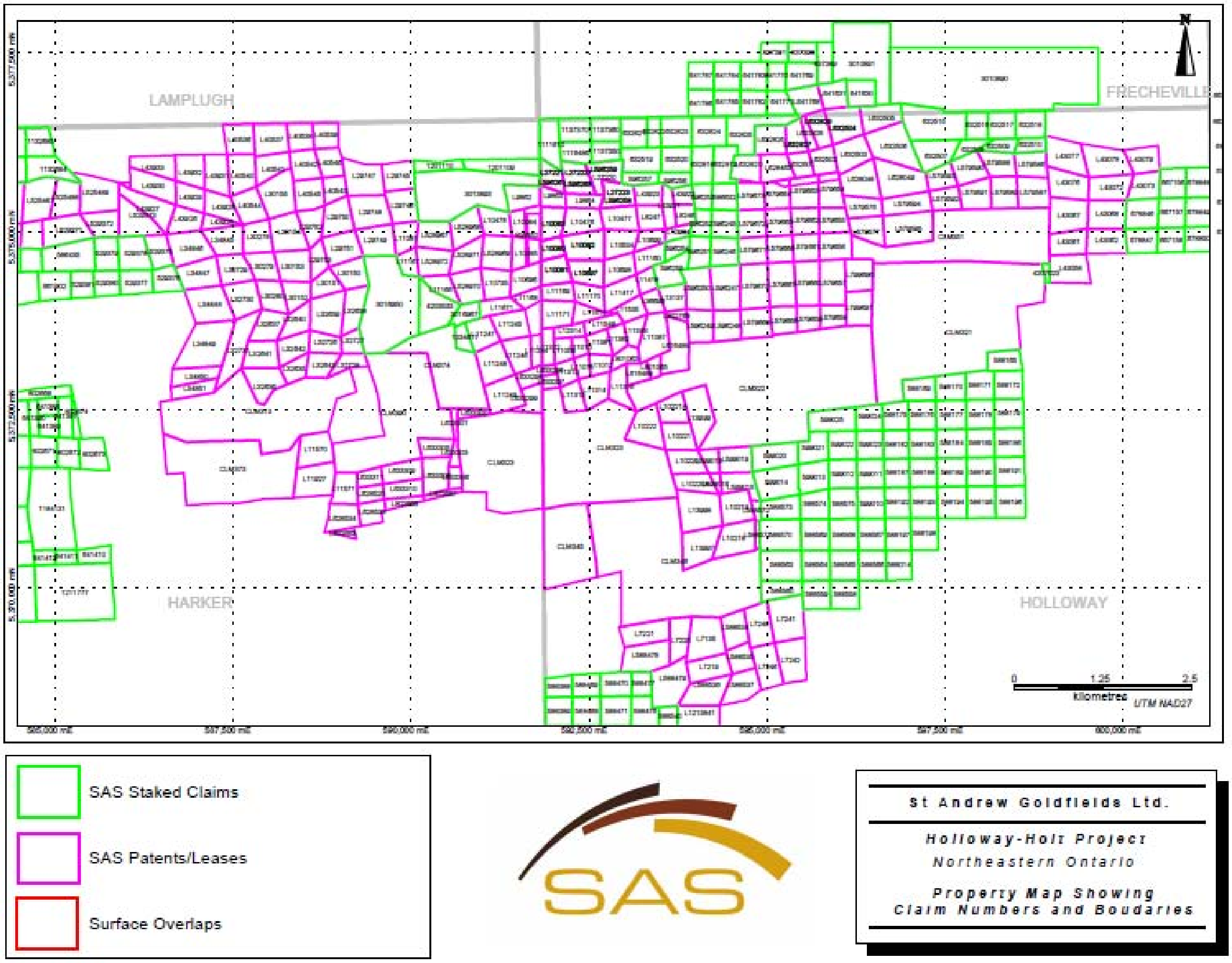

Figure 3-3: Claims location map.

All properties are maintained in good status and there are no encumbrances on the properties.

3.3 Permit Status

All permits and certificates are in good standing with the appropriate regulatory offices. Updates or modifications are performed in compliance with current legislation.

3.4 Environmental Liability and Other Potential Risks

In the Qualified Person's (QP) opinion, there are no significant factors or risks that may affect access, title or the right or ability of SAS to perform work on the Holt-Holloway property.

4.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The following sections are copied (and updated) from the previous technical report (SWRPA, 2008).

4.1 Climate, Topography and Physiography

The climate of the area is typical of northern Ontario with cold winters, warm summers and only moderate precipitation. Climatic conditions in Timmins have been described based on meteorological information from Environment Canada (2010) during the period from 1971 to 2000. The average daily temperature in the Timmins area is recorded as 1.3°C with a daily average low of -17.5°C in the month of January, and a daily average high of 17.4°C in the month of July. An extreme low of -45.6°C was recorded on February 1st, 1962 and the extreme high of 38.9°C occurred on July 31st, 1975. The yearly average precipitation for the Timmins area is 831.3 mm with approximately 67% as rain and 33% as snow. The record daily amount of rainfall, 87.6 mm, occurred on July 29th, 1990 and the record daily amount of snowfall, 48.2 cm, occurred on March 19th, 1983.

All of the property is covered by flat lying to gently rolling terrain with average topographic relief of approximately 40 m. Overburden depths range for 3 to 60 m, with average overburden depth on the property ranging from 5 m to 10 m. Elevations range from approximately 200 m to 300 m above sea level. The area is reasonably well drained by creeks and small rivers, and there are numerous small swamps and marsh areas. Outcrop is limited due to an extensive blanket of overburden, mostly sand with lesser amounts of clay from the northerly trending Munro esker. The area is located within the Boreal Shield zone: tree cover is normally thick and predominantly coniferous (with black spruce and jack pine being the most common species), with lesser stands of poplar and birch. The current cover is believed to be a mix of second and third growth forest as a result of logging operations and forest fires.

4.2 Means of Access to the Property

The Holt-Holloway property is located in the District of Cochrane, 58 km east of Matheson on Ontario provincial highway 101 and 68 km by road northeast of Kirkland Lake via Ontario provincial highway 66 and Ontario provincial road 672. To reach the property from Toronto, there are daily scheduled flights to Timmins, which is 126 km by road west of the property. From Montreal, there are daily scheduled flights to Rouyn-Noranda, which is 96 km by road east of the property. Access to various parts of the property package can be achieved by various bush roads and logging roads that join Ontario provincial highway 101. In the summer months, these roads are normally passable. The Trans-Canada Highway (Highway 11) goes through the town of Matheson. The Holloway and Holt surface facilities are secured behind fenced and gated facilities. Twenty-four hour security service is provided with all personnel and visitors signed in and out of the facilities. Employee and visitor parking are provided outside the gated facilities.

4.3 Infrastructure and Local Resources

The infrastructure is well developed and can support mining activities in the area. Power, fuel sources and water are already available at the Holt-Holloway property. Water is plentiful in the area and can be sourced from rivers and small lakes. An electric power line connects the mine property to the provincial power grid connecting Kirkland Lake and Larder Lake. The area is well serviced with an array of major roads and two airports (in Timmins and Rouyn-Noranda). The ore is treated at the company's Holt mill. Tailings are managed in four adjoining tailings ponds, two sludge precipitate pond, one water treatment/holding pond (pre-polishing), and one polishing pond, all located southeast of the milling facility. Current capacity of the tailings facility is approximately 7.0 million tonnes, with one minor phase of dam construction remaining. Waste rock is not typically hoisted to surface as it can be used as a source of backfill material for the underground stopes, as needs arise.

The Black River-Matheson Township (116,167 ha) has an approximate population of 2,800 residing mainly in the towns of Matheson, Shillington, Holtyre and Ramore. Further to the west are the towns and cities of Porcupine, South Porcupine, Schumacher and Timmins (approximately 45,000 residents). To the north are the towns of Iroquois Falls and Cochrane. To the south is the Town of Kirkland Lake (approximately 10,000 residents).

SAS owns an office building in Matheson that is being used as its Regional Exploration Department base. Additionally, SAS acquired two former motels in Matheson that are operated as temporary housing for relocated employees. SAS uses many local residents as support staff and local contractors to maintain the facilities.

SAS does not anticipate opposition from the local communities to continued operation of the Holt and Holloway mines. The primary First Nations community living close to the Holt-Holloway property is the Wahgoshig First Nation (WFN). The WFN is an Anishinaabe (Algonquin and Ojibwa) and Cree First Nation located near Matheson, in the Cochrane District of north-eastern Ontario, Canada. The reserve covers 7,770.1 ha (Abitibi 70 Indian Reserve) on the south end of Lake Abitibi. The First Nation community has approximately 270 registered people; 121 people live on the reserve, where they provide the following services: band office, health clinic, warehouse / fire hall, public works garage and a community hall. Wahgoshig is policed by the Nishnawbe-Aski Police Service, an Aboriginal staffed service.

SAS has recently signed an Impact and Benefit Agreement (IBA) with the Wahgoshig First Nation.

5.0 HISTORY

The following sections are copied (and updated) from the previous technical report (SWRPA, 2008).

Because of the duality of original ownership of the Holloway and Holt mining operations, the history of each is treated separately in this section.

5.1 Holt Property Prior Ownership

In 1922, P.A. McDermott discovered gold in northwestern Holloway Township and, over the next four years, did some trenching and limited drilling on the prospect. McDermott Gold Mines Ltd. was incorporated and eventually ten contiguous claims were patented. A small drilling program was carried out in 1937; however, no further work was done until Sylvanite Gold Mines Ltd. optioned the property in 1948-1950 and drilled 11 holes totalling 925 m along 76 m of strike. In 1950, McDermott Gold Mines Ltd. became McDermott Mines Ltd.

In 1981, Camflo Mines Ltd. formally optioned the McDermott claims and staked a large surrounding area. Through 1983, Camflo carried out exploration, drilled 53 holes, and optioned the adjacent Worvest, Lenora, Canamax, and Newmex claims. In 1984, Barrick (then Barrick Resources Corp.) amalgamated with Camflo and, by year end, 120 holes had been drilled. By October 1985, encouragement was sufficient to begin an exploration shaft to an initial depth of 420 m, with development work on two levels. A production decision was made in October 1986, and production at 1,400 tpd began in 1988. In September 2004, the mine was shut down, having produced 1.32 million ounces of gold from 7.5 Mt of ore with a recovered grade of 5.5 g/t. SAS declared commercial production at the Holt mine in 2011.

5.2 Holloway Property Prior Ownership

In 1922, gold was discovered on claims adjacent to the current property. From that time until the late 1930s, Teddy Bear Valley Mines, Ltd. (Teddy Bear) carried out an exploration program that included some underground development. This work did not generate any interest in the property. In the mid-1980s, Teddy Bear renewed exploration drilling on its claims and Noranda Exploration Company, Limited (Noranda) began drilling on adjacent claims. These new programs encountered significant sericite-ankerite alteration and weak gold mineralization at depth.

In 1988, drill holes from both properties intersected the upper portion of the deposit, now known as the Lightning Zone, which tops out at approximately 150 m below surface. Noranda then formed a joint venture to earn an interest in the Teddy Bear property. In July 1991, Hemlo Gold Mines Inc. (Hemlo) acquired Noranda's interest in the Holloway project and surrounding claims. The Holloway Joint Venture was formed in 1992 to fund, develop, and operate the two properties as one mine.

The underground validation program in 1992 included a 441 m exploration shaft, 25,600 m of additional diamond drilling, and an 8,500 t bulk sample to study the ore metallurgy. A feasibility study completed in 1994 moved the property ahead into the production-development phase. A total of $55 million was committed to build the surface and underground infrastructure. The mine went into full production on October 1, 1996. That same year, Hemlo Gold Mines Inc. merged with Battle Mountain Gold Company. In January 2001, Newmont merged with Battle Mountain Gold and the Holloway Mine was operated by Newmont Canada Limited. In October of 2004, Newmont acquired the Holt-McDermott Mill and Mine assets from Barrick Gold Corporation (Barrick) and thus controlled 100% of the Holloway-Holt Project assets and land position. To date, the Holloway Mine has produced 0.90 million ounces of gold from 5.1 Mt of ore with a recovered grade of 5.5 g/t gold. In early 2006, Newmont placed the Holloway Mine on care and maintenance. SAS re-opened the Holloway mine in 2009.

5.3 Historical Mineral Resources and Mineral Reserves

In April 2006 Scott Wilson RPA estimated mineral resources (Table 5-1) using polygonal and sectional methods, depending on the diamond drill density.

		Tonnes ('000 t)	Grade (g/t)	Cont. Gold ('000 oz)
Holloway Mine	Measured	537	6.7	115
	Indicated	500	8.9	144
	Measured + Indicated	1,037	7.8	259
	Inferred	477	6.3	97
Holt Mine	Measured	191	8.1	50
	Indicated	2,794	7.3	655
	Measured + Indicated	2,985	7.3	704
	Inferred	677	7.9	173
Holloway + Holt	Measured	728	7	165
	Indicated	3,294	7.5	799
	Measured+Indicated	4,022	7.4	963
	Inferred	1,154	7.3	270

Notes:
1) CIM definitions were followed for Mineral Resources.
2) Mineral Resources were estimated at a marginal cutoff grade of 3.0 g/t Au and a block cutoff grade of 4.5 g/t Au.
3) Mineral Resources were estimated using an average long-term gold price of US$500 per ounce, and a US$/C$ exchange rate of 1.25.
4) A minimum mining width of 2.0 to 3.0 metres was used.
5) Columns may not add exactly due to rounding.

Table 5-1: Holt-Holloway mineral resources, as of April 30, 2006 (After SWRPA, 2008).

Following the April 2006 mineral resource estimate, SAS has diamond drilled and/or reinterpreted approximately 75% of the mineralized zones on the Holloway-Holt Project. The remaining 25% was not re-assessed and thus the 2006 estimate remained current for that portion.

Mineral resources were updated in June 2008 by SAS staff and endorsed by SWRPA (Table 5-2).

Mineral reserves were updated in June 2008 by SAS staff and endorsed by SWRPA (Table 5-3).

		Tonnes (000 t)	Grade (g/t Au)	Contained Gold (000 oz)
Holloway Mine	Measured	850	7.2	196
	Indicated	81	7.0	18
	Meas + Ind	931	7.1	214
	Inferred	447	6.3	91
Holt Mine	Measured	1,323	6.6	283
	Indicated	1,914	6.8	422
	Meas + Ind	3,237	6.7	705
	Inferred	1,066	7.7	265
TOTAL Holloway and Holt	Measured	2,173	6.8	479
	Indicated	1,995	6.8	440
	Meas + Ind	4,168	6.8	919
	Inferred	1,513	7.3	356

Notes.

1) CIM definitions were followed for Mineral Resources.
2) Mineral Resources were estimated at a marginal cutoff grade of 3.0 g/t Au and a block cutoff of 4.5 g/t Au.
3) A minimum mining width of 2.0 m to 3.0 m was used.
4) Columns may not add exactly due to rounding.
5) Mineral Resources are inclusive of the Mineral Reserves.

Table 5-2: Holt mineral historical resource estimate, as of 2008 (After SWRPA, 2008).

			Tonnes ('000)	Grade (g/t)	Ounces ('000)
Holloway	Blacktop Footwall Upper	Proven	288	6.7	62
	Blacktop Footwall Upper	Probable	40	6.7	9
	Blacktop Footwall Lower	Probable	170	5.6	31
	Blacktop Lightning	Probable	53	5.8	10
	Lightning Zones	Probable	181	5.4	31
		Proven	288	6.7	62
		Probable	444	5.6	80
	Subtotals	Proven+Probable	732	6.1	142
Holt	C103	Proven	102	6.3	21
	C103	Probable	19	6	4
	Zone 4	Probable	1,250	5.2	208
	Zone 6	Probable	905	5.7	166
	Tousignant	Probable	150	7.9	38
	Zone 1, 5, 8, 8F & Stope 4, 5	Probable	254	6.1	50
		Proven	102	6.3	21
		Probable	2,578	5.6	466
	Subtotals	Proven+Probable	2,680	5.6	486
	Stockpile	Proven	5	3.3	1
		Proven	395	6.6	84
		Probable	3,022	5.6	546
Totals		Proven+Probable	3,420	5.7	629

Notes:
1) CIM definitions were followed for Mineral Reserves.
2) Mineral Reserves are estimated using an average long-term gold price of US$775 per ounce and an exchange rate of C$1.00 = US$0.87.
3) A minimum mining width of two metres was used.
4) Rows and columns may not add exactly due to rounding.
5) Mineral Reserves are included within the Mineral Resources

Table 5-3: Holt-Holloway historical mineral reserves estimate, as of 2008.

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5.4 Exploration and Development Work on the Holt-Holloway Property

Mineral exploration and development on and around the subject properties began with prospecting around 1918 and have continued to this day through episodes of exploration and occasional production. The initial and very general geological map of the area was produced by the Ontario Bureau of Mines in 1909. This was followed with better detail in the reconnaissance mapping of the Abitibi-Night Hawk gold area in

1918. Prospecting and exploration in the various local townships began in earnest thereafter and continued through the 1940s, with occasional underground programs and minor local production mostly from surface workings. Interest in the area was greatly accelerated in 1944-1945, when it was demonstrated that the Destor-Porcupine fault zone traversed the area. Significant production has only been in recent times from the Holloway and Holt-McDermott mines.

The current land package, more recently known as the Golden Highway property, extends eastwards 40 km along Highway 101 from eastern McCool and Michaud townships, through Garrison, Harker, and Marriott townships to the Quebec border. Apart from the main Holloway and Holt-McDermott properties, the bulk of the remaining holdings derive from claim packages assembled over the years by Noranda Exploration Company, Limited (Noranda), Canamax Resources Inc. (Canamax), and Lightval Mines Limited (Lightval). The Golden Highway – Moneta claim blocks in Garrison, Holloway, and Marriott townships were originally staked by the Noranda associate company, Mining Corporation. In 1945, Moneta Porcupine Gold Mines entered into an agreement with Noranda and subsequently attained a 40% interest in the property. Work completed included prospecting, magnetic surveys, and a total of 13 holes drilled mostly on the Garrison Township claims. In 1980, Noranda completed more work on the Garrison block and drilled one hole to test an electromagnetic (EM) anomaly. Canamax entered into an agreement with Noranda-Moneta in 1983, and between 1984 and 1988 completed extensive geophysics and drilling on the Moneta properties.

Much of the Golden Highway property was assembled in the mid-1980s through staking and work options by Rosario Resources, subsequently Canamax. In January 1990, Noranda entered into an option agreement with Canamax covering 411 patented, unpatented, and leased mining claims. In mid-1991, Noranda assigned its rights to earn an interest in the properties and operatorship to Hemlo. In January 1993, Canamax amalgamated with Canada Tungsten Mining Corp. and Minerex Resources Ltd. to form Canada Tungsten Inc. (Canada Tungsten). In late 1996, Canada Tungsten merged with Aur Resources and, at the time, Aur had a 50% interest in the joint venture properties. In January 1996, Hemlo became vested as a 50/50 joint venture partner after having fulfilled all the required work commitments and having made all the necessary option payments. In July 1996, Hemlo merged with Battle Mountain Gold Company and the Golden Highway assets were vested in Battle Mountain Canada Ltd. (BMC). Battle Mountain Gold subsequently merged with Newmont Mining Corporation in January 2001 and the BMC interests were transferred to Newmont.

The 60 claim Lightval property was under option to Newmont Mines Limited (Canada) in 1986-1989 and Noranda in 1989-1992, but was ultimately acquired by Newmont through a 1999 option agreement. Newmont acquired the Holt-McDermott Mine and Mill assets from Barrick in October of 2004.

Throughout the period described above, a variety of conventional exploration techniques were employed to investigate the gold potential of the various properties. Considerable ground geophysics was done, mostly magnetometer and induced polarization (IP) surveys. Soil and humus sampling for gold was done locally and trenching was attempted in certain areas of shallow overburden. The most useful and definitive exploration procedure was diamond drilling and core assaying. This was the only way that altered, and gold-mineralized zones were located and delineated.

5.5 Historical Production from the Property

Production records for the Holt-Holloway Property are shown in Table 5-4.

Year	Holt Mine Tonnes Processed	Holt Mine Ounces Gold Recovered	Holt Mine Recovered Grade (g/t)	Holloway Mine Tonnes Processed	Holloway Mine Ounces Gold Recovered	Holloway Mine Recovered Grade (g/t)
1988	219,526	23,993	3.40	-	-	-
1989	507,148	63,354	3.89	-	-	-
1990	466,708	59,164	3.94	-	-	-
1991	594,572	60,727	3.18	-	-	-
1992	418,999	47,481	3.52	-	-	-
1993	388,116	64,219	5.15	-	-	-
1994	367,699	59,872	5.06	8,556	1,844	6.70
1995	382,470	66,389	5.40	79,701	10,750	4.20
1996	438,894	117,621	8.34	190,075	37,149	6.08
1997	418,795	116,368	8.64	381,459	62,793	5.12
1998	497,122	134,379	8.41	467,134	94,781	6.31
19 99	501,794	106,701	6.61	487,317	107,780	6.88
2000	487,127	91,470	5.84	530,865	109,918	6.44
2001	449,793	83,142	5.75	551,963	105,417	5.94
2002	471,427	83,947	5.54	552,064	103,633	5.84
2003	506,905	89,514	5.49	506,633	79,245	4.87
2004	357,521	55,014	4.79	516,134	79,966	4.82
2005	-	-	-	531,012	71,747	4.20
2006	-	-	-	136,151	20,748	4.74
2007	Included in Holloway			153,163	14,471	2.94
2008	3,485	416	3.71	4,966	592	3.71
2009	-	-	-	101,941	18,712	5.71
2010	23,257	2,022	2.70	340,594	57,459	5.25
2011	232,330	32,376	4.33	204,258	21,461	3.27
2012	316,487	50,444	4.96	191,471	21,629	3.51
Total	8,050,175	1,408,613	5.44	5,935,457	1,020,096	5.35

Table 5-4: Holt-Holloway Property historical production.

6.0 GEOLOGICAL SETTINGS AND MINERALIZATION

6.1 Regional Geology

The Holloway and Holt mines lie within the southern Abitibi greenstone belt (SAGB) of the Superior Province in north-eastern Ontario (Figure 6-1). In very general terms, the Abitibi Sub province consists of Late Archaean metavolcanic rocks, related synvolcanic intrusions, and clastic metasedimentary rocks, intruded by Archaean alkaline intrusions and Paleoproterozoic diabase dikes. The traditional Abitibi greenstone belt stratigraphic model envisages lithostratigraphic units deposited in autochthonous successions, with their current complex map pattern distribution developed through the interplay of multiphase folding and faulting.

The structural grain is also dominated by east-west trending Archaean deformation zones and folds. The regional deformation zones commonly occur at assemblage boundaries and are spatially closely associated with long linear belts representing the sedimentary assemblages. The dominant regional fault in this area is the Destor-Porcupine, hereafter referred to as the Destor-Porcupine Deformation Zone (DPDZ).

The southern part of the Abitibi greenstone belt, in the general vicinity of the Holt-Holloway mines, consists of three major volcanic lithotectonic assemblages and two unconformably overlying primarily metasedimentary assemblages.

The evolution of the SAGB in the region of the Holloway-Holt Project spans a period of at least 60 Ma from approximately 2,723 Ma to approximately 2,660 Ma and includes volcanism, sedimentation and plutonism. All rocks are at greenschist to upper greenschist grade of metamorphism.

After 2,696 Ma, the tectonic regime shifted from volcanic construction to that dominated by deformation, plutonism and erosion accompanied by development of localized basins infilled by sedimentary and volcanic rocks.

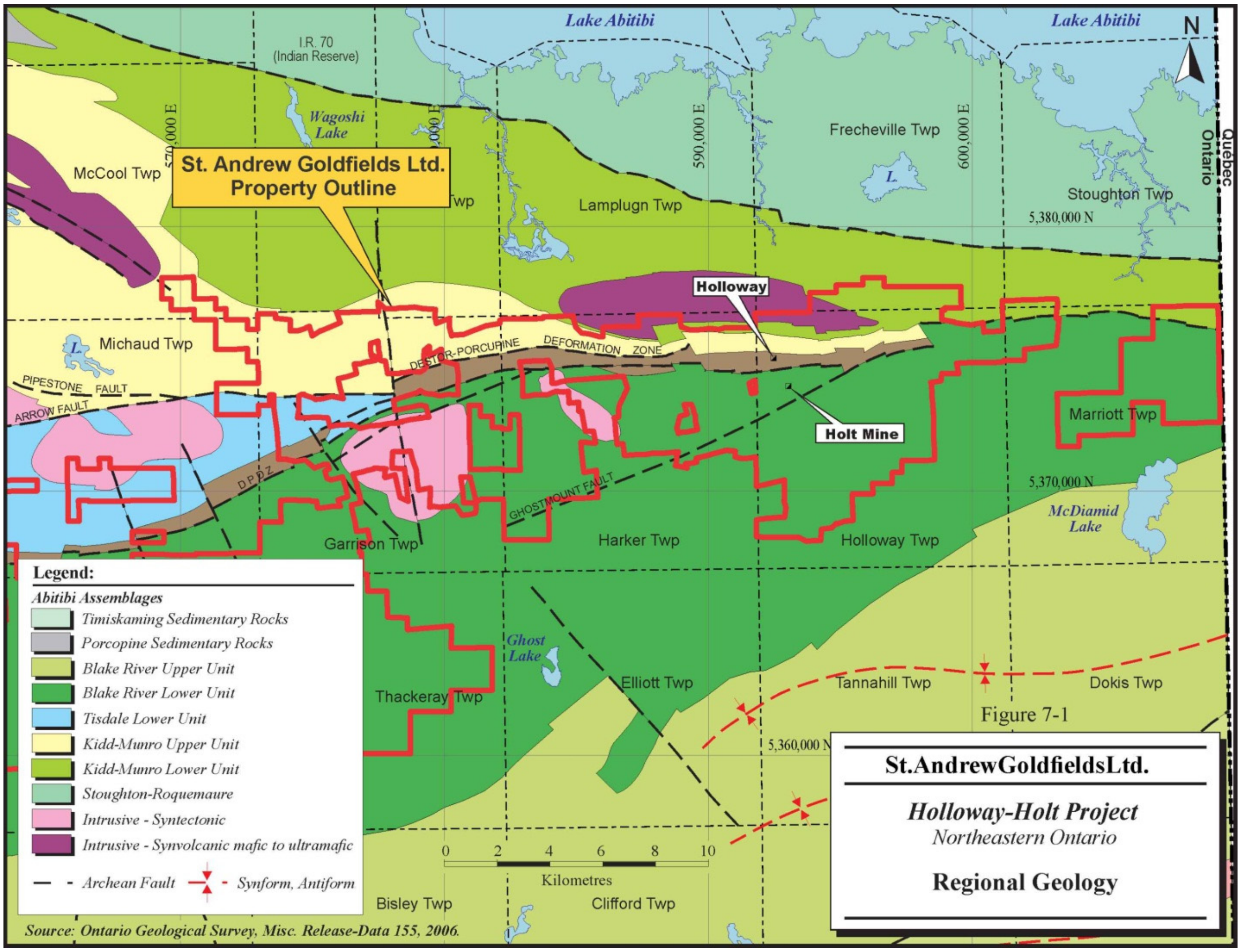

Figure 6-1: Holt and Holloway mines regional geology.

6.2 Local and Property Geology

6.2.1 Local Geology

The deformation history of the area is defined by five events. The earliest episode of regional D1 deformation (compression and extension) predated the Porcupine angular unconformity at 2,690 Ma. The D2 event (compression and extension) postdated the Porcupine assemblage and resulted in localized folding and thrusting and early south-side up, dip-slip, ductile deformation on regional deformation zones. Broadly synchronous with the syntectonic opening of the Timiskiming basins in dilational jogs was D3 folding that resulted in significant left lateral slip movement along the DPDZ. The D4 folding event created synclines within the Timiskaming assemblage rocks and right-lateral strike-slip displacement along the DPDZ. The D4-D5 event represents the final stage of transpressional deformation along the DPDZ. Gold mineralization in the Holt-Holloway area is interpreted to be early D3 in age. Lightning Zone replacement mineralization is cut by an inter-mineral dike with an age of 2672 ± 1.9Ma, which is overprinted by a later auriferous quartz-carbonate veining event. The bulk of the gold in the Timmins area was related to late D3 events.

The 40 km long, mostly contiguous Holt-Holloway property package is a grouping of strategically located claims straddling the DPDZ midway along its 260 km length. The defining structural characteristic of the property package and the most important feature from an economic geology viewpoint is the DPDZ, around which a multitude of gold showings and prospects are clustered. The Holloway and Holt mines are located opposite each other, approximately one kilometre apart, on the north and south sides of the DPDZ, respectively (Figure 6-1).

Gold mineralization at the Holt and Holloway mines comprises replacement carbonate-pyrite-albite-quartz alteration that overprints mafic volcanic rocks in, and adjacent to, D3-D4 high strain zones (Figure 6-2).

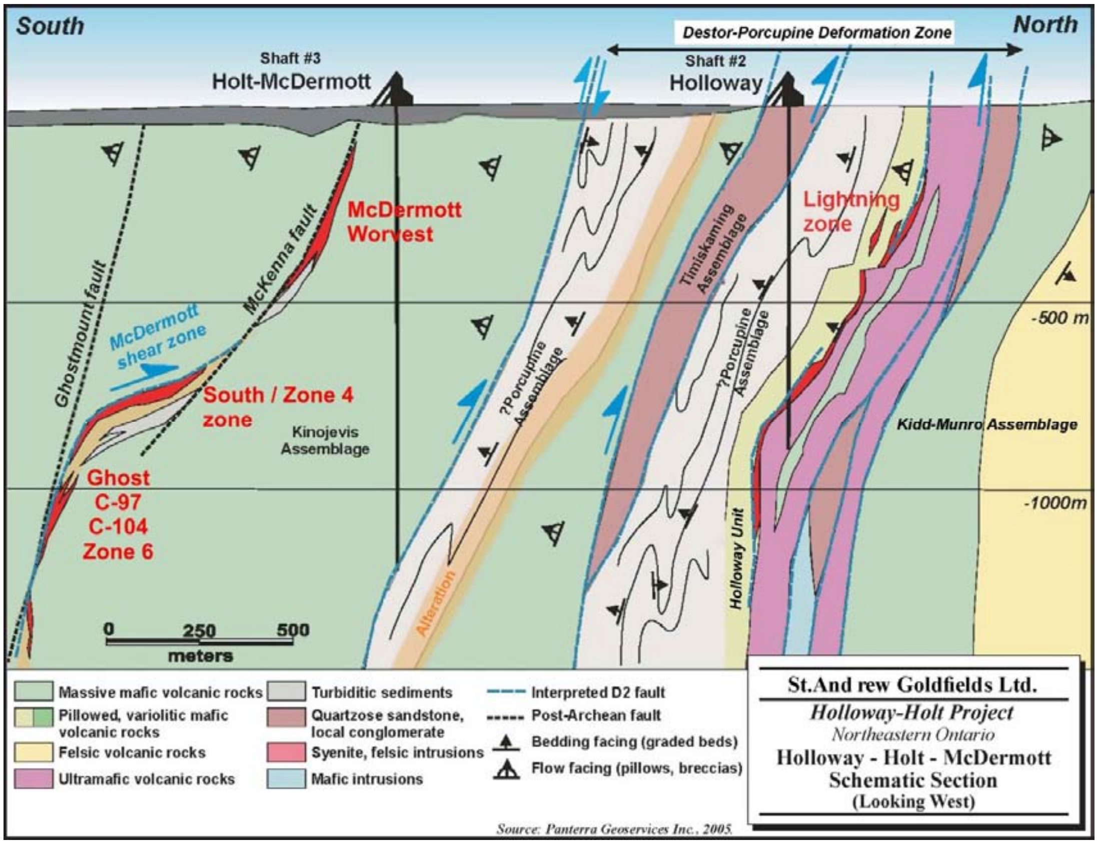

Figure 6-2: Holt and Holloway properties geology (cross sectional view).

6.2.2 Holt Property Geology

At the Holt Mine, mineralized zones are hosted by the McDermott shear zone, a 10 m to 50 m thick, south-southeast dipping carbonate-chlorite ± albite ± sericite altered ductile D3-D4 shear zone, which, in turn, is hosted by otherwise massive, low strain mafic volcanic rocks. Mineralization typically occurs in its hanging wall (south) side as areas of fine-grained, massive to crudely banded grey replacement quartz-carbonate-albite pyrite that contain diffuse quartz veinlet networks with fine-grained breccia fragments.

<u>South Zone / Zone 4</u>

Zone 4 (the down plunge extension of the South Zone) at the Holt Mine is flatter lying than the other property deposits, which occur on the McKenna and Ghostmount faults, and are typically vertical to sub-vertical. Zone 4 occurs where the shear zones rolls to a moderately shallow southerly dip. This zone is related to a zone of more intense alteration, including sericite, chlorite, hematite and silicification, and elevated concentrations of sulphides within an overall lower grade envelope. This higher grade zone, typically three to 20 m thick, is almost exclusively located along the hanging wall of the deposit, against the hanging wall fault or any associated fault splay. This zone extends over 1,000 m along strike and 400 m down dip. Gold values in zone 4 die out laterally, over several metres within the envelope of altered rock. There is generally a fairly sharp boundary on the hanging wall side along the hanging wall fault structure, but a more gradational die off of values on the footwall side. During 2012 197,528 ore tonnes were mined from Zone 4 at an average grade of 5.72 g/t Au.

Zone 6

Zone 6 is one of the more recently discovered deposits hosted by the McDermott shear zone. Mineralization occurs in steeply south dipping sections of the shear zone. This higher grade zone, typically three to eight metres thick, is almost exclusively located along the hanging wall of the deposit, against the Ghostmount fault, with less consistent lens of mineralization along the gradational foot wall contact, where the contacts of the mineralization are generally sharp with the surrounding mafic volcanic rocks.

This zone typically extends over a 200 m strike length and 400 m down dip and is open to the east and down dip below the 1075 m level. During 2012 over 21,000 m of diamond drilling was completed above the 775 m level to confirm and expand Zone 6 up dip and to the East.

Tousignant

The Tousignant Zone was modeled using a combination of spatial variation between gold and an understanding of the physical geology. Gold grade, lithology, structure, veining and alteration were all considered in the construction of the 3 dimensional solids representing Tousignant mineralization. This information was taken out of drill logs, the electronic database and from the re-evaluation and verification of the actual drill core.

Gold mineralization is typical Holt mineralization and is very similar to that of Zone 4 and C-103. Gold is associated with disseminated pyrite and intense albite/silica alteration. The zone is characterized by two structural components: a flat south west dipping component in the form of a lens shaped alteration package () and a steep south dipping component concordant to a fault belonging to the Ghostmount shear. There is an apparent thickening of the mineralization envelope near to where the two aforementioned structural components intersect.

A 3 g/t Au envelope is completely haloed by a lower grade envelope in the flat zone whilst the vertical zone is typically thinner but, unlike the thicker flat zone, a continuous higher grade envelope cannot be distinguished. The flat zone is typically two to five metres thick whilst the vertical zone is about one to three metres in thickness, thickening slightly towards its upper limits.

Although the flat zone was fairly continuous, some lower grade material was included for the purpose of realizing a continuous mineralized zone.

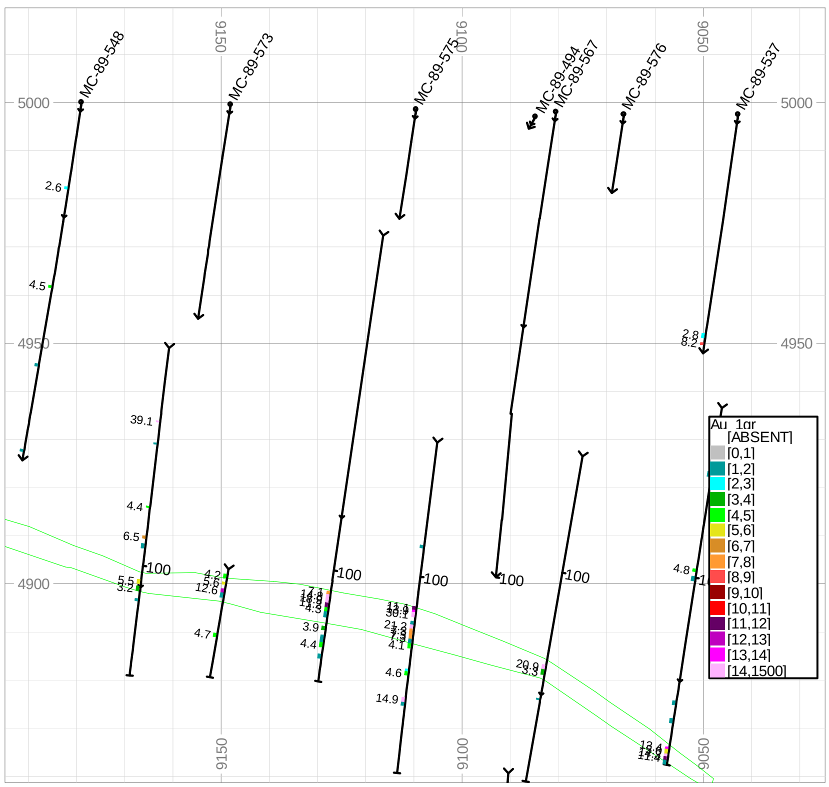

Figure 6-3: Typical cross section from the Tousignant Zone (looking east).

6.2.3 Holloway Property Geology

The Holloway deposit is hosted by the 30 m to 150 m wide Holloway unit, a south dipping band of Fe-tholeiitic mafic volcanic rocks that is bounded to the south and north by south facing turbiditic sedimentary rocks and komatiitic ultramafic volcanic rocks, respectively. Mineralization occurs where a 200 m to 300 m wide corridor of east-northeast trending D2-D3 high strain zones obliquely crosses the Holloway unit, resulting in a deflection in its strike to east-northeast trends, from east to west-northwest trends that are more typical at the property scale.

Lightning and Blacktop

Lightening and Blacktop mineralization at the Holloway Mine comprises replacement carbonate-quartz albite-pyrite zones developed adjacent to and within the high strain zones that overprint earlier formed albite-hematite alteration that preferentially replaces variolitic flow units. Mineralized bodies trend east-northeast.

Smoke Deep

The Smoke Deep mineralized zone is hosted within mafic-volcanic rocks that display varying textures and structures. Within the mafic-volcanic lithologies the mineralized area is hosted within an alteration assemblage that has a variable composition. The alteration ranges from strongly silicified, with accessory sericite, albite and hematite to a less silicified, strongly sericitized unit. The majority of mineralization occurs within a dark to light grey silicified host where the gold mineralization is associated with pyrite and occupies a stock work within the host rock. Unlike the Blacktop zone, the alteration zone and associated gold mineralization does not always lie in direct contact with the lower ultramafic suite of rocks; however, in some locations the alteration zone does come in contact with the lithological boundary between the ultramafics and mafic-volcanics and, as a result, so does the mineralized zone. Despite the alteration zone and resulting gold mineralization not consistently being in direct contact with the above mentioned lithological contact the orientation of the mineralized zone closely mimics the orientation of this lithological boundary.

Ghost Zone

The Ghost Zone mineralization was discovered in 2000 approximately one kilometre east-northeast of the Mattawasaga mineralized zone. The discovery hole, drilled 250 m east of the Holt property boundary, intercepted the zone at a vertical depth of 450 m and encountered a broad zone of mineralization returning 3.47 g/t over 32 m and 5.47 g/t over 4 m. Subsequent drilling at approximately 200 m offsets encountered lesser values; however, notable intercepts included 2.64 g/t over 13 m and 2.12 g/t over 14 m, and broad low-grade composites, including 0.68 g/t over 23 m, defined the extremity of the system.

In 2001, Newmont drilled two holes to test the extent of the Ghost Zone. One hole, approximately 1.7 km to the east, tested 300 m below surface and the second hole, 500 m east of previous drilling, tested to 520 m below surface, in the plunge direction of the zone. Both holes encountered modest alteration with weak gold values but did not particularly define any limits to the Ghost Zone. In 2005, Newmont drilled five more holes totaling 2,480 m to the west of the zone. Each hole intersected good alteration and modest gold values, such as 3.49 g/t Au over 2.0 m. Similar to the Mattawasaga and Zone 6 deposits, mineralization is hosted by the McDermott shear zone, and occurs in steeply south dipping sections of the shear zone. This higher grade zone, typically three to eight metres thick, is almost exclusively located along the hanging wall of the deposit, against the Ghostmount fault. During 2010 and 2011 SAS drilled 55 holes for over 30 km of drilling. In late 2012, a new mineral resource was calculated. Additional drilling is planned to expand and upgrade this deposit.

Sediment Zone

Deep surface drilling was initiated in late 2012 to test the down-dip component of the Smoke Deep Zone. During this program, drilling intersected a steeply south dipping, silicified, pyritic zone hosted within the sedimentary unit and SAS has named this new zone the Sediment Zone. The first hole of the program (GH12-001) returned assays grading 5.60 g/t Au over 8.1 m. Follow-up drilling has continued to intercept the newly discovered zone with recent drilling extending the mineralization over a strike length of 750 m with a 250 m vertical height. The new Sediment Zone is situated approximately 250 m in the hanging wall (south) of the Smoke Deep Zone. The zone is significant because it can be easily accessed and drilled using existing development from the 550 m drift or 780 m level at the Holloway Mine. The Sediment Zone remains open in all directions with two surface drills currently following up on these mineralized zones.

7.0 DEPOSIT TYPE

At Holt-Holloway, the gold mineralization is quite unlike the classical Superior province auriferous quartz vein systems resulting from deformed, extensional fracture arrays. Rather, it is associated with disseminated sulphides in altered rock, sometimes described as replacement mineralization. Mineralization typically consists of moderately to steeply dipping tabular zones of disseminated pyrite (generally less than 5 per cent per volume) and gold in intensely altered tholeiitic basalt, with variably developed microveinlet stockworks. The ore is gold rich (Au:Ag is greater than 5) and contains concentrations of arsenic. The mineralized zones occur in a variety of geological settings reflecting a variety of controls on the localization of the mineralization: along low-strain lithological contacts (Lightning, Blacktop and Smoke Deep zones at Holloway), along brittle and/or ductile faults (McDermott, Worvest and Mattawasaga zones), and as shallowly dipping discordant zones (Tousignant, South Zone and Zone 4) of which the South Zone (Holt) is spatially coincident with an array of shallowly dipping syenitic dykes. Mineralized zones are coincident with zones of intense albite-ankerite alteration of the host basalt, which, in turn, are partly fringed by sericite alteration haloes at Holloway and fringed by broader zones of calcite alteration. Disseminated specular hematite can be present within or outboard of mineralized zones.

Gold mineralization at the Holt and Holloway Mines is associated with replacement carbonate-pyrite-albite-quartz alteration that overprints mafic volcanic rocks in, and adjacent to, D3-D4 high strain zones. The overprinting of multiple mineralization phases in the same area suggests that mineralization was long lived and spanned syn-tectonic deformation during exploitation of the same fluid channel ways.

7.1.1 Holt

At the Holt Mine, mineralized zones that have been historically mined are hosted by the McDermott shear zone, a 10 m to 50 m wide south-southeast dipping carbonate-sericite-chlorite ± albite altered ductile D3-D4 shear zone, which is hosted by otherwise massive, and generally low strain mafic volcanic rocks. The McDermott shear zone has been traced laterally for approximately 10 km along strike, joining the Destor-Porcupine corridor to the northeast. It has been traced by drilling at least eight kilometres west of the Holt Mine headframe. The shear zone may be localized along an older D2 thrust plane that has structurally emplaced lenses of fine-grained clastic sedimentary units along it. Principal mineralized zones that have been mined to date along the structure include the South, C-104, McDermott, Worvest/Three Star, Mattawasaga, and C-97 zones, which occur over a strike length of three kilometres and have been mined to depths of over one kilometre below surface. More recently, the C-103, Zone 4 and Zone 6 gold mineralization has been identified along these geologic structures and are host to the bulk of the existing gold mineralization. All but the South Zone and Zone 4 occur in steeply south dipping sections of the shear zone. The South Zone and Zone 4 occur where the shear zone rolls to moderate to shallow southerly dips (Rhys, 2005a). Prominent within the Holt Mine geology are two northeast to east-northeast trending brittle faults: the Ghostmount and the McKenna. Although once interpreted as mineralization controlling structures, they offset mineralization and are in fact the youngest structural elements in the region (Rhys, 2005a).

Mineralization frequently occurs within the upper (hanging-wall/south) portions of the McDermott shear zone, often in areas where the structure defined by its carbonate-sericite-quartz altered high strain zone widens from a thickness of generally less than 10 m to locally greater than 50 m wide. The widening may in part be controlled by the interaction of the shear zone with lenses of carbonaceous sedimentary rocks in its footwall. Mineralization occurs in massive to banded quartz-carbonate-pyrite-albite alteration that occurs within the McDermott shear zone and may extend a short distance into adjacent, unfoliated, massive mafic volcanics. Diffuse quartz veinlet networks and matrix are commonly developed, locally imparting breccia textures in sheared rocks. The apparent overprinting of foliation by alteration, and rotation of shear zone fabrics in breccia fragments, collectively suggest that mineralization overprints portions of the McDermott shear zone, and that it formed during or after most shear zone fabric development. An early phase of hematite-bearing carbonate-albite-quartz alteration is often preserved as lenses and domains within and adjacent to the Holt Mine mineralized zones (Rhys, 2005a).

Zones 4, 6 and C-103 at the Holt Mine have a well established higher grade gold zone (i.e., more than 3 g/t Au) related to a zone of more intense alteration, including sericite, chlorite, hematite and silicification, and elevated concentrations of sulphides within an overall lower grade envelope. This higher grade zone, typically three to five metres thick, is almost exclusively located along the hanging wall of the deposit, against the Ghostmount fault or any associated fault splay. The zones typically extend over 100 m along strike and 100 m down dip.

Native gold in mineralized zones at Holt occurs as fine grains spatially associated with pyrite, in fractures, on grain boundaries, or encapsulated in pyrite grains. Microscopically, gold grain distribution can be clustered; however, assays do not reveal erratic or "nuggety" gold concentrations. Gold values in mineralized zones die out laterally, over several metres within the envelope of altered rock. There is generally a fairly sharp boundary on the hanging-wall side, but a more gradational die off of values on the footwall side. This is particularly evident in the Zone 4 and C-103 and less evident in Zone 6 where the contacts of the mineralization are generally sharp with the surrounding mafic volcanic rocks.

Mineralized zones at Holt display two pronounced shoot plunges:

- Moderate to steep east plunges that outline the major zones; and,
- Alignment of zones and chains of small mineralized shoots along shallow west plunging axes.

The latter plunge is parallel to the plunge line of dip changes in the McDermott shear zone. The patterns are similar to Holloway.

7.1.2 Holloway

The Holloway deposit is hosted by the 30 m to 150 m wide Holloway unit, a south dipping band of Fe-tholeiitic mafic volcanic rocks which is bounded to the north and south by south facing turbiditic sedimentary rocks and komatiitic ultramafic volcanic rocks, respectively. Mineralization occurs where a 200 m to 300 m wide corridor of east-northeast trending D2-D3 high strain zones obliquely crosses the Holloway unit, resulting in a deflection in its strike to east-northeast trends from east to west-northwest trends that are more typical at the property scale (Rhys, 2005a). Mineralization in the Holloway Mine comprises the Lightning, Middle, and Blacktop zones.

Lightning Zone

The Lightning Zone is host to by far the largest zone at the Holloway Mine. It comprises a series of generally interconnected lenses of pyritic replacement mineralization localized at and near the northern portions of the Holloway Unit, frequently within variolitic units. Two stages of alteration are evident: pre-mineralization albite-hematite-quartz and syn-mineralization pyrite-quartz-albite-carbonate-sericite. Gold mineralization occurs as native grains associated with fine-grained clustered pyrite occurring as stringers and veinlets, irregular clumps, and dense vein haloes. Quartz veins are generally not mineralized. “Typical” ore contains on average 10 % to 55% clustered pyrite. Gold most often occurs along the pyrite grain boundaries or, less often, along fractures in pyrite grains. Accessory arsenopyrite, chalcopyrite, sphalerite, and scheelite are very minor constituents overall. Gold grain sizes average 5 µm to 9 µm and visible gold is rare.

The deposit has a strike length of approximately 800 m, a minimum indicated vertical extent of 750 m (150 m to 900 m below surface) and an average true width of 8 m. It is open to depth along most of its strike length. In longitudinal section, an overall moderate easterly plunge is evident, with subsidiary internal steep and shallow plunging mineralized shoots/trends. In plan view, mineralized bodies within the

Lightning Zone collectively have east-northeast trends and steep dips. On upper levels, the zone comprises two separate subzones located between coordinates 5400E to 5600E and 5750E to 5959E. Within the overall southeast plunge of the Lightning Zone, main stage albite-pyrite mineralization in these subzones occurs in steeply plunging second order shoots, which correspond both with the intersection line of high strain zones with the Holloway Unit and the dominant plunge of the L3 stretching lineation developed on foliation surfaces.

Lightning Zone replacement mineralization is overprinted by a stacked set of shallow dipping, semi-brittle faults, with top to north-northwest displacements of up to 100 m, which cause segmentation of the Holloway Unit and offset mineralized shoots. These structures are partially filled with quartz veins, and are coeval with a set of moderate to shallow north-northwest dipping quartz extension veins that are developed orthogonal to the stretching lineation. On longitudinal section, elevated areas of grade times thickness in the Lightning Zone form shallow plunging zones that correspond with the passage of these structures through the zone. The shallow plunging zones probably represent areas of upgrading where new gold mineralization was introduced in the pyritic envelopes of quartz veins that occur within, and as haloes of, more abundant veining surrounding the flat faults. Since the flat faults offset earlier disseminated mineralization, they are natural boundaries to stope and resource blocks (Rhys, 2005a).

At the Holloway Mine, the so-called Holloway Deep mineralization provides a potential exploration target to be investigated along the southwest plunge extent of the Lightning Zone below the lowest level.

Middle Zone

In addition to the quartz vein related mineralization associated with the flat faults, a series of north-trending, moderate to steep east-dipping quartz-tourmaline shear veins occurs in the Middle Zone, west of the main Lightning Zone mineralized body. The veins are developed in narrow reverse shear zones and are probably intermediate in age between the Lighting Zone and flat fault related quartz veining episodes. These veins are quartz dominated and contain variable quantities of black tourmaline as ribbons and stylolites. They have auriferous pyritic envelopes and outer sericite-carbonate alteration. The veins are cut by the shallow quartz extension veins associated with the flat faults, and their local development in areas of the Lightning Zone style disseminated mineralization suggests that they overprint it, forming an intermediate mineralizing phase. The veins are affected by open and ptygmatic F3/F4 folds, and by F5 folds, consistent with the earlier timing than the less strained quartz extension veins that cut them. At their northern end at least, the quartz-tourmaline veins penetrate into Lightning Zone style replacement mineralization and split up or dissipate as they enter it. Other evidence suggests that they bend into parallelism with the east-northeast trending dominant foliation. Lightning Zone style mineralization with lower albite and higher sericite content is also present in the Middle Zone, and probably forms the bulk of the resource there. Its mineralogical proportions, different from the Lightning Zone, may reflect its non-variolitic host rocks which may have not been affected to the same degree by early albite-pyrite alteration (Rhys, 2005a).

The Middle Zone has an east-west strike length of 90 m, an overall thickness of 20 m and a depth extent of 100 m. There are three north-trending quartz-tourmaline veins within the zone and they have an average thickness of two metres.

Blacktop Zone

Located 2.4 km due east of the Holloway shaft, the Blacktop Zone is developed in an east-northeast trending high strain zone, or network of high strain zones, associated with intense S3-S4 development and sericite-carbonate-chlorite alteration of mafic volcanic rocks. As is the case at the Lightning Zone, the area of high strain at Blacktop is associated with an east-northeast trending deflection in the otherwise dominantly east-west to west-northwest trend of lithologies. The Blacktop Zone is a tabular (typically two metres to seven metres thick) and shallow southerly dipping zone which is hosted by and cuts obliquely across the Holloway Unit. The zone may be at least 100 m in strike length. The mineralization coincides with an apparent 20 m to 80 m top to the north (reverse) displacement of the northern contact of the Holloway Unit with ultramafic volcanic rocks, and of subunits internal to the Holloway Unit. Mineralization may extend along this structure into the Holloway Unit for more than 100 m southward from the northern mafic-ultramafic contact, and on some sections could potentially penetrate southward to the southern contact of the Holloway Unit with turbiditic sediments. At the northern margin of the Holloway Unit, mineralization may also extend upward from the shallow dipping structure in altered hyaloclastite, forming steeply dipping to irregularly shaped extensions to the mineralization. Widest and highest grade portions of the mineralized shallow southerly dipping zone also occur at the northern ultramafic-mafic contact, often in the immediate fault hanging wall, in the overthrust above ultramafic rocks (Rhys, 2005a). Intersections of more than 12 g/t over possible true thicknesses of 20 m have been encountered in this area.

The Blacktop "flat fault" falls within the range of orientation of flat faults in the Holloway Mine, although it has slightly steeper southerly dips than most of these. Mineralization along the flat fault at the Blacktop Zone is predominantly Lightning Zone in style, comprising a tabular zone of grey albite-carbonate-pyrite-quartz mineralization. In general, the gold mineralization and associated alteration and sulphide mineralization at the Blacktop zones has sharp boundaries with the surrounding volcanic rocks with higher grade values (i.e. more than 10 g/t Au) disseminated throughout. As such, the entire mineralized – altered zone was modelled and it is envisioned that the entire mineralized zone from hanging wall to footwall would be mined given that it would be difficult to predict any higher grade trends within this mineralized zone. Overall, there is good continuity of the extent of mineralized zones from hole to hole.

In several drill holes, in addition to Lightning Zone style replacement mineralization, quartz veining is also abundant in the zone and forms the bulk of the intercept. This suggests that the mineralization represents a composite style composed of the earlier replacement mineralization with upgrading by later phases of vein mineralization, as has been suggested for portions of the Lightning Zone that are affected by similar flat faulting (Rhys, 2005a).

The Blacktop Zone seems to offer considerable scope for expansion. For example, the footwall mineralization along the shallowly south dipping (flat) fault requires follow-up drilling to the south. As within the Lightning Zone alteration package, there may be potential, above and below, for parallel (stacked) zones along other flat faults. To the west of Blacktop, at remucks #6 and #7, there is good potential to follow up around good grade mineralization as encountered in hole 550-384, approximately 200 m below the 550 level.

Smoke Deep Zone

The Smoke Deep Zone is located half way between the Lightning and Blacktop deposits. The mineralized zone is hosted within mafic-volcanic rocks that display varying textures and structures. Within the mafic-volcanic lithologies the mineralized area is hosted within an alteration assemblage that has a variable composition. The alteration ranges from strongly silicified, with accessory sericite, albite and hematite to a less silicified, strongly sericitized unit. The majority of mineralization occurs within a dark to light grey silicified host where the gold mineralization is associated with pyrite and occupies a stock work within the host rock. Unlike the Blacktop Zone, the alteration zone and associated gold mineralization does not always lie in direct contact with the lower ultramafic suite of rocks; however, in some locations the alteration zone does come in contact with the lithological boundary between the ultramafic and mafic-volcanic units and as a result so does the mineralized zone. Despite the alteration zone and resulting gold mineralization not consistently being in direct contact with the above mentioned lithological contact the orientation of the mineralized zone closely mimics the orientation of this lithological boundary. Gold mineralization is associated with tabular replacement bodies of albite-quartz-pyrite, often bounded in the hanging wall by a narrow shear zone. The steeply-plunging mineral stretching lineation in high strain and shear zones indicate dominant dip-slip kinematics during brittle-ductile deformation associated with gold mineralization. Stacked shallow dipping graphitic fault planes cross-cut gold mineralization and potentially offset the ore zone. In addition a moderate easterly plunge can be observed from drill section interpretation.

Deep Thunder/Canamax

Surface drilling at the Deep Thunder Zone in 2011 was successful in expanding the zone of gold mineralization to the east and has confirmed the presence of higher grade gold structures within a broader zone of alteration. Gold mineralization is concentrated within several sub-parallel zones along steeply dipping structures, from true depths of 620 m to 1,100 m, over a strike length of 350 m. No drilling was conducted on this target in 2012.

Ghost Zone

The Ghost Zone is similar to the Mattawasaga and Zone 6 deposits: mineralization is hosted by the McDermott shear zone and occurs in steeply south dipping sections of the shear zone. This higher grade zone, typically three to eight metres thick, is almost exclusively located along the hanging wall of the deposit, against the Ghostmount fault. During 2010 and 2011, SAS drilled 55 holes for over 30 km of drilling and a new resource has been calculated. Additional drilling is planned to expand and upgrade this deposit.

Sediment Zone

Deep surface drilling was initiated in late 2012 to test the down-dip component of the Smoke Deep Zone. During this program, drilling intersected a steeply south dipping, silicified, pyritic zone hosted within the sedimentary unit and SAS has named this new zone the Sediment Zone. The first hole of the program (GH12-001) returned assays grading 5.60 g/t Au over 8.1 m. Follow-up drilling has continued to intercept the newly discovered zone with recent drilling extending the mineralization over a strike length of 750 m with a 250 m vertical height. The new Sediment Zone is situated approximately 250 m in the hanging wall (south) of Smoke Deep. The zone can be easily accessed and drilled using existing development from the 550 m drift or 780 m level at the Holloway Mine. The Sediment Zone remains open in all directions with two surface drills currently following up on these mineralized zones.

8.0 EXPLORATION

The Holt-Holloway property has a mix of mining and exploration assets. The property package comprising claims, patents, and mining leases covers an area of 148 km^2, straddling 40 km of the regionally important DPDZ. This large and coherent land holding in an old and productive gold belt, with numerous gold deposits and showings focused along the DPDZ speak to the excellent exploration potential of the area. With three operating mines and a mill in the district provide SAS with a substantial advantage in the belt.

The exploration potential on the Holt-Holloway property can be divided into three equally prospective areas:

- Within the immediate mine areas;
- Within and immediately adjacent to the gold mineralization previously discovered, namely the Lightval and Newmex property segments and at the Blacktop, Ghost, Pumphouse, and 42 E zones; and,
- In new areas where conceptual exploration targets have been generated based on both past and recent theories that predict the controls on the location of gold mineralization.

8.1 Mine Area

In addition, there remains excellent potential to add to the current mineral resource base immediately adjacent to the Holloway and Holt deposits that can be accessed from the present underground workings. This includes, but is not limited, to the following areas:

- Down plunge extension of Zone 4 and Zone 2 at the Holt Mine;
- Westwards along the hinge line formed by the known deposits within the Holt Mine where additional zones of mineralization may exist;
- Up and down plunge of the Holloway – Lightning and Blacktop zones;
- Between the Lightning and Blacktop zones at the Holloway Mine where limited drilling has returned significant gold values from underground drilling;
- Zone 6B: Potential to the east of this zone, beyond current mine workings; and,

- Zone 1: There is potential to investigate in this zone, 50 m below the 1075 Level.

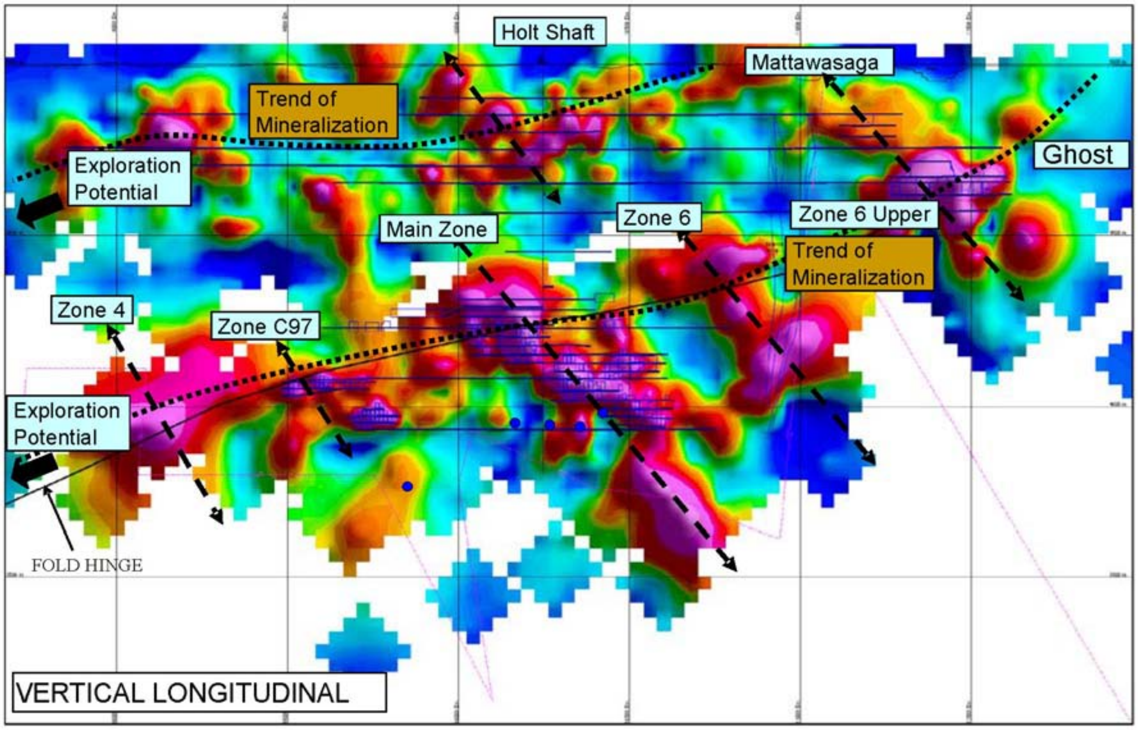

Figure 8-1: Vertical longitudinal section of Holt deposits.

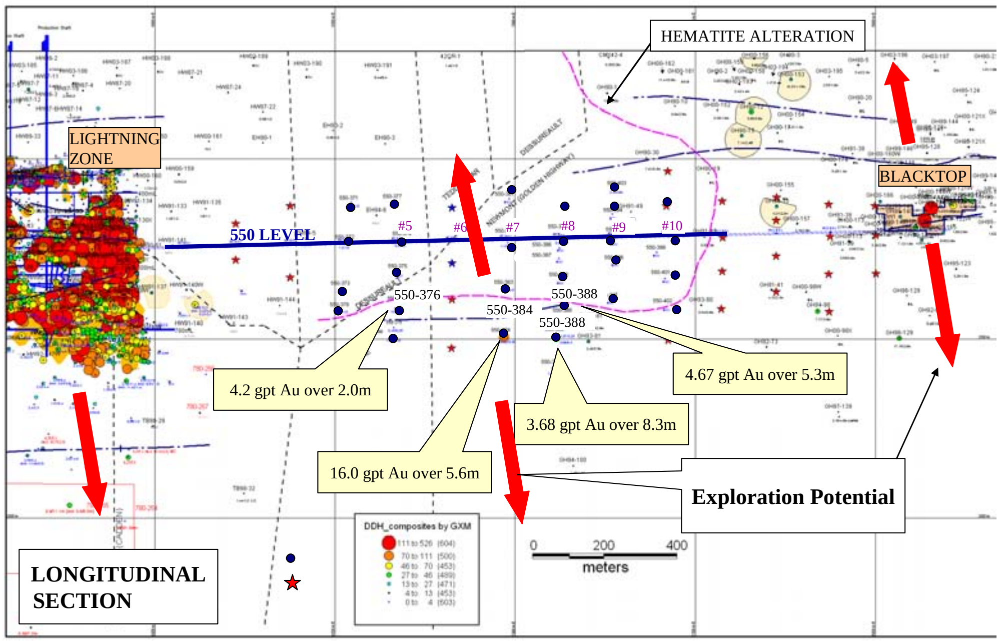

Figure 8-2: Vertical longitudinal section of Holloway to Blacktop Zones.

8.2 Within and Immediately Adjacent to Previously Discovered Areas

8.2.1 Lightval

In the period 1986-1989, Newmont Mines Limited (Canada) conducted a significant exploration program that included line cutting, geological mapping, lithogeochemical sampling of all rock outcrops, outcrop stripping, channel sampling of stripped areas, ground magnetic surveying, IP and limited HLEM surveying. Diamond drilling of 37 holes totaling 11,316 m was completed. Significant intersections include 2.85 g/t Au over 9.95 m from hole LV88-8B (green carbonate altered ultramafic) and 1.42 g/t Au over 14.0 m from hole LV87-2 (altered zone at sediment/porphyry contact). Noranda optioned the ground during 1989-1992 and completed 5.5 line kilometres of IP surveying on five lines on the northern half of the property. Drilling over a three year period amounted to 30 holes completed for a total of 8,621 m. Significant intersections from this program include 29.85 g/t Au over 1.5 m from hole LV89-51 (sediment/ultramafic contact) and 3.64 g/t Au over 2.0 m (Lightning Zone style mineralization, mafic/ultramafic contact).

During October 2001, Newmont carried out a diamond drilling program comprised of two holes totalling 475 m on the southern portion of the Lightval property. The program was designed to test geological targets with coincident IP chargeability anomalies and, in the case of hole LV01-68, anomalous Au in humus geochemistry. Previous IP surveying (1986) on the Lightval Property, by Newmont Mines Limited (Canada), had outlined a number of untested IP trends in favourable geological settings. No economic gold values were returned from the drilling, although both holes intersected weak to moderately altered zones with low gold values. The highest value obtained was 0.51 g/t Au over 1.0 m from a calcite and hematite altered mafic volcanic from drill hole LV01-69. A moderate to strongly altered section over 13.8 m of silica and lesser albite and ankerite alteration in hole LV01-68, returned only weakly anomalous values of 0.17 g/t Au over 1.0 m. Following this program, two areas of interest were recommended for follow-up, namely the Lightning Zone volcanics package in the northern half of the property and the silica/albite altered interval in LV01-68 in the southern half of the property. The Lightning Zone stratigraphy has not been fully tested at depths below 200 m from surface due to gaps in the potentially more prospective areas of up to 800 m between drill holes. Only one hole tests the 1.8 km long package at a depth of 500 m below surface, which is a favourable zone for flat fault-hosted gold mineralization in the Holloway Mine. The silica/albite altered interval intersected in LV01-68 remains open ended, having possibly been intersected in one historic hole to the west. The zone has been traced for a distance of 300 m in outcrops and pits before disappearing under overburden. More drilling is required here, particularly to investigate the potential of the footwall stratigraphy to the north of the equivalent Lightning volcanic package.

8.2.2 Newmex

An 813 m hole was drilled in 2005 to follow up on a series of good intersections. More work is needed to follow up this mineralization.

8.2.3 Ghost

The Ghost Zone mineralization was discovered in 2000 approximately one kilometre east-northeast of the Mattawasaga mineralized zone. The discovery hole, drilled 250 m east of the boundary with Holt property, intercepted the zone at a vertical depth of 450 m and encountered a broad zone of mineralization returning 3.47 g/t over 32 m and 5.47 g/t over 4 m. Subsequent drilling at approximately 200 m offsets encountered lesser values, however, notable intercepts included 2.64 g/t over 13 m and 2.12 g/t over 14 m, and broad low-grade composites, including 0.68 g/t over 23 m, defined the extremity of the system.

In 2001, Newmont drilled two holes to test the extent of the Ghost Zone. One hole, approximately 1.7 km to the east, tested 300 m below surface and the second hole, 500 m east of previous drilling, tested to 520 m below surface, in the plunge direction of the zone. Both holes encountered modest alteration with weak gold values but did not particularly define any limits to the Ghost Zone. In 2005, Newmont drilled five more holes totaling 2,480 m to the west of the zone. Each hole intersected good alteration and modest gold values, such as 3.49 g/t Au over 2.0 m. More drilling is required in this zone; however, work to date suggests that the Ghost Zone extends for at least 600 m along strike and at least 200 m down dip towards the southeast.

8.2.4 Pumphouse (now known as Deep Thunder)

Drilling on the Pumphouse Zone to the east of the Blacktop Zone has encountered interesting gold values. More work is needed to follow up this mineralization.

8.2.5 42 E

Drilling on the 42 E Zone to the east of the Pumphouse Zone has also encountered interesting gold values. More work is needed to follow up this mineralization.

8.3 New Exploration Targets

Based on aeromagnetic patterns, and the locations of known alteration-high strain zones, examination of property geological and geophysical maps, in combination with known drill hole data, suggests that several east-northeast trending shear zones are developed across the area, including in the Lightval property area west of Holloway, and at least three structures developed in the mafic volcanic sequence to the northwest of the McDermott shear zone.

The sequence of mineralization at Holloway is comparable to deposits in the Timmins area, evolving from early disseminated mineralization styles through later quartz-tourmaline veins, and late flat quartz extension veins associated with semi-brittle faults. The endowment of mineralization, however, differs in each stage: at Holloway, most gold mineralization was introduced in early replacement phases, while in the Timmins area, the later stage vein systems associated with shallow dipping extension vein arrays introduced the bulk of gold mineralization. The flat fault-related and quartz-tourmaline vein systems at Holloway illustrate the potential for development of Timmins and Val d'Or style vein systems in the local area.

8.3.1 Holt Mine

Zone 4 – Upper and Lower strike extensions

Historical production from the Holt mine was derived from an area known as the South Break. SAS site personnel have named the westerly strike extension of the South Break, as Zone 4. Zone 4 is noted to possess similar geological, mineralogical and structural characteristics to the South Break. In recent years, SAS has focused a considerable amount of exploration attention on drilling the westerly strike extension of Zone 4 from drill platforms located on both surface and underground. The up-dip strike extension of Zone 4 contains exploration potential with two historical drill holes returning significant assay results and mineral widths which warrant follow-up.

A composite longitudinal view of the Holt mine indicating the historical diamond drill coverage, the gold grade assay histograms (red bars adjacent to the drillhole trace) and the areas for potential drill follow-up, namely the down plunge extension of the Worvest zone and the westerly strike extension of Zone 4 is displayed in Figure 8-3.

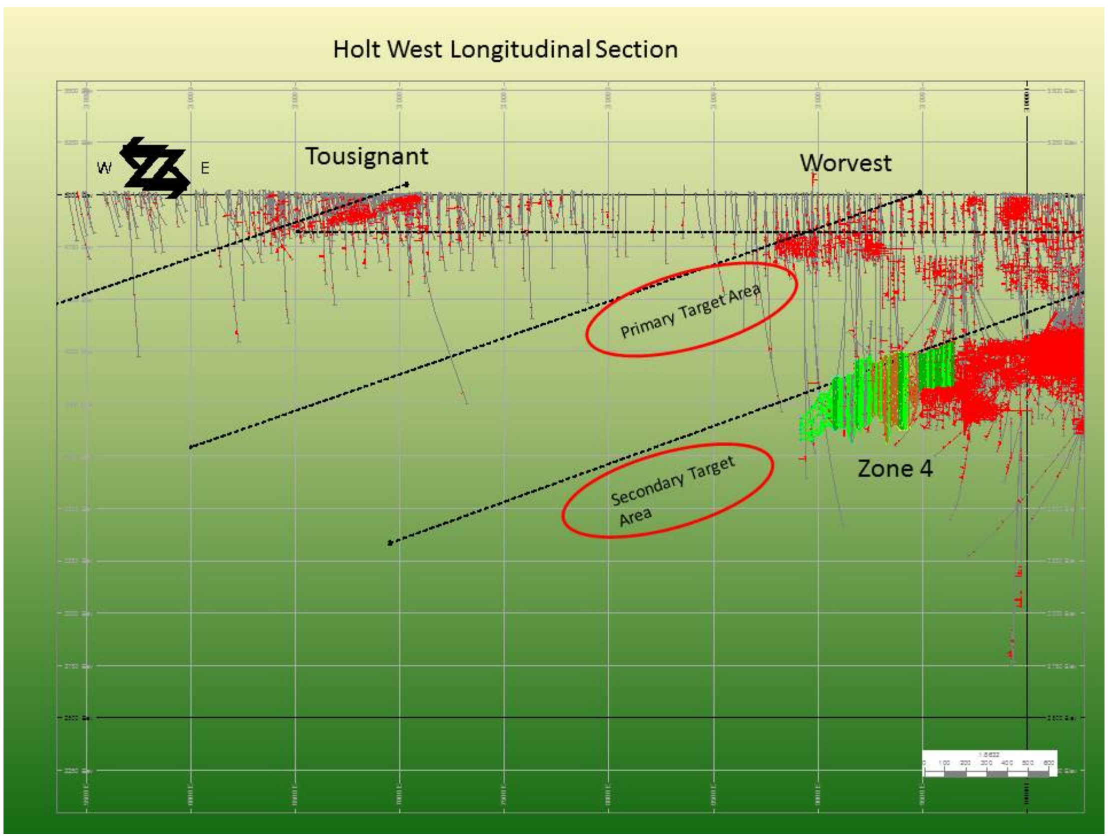

Figure 8-3: Holt mine longitudinal indicating potential exploration target areas.

8.3.2 Holloway

The following new exploration targets are being examined by SAS geological personnel at the Holloway mine.

Smoke Deep – Easterly / depth extension

SAS has been actively drilling the Smoke Deep target from both surface and underground drill set-ups. Recent drill results from Smoke Deep were disclosed in a March 4 2013 press release, SAS reported "Underground drilling east of Smoke Deep commenced earlier this year to test the possible eastern and down dip extension of the zone from the underground drift on the 780m Level elevation ramp. The drill program continues to extend the Smoke Deep deposit both along strike and further to the east. This drilling has effectively extended the known mineralized strike length of the deposit an additional 50 m for a total strike length of 500 m. Surface drilling was conducted to test the up dip component of the Smoke Deep Zone. Recent assay results include hole GH13-002 (drilled from a collared hole at the Ghost Zone), which returned 3.46 g/t Au over 12.2 m including 4.39 g/t Au over 6.6 m. This intersection is typical of Smoke Deep mineralization, associated with the mafic volcanic-ultramafic volcanic contact and is approximately 400 m directly above the current Smoke Deep resource model and approximately 200 m below surface".

Smoke Deep remains open both along strike to the east and both up-dip to surface and down plunge at depth. Recent drill intercepts from the Smoke Deep east extension drill program are illustrated in Figure 8-4.

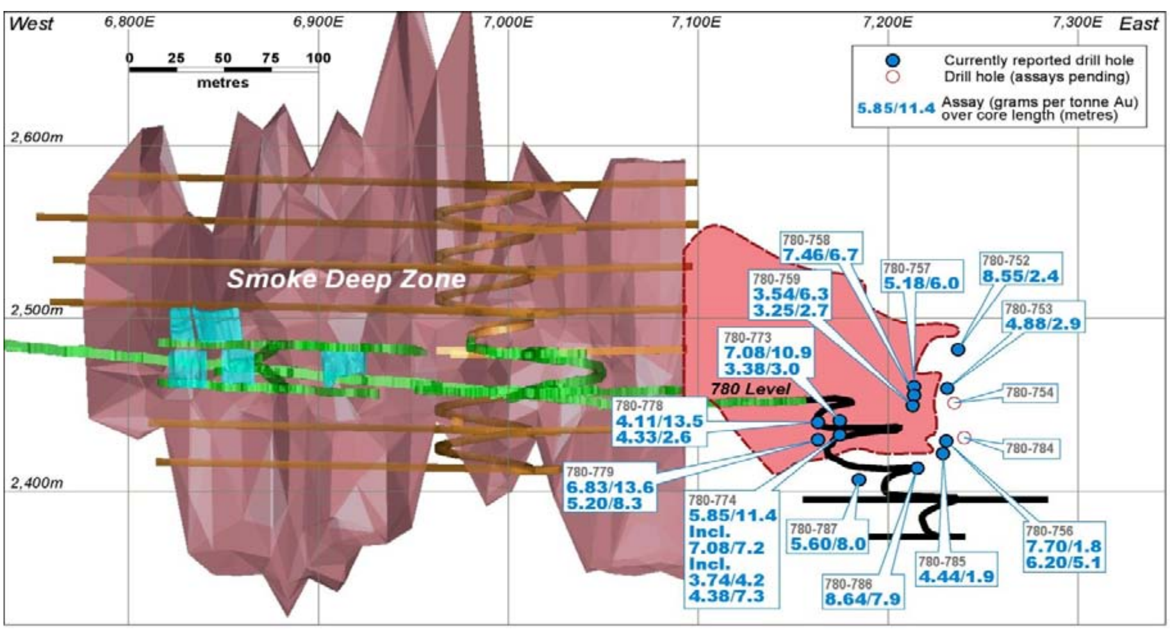

Figure 8-4: Recent drill intercepts at Smoke Deep (east extension).

A longitudinal view of the Smoke Deep Zone showing the exploration potential available at depth and up-dip to surface is displayed in .

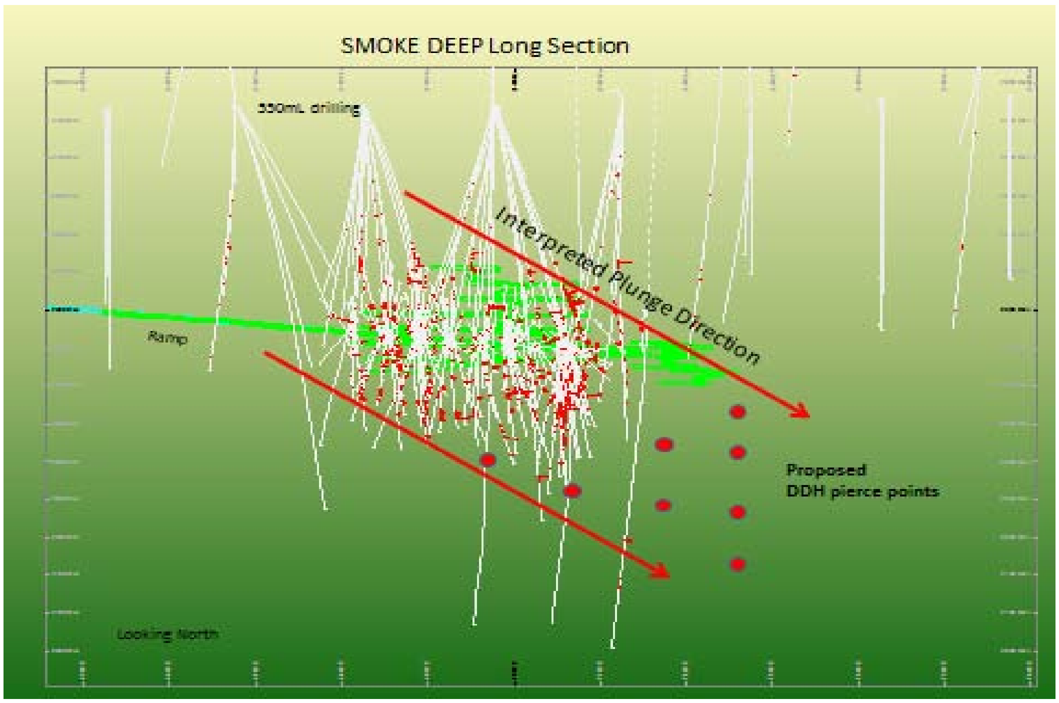

Figure 8-5: Exploration potential at the Smoke Deep Zone.

<u>Sediment zone</u>

In March 2013 SAS reported that "Deep surface drilling was initiated in late 2012 to test the down-dip component of Smoke Deep. During this program, drilling intersected a steeply south dipping, silicified, pyritic zone hosted within the sedimentary unit. The first hole of the program, Hole GH12-001 returned assays grading 5.60 g/t Au over 8.1 m, and has named this new zone the Sediment Zone. Additional follow-up drilling by SAS has continued to intercept the newly discovered zone with recent drilling extending the mineralization over a strike length of 750 m with a 250 m vertical height. The new Sediment Zone is situated approximately 250 m in the hanging wall (south) of Smoke Deep. The zone is significant because it can be easily accessed and drilled using existing development from the 550 m drift or 780 m level at the Holloway Mine.

The Sediment Zone remains open in all directions with two surface drills actively following up on these mineralized zones at this time".

A geological cross-section highlighting recent assay results and showing both the geological and spatial relationship of the Sediment Zone to Smoke Deep is displayed in Figure 8-6.

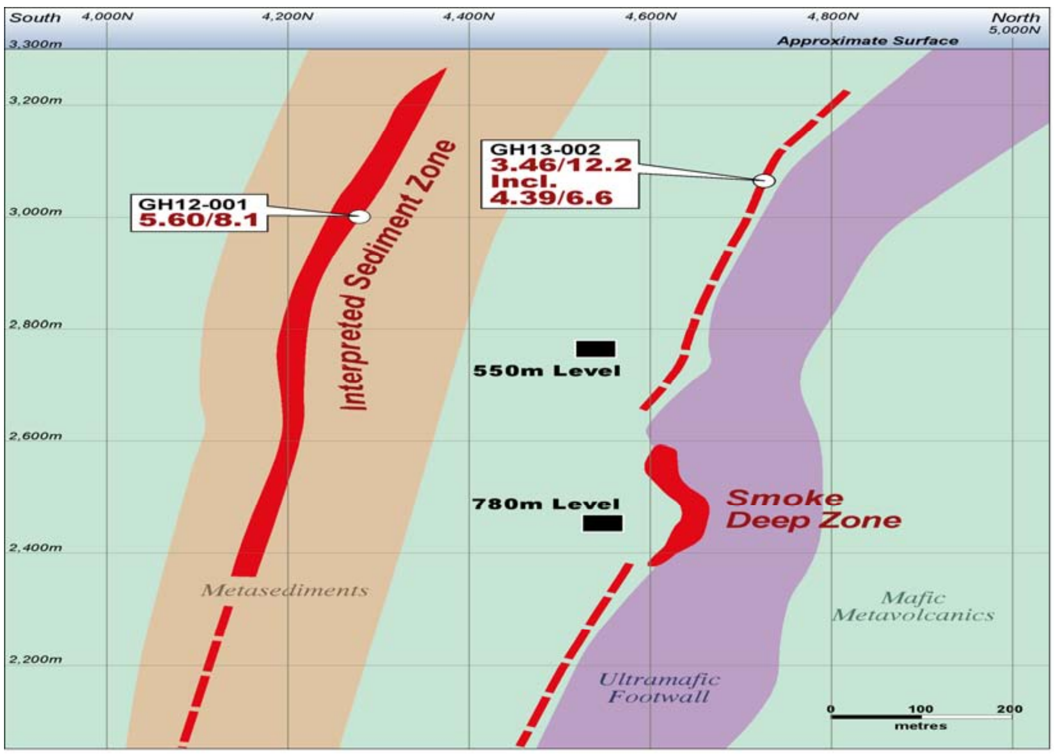

Figure 8-6: Location of Sediment Zone.

<u>Ghost Zone extension to the east</u>

SAS actively drilled off the Ghost zone in 2011-2012. The Ghost zone is located two kilometers east of the Holt shaft; however, in 2013 the deposit was transferred to the Holloway property to reflect the underlying production royalty associated with the zone. Surface drilling effectively defined the Ghost zone as being mineralized over a 600 m strike length, which was brought into a resource by SAS in 2012. The Ghost mineralization remains open to the east – towards an area known as the Plato Gold option. The mineral potential of this zone will be drill tested by SAS in 2013.

8.3.3 Generative Targets Compilation and Evaluation.

SAS geological personnel are actively working up exploration targets on the Holt and Holloway properties and the potential for a repetition of the mineralized zones and the extension of most zones remains open along strike and or at depth. These extensions are regarded as high potential targets by SAS Exploration personnel. In many instances, underground diamond drill platforms are required to facilitate the orderly exploration of these zones where possible. Surface drilling will also be used to support the mine exploration effort where warranted.

8.4 2012-2013 Exploration Programs

8.4.1 Holt-Holloway Mines

As in 2012, exploration in the vicinity of the Holloway-Holt mines continues to be a priority as a number of exploration targets adjacent to the mine workings will be tested in 2013. The exploration will be focused at the Smoke Deep, Ghost Zone, Blacktop East, Deep Thunder and Zone 4 west extension, and to a lesser degree to more regional targets at the Lightning Vein and Canamax 42 East zones (Figure 8-7).

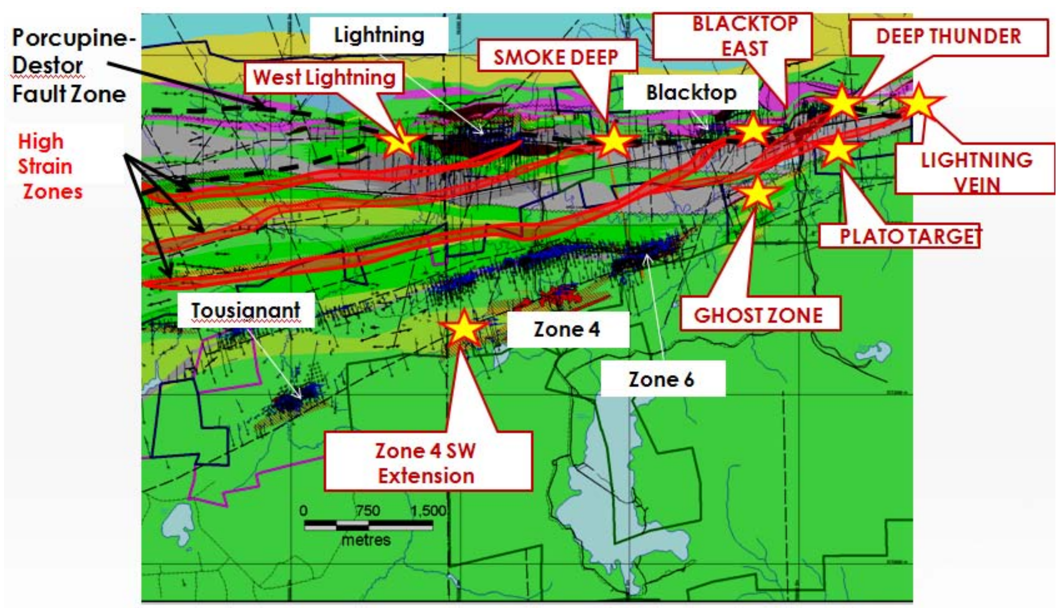

Figure 8-7: Holt-Holloway exploration targets (plan view).

8.4.2 Ghost Zone

The Ghost Zone is located approximately 400 m east of the Holt mine workings, along the Ghostmount Fault Zone. Follow-up drilling in 2013 will be targeting extensions of the zone at depth and along strike. Additional in-fill drilling may be required to increase the mineral resource classification and confidence. A substantial amount of drilling was conducted on the Ghost target in 2011-12, which resulted in a mineral resource being disclosed for the zone. A longitudinal section for the Ghost Zone is displayed in .

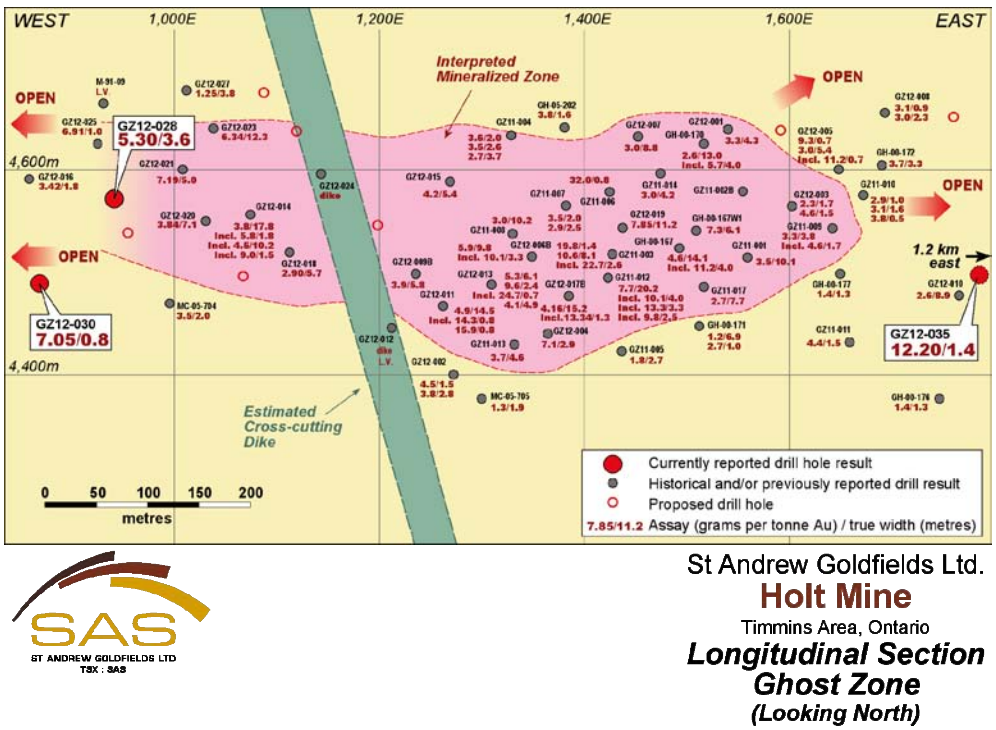

Figure 8-8: Ghost Zone longitudinal section showing recent drill results.

8.4.3 Blacktop East Zone

The Blacktop East Zone is located immediately east of the Blacktop Zone, where current mining activities are completed.

Surface drilling in 2011 was completed to extend the gold mineralization further to the east along strike. The holes were drilled from surface approximately 80 m to the east and intersected a similar style of gold mineralization, consisting of silicified mafic volcanics with minor disseminated sulfides. One hole returned 5.04 g/t Au over 17.7 m, which is similar to the results received from the underground drilling. Additional drilling is planned for 2013 to better define this potential mineral resource.

Results of the recent surface drilling are summarized in Table 8-1 and Figure 8-9.

	Intersection (m)		Core Length	Gold Grade
Hole Number	From	To	(m)	(g/t)
GH11-008	470.1	487.7	17.7	5.04
including	*475.0*	*487.7*	*12.7*	*6.20*
GH11-015	626.2	630.8	4.2	3.85
including	*629.2*	*630.4*	*1.2*	*9.79*

Notes:
All lengths are reported as core length as true width is not available at this time.
Gold grades capped to 30 g/t Au.

Table 8-1: Blacktop East highlights from the 2011 drilling campaign.

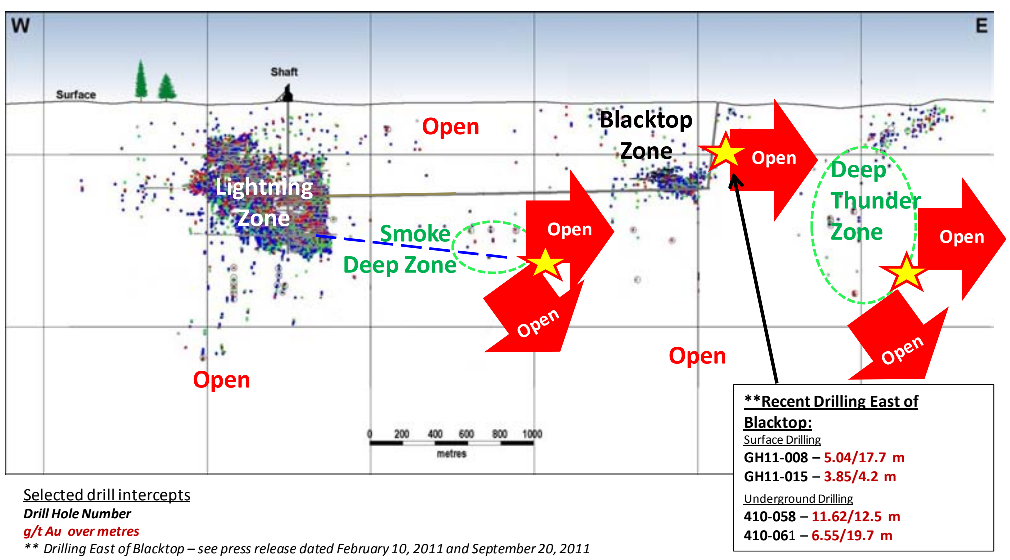

Figure 8-9: Blacktop East longitudinal view.

8.4.4 Deep Thunder Zone

Surface drilling at the Deep Thunder Zone in 2011 was successful in expanding the zone of gold mineralization to the east and has confirmed the presence of higher grade gold structures within a broader zone of alteration. Gold mineralization is concentrated within several sub-parallel zones along steeply dipping structures, from true depths of 620 m to 1,100 m, over a strike length of 350 m.

This phase of exploration resulted in a mineral resource estimate and preliminary assessment of various development scenarios. Further drilling is required to expand the zone especially at depth and along strike to the east (Figure 8-10).

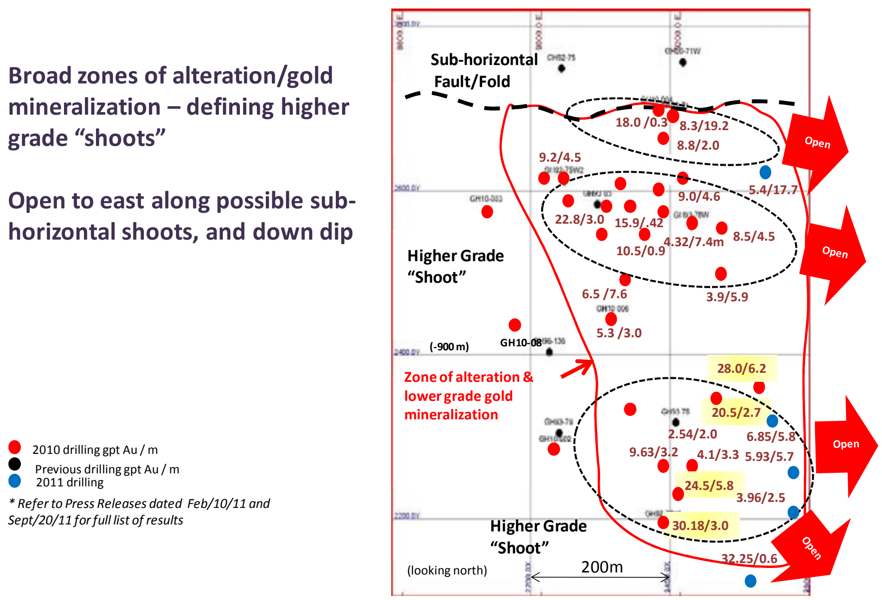

Figure 8-10: Deep Thunder Zone longitudinal view.

8.4.5 Smoke Deep Exploration

The Smoke Deep Zone is considered to have excellent potential for resource expansion. In 2012, underground exploration to test the eastward, down plunge and down dip extension of the Smoke Deep Zone was completed successfully. An underground exploration drift was driven to assess the eastward potential. Recent drill intercepts for the Smoke Deep target are displayed in Figure 8-11. A study by SRK completed in the summer of 2012 identified potential for repetitive targets both up and down dip from the current zone (Figure 8-12 and Figure 8-13).

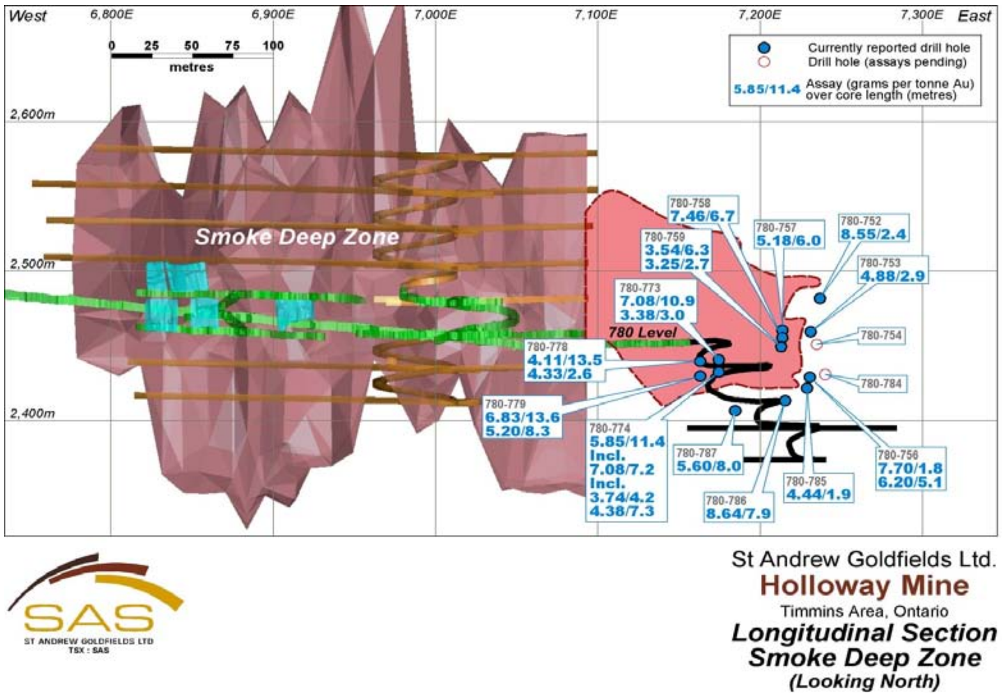

Figure 8-11: Smoke Deep Zone - Recent underground drillhole assay intercepts.

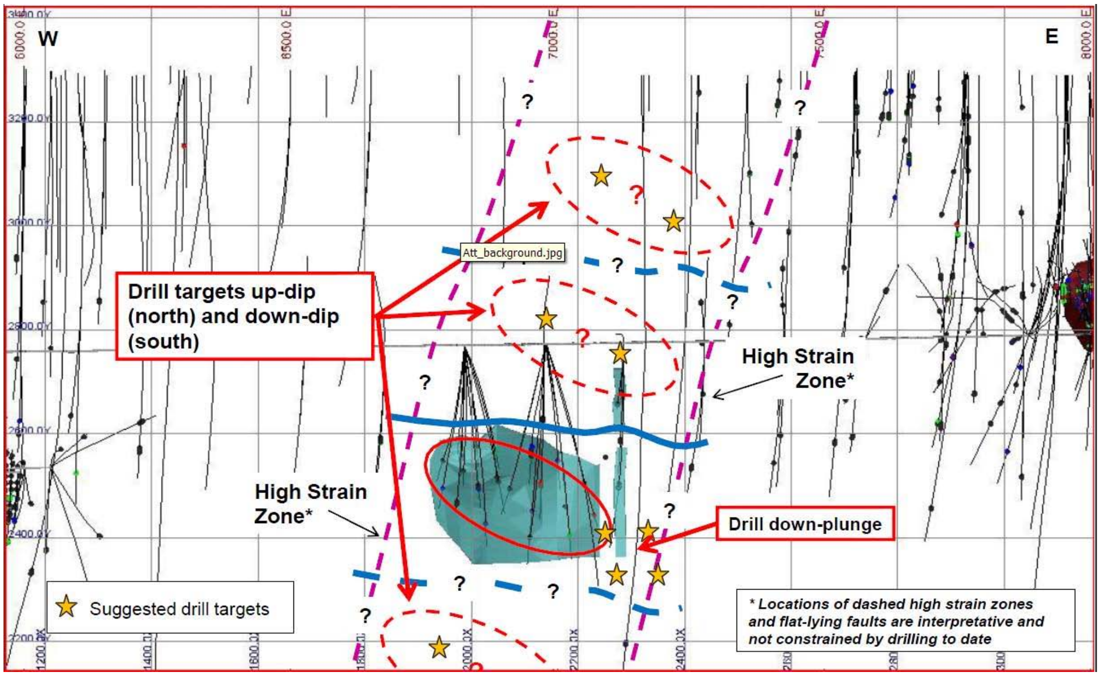

Figure 8-12: Smoke Deep Zone longitudinal view of exploration targets.

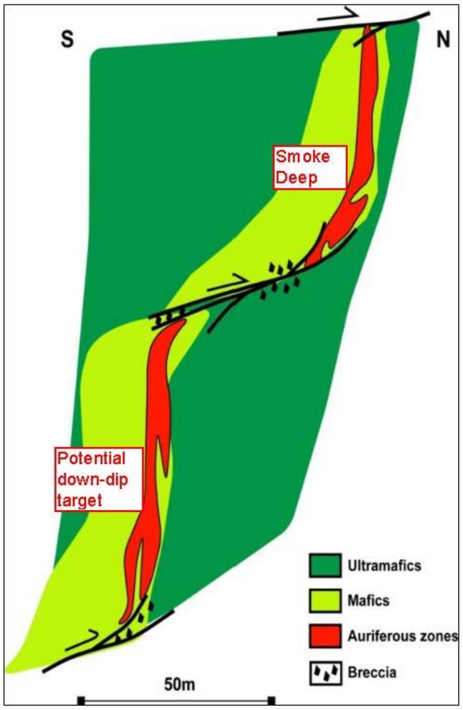

Figure 8-13: Smoke Deep Zone sectional view of exploration targets (looking west).

8.4.6 Zone 4 – Southwest Extension

Surface drilling is underway to test for the possible southwest, down plunge extension of Zone 4 at the Holt mine, which is currently being mined. Historical drilling in this area has returned several anomalous values including 3.9 g/t Au over 12.0 m and 7.8 g/t au over 2.8 m. If the 2012-13 drilling proves successful, underground development may be warranted to continue the exploration program ().

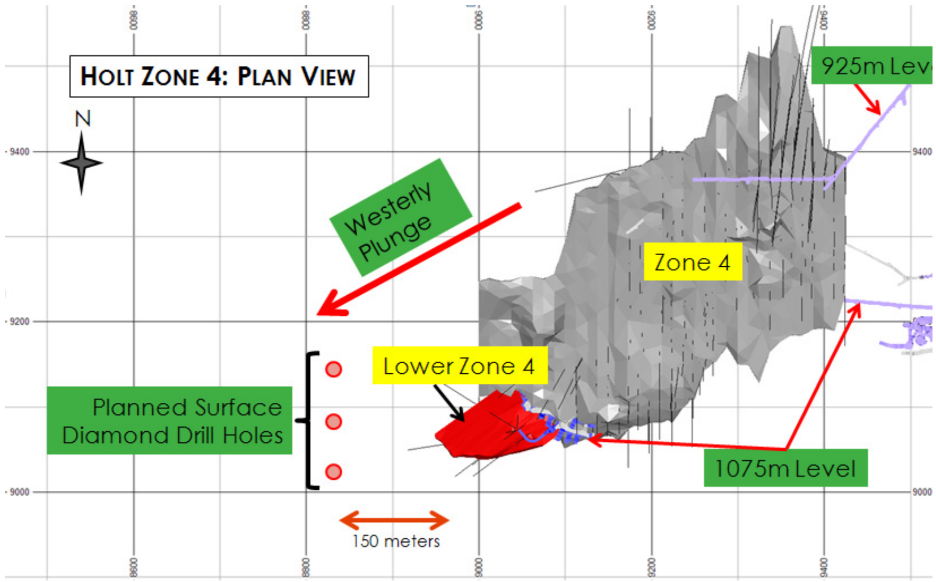

Figure 8-14: Holt Zone 4 south-west extension plan view.

8.4.7 Regional Holt-Holloway Targets

The 2013 exploration program also includes surface drilling on several targets where historical drilling has returned anomalous gold values and/or where gold mineralization occurs at or near the intersection between ENE trending High Strain Zones ("HSZ") with other E-W trending structures or lithological contacts, as per the current geological model for gold mineralization in the region. The primary targets include:

- Lightning Vein: previous drilling returned a number of anomalous gold values that occurred at the interpreted intersection between the ENE trending HSZ and the mafic-ultramafic contact (similar to location of mineralization at the Smoke Deep, Blacktop and Deep Thunder zones);
- Plato Gold Anomaly: drilling intersected several gold values over narrow intervals along the northeastern extension of the Ghostmount Fault (i.e. 52.4 g/t Au over 0.30 m and 64.8 g/t Au over 0.43 m);
- Canamax 42 East: located approximately one kilometre east of the Blacktop Zone. Previous underground exploration defined a high grade gold resource within altered ultramafic volcanics, somewhat similar to that of the recently discovered Deep Thunder Zone, and could possibly represent its offset, up-dip

extension. Drilling in 2013 is designed to extend this zone of mineralization both east and west along strike and/or down dip to the Deep Thunder Zone.

- Holloway West Area: located west of the Holloway Mine, an area that is under explored along the mafic/ultramafic contact, which hosts the Lightning Zone. Compilation work and diamond drilling will be conducted in 2013;

- Holt West: Very limited historical surface drilling between Zone 4 and the Tousignant Zone has been conducted. Follow-up drilling in 2013 will test both the vertical potential along the Ghostmount Fault and the potential for repetitive flat lying mineralization such as Zone 4 and Tousignant;

- Sediment zone: Recent drilling intersected a steeply south dipping, silicified, pyritic zone hosted within the sedimentary unit and SAS has named this new zone the Sediment Zone. The first hole of the program (GH12-001) returned assays grading 5.60 g/t Au over 8.1 m. Additional follow-up drilling by SAS has continued to intercept the newly discovered zone with recent drilling extending the mineralization over a strike length of 750 m with a 250 m vertical height. The new Sediment Zone is situated approximately 250 m in the hanging wall (south) of the Smoke Deep Zone. This zone remains open in all directions and will actively be followed-up with additional surface and underground drilling.

9.0 DRILLING

The current database for Holt-Holloway consists of 14,447 surface and underground core holes totaling approximately 1,650 km. The drilling was completed essentially continuously since the initial discovery of the deposits, and most recently by SAS from late 2006 to date. Since acquiring the Holt-Holloway properties in late 2006, SAS has drilled 615 holes totaling 75 km of core at the Holt Mine in Zone 4, Zone 6, C-99 Zone and Zone V-93. At the Holloway Mine, since late 2006, SAS has drilled 820 holes totaling 78 km of core on the Blacktop, Lightning, Middle and Smoke Deep zones. Drill spacing is typically 12.5 m along strike and 15 m up or down dip. This spacing has proven to provide enough data to produce grade estimates that reconcile well to the actual milling results.

The drilling was completed by a combination of contract drillers, namely, Heath and Sherwood, CABO, Boreal (formerly Azimut), Orbit-Garant, and SAS-owned drills. Only the surface and underground drill core is used in the resource estimate; no underground muck samples or chip samples are used because of their limited distribution.

Drill data for Holt-Holloway consist of drill sections aligned north-south, with the majority of drilling completed along the section lines. The control grid has been used for all coordinates in this report, unless otherwise expressed. The section lines are spaced at 12.5 m intervals. The majority of the holes have been drilled along the direction of the section lines, intersecting the mineralized zones at as close to perpendicular as possible. Mineralized zones at the Holloway and Holt mines tend to have a generally tabular geometry and variably steep to shallow dips. The relationship between the sampled interval of mineralization and the true width is usually best determined from cross sections showing resource definition drill holes.

Historically drill core was BQ size (i.e. 36.5 mm diameter core). Since late 2006, underground drilling is almost exclusively BQ size core, while surface drilling is typically NQ size (48 mm core diameter). All of the diamond drill hole collar locations have been surveyed in the local mine grid, either by a contractor surveyor or SAS personnel, historically using a theodolite and more recently using a total station survey instrument. Down-hole surveying of the drill holes, which is necessary to accurately plot the position of the drill hole trace, has been completed for all of the holes. Downhole deviation in the majority of new holes was measured by a REFLEX down-hole survey instrument that measures the deviation and records the results digitally. Downhole deviation in historic holes not surveyed by REFLEX was measured by one of the following: Sperry-Sun Single Shot instrument that photographed a compass and inclinometer reading at selected intervals down the hole or older Tropari instruments that mechanically locked a compass and inclinometer after a designated time period.

The database includes the survey, assay and geological data for each drill hole. All relevant information available as of December 31, 2012, has been included. The drill logs provide sufficient description and recognition of the lithology, alteration, geological structures and mineralization to correlate geologic boundaries between drill holes and surface outcrops. The database is maintained at SAS mine sites utilizing DATAMINE computer software program.

Underground drilling is performed at both the Holt and Holloway mine sites by Boreal Drilling (formerly Azimut) based out of Val d'Or (QC). A total of four trackless underground drills are used and operated two shifts per day (10 hour shifts), four days per week. Typical underground daily core production is 70m/drill/day.

Surface drilling is conducted two shifts per day (12 hour shifts) on a 10 days on-4 days off schedule. Typical surface daily core production is 100 m per day. A total of two surface drills are active on the Holt-Holloway mine properties.

Drilling since 2007 at the Holt and Holloway mine sites is summarized in Table 9-1 and Table 9-2.

YEAR	ZONE	HOLES	METRES
2012	C-99	2	127
	C-99	3	290
	Zone 6	105	20,874
	Zone 6	7	1,412
	Zone 4	107	11,928
	Zone 4	4	572
	V-93	4	403
	Zone 4	6	1,289
2011	Zone 4	2	34
	Zone 4	50	3,454
	Zone 4	99	9,977
	C-99	7	1,320
2010	C-103	22	1,981
	Zone 4	11	1,105
	Zone 4	23	1,174
2009	No drilling		
2008	Zone 6	17	3,138
	Zone 4	7	439
	Zone 4	38	2,636
2007	Zone 6	31	6,024
	Zone 4	33	2,191
	Zone 4	37	4,966
TOTAL		615	75,331

Table 9-1: Summary of drilling at the Holt Mine.

YEAR	ZONE	HOLES	METRES
2007	Blacktop	87	7,776
	Blacktop	83	468
2008	Lightning	6	1,852
	Lightning	25	117
	Blacktop	5	138
2009	Lightning	40	164
	Blacktop	39	4,424
	Blacktop	26	109
2010	Lightning	1	495
	Smoke Deep	15	5,030
	Blacktop	61	6,819
	Blacktop	29	153
	Lightning	9	41
2011	Middle Zone	32	3,544
	Smoke Deep	20	6,795
	Blacktop	31	2,793
	Lightning	28	3,055
2012	Smoke Deep	132	17,989
	Middle Zone	33	1,688
	Smoke Deep	118	14,888
TOTAL		820	78,337

Table 9-2: Summary of drilling at the Holloway Mine.

10.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

10.1 Sampling Methods

A standardized protocol for sampling of diamond drill core, as well as for underground sampling of chip and muck samples, for gold analyses, is employed by SAS. With drill core, a maximum interval of 1.5 m is sampled unless variation in mineralization, lithology or alteration dictates that a smaller interval should be used. A minimum sample interval of 0.3 m is also applied to sampling procedures. Visual recognition of variation of auriferous (sulphide) mineralization concentration, strength of alteration mineralization and lithological host are keys used by the geology personnel in determination of an appropriate sample length to be employed. More specifically, samples are begun or ended at the interface of different lithology, alteration assemblages, or concentrations in auriferous mineralization. Sampling extends into barren rock at a minimum of one sample at the beginning and end of any sampled interval. Core logging set-up at the Holt mine is shown in Figure 10-1.

Figure 10-1: Holt mine core logging facility.

All drill core sampled from definition drilling that falls within stated reserves shapes is bagged whole and typically assayed at SAS's Holt assay lab. Remaining core outside the sample interval is kept in storage racks at Holloway Mine pending review of final gold analyses of sampled material. Once values are received and reviewed by a geologist and no further sampling of an individual drill hole has been determined to be necessary, the remaining drill core is disposed of.

For all drill core sampled for definition drilling that falls outside current reserves shapes, the same protocols are applied with the exception that some core is split using a hydraulic splitter, with one half forming the sample and the other half remaining in the core box. This remaining core is stored in racks at the Holloway Mine site, where sample tags remain in the boxes at the appropriate intervals for future review. Determination of what material should be split and stored is performed by a geologist (e.g. the project, senior or chief geologist) in charge of overseeing the drilling program. All drill core obtained from underground exploration drilling is sampled under the same protocol, with the exception that all samples and core are split and stored permanently as described above.

Chip sampling of development faces underground also abide by the above described protocol in that sample lengths can range from a minimum of 0.3 m to a maximum of 1.5 m and are delineated by lithological and alteration assemblage, as well as by concentration of auriferous minerals. Chip sample orientations are chosen so that an optimal cross-section of observed material on the face is represented, when logistically possible. Once gold values for obtained samples are received, they are incorporated into drawings and may be used as additional data for evaluations of grade control shapes compiled to maximize gold recovery.

Chip samples are analyzed at the Holt Mine assay lab and have a typical turnaround time of 5 days.

The drill core samples are delivered from the core room to the sample preparation room by the geology technician (Figure 10-2). Each core sample plastic bag was previously identified by the technician from the geology department. The plastic tag includes the sample number and the location of the sample (diamond drill hole number, from-to in metres). The weight of the sample varies from two to ten kg depending of the length of the core sample, its nature (massive sulphides, chloritic waste rocks), and depending if the core sample has been split in two.

Equipment and facilities used for samples preparation and analysis are shown in Figure 10-3 to Figure 10-5. Flow sheet of the sample preparation and assay analysis process is displayed in Figure 10-6.

Figure 10-2: Sample receiving (left) and preparation room (right).

Figure 10-3: Sample dryer (top left), drying pan (top right) and jaw crushers (bottom).

Figure 10-4: Sample riffle splitter (left) and pulverizer bowl (right).

Figure 10-5: Assay lab samples cupellation (left) and assay balance (right).

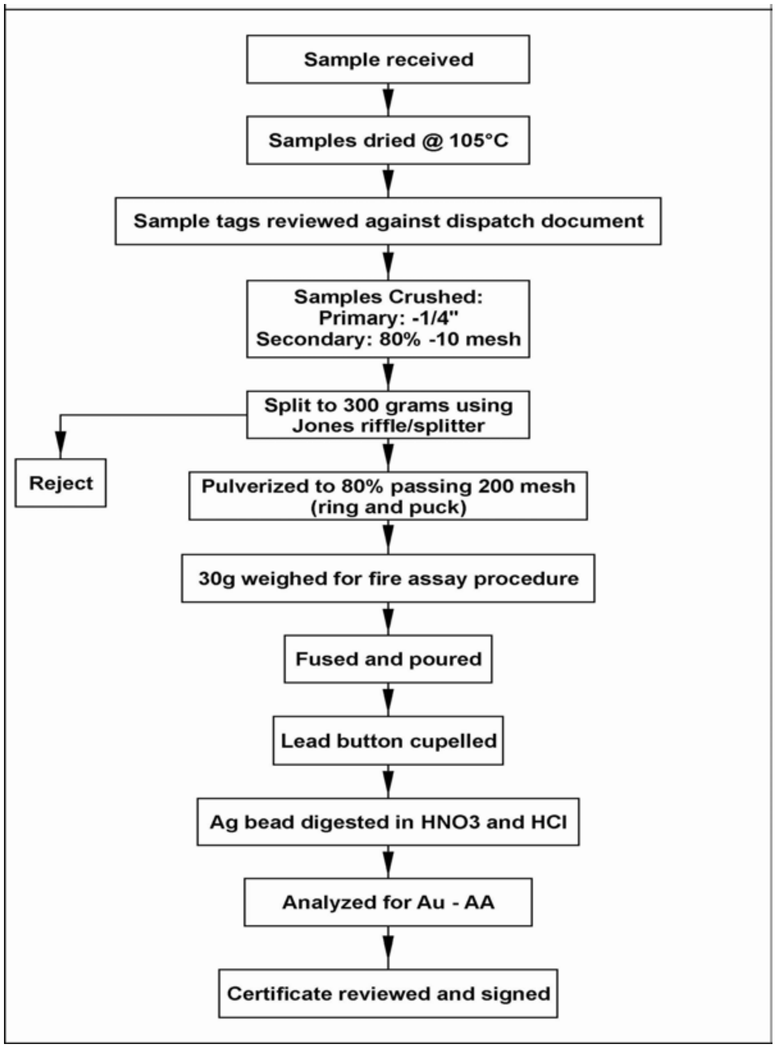

Figure 10-6: Sample process flow sheet for the Holt assay laboratory.

10.2 QC/QA Comparative Assay Laboratory Program.

In late 2012, as a Quality Control check, sample rejects from the Holt-Holloway surface exploration programs were collected and submitted for comparative "Lab-Lab" analysis. The program consisted of a total of 209 sample rejects with 12 standards and 11 blanks for a total of 233 samples that were sent to the SGS Lab in Cochrane, Ontario. The purpose of this process was to randomly check assay results from the year 2012. All assays for this project for 2012 were originally assayed at Lab Expert in

Rouyn-Noranda QC. Sample results are found in the QC/QA report found in Appendix B.

10.3 Sampling

A total of nine holes that were drilled and sampled throughout 2012 were randomly selected to be re-assayed, based on a mixture of high grade and low grade samples. They include GZ12-006, GZ12-007, GZ12-014, GZ12-038, GH12-001, Zn412-002, Zn412-002W1, Zn412-003B and SL12-002.

10.4 Process

In mid-December 2012 sample rejects from the 2012 Exploration drill program were sorted and samples were randomly selected. The sample rejects were re-marked and re-bagged if necessary and put in rice bags for easy transfer to SGS lab. Sample sequences containing blanks simply used the reject. Sample sequences containing standards had a new standard of similar value re-inserted into the sequence.

10.5 Results

The “Lab-Lab” check program had a one month sample turn around for results. When compared to Lab Expert assays results, the values are relatively close (generally within +/-10%). The highest variation, as expected, is seen within the highest grade samples; however, six of the twelve certified reference standards inserted into the sample stream returned assay results outside of the recommended performance gates. All of the standards three OR-2pd, two OR-65a and one OR-66a reported a low assay bias. Additional follow-up is being undertaken at this time.

Overall, this process verified the presence of high grade, confirmed low grade values and provided confidence that the primary lab is producing accurate, consistent results.

A comparative assay plot of “Lab-Lab” samples is found in Figure 10-7.

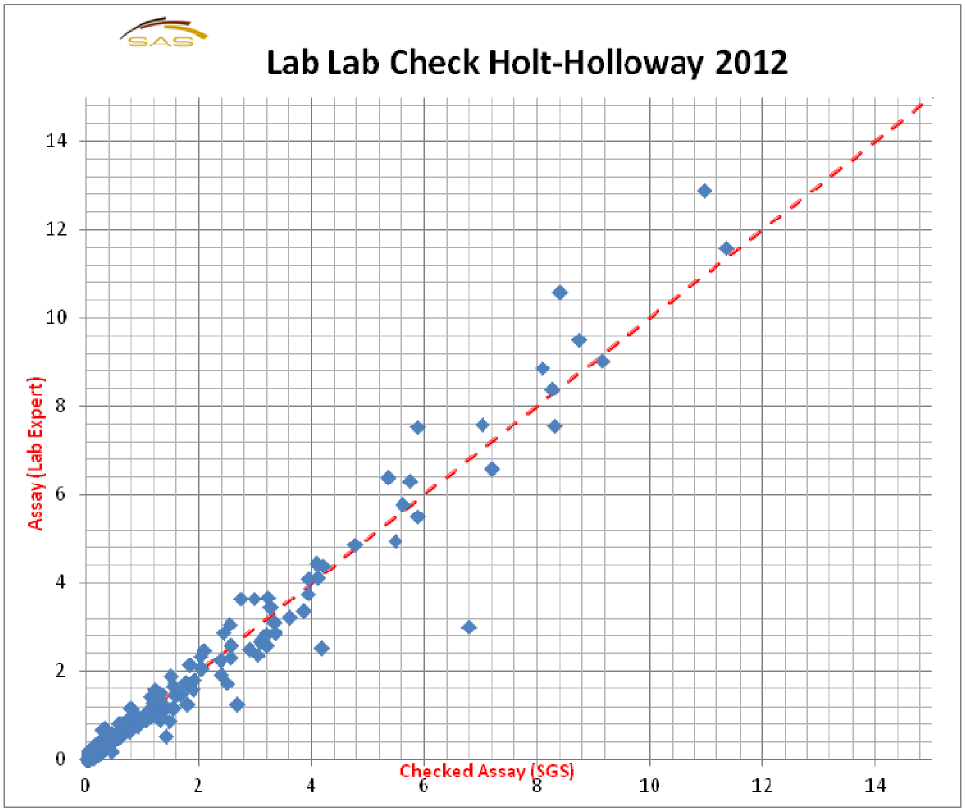

Figure 10-7: Comparative "Lab-Lab" sample analysis program for surface drill core.

10.6 QC/QA Holt Mine Assay Lab

The assay lab at the Holt Mine is used to analyze BQ calibre core samples generated from the underground drill programs. Certified reference standards are inserted by the lab staff as part of the quality control checks. The certified reference standards have two specific gold grades namely Rocklabs SF67 standard which assays 0.0835 g/t Au and Rocklabs SH55 that assays 1.375 g/t Au. These samples were selected for their low grade gold assay range. The performance grade range for the reference samples SH55 used at the Holt lab during the month of December 2012 inserted into sample batches of underground drill core is shown in Figure 10-8. The QC/QA record is retained by the Mill Metallurgist.

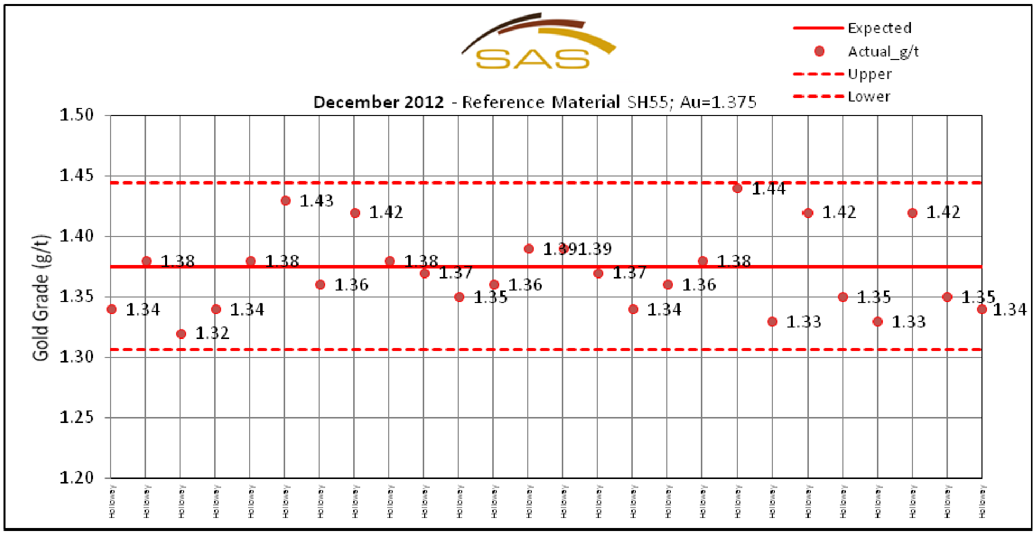

Figure 10-8: Holt Mine lab performance standards (Dec 2012 – Rocklabs SH55).

10.7 Assay Laboratory Site Audits

SAS personnel conducted laboratory audits of both the assay lab situated at the Holt Mine and at Lab Expert. Both of these laboratories conduct all of the assay analysis for drill core and sample chips used in the mineral resources calculation at the Holt and Holloway mines.

On September 27, 2012, SAS personnel visited the Holt Mine site assay lab. SAS samples were observed in every stage of preparation and analysis during the visit and no concerns were noted as a result of the visit.

On December 18, 2012, SAS personnel visited Lab Expert based in Rouyn-Noranda (QC) and were given a site tour by the laboratory manager. SAS core samples were observed in every stage of preparation and analysis during the visit. No concerns were noted as a result of the visit.

11.0 DATA VERIFICATION

Holloway-Holt operation has a history of gold production. Consequently there was no independent sampling of drill core or working faces to confirm the presence of gold values. A "Lab-Lab" check is proposed for the underground core for 2013.

The delineation drilling completed within the Blacktop Zone at the Holloway Mine and Zones 4 and Zone 6 at the Holt Mine has produced results in agreement in terms of grade and geometry with the results obtained from the previous, wider spaced drilling.

Assay results are received from Laboratoire Expert by email, followed by a signed paper copy of the assay certificate. Data are transferred to the diamond drill logs and database electronically, thereby reducing the chance of error. Historically assay data from five diamond drill holes, namely 550-524, 660-169, 245-030, 505-378, and 505-465 were checked against the diamond drill log entries. No errors were found.

More recently, SAS verified 20 drill holes from both Holt and Holloway mines against the database. There were no errors found in the assays and two small errors in the collar coordinates (those were found to be insignificant; highlighted in red). Summary of database check is shown in Table 11-1 and Table 11-2.

BHID	DATABASE	LOGGED DATE	EASTING	COLLAR NORTHING	ELEVATION	DIP	AZIMUTH	LENGTH	GEOLOGY	ASSAY
1075-132	Fusion Central	04-Apr-11	9204.97	9247.51	3934.08	14	180	157.7	No Errors	No Errors
	Sam's Local	04-Apr-11	9204.97	9247.51	3934.08	14	180	157.7		
1075-176	Fusion Central	30-May-11	9239.49	9237.85	3934.23	27	180	142.2	No Errors	No Errors
	Sam's Local	20-May-11	9239.49	9237.85	3934.23	27	180	142.2		
1075-227	Fusion Central	30-Jan-12	9071.80	9043.35	3935.56	-55	231	111.0	No Errors	No Errors
	Sam's Local	30-Jan-12	9071.80	9043.35	3935.56	-55	231	111.0		
925-139	Fusion Central	05-Jul-11	9341.36	9286.13	4080.18	5	180	61.0	No Errors	No Errors
	Sam's Local	05-Jul-11	9431.36	9286.13	4080.18	5	180	61.0		
925-169	Fusion Central	07-Nov-11	9363.89	9224.20	4083.28	60	360	5.5	No Errors	No Errors
	Sam's Local	07-Nov-11	9363.89	9224.20	4083.28	60	360	55.5		
775-067	Fusion Central	26-Apr-12	9538.98	10830.13	4233.06	53	180	219.0	No Errors	No Errors
	Sam's Local	26-Apr-12	9538.98	10830.13	4233.06	53	180	219.0		
775-114	Fusion Central	06-Dec-12	9541.17	10886.45	4234.74	61	180	246.0	No Errors	No Errors
	Sam's Local	06-Dec-12	9541.17	10886.45	4234.74	61	180	246.0		
775-130	Fusion Central	23-Oct-12	9538.96	10999.18	4234.44	-4	180	163.2	No Errors	No Errors
	Sam's Local	23-Oct-12	9538.96	10999.18	4234.44	-4	180	163.2		
775-288	Fusion Central	10-Feb-12	9370.89	9358.62	4231.20	-41	360	109.7	No Errors	No Errors
775-405	Fusion Central	16-Dec-11	9403.05	10011.76	4227.95	-21	220	182.7	No Errors	No Errors
	Sam's Local	16-Dec-11	9403.05	10011.76	4227.95	-21	220	182.7		

Table 11-1: Holt Mine drill hole database (partial).

BHID	DATABASE	LOGGED DATE	COLLAR EASTING	COLLAR NORTHING	COLLAR ELEVATION	DIP	AZIMUTH	LENGTH	GEOLOGY	ASSAY
430-002	Fusion Central	03-Jul-07	7963.5	4743.2	2849.3	19	0	130.5	No errors	No errors
	Historical Log	03-Jul-07	7963.5	4743.2	2849.3	19	0	130.5		
470-009	Fusion Central	22-Feb-07	8075.0	4764.3	2838.1	0	0	102.0	No errors	No errors
	Historical Log	22-Feb-07	8075.0	4764.3	2838.1	0	0	102.0		
550-630	Fusion Central	18-Sep-07	6974.8	4556.8	2770.7	-58	0	324.0	No errors	No errors
	Historical Log	18-Sep-07	6974.8	4555.6	2770.7	-58	0	324.0		
430-013	Fusion Central	27-Jul-07	7950.0	4783.8	2873.1	27	0	75.0	No errors	No errors
	Historical Log	27-Jul-07	7950.0	4783.8	2873.1	27	0	75.0		
450-037	Fusion Central	10-Apr-07	8025.0	4790.7	2849.5	-9	0	60.7	No errors	No errors
	Historical Log	10-Apr-07	8025.0	4790.7	2848.8	-9	0	60.7		
440-005A	Fusion Central	06-Nov-07	7809.3	4729.1	2860.4	10	170	301.5	No errors	No errors
	Historical Log	06-Nov-07	7809.3	4729.1	2860.4	10	170	301.5		
450-060	Fusion Central	11-Jun-07	8016.3	4743.2	2843.3	28	357	139.0	No errors	No errors
	Historical Log	11-Jun-07	8016.3	4743.2	2843.3	28	357	139.0		
470-022	Fusion Central	03-Aug-07	8050.1	4763.1	2835.9	-18	0	81.0	No errors	No errors
	Historical Log	03-Aug-07	8050.1	4763.1	2835.9	-18	0	81.0		
470-015	Fusion Central	05-Mar-07	8058.0	4763.1	2836.9	1	1	109.5	No errors	No errors
	Historical Log	05-Mar-07	8058.0	4763.1	2836.9	1	1	109.5		
430-015	Fusion Central	25-Jul-07	7950.0	4783.8	2871.5	0	0	51.0	No errors	No errors
	Historical Log	25-Jul-07	7950.0	4783.8	2871.5	0	0	51.0		

Table 11-2: Holloway Mine drill hole database (partial).

12.0 MINERAL PROCESSING AND METALLURGICAL TESTING

12.1 Metallurgical Testing

Metallurgical test work was completed by Unité de Recherche et de Services en Technologie Minérale (URSTM) on ore samples from Holt Zone 5, Zone 6, Zone 8, and Holloway's Lightning Zone, Blacktop Lightning and Blacktop Footwall zones from August to December 2005. Assays were analyzed at Laboratoire Expert in Rouyn-Noranda (QC). Some ICP analysis was done in the analytical chemistry laboratory at the URSTM. A summary of test work completed on ore from the various zones is presented in Table 12-1 and a summary of the test results is presented in Table 12-2.

Test	Zone 5	Zone 6	Zone 8	Blacktop Lightning	Blacktop Footwall	Holloway stock pile ore
Standard leach tests at different grinds (48 hours)	3 tests	3 tests	3 tests	5 tests		
Carbon in leach test (different carbon concentrations)				3 tests	3 tests	
Flotation and leach of flotation tail				1 test	1 test	
Ball mill work index				1 test		1 test
Preg-robbing test				1 test	1 test	
Diagnostic test				1 test		
ICP analysis	1	1	1	1	1	
Whole rock assay				1		
Carbon analysis				1	1	

Table 12-1: Recent metallurgical test work on Holloway ore.

Zone	Average Grind % <325 mesh	Average Head Grade g/t	Average Recovery %
Holt Zone 5	75.0	5.10	88.8
Holt Zone 6	75.0	5.96	90.8
Holt Zone 8	75.0	5.22	94.5
Blacktop Lightning	81.6	6.66	85.6
Blacktop Footwall	75.0	3.40	48.5
Blacktop Footwall	82.7	3.95	85.6

Table 12-2: Metallurgical standard leach test results.

Leach test recoveries varied between 86% and 95% depending on the zone. Blacktop Lightning and Footwall samples had the lowest recoveries. Results indicated that the

Blacktop Footwall ore, which contains preg-robbing graphite, should be treated by a CIL process to attain higher recovery. This is the process used at the Holt Mill.

Gold in the tails of the Blacktop Lightning ore is thought to be associated exclusively with sulphides. Finer grinding offers limited recovery increases. Mineralogical studies may help to understand the gold occurrence in these samples. Process alternatives to offset this problem seem limited as oxidation processes are not considered to provide an economic alternative, taking into account the limited gold recovery increase and the proportion of tonnage involved.

All leaching tests were based on 48 hours residence time. At the planned production rate of 1,500 tpd, the residence time in the pre-aeration and leach circuit would be 48 hours. A kinetic leaching test, by type of ore, versus a residence time relationship should be considered as a method to determine if recoveries could be improved.

The results obtained are based on lab scale tests on small samples from a limited quantity of ore.

12.2 Mineral Processing

There has been production from the Holt and Holloway mines which provides records of metallurgical performance (Table 5-4). The ores from the two mines were blended and processed with other ore in the past.

12.2.1 Holloway Mine Ore

Process plant statistics since re-starting the operation in 2009 are presented in Table 12-3. Metallurgical recoveries varied from 86.9% in 2009 to 90.2% in 2012.

		2009	2010	2011	2012	Total
Tonnes milled	(t)	101,941	340,594	204,258	191,471	838,264
Grade	(g/t)	6.57	6.04	3.84	3.90	5.08
Contained ounces	ozs	21,529	66,122	25,199	23,990	136,840
Recovery rate	%	86.9%	86.9%	85.2%	90.2%	87.2%
Recovered ounces	ozs	18,712	57,459	21,461	21,629	119,262

Table 12-3: Mineral processing statistics for the Holloway ore (since 2009).

12.2.2 Holt Mine Ore

Process plant statistics since re-starting the operation in 2010 are presented in Table 12-4. Metallurgical recoveries varied from 92.5% in 2010 to 94.4% in 2012.

		2009	2010	2011	2012	Total
Tonnes milled	(t)	0	23,257	232,330	316,487	572,074
Grade	(g/t)	0	2.92	4.63	5.25	4.91
Contained ounces	ozs	0	2,185	34,611	53,444	90,241
Recovery rate	%	0%	92.5%	93.5%	94.4%	94.0%
Recovered ounces	ozs	0	2,022	32,376	50,444	84,842

Table 12-4: Mineral processing statistics for the Holt ore (since 2010).

13.0 MINERAL RESOURCE ESTIMATES

The Mineral Resources effective as of December 31, 2012 are summarized in Table 13-1.

	Measured			Indicated			Measured + Indicated			Inferred		
	Tonnes (000)	Grade (g/t)	Gold (oz) (000)	Tonnes (000)	Grade (g/t)	Gold (oz) (000)	Tonnes (000)	Grade (g/t)	Gold (oz) (000)	Tonnes (000)	Grade (g/t)	Gold (oz) (000)
Holt	1,947	3.80	238	2,512	4.12	333	4,459	3.98	570	1,713	4.72	260
Holloway	209	3.57	24	1,178	4.29	163	1,386	4.18	187	3,067	4.67	461
Total	2,155	3.77	262	3,689	4.18	495	5,845	4.03	757	4,779	4.69	721

Notes
CIM definitions (2010) were followed in the calculation of Mineral Resource
Mineral Resource estimates were prepared under the supervision of D. Cater, P. Geo.
Mineral Resource estimates were undertaken according to SAS Policy for Mineral Reserve and Resources
Mineral Resources were estimated at a block cut-off grade of 2.5g/t
Mineral Resources are estimated using a long term gold price of US$1,500/oz
A minimum mining width of 3m was applied
A bulk density of 2.84 t/m^3 was used
Totals may not add exactly due to rounding

Table 13-1: Mineral Resources for the Holt and Holloway properties (as of Dec 31, 2012).

13.1 Database

The current drillhole database for the Holt and Holloway mines consists of 11,671 m of surface core and approximately 1,500 km of underground core. The majority of underground drilling was done with BQ diameter core, the surface drilling was a mix of BQ and NQ diameter. The drill hole database used for all resource estimates updated by the current report was complete as of December 31, 2012. The database used in the mineral resource estimates consisted only of diamond drill hole data; no underground chip samples were used.

The Holt and Holloway mines have a history of production and good reconciliation between the mill and block model grades. This indicates that the majority of the drillhole database is reliable and can be used with confidence. Spot checks were conducted on the original assays against the Datamine drill hole database for 20 holes, randomly selected from 2011-2012 drilling.

Three surface diamond drillholes were removed from the database because the locations of the collars or the downhole deviation are known to be incorrect. The holes removed from the database were: F-02-3w, W-02-2 and W-97-1.

13.2 Geological Interpretation and 3D Solid Modelling

Geologic interpretation and 3D modelling was completed by the Senior Geologists for the respective mines. The main criteria for inclusion within a mineralized zone were: lithology, alteration, major structures and gold grade. The cut-off grade used for 3D modelling was 1.0 g/t, with exceptions allowed to follow alteration, lithology or structural contacts. All 3D modelling of low grade mineralized envelopes was done using the Datamine Studio3 software. The shapes were verified by the Chief Mine Geologist and by the Resource Geologist.

3D models of underground lateral development and stoping were verified and imported into Datamine from AutoCAD by the Mine Engineering Department personnel.

13.3 Density Data

The density used for mineral resource estimation is 2.84 t/m^3, which essentially corresponds to historical density determinations at both the Holloway and Holt deposits. These density determinations seem appropriate for a sulphide replacement style of deposit within a sequence of mafic volcanic – ultramafic rocks. No correlation exists between gold grade and density and, therefore, a bulk density by rock type was considered appropriate for this deposit.

During the SAS drilling campaign between 2006 and 2008, in excess of 1,030 samples from the mineralized zones were sent to Laboratoire Expert for specific gravity determination (i.e. sample dried and weighed (D) and then immersed in water and weighed (W), SG=D/(D-W)). The average density determination by the lab was 2.81 t/m^3, a difference of approximately 1% compared with historical results. The recent work is not considered sufficient to modify the density estimate for the current resource estimation.

13.4 Assay Composites

Samples used in the resource calculation process at the Holt and Holloway mines consisted of drill core samples only. Chip samples were not used in the grade estimation procedure. Typical underground drill core is BQ (37 mm) in size.

Samples were taken at the discretion of the geologist. They were identified with a sample number, securely sealed and transported to the assay lab located at the Holt mine site. Core samples from the surface drill program were typically NQ caliber (48mm) in size, were sawed in half and shipped to Lab Expert for gold analysis, located in Rouyn-Noranda, (QC).

Quality control (QC) samples consisting of both certified reference standards and blanks were inserted into the sample stream for exploration samples only. The labs also use internal calibration standards to act as a QC check; these were considered sufficient QC for definition drilling.

Assay results were returned to the geologist by the lab in excel format and the results were uploaded into the drillhole / mine sample database.

Composite lengths for drillhole data were determined on a zone by zone basis by creating histograms of sample length through each mineralized zone. In most cases, the sample lengths were clustered around 1.0 m, with a maximum sample length of 1.5 m (consistent with SAS Standard Operating Procedure for core sampling). Samples were composited to 1.5 m in all cases. Orphan samples (residual composites at the edge of the zone) were distributed evenly with the other composites of each drillhole, maintaining a composite length as close to 1.5 m as possible. This method prevents any data from being discarded at the margins of the mineralized envelope.

No correlation between density and grade has been identified, so only sample length was used to weight the grades during compositing. Missing or unsampled areas were assumed to have trace gold grade and were assigned a grade of 0.0025 g/t Au.

13.5 Assay Statistics

Statistical analysis was conducted on the assay populations of each zone, or grouped zones, where possible. Histograms and probability plots of gold grade were created (Figure 13-1 and Figure 13-2). The probability plots for each zone are shown in Appendix C. Gold grade capping of 25 g/t has been used in historical estimates for the Holt and Holloway mines and has been shown to reconcile well on a stope-by-stope basis. Probability plots indicate that 25 g/t is a suitable capping value based upon inflection points in the sample population in the area of the 95th to 99th percentile; it has been used in the majority of the grade estimates in this report. The zone V-93 was not capped as there were no anomalously high grade samples and a relatively small dataset. The Tousignant Zone was capped at 20 g/t, but there were no anomalously high gold grades and capping probably wasn't necessary. Capping was applied prior to compositing. The number of samples capped was less than 1% for each zone, with the exception of C-104, where two lenses were between 1% and 2%. Resource estimates were insensitive to capping values, due to the low numbers of capped samples and the absence of anomalously high gold grades. The difference in total tonnes and grade for Zone 4 "upper" (inclusive of reserves), with capping of 25g/t and un-capped is shown in Table 13-2: it demonstrates that the effect of high grade gold assay capping on the mineral resource estimation process at the Holt and Holloway mines is minimal. This is attributed to the fact that most assay results for the zones were less than 25 g/t Au and from the lack of high grade "nugget" outliers. Gold grade distribution behaves quite well.

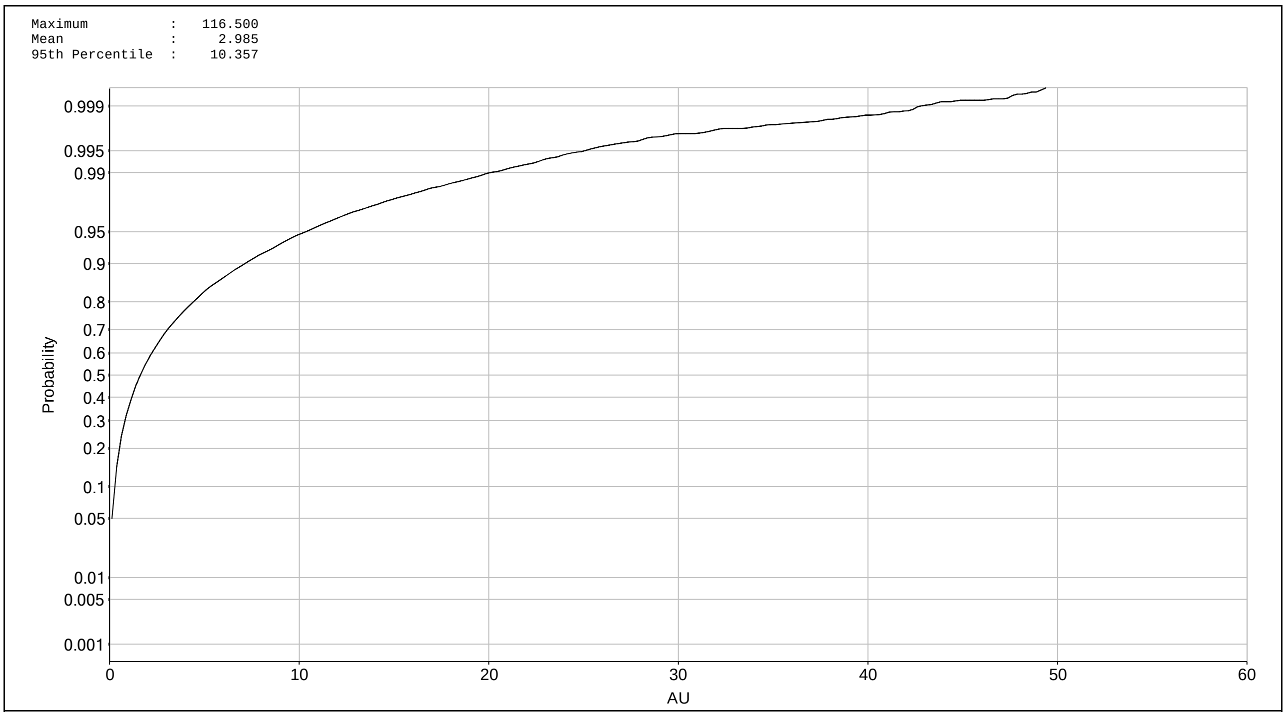

Figure 13-1: Au probability plots for Zone 4 (upper and east).

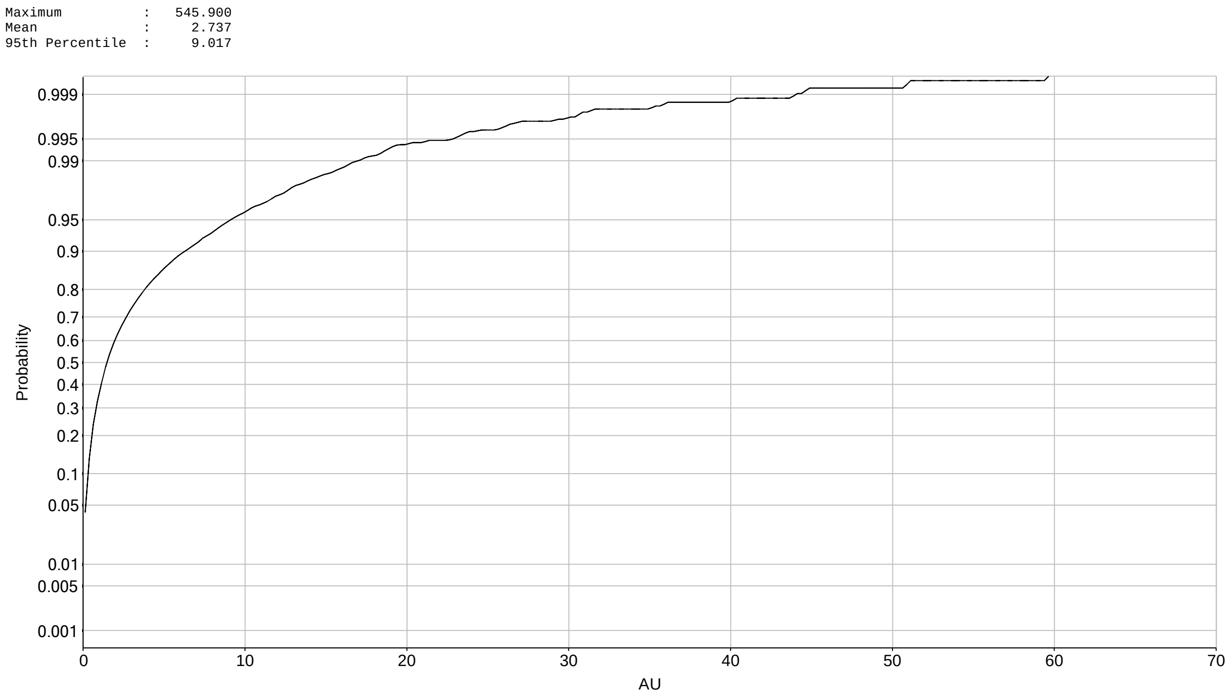

Figure 13-2: Au probability plots for Zone 4 (lower), C-95, C97 and C-99.

Cut-off (g/t)	Capped at 25 g/t			Uncapped		
	Tonnes	Grade (g/t)	Ounces	Tonnes	Grade (g/t)	Ounces
2.50	3,971,868	4.54	580,467	3,978,956	4.67	597,896

Table 13-2: Capped and uncapped models for Zone 4 “upper” and “east”.

13.6 Semi-Variograms

Semi-variograms were created for each zone or grouped zone using capped composite values (Figure 13-3 and Figure 13-4). Model semi-variogram parameters (nugget and sill variance, range and orientation) are summarized for each zone in Table 13-3. Anisotropic semi-variograms were created for the majority of zones. Where reliable anisotropic semi-variogram directions could not be determined, omni-directional semi-variograms were created to determine effective ranges for grade interpolation. Omni-directional semi-variograms were also used as a guideline for effective distances to categorize mineral resources as measured, indicated or inferred. In some cases the “vertical” axis of the anisotropic semi-variogram could not be modelled accurately, likely due to irregular orientations of underground drilling (e.g. Holt "Vertical Zones", which include: Zone 4 "lower", C-95, C-97 and C-99). In those cases the model semi-variogram vertical component was estimated as a reasonable best-fit (refer to Appendix D).

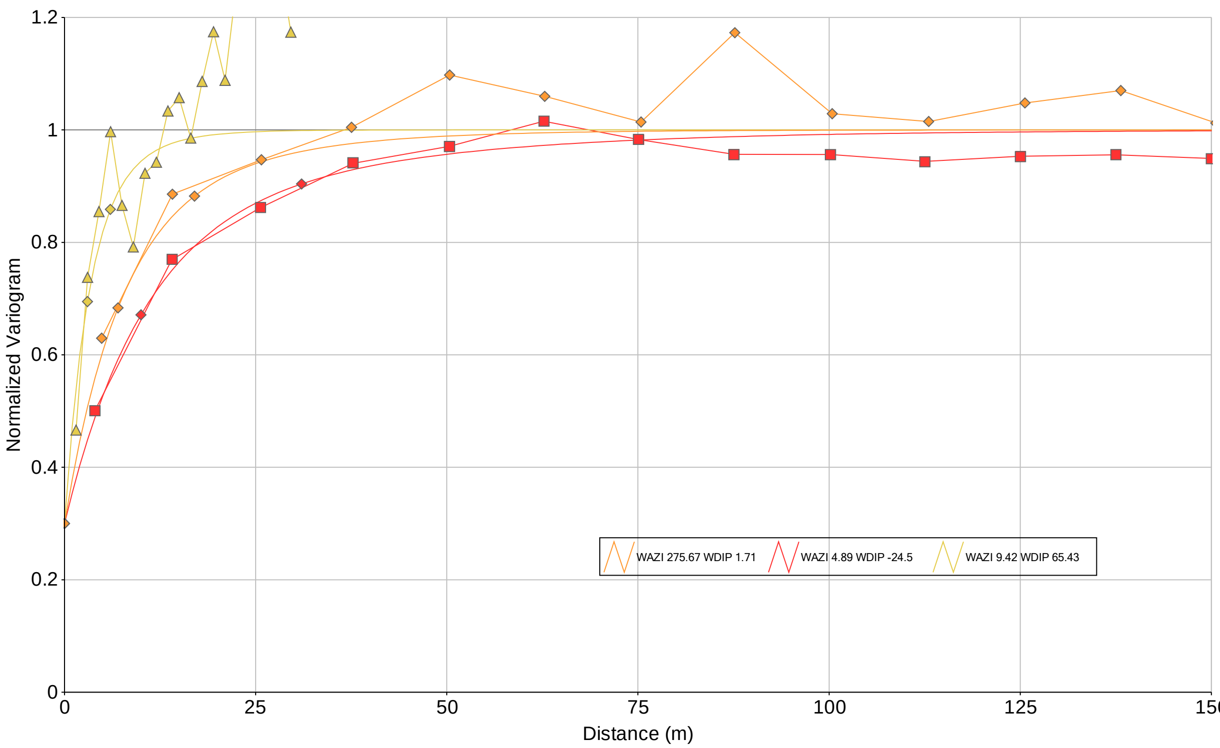

Figure 13-3: Anisotropic semi-variogram for Zone 4 (upper and east).

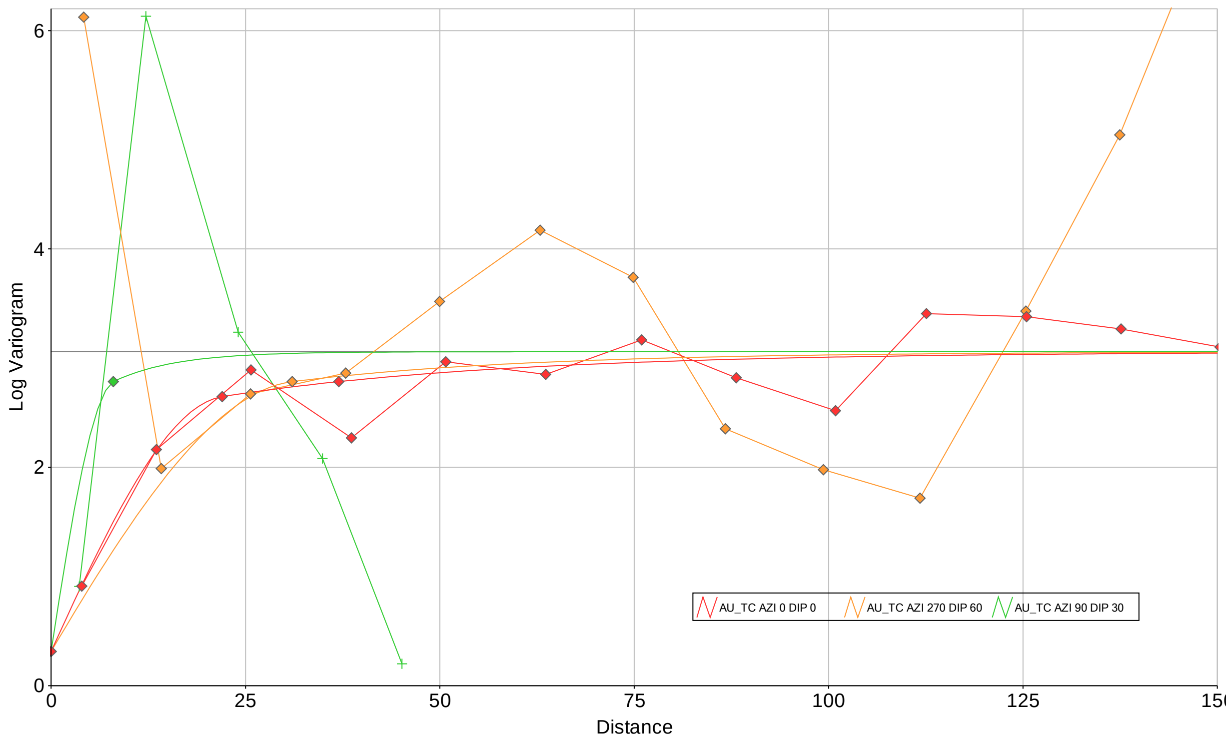

Figure 13-4: Anisotropic semi-variogram for Zone 4 (lower), C-95, C-97 and C-99.

Zone	Sill Variance or (Log Variance)	Nugget Variance	Structure(s)	Spatial Variance	Range & Anisotropy Angles (Dip Dir'n / Dip)			Rotation Angles		
					Axis 1	Axis 2	Axis 3	Z	Y	X
Lower Middle Zone	6.563	1.883	Exponential	3.505	6	6	6	Omnidirectional		
			Exponential	1.175	76	76	76			
Upper Middle Zone	8.723	2.407	Spherical	2.804	10	10	10	Omnidirectional		
			Spherical	3.512	38	38	38			
Zone 4 upper and Zone 4 East	9.954	2.986			4.89/-24.5	275.67/1.71	9.42/65.43			
			Exponential	4.977	7	10	3	185.67	-1.71	204.51
			Exponential	1.991	17	31	6			
Zone 4 lower, C-95, C-97, C-99	3.059	0.314			153.26/58.53	260/10	355.73/29.5			
			Spherical	2	22	31	8	170	-10	60
			Exponential	0.745	37	31	8			
C-104 Lens 4	10.453	4.454			180/60	90/0	0/30			
			Spherical	4.3	11	12	7	0	0	120
			Spherical	1.699	11	22	7			
Smoke Zone	3.389	0.8	Spherical	2.214	12	12	12	Omnidirectional		
			Exponential	0.375	84	84	84			
Ghost Zone Lens 1	6.446	1.457	Spherical	0.084	7	7	7	Omnidirectional		
			Exponential	4.905	7	7	7			
Tousignant Lens 1	15.575	4.641	Spherical	5.654	6	6	6	Omnidirectional		
			Spherical	5.28	35	35	35			
Tousignant Lens 2	1.529	0.49	Exponential	1.039	20	20	20	Omnidirectional		

Table 13-3: Semi-variogram model parameters.

13.7 Block Model

Three-dimensional block models were calculated using Datamine software for each zone to interpolate gold grade between drillholes. The block models were created by filling the mineralization envelopes for each zone with cells of a predefined size; the cells were oriented to follow the strike and dip of the zone. Cell size, orientation and number of sub-cells for each modelled zone are displayed in Table 13-4.

For all zones the block size was chosen to correspond to approximately ¼ of the average drillhole spacing, with the exception of the Tousignant and Middle zones. For Tousignant, a number of spatial irregularities were observed with larger block sizes, so a smaller size was used. It is recommended that some definition drilling be completed there, to minimize the adverse effects of using a small block size with relatively wide drill spacing (approximately 25 m by 25 m), such as over-smoothing of data, particularly at the limits of the search ellipsoid radius from a composite. The Middle Zone lenses were irregularly shaped and a smaller block size allowed the cells to fit better within the mineralized lenses.

Property	Zone	Block Size (m)			Block Rotation (^{o})			Subcells		
		X	Y	Z	Z	Y	X	X	Y	Z
Holt	Zone 4, Zone 4 East, C-95, C-97, C-99	3.0	3.0	3.0	-12.9	19.3	-22.5	6	6	6
	C-104	3.0	3.0	3.0	-2.0	0.0	22.0	6	6	6
	V-93	4.0	4.0	3.0	-8.5	0.0	18.0	8	8	6
	Tousignant Zone, Lens 1	1.0	1.0	0.5	103.4	-14.9	-6.2	2	2	2
	Tousignant Zone, Lens 2	1.0	1.0	0.5	-2.0	13.0	-14.0	2	2	2
	Tousignant Zone, Vertical Lens	1.0	0.5	1.0	-14.5	3.2	20.3	2	2	2
Holloway	Smoke Zone (Main upper, Main lower, Main east, East)	3.0	3.0	3.0	14.0	0.0	0.0	6	6	6
	LMZ, Lens 1	1.0	1.0	0.5	-15.0	-24.0	37.0	2	2	2
	LMZ, Lens 2	1.0	1.0	0.5	19.0	-20.0	33.0	2	2	2
	LMZ, Lens 3	1.0	0.5	1.0	-0.6	0.0	19.3	2	2	2
	LMZ, Lens 4	1.0	0.5	1.0	-8.0	-6.0	40.0	2	2	2
	LMZ, Lenses 5-1 & 5-2	1.0	1.0	1.0	-0.6	0.0	19.3	2	2	2
	LMZ, Lens 6	1.0	1.0	1.0	-0.6	0.0	19.3	2	2	2
	LMZ, Lens 7	1.0	1.0	0.5	-8.0	-6.0	40.0	2	2	2
	LMZ, Lens 8	1.0	0.5	1.0	4.0	0.0	28.0	2	2	2
	UMZ, Lens 1	1.0	1.0	1.0	6.0	-45.0	32.0	2	2	2
	UMZ, Lens 2	1.0	1.0	1.0	-	-	-	2	2	2
	UMZ, Lens 3	1.0	1.0	1.0	10.0	34.0	-8.0	2	2	2
	UMZ, Lens 4	1.0	1.0	1.0	5.0	30.0	11.0	4	4	4
	KZ, Lenses 1 & 2	1.0	1.0	1.0	5.0	30.0	11.0	4	4	4
	Ghost Zone, Lens 1	8.0	2.0	8.0	-13.0	0.0	19.0	4	4	4

Table 13-4: Block model set-up parameters.

13.8 Grade Interpolation

Gold grades were interpolated into the block model using ordinary kriging (OK) whenever reliable anisotropic semi-variogram models could be fit to the data. For folded or irregularly shaped zones, or where the sample dataset lacked sufficient data, inverse distance squared (ID^2) was used. The parameters used in the grade estimation calculation are displayed in Table 13-5.

To facilitate the resource estimation process, a number of zones with similar orientations were grouped together for geostatistical analysis and block modeling. Zone 4 (Holt Mine) was grouped with Zone 4 East, which is an extension of the zone to the east. Zone 4 itself was split into two domains with different orientations:

- Zone 4 “upper” lies on a moderately dipping cross fault; this domain was grouped with Zone 4 East.
- Zone 4 “lower” is sub-vertical and follows the Ghostmount fault. Zone 4 “lower” was grouped with C-95, C-97 and C-99 for modelling, as they are adjacent zones following the same structure.

The Smoke Deep Zone (Holloway Mine) consists of 4 lenses along a sub-vertical structure. These lenses were also grouped and modelled together.

The search ellipsoid orientations were determined by the orientations of the anisotropic semi-variograms for each zone. In the majority of cases, where no reliable anisotropic semi-variogram was found, the search ellipsoid was visually oriented parallel to the strike and dip of the zone. In some cases (e.g. Smoke Deep Zone), the zone was folded. In those cases the search ellipsoid orientation was dynamic, following the orientation of the wireframe. The dynamic orientation was defined by digitizing two sets of strings on closely spaced sections that followed the strike and the dip of the mineralized lens. The Studio3 software uses these strings to create a “net” of points, each with dip and dip direction attributes. During grade estimation, the closest points are used to define the orientation of the search ellipsoid.

For most of the zones modelled, three estimation passes were completed for each cell estimated. The first pass was more restrictive, designed to populate only cells where there was a high confidence in the grade estimate. This pass was designed to populate the measured or indicated categories, depending on the zone being modelled. At least two drillholes were required to populate the first search volume. Smoothing was minimized close to sampled locations (drillhole intersections) by reducing the maximum number of composites that were considered for each estimated cell. The second pass was less restrictive but cells were also populated by at least two drillholes. This pass increased the smoothing of the model by allowing a larger number of composites to be considered in the grade estimation. When used, the third pass was designed to interpolate grades for outlying areas of the mineralization envelope, and typically only required one drillhole to populate cells with grades. Cells populated by the third search volume were restricted to the inferred category.

Zones with a high drillhole density used composites from at least two octants of the search ellipsoid to populate cells for all estimation passes. This method helps reduce the effects of oversampling in certain directions, particularly for zones where ID^2 was used.

Zone	Interp.	Ellipsoid Rotation (°)			Ellipsoid Radii (m)			# of Comps.		2nd SV	# of Comps.		3rd SV	# of Comps.		Max.	
	Method	Z	Y	X	X	Y	Z	Min	Max	Multiplier	Min	Max	Multiplier	Min	Max	Comps.	Octants
Zone 4 “upper,” Zone 4 East	OK	186.7	-1.7	204.5	7	10	3	5	12	2.5	3	12	5	2	16	2	Yes
Zone 4 “lower,” C-95, C-97, C-99	OK	170	-10	60	15	21	5	5	12	2	4	20	3	2	16	2	Yes
V-93	ID^2	-8.5	18	10	30	6	20	3	12	2	3	16	3	2	16	2	No
C-104	ID^2		Dynamic Anisotropy		7	11	4	4	8	2	3	10	3	2	16	2	Yes
Tous. Lens 1	ID^2	65	-13	-15	30	50	10	3	12	2	4	20	-	-	-	2	No
Tous. Lens 2	ID^2	-2	13	-14	30	30	10	3	10	2	4	20	-	-	-	2	No
Smoke Deep	ID^2		Dynamic Anisotropy		12	12	6	4	8	2	3	12	4	4	20	3	Yes
Ghost Lens 1	ID^2	80	-70	25	50	70	10	3	12	2	4	20	-	-	-	2	No
LMZ, all lenses	ID^2		Dynamic Anisotropy		15	15	10	3	10	2	4	20	-	-	-	2	No
UMZ, Lens 1	ID^2	-10	-50	15	10	20	5	3	12	2	4	20	-	-	-	2	No
UMZ, Lens 2	ID^2	80	0	30	10	20	5	3	12	2	4	20	-	-	-	2	No
UMZ, Lens 3	ID^2	110	0	45	10	20	10	3	12	2	4	20	-	-	-	2	No
UMZ, Lens 4	ID^2		Dynamic Anisotropy		15	15	5	3	10	2	4	20	-	-	-	2	No
KZ, all lenses	ID^2		Dynamic Anisotropy		15	15	10	3	10	2	4	20	-	-	-	2	No

Table 13-5: Parameters for grade interpolation for all zones.

13.9 Model Checks

A number of checks were performed to verify that each model was producing a reliable estimate. Visual inspection of each block model in cross-section and in 3D helped to ensure that block model grades agreed with composite grades, and that the continuity of the model was consistent with the drill hole data. Visual inspection also verified that the parameters used in the model were reasonable, such as search ellipsoid orientation and constraining parameters.

For the larger zones (e.g. Zone 4) a number of additional checks were performed. The drill hole data was de-clustered to remove the effects of preferential sampling in high-grade areas and the mean grade of the model was compared to the mean grade from the drill holes. Agreement was good in all cases. Q-Q plots comparing gold grades from ID^2 and OK models showed a bias of higher grades towards the ID^2 models, which is expected due to the “bulls-eye” effect inherent in most ID^2 models. Whenever reliable OK models were calculated, they were used over ID^2 models. SWATH plots were also created, which compare the spatial distribution of different models by calculating the mean grade for each "row" or "column" of cells in the model. In this case, ID^2 and OK models were compared: spatial agreement was good between the two models for all zones compared; the grades were typically higher for the ID^2 models, but the OK models were less erratic, indicating better averaging.

13.10 Resource Estimate and Classification

Resource classification was based upon both drill hole density (spacing between drill holes) and gold grade continuity. Cut-offs between the Measured, Indicated and Inferred categories were determined for each zone. The block model for each zone was viewed perpendicular to the zone, with the cells coloured by search volume. A closed string was created enclosing search volumes 1 and 2. The model was then re-coloured to show grade and the string was adjusted to enclose only areas within search volumes 1 and 2 where grade continuity was good. The string was used to "cut" an Indicated resource shape out of the low-grade mineralization envelope. The remainder of the low-grade envelope was categorized as Inferred. The Measured category was defined by "cutting" a shape from within the Inferred resource, where confidence in the grade continuity was highest. The area of the Measured category varied from zone to zone, based on past mining activity and reconciliation between the block models and mill. For example, in Zone 4 at the Holt Mine there is an established history of good reconciliation, so the majority of the Indicated shape was upgraded to Measured resources. In the Smoke Deep Zone at Holloway, resources were only classified as Measured if there was development above and below the region being classified.

The Measured and Indicated shapes for each zone were used to create mining shapes. Underground development and the shapes that were added to mineral reserves were removed from the resource by assigning "absent" grade to the resource model where it is intersected by those shapes, then copying only grades above 0 g/t into a new model. Remnant and unrecoverable pillars (as identified by the Mine Engineering group) were removed from the mineral resource using a similar technique. Mineral resources are reported exclusive of mineral reserves for each zone in Table 13-1.

In the QP's opinion, there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the mineral resources estimate.

14.0 MINERAL RESERVES ESTIMATE

The Mineral Reserves effective as of December 31, 2012 are summarized in Table 14-1.

	Proven			Probable			Proven + Probable		
	Tonnes (000)	Grade (g/t)	Gold (oz) (000)	Tonnes (000)	Grade (g/t)	Gold (oz) (000)	Tonnes (000)	Grade (g/t)	Gold (oz) (000)
Holt	1,174	4.66	176	1,820	5.38	315	2,993	5.10	490
Holloway	110	4.07	14	187	4.38	26	298	4.26	41
Total	1,284	4.61	190	2,007	5.29	341	3,291	5.02	531

Notes
CIM definitions (2010) were followed in the calculation of Mineral Reserves
Mineral Reserves estimates were prepared under the supervision of P. Rocque, P. Eng.
Mineral Reserves estimates were undertaken according to SAS Policy for Mineral Reserve and Resources
Cut-off grades were calculated for each stope
Mineral Reserves were estimated using a long term gold price of US$1,400/oz and currencies at par, except for stopes that were included in the 2013 mining plan where a gold price of $1,600/oz was used
Totals may not add exactly due to rounding

Table 14-1: Mineral reserves for the Holt and Holloway properties (as of Dec 31, 2012).

In the QP’s opinion, there are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could affect materially the mineral reserves estimate.

15.0 MINING METHODS

15.1 Holt

15.1.1 Design Criteria

Mining activities at the Holt mine are planned to occur in multiple zones concentrated in two regions within the mine. The western region of the mine contains Zone 4 (Upper and Lower), Zone 4 East, and V-93 (Figure 15-1). The eastern region contains Zone 6, Zone 6B and the remnant pillars of the C-104 Zone. All of the planned zones are accessed from existing rail haulage development headings; therefore, the equipment used in each zone remains captive. The Tousignant Zone will be mined as an autonomous zone from surface via a decline access.

The main accesses for all zones are concentrated on three rail haulage levels: 775, 925 and 1075. Ore is transported on these haulage levels to the shaft ore pass system. Ramp access is available between 925 and 775 haulage levels. Zone 6B, Zone 6 and C-104 have limited access between mining fronts. Zone 4 is accessed from both 925 and 1075 haulage levels as there is no ramp connection from the 1075 level to the upper levels in the mine. It is planned to connect the 1075 and 925 haulage levels through Zone 4, as mining progresses.

Zone 4

Zone 4 represents the bulk of the mining since resuming operations at the Holt mine in 2010. This zone presents several design challenges due to its geometry: the zone dips at 30° to the horizontal and plunges from the east to the west at approximately 10°. The plunge, in particular, makes the installation of service raises and holes challenging. Ore passes in the zone consist of a series of conventional raises dipping at 49° that feed chutes on the 925 and 1075 haulage levels. Due to the plunge, a transfer point will be needed at the 990 level, in the lower portion of Zone 4 to facilitate ore delivery to the 1075 level. The mining method in Zone 4 is open stoping with delayed backfill.

Backfill for Zone 4 will be delivered from the 775 level. A conventional raise from 775 level will be needed to access the existing backfill system on the 760 level near the junction of the 775 shaft access drift and the C-104 ramp. Backfill will then be transferred from a conventional raise, approximately 1,000 m to an Alimak raise from 775 level to 925 level. For stopes below 925 level, backfill will be transferred approximately 250 m to another Alimak raise joining 1055 and 925 levels. Slurry for cemented backfill will be delivered to 775 level via a diamond drill hole from surface and then to 870 level through an existing diamond drill hole. Slurry to mining areas below 925 level will be delivered via additional diamond drill holes to 1020, 1005 and 990 levels as mining progresses.

Due to the shallow dipping nature of the ore body, sublevels within Zone 4 are spaced 17 m apart to minimize the length of exposed hanging wall during mining.

Ventilation for Zone 4 is provided via a 160 m long ventilation raise from 1075 level to 925 level. Fresh air is distributed from the Shaft and fed up the 1075 Zone 4 ramp. The air is then exhausted up the Zone 4 ventilation raise to the 925 level. The air is then distributed up the 925 Zone 4 ramp and exhausted back to the 925 level via a series of internal raises. The air then flows to the C-104 ramp on 925 level and exhausts up the ramp to the 650 level. From the 650 level, the exhaust air travels up raises to the 435 level where it is pulled to surface via the main return air raise.

Zone 6

Zone 6 dips at 68° from the horizontal and proves much more conducive to installing services than Zone 4. Zone 6 ore will report to the 925 and 775 rail haulage levels through a series of ore passes developed with Alimak raise climbers. Chutes will be installed on both rail haulages to facilitate rail car loading. The mining method in Zone 4 is open stoping with delayed backfill.

Delivery of backfill to stopes below the 775 level will be accomplished through the development of an Alimak raise from 925 level to 775 level. Backfill will be transferred from the conventional raise developed to 760 level, as mentioned previously in the Zone 4 section above. For stopes above 775 level, backfill will be delivered from the 550 level by means of a backfill raise to be developed from the 750 sublevel.

Sublevels are spaced 20 m apart in the “conventional” open stoping portions of Zone 6 and 80 m to 100 m in the portions planned to be extracted via the Alimak stoping method.

Tousignant

The Tousignant Zone is located 3.5 km to the west of the Holt shaft and approximately 2 km west of the westernmost extents of Zone 4 underground workings. Tousignant extends from surface to a vertical depth of approximately 150 m. The ore body is shallow dipping (approximately 20° from the horizontal) and is composed of two lenses. There is a sub-vertical component to the ore body located to the north of the two flatter lenses; additional diamond drilling is needed to upgrade this vertical component to measured or indicated resources. As a result, the sub-vertical lens (i.e. inferred resources) was not included in the mine plan. Infrastructure, such as a road from the portal to the mill, power line extensions, security building, etc. will need to be constructed as part of the project. Ore will be trucked from the stopes to surface and transferred to the Holt mill via surface trucks.

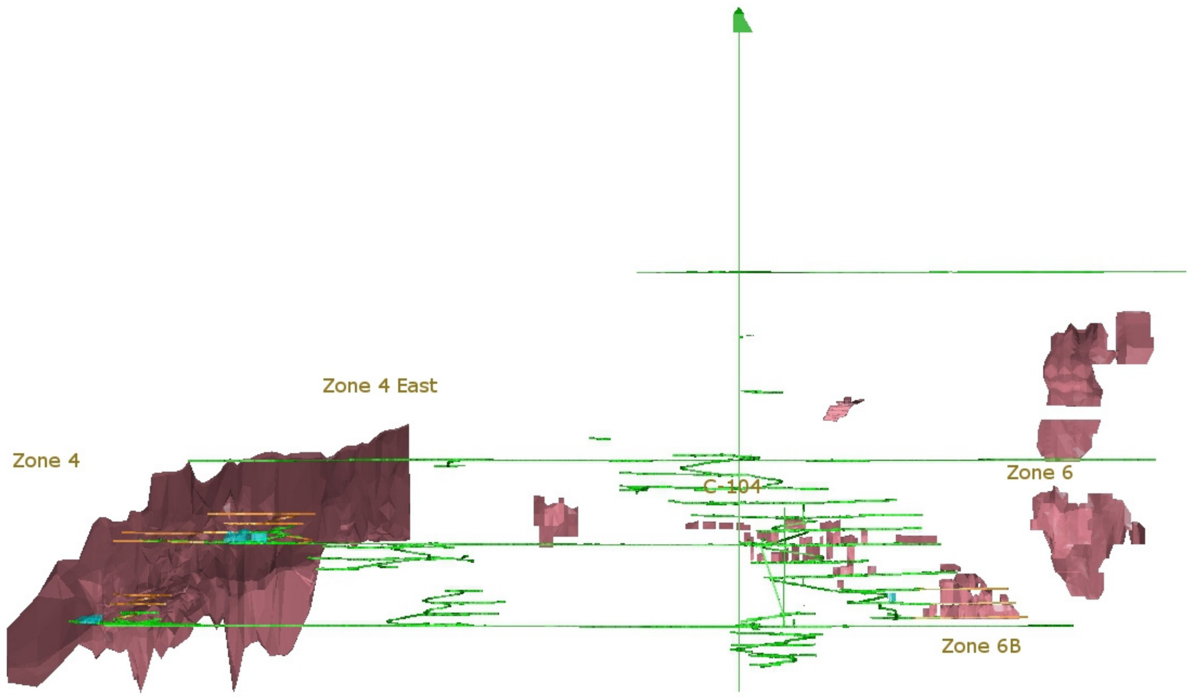

Figure 15-1: Holt mine vertical longsection (looking North; without Tousignant Zone).

15.1.2 Mining Shapes

Mineral resources were modelled in 3D using Datamine Studio 3. Mining shapes were then created within the Measured or Indicated Resource shapes on sections.

The block model was then run against the mining shapes. Dilution and mining extraction were then applied. Finally, each resulting shape was assessed independently and only the shapes that returned a positive operating cash flow were included in the mineral reserves.

15.1.3 Mining Method

The primary stoping method at the Holt Mine is mechanised long hole drilling and blasting within the mining blocks with rail transport to the shaft ore passes. The spacing between sublevels for long hole stoping varies between 20 m and 17 m, depending on the dip of the ore. Mechanized long hole stoping is planned to be used in all zones at the Holt mine. The secondary stoping method for the Holt mine will be Alimak stoping within a portion of Zone 6. "Drift and pillar" stoping may be needed in some areas where the ore is too shallow and not amenable to long hole methods. Drilling is performed with top-hammer drills, with hole sizes ranging from 64 mm to 76 mm in diameter.

The Tousignant Zone is planned to be mined using a combination of a modified room and pillar and overhand cut and fill.

Zone 4

Zone 4 is a large ore zone dipping at approximately 30° from the horizontal and is located on the western extremity of the Holt mine. The zone is bounded by the C-97 mining block on the east and is located between 1075 level and 775 level. Mineral reserves for Zone 4 are estimated at 1.32 million tonnes grading at 4.81 g/t. SAS mined an estimated 372,000 tonnes grading 5.43 g/t au since commercial production in Zone 4 re-started in 2011.

Zone 4 is accessed by mechanised equipment via ramps and sublevels connected to two main rail haulage levels 925 and 1075. Zone 4 is divided into two mining blocks: the upper mining block represents the stopes reporting to the 925 haulage level and the lower mining block represents the stopes reporting to the 1075 haulage level. The use of both haulage levels provides increased flexibility to the overall Holt mine plan.

The mine extraction sequence for Zone 4 is using a primary-secondary stoping arrangement with cemented rock fill being used in the primary stopes. Strike length is set at 17 m for the primary stopes and 20 m for the secondary stopes. Sublevels in Zone 4 are spaced 17 m apart due to the shallow dipping nature of the ore within the zone. The current mine plan includes stopes being mined using up holes, with the remainder of the stope being mined using down holes. This method of combining up and down hole configurations helps minimizing hole length and increases accuracy of hole drilling. A typical production ring section is shown in Figure 15-2.

A dilution factor of 15% was applied to mining shapes. Dilution material was assigned a grade of 0.3 g/t. Mining extraction was set at 90%. Cable bolts will be used in the stope hanging wall to help mitigate dilution.

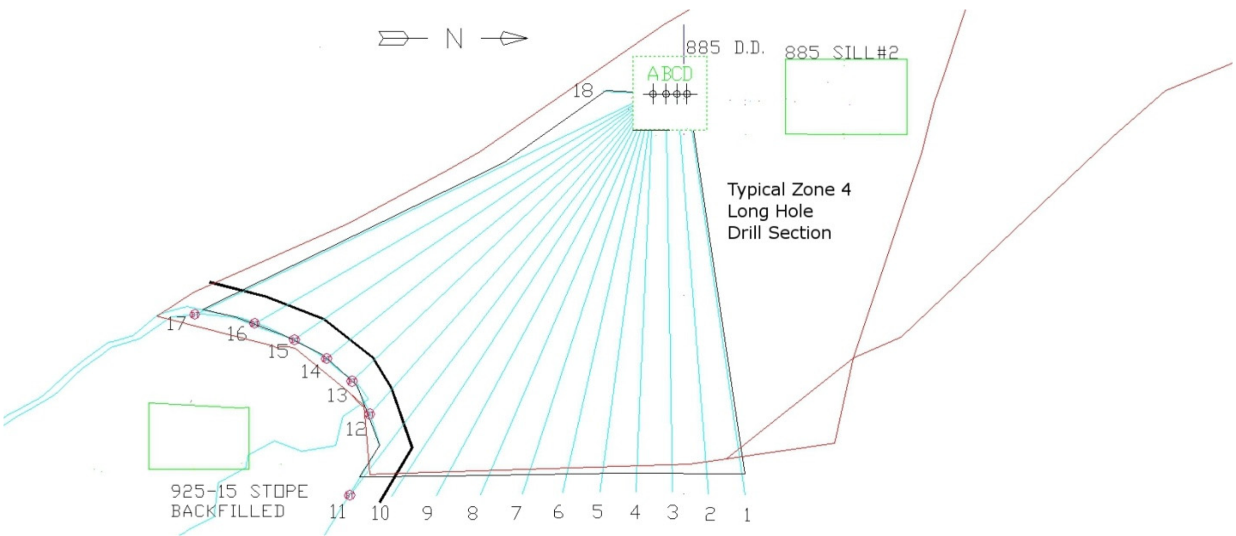

Figure 15-2: Typical Zone 4 long hole ring section view.

Zone 6

Zone 6 is a steeply dipping ore body located on the east side of the Holt mine, centered near the 10850 easting coordinate. The mineral reserves for Zone 6 are estimated at 826,000 tonnes grading at 5.85 g/t.

Zone 6 is planned to be accessed via a ramp system and sublevels spaced at 20 m intervals for the “conventional long hole” portion and spaced 80 m to 100 m apart for the Alimak stoping portion. Accesses will be connected to haulage levels on 925, 775 and 1075 via drifts and ore passes. An extension of the existing 550 backfill level is planned to facilitate the delivery of cemented rock fill to the zone as mining progresses. Initial stopes are planned to be filled with rock fill produced during development of the ramp and footwall drifts.

Ore will report to one of three rail haulage levels (775, 925, or 1075 level, depending on the stopes elevation) via an internal ore pass system. Ore will then be trammed on rail to the shaft ore pass system.

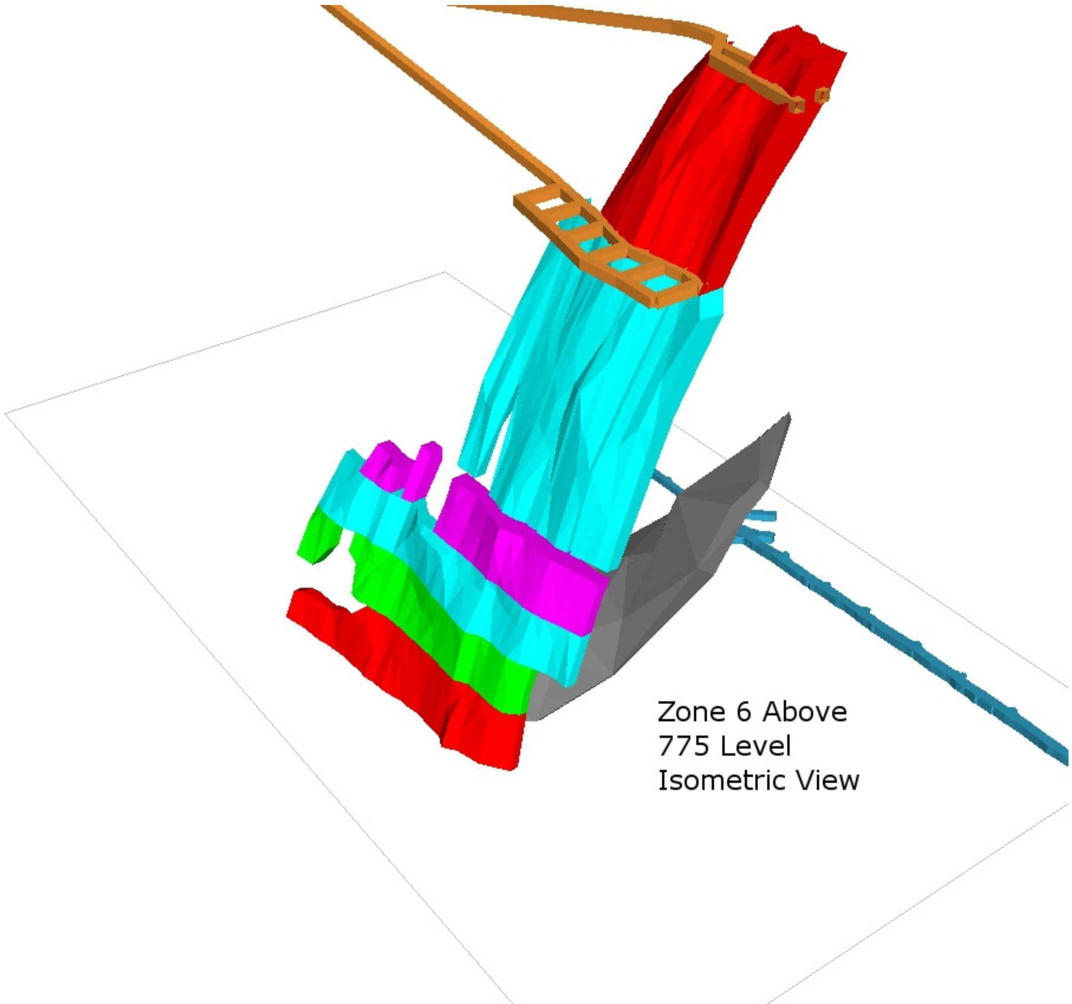

Figure 15-3: Zone 6 isometric.

Zone 6B

Zone 6B is located to the east of the C-104 Zone between 1062 level and 1005 level. The mineral reserves for Zone 6B are estimated at 120,821 tonnes grading at 3.63 g/t.

The zone is accessed by drifts extending from C-104 Zone on 1062, 1030, and 1005 levels. The ore is steeply dipping and is planned to be mined longitudinally in a retreat fashion. The zone is planned to be back filled with rock fill and pillars will be left in lower grade areas of the zone to improve local ground stability.

Ore from Zone 6B reports to the 1075 rail haulage level via the C-104 ore pass system. The ore is then trammed to the shaft ore pass system.

A dilution factor of 15% has been applied to Zone 6B mining shapes, with a dilution grade of 0.3 g/t. Mining extraction has been set at 90%.

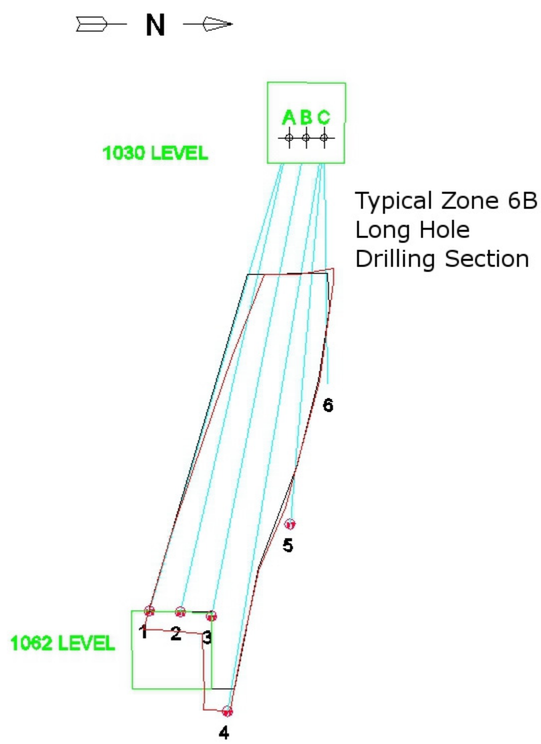

Figure 15-4: Typical Zone 6B long hole drill ring section view.

V-93 Zone

V-93 is a steeply dipping ore body located to the south of Zone 4 and above 775 level on the west end of the mine. The mineral reserves for V-93 are estimated at 63,655 tonnes grading at 4.92 g/t.

V-93 Zone is planned to be accessed from a ramp system connected to the 775 level with sublevels spaced at 25 m intervals. The zone is planned to be mined using longitudinal long hole retreat method. The stopes will be backfilled using cemented rock fill from the planned 775 level backfill system. Rock fill will be provided from development headings or could be trammed from Zone 6 development when available.

15.1.4 Geomechanical

Reports by Golder Associates related to the Holt Mine and dated from 1994 to 1999 are available on site. These reports provide relevant background information but are for the most part related to older areas of the mine, which will only be subject to some remnant mining. No adverse ground conditions have been reported throughout the mine. The planned mining methods all incorporate backfill or pillars and the stope dimensions are based on local experience.

Hanging wall support of longhole stopes are planned on a stope by stope basis. Based on the outcome of empirical analysis (i.e. Stability Graph) or geological information, hanging wall support may be required. In this case, 7 m long cable bolts (typically) will be installed.

Ground support in headings typically consists of 1.2 m friction bolt (e.g. Split Sets) in the walls and alternating rows of 0.5 m friction bolts and 1.8 m mechanical rock bolts in the back with wire mesh (Figure 15-5). In intersections and localized areas requiring extra support, 2.4 m resin-grouted rebars are used.

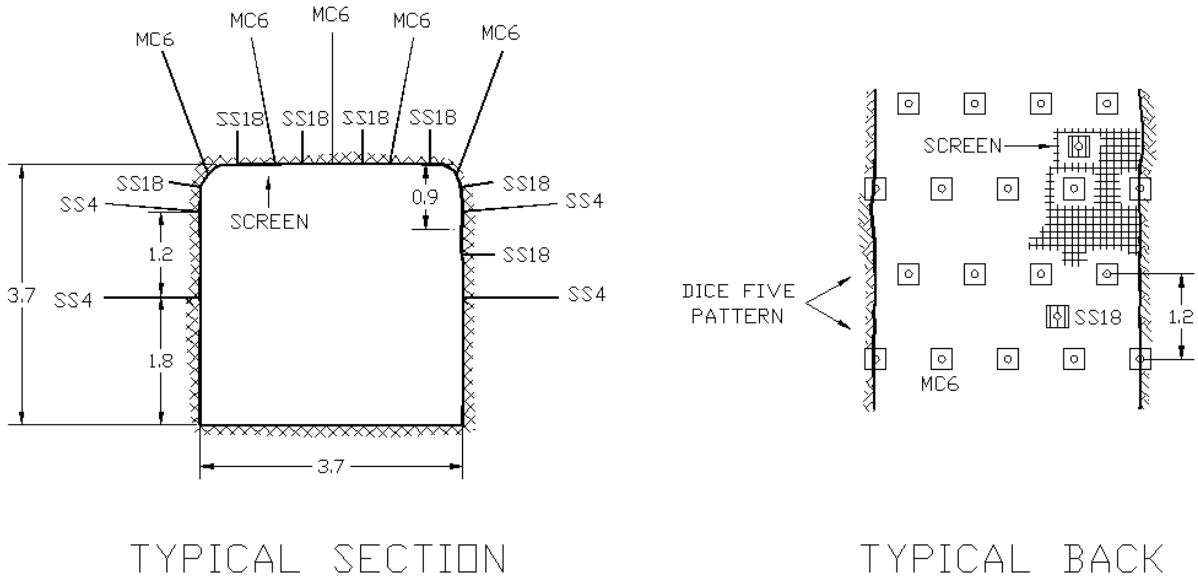

Figure 15-5: Ground support standard for development headings at Holt.

15.1.5 Mine Access and Development

The Holt Mine is accessed by a single shaft, which extends to a depth of 1,195 m from surface. It has three compartments from surface to the 350 m level and four compartments to the 1,195 m level. The shaft has been deepened on several occasions. The shaft is rectangular and has timber sets and guides.

Access to planned mining areas is gained from the three main rail haulage levels: 775, 925 and 1075 levels. The rail haulage drifts were developed 3 m wide by 3 m high, making access between mining zones with large equipment a difficult task. An existing main ramp system is located within the C-104 Zone and extends from 650 level to 1062 level. Sublevel accesses from the main ramp were developed by previous owners at intervals of 20 m vertically. The main ramp has shaft access on four levels: 650, 700, 775 and 925 levels. The 1075 main haulage level is connected to the main ramp system via a 2 m by 2 m raise from the 1062 level. A ramp system was also developed by previous owners in the C-97 zone. The C-97 ramp consists of two ramps: one is a decline from the 925 main haulage and extends to the 970 level, the other is an incline extending from 1075 level to 1010 level. For both ramp systems, there is no connection between the 1075 haulage level and the haulage levels above.

An internal ramp system is being developed in Zone 4 from the 925 haulage level and the 1075 haulage level. The Zone 4 ramp is planned to connect the 1075 haulage level with the 925 haulage level as mining progresses. An internal ramp system will also be established in Zone 6 from the 925 and 775 haulage levels, but will not include a connection between 1075 level and the haulage levels above.

The Tousignant Zone is planned to be accessed via a portal and decline ramp, which will be located approximately 3 km west of the Holt shaft. A main ramp is planned to be developed in ore through lens 1 to access mining areas and in lens 2, thus minimizing development costs. Mining will retreat from the deeper area (i.e. lens 2) to the shallower area (i.e. lens 1), progressively losing the ramp access to the bottom area.

Development requirements are shown in Table 15-1 and Table 15-2.

	2013	2014	2015	2016	2017	2018	Total
Total Capital Development	3,333	3,489	3,668	3,068	1,674	220	15,451
Total Operating Development	2,970	3,285	2,550	2,050	1,584	360	12,799
Total Development	6,303	6,774	6,218	5,118	3,258	580	28,250

Table 15-1: Holt Mine development requirements.

	Year 1	Year 2	Year 3	Total
Total Capital Development	862	662	0	1,524
Total Operating Development	963	3,450	962	5,375
Total Development	1,825	4,112	962	6,899

Table 15-2: Tousignant Zone development requirements.

15.1.6 Capital Development

Details of capital development are listed in Table 15-3 and Table 15-4.

	2013	2014	2015	2016	2017	2018	Total
Ramps	975	944	2,030	870	384	0	5,203
Raising	550	0	450	600	0	0	1,600
Lateral	1,808	2,545	1,188	1,598	1,290	220	8,648
Total	3,333	3,489	3,668	3,068	1,674	220	15,451

Table 15-3: Capital development at Holt Mine.

	Year 1	Year 2	Year 3	Total
Ramps	612	462	0	1,074
Raising	150	0	0	150
Lateral	100	200	0	300
Total	862	662	0	1,524

Table 15-4: Capital development at Tousignant.

15.1.7 Operating Development

Details of operating development are listed in Table 15-5 and Table 15-6.

	2013	2014	2015	2016	2017	2018	Total
Lateral	2,970	2,805	2,150	2,050	1,584	360	11,919
Raising	0	480	400	0	0	0	880
Total	2,970	3,285	2,550	2,050	1,584	360	12,799

Table 15-5: Operating development at Holt Mine.

	Year 1	Year 2	Year 3	Total
Lateral	963	3,450	962	5,375
Raising	0	0	0	0
Total	963	3,450	962	5,375

Table 15-6: Operating development at Tousignant.

15.1.8 Equipment

The list of major mobile equipment is shown in Table 15-7. The 3.5 yd^3 Load-Haul-Dump (LHDs) and single boom jumbos will be the primary development and production units at the Holt Mine followed by the locomotives and four tonne rail cars for the transport of the ore to the shaft. It may be necessary to replace locomotives and batteries at the Holt Mine as the need arises.

EQUIPMENT #	DESCRIPTION
MNCR012	KUBOTA MANCARRIER
MNCR013	KUBOTA MANCARRIER
MNCR014	KUBOTA MANCARRIER
JMBO102	MTI JUMBO CDL120 HC40
JMBO104	MTI JUMBO CDL 124 HC80
JMBO105	MTI JUMBO CDL 124 HC80
SCOP202	2 YARD JCI
SLFT300	SCISSOR TRUCK
HLTK301	EJC 416 HAUL TRUCKS
HLTK302	EJC 416 HAUL TRUCKS
HLTK307	EJC 416 HAUL TRUCKS
BH007	KUBOTA DITCH DIGGER
RB009	KUBOTA ROCK BREAKER
RB011	KUBOTA ROCK BREAKER
SCOP351	WAGNER SCOOP 3.5
SCOP353	WAGNER SCOOP 3.5
SCOP354	WAGNER SCOOP 3.5
SCOP355	WAGNER SCOOP 3.5
SCOP357	WAGNER SCOOP 3.5
SCOP358	WAGNER SCOOP 3.5
SCOP359	SCOOP 3.5 Caterpillar
SCOP360	SCOOP 3.5 Caterpillar
SCOP361	WAGNER SCOOP 3.5
SCOP362	WAGNER SCOOP 3.5
SCOP401	JCI SCOOP 2.5 YARD
SLFT410	SCISSOR TRUCK
SLFT412	SCISSOR TRUCK
MNCR425	KUBOTA MANCARRIER
MNCR513	KUBOTA MAN CARRIER
FKLT577	KUBOTA MNEMASTER FORKLIFT
FKLT578	KUBOTA MNEMASTER FORKLIFT
FKLT579	KUBOTA MNEMASTER FORKLIFT
Locomotive 1	40 cell 80 V
Locomotive 2	40 cell 80 V
Locomotive 3	40 cell 80 V
Locomotive 4	40 cell 80 V
Locomotive 5	40 cell 80 V
Locomotive 6	40 cell 80 V
Locomotive 7	40 cell 80 V
Locomotive 8	40 cell 80 V
Locomotive 9	40 cell 80 V
Locomotive 10	40 cell 80 V
Locomotive 11	40 cell 80 V
Locomotive 12	40 cell 80 V
Locomotive 13	40 cell 80 V
Locomotive 14	40 cell 80 V
Locomotive 15	40 cell 80 V
49 cars	4 ton ore cars

Table 15-7: Major mobile equipment at Holt.

15.1.9 Production Rate and Life of Mine Plan

Production from the Holt Mine will increase from 1,000 tpd to 1,400 tpd over the next few years. For 2013 and 2014, production will rely heavily on Zone 4.

Zone 4 ore is delivered to the lowest loading pocket in the mine. The skipping time from this loading pocket coupled with the 1.5 km tramming distance from Zone 4 to the shaft maximizes a sustained production rate of approximately 1,000 tpd. As additional mining areas become available, the production rate will increase to approximately 1,400 tpd. For example, Zone 6 ore will report, in part, to the 890 m loading pocket rather than the 1110m; skipping time will be greatly reduced and will allow for the production rate increase. An average mining rate of 1,255 tpd is planned over the six year mine life (based on mineral reserves only). Since the Holt Mine is currently in production, no additional time is needed for activities typically associated with operation start up.

The Life of Mine plan (LOM) for the Holt Mine is shown in Table 15-8. The LOM plan for the Tousignant Zone is shown in Table 15-9.

(in 000)	2013	2014	2015	2016	2017	2018	2019	Total
Tonnes	372	401	438	511	508	516	32	2,779
Grade	4.90	4.66	5.15	5.22	4.99	5.14	4.23	5.02
Ounces	57	60	72	86	81	85	4	445
Mining rate (tpd)	1,000	1,100	1,200	1,400	1,400	1,400	1,400	

Table 15-8: Holt Mine LOM plan.

(in 000)	Year 1	Year 2	Year 3	Total
Tonnes	37	134	37	208
Grade	6.68	6.68	6.68	6.68
Ounces	8	29	8	45

Table 15-9: Tousignant Zone LOM plan.

15.2 Holloway

15.2.1 Design Criteria

Mining activities at the Holloway mine are planned to be concentrated in two zones: Smoke Deep, which is located between the Lightning Zone to the west and the Blacktop Zone to the east, and the Lightning/Middle Zone which is the main portion of the mine developed by previous owners. A vertical longitudinal section is shown in Figure 15-6.

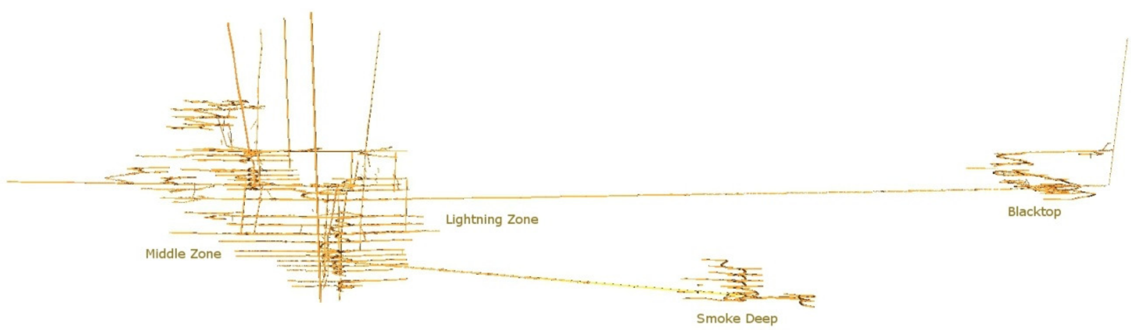

Figure 15-6: Holloway Mine vertical longitudinal section.

Smoke Deep

The Smoke Deep Zone extends vertically from 765 m to 865 m and is mostly open at depth and to the east. The zone is accessed via a 1.4 km long ramp from the 730 level at the Lightning Zone. The zone consists of steeply dipping ore and is amenable to long hole stoping mining method.

Ore is transported in the zone via an internal ore pass reporting to a chute on the 845 level. Ore is then transferred by 26 and 30 tonne trucks to the main ore pass on the 730 level in the Lightning Zone. In areas mined below the 845 level, the ore will need to be trucked up to the 845 level and then on to the 730 ore pass. Hauling of waste to the 730 level at the Lightning Zone is minimized by scheduling stopes so that waste can be used as backfill. Smoke Deep is serviced by a single vent raise. It extends from the 845 level to the 505 Blacktop access drift. Fresh air is forced down the main access ramp and up the internal Smoke Deep ramp system. Auxiliary fans feed individual levels from the ramp and the air is exhausted to the 505 level via the internal ventilation raise. Exhaust air splits on the 505 level with approximately half returning to the Lightning Zone and half travelling to the Blacktop return air raise.

Smoke Deep stopes access consists of a singular level access bisecting the ore sill. Stopes are mined longitudinally in a retreat fashion. Sublevels are spaced approximately 20 m apart vertically.

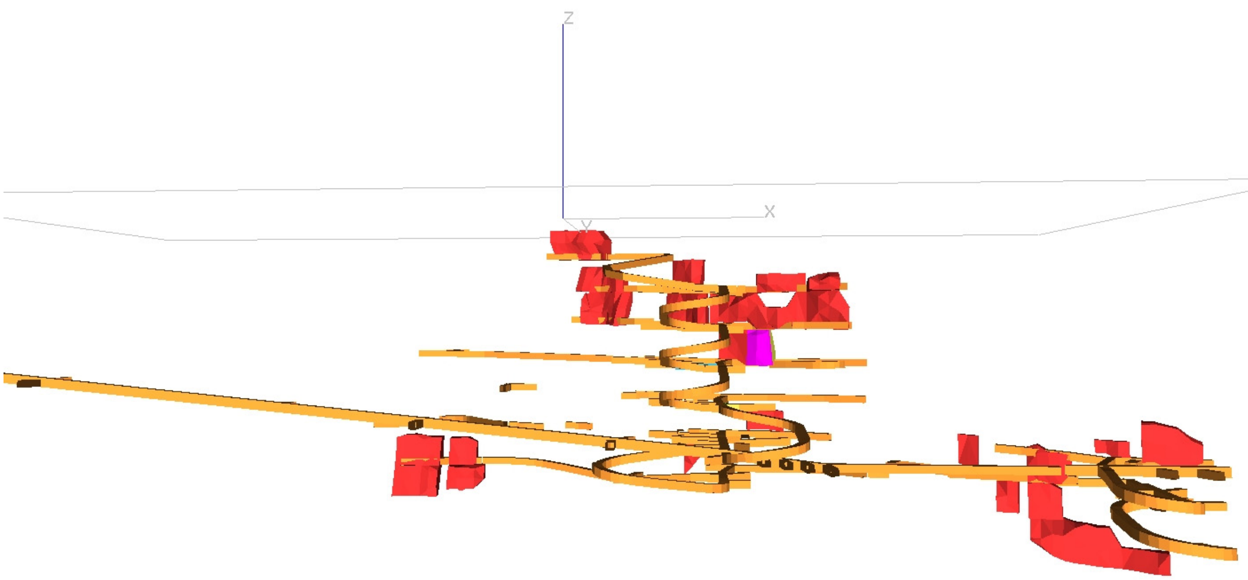

Figure 15-7: Smoke Deep vertical longitudinal section.

Lightning/Middle Zone

The Lightning/Middle Zone extends from the 820 m level to the 150 m level and together they make up the main portion of the Holloway Mine. Remnant pillars make up the bulk of the 2013 production from the Lightning Zone, while the Middle Zone is a mixture of remnant pillar mining located between the 400 m and 650 m levels and new stoping areas on the 780 m level.

Mining activities in the Lightning/Middle Zones will benefit from existing infrastructure developed during previous mining activities. Access is via an existing ramp, which extends from the 870 m level to the 260 m level. Ore transport will be accomplished via the existing ore pass system using LHDs, with the exception of planned mining below the 730 m level, which will require the ore to be hauled to the 730 m level ore pass using 26 t and 30 t trucks.

15.2.2 Mining Shapes

Mineral resources were modelled in 3D using Datamine Studio 3. Mining shapes were then created within the indicated resource shapes on sections.

The block model was then run against the mining shapes and dilution and mining recoveries were then applied. Finally, each resulting shape was assessed independently and only the shapes that returned a positive cash flow were included in the mineral reserves.

15.2.3 Mining Method

The primary mining method at the Holloway Mine is open stoping. This has been the historical mining method used at the mine by previous owners. A steeply dipping ore body (60° to 70°) is amenable to using this method. Drilling will be performed by top hammer drills with hole diameters ranging between 64 mm and 76 mm. Stoping is performed in a longitudinal retreat in order to minimize development costs. Rock is planned for use as backfill during stoping activities. Pillars have been designed to be left within low grade areas. A dilution factor of 15% has been applied to mining shapes at the Holloway Mine and a grade of 0.3 g/t was applied to dilution material. Mining recovery has been set at 90%.

15.2.4 Geomechanical

Reports by 1990 to 2003 authored by Noranda Technology Centre, Mines & Aggregates Safety & Health Association (MASHA) and Canmet related to the Holloway Mine are available on site. These reports provide relevant background information but are for the most part related to older areas of the mine. No adverse ground conditions have been reported throughout the mine. The planned mining methods all incorporate backfill or pillars and the stope dimensions are based on local experience.

Hanging wall support of longhole stopes are planned on a stope by stope basis. Based on the outcome of empirical analysis (i.e. Stability Graph) or geological information, hanging wall support may be required. In this case, 7 m long cable bolts (typically) will be installed.

Ground support in headings typically consists of 1.2 m friction bolt (e.g. Split Sets) in the walls and alternating rows of 0.5 m friction bolts and 2.1 m mechanical rock bolts in the back with wire mesh (Figure 15-8). In intersections and localized areas requiring extra support, 2.4 m resin-grouted rebars are used.

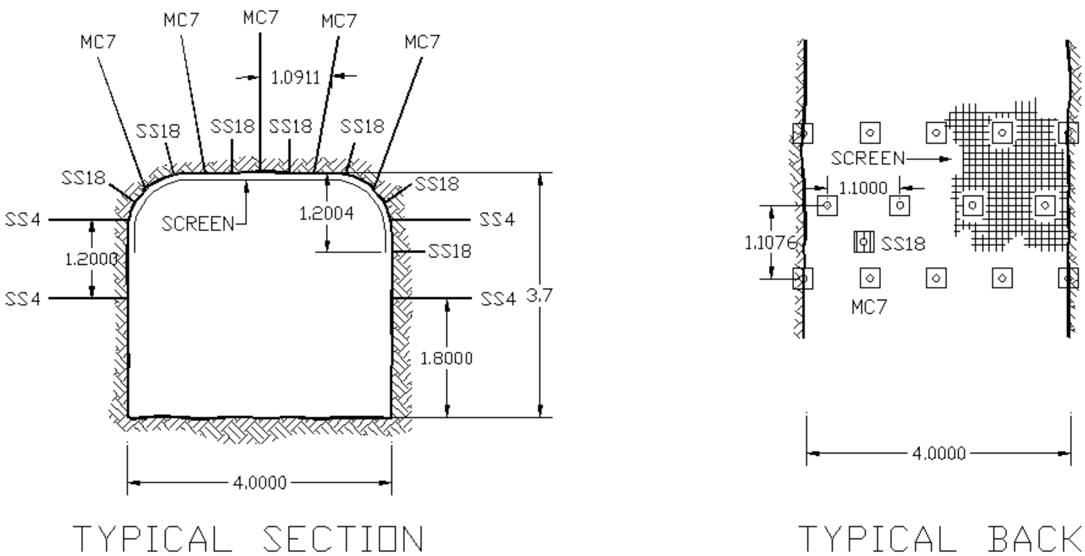

Figure 15-8: Ground support standard for typical Holloway drift.

15.2.5 Mine Access and Development

The mine is accessed by a 5.5 m diameter shaft that is 867 m deep and contains two hoisting compartments and a manway. The shaft is circular with concrete rings on a 1.5 m spacing and steel hardware. The main hoist is a 932 kW (1,250 hp) double drum (3.7 m) equipped with a 15 person cage over a ten tonne skip in balance with a second ten tonne skip. The production hoist is a refurbished 1957 Ingersoll Rand hoist. It can be run on automatic setting, with the hoistman controlling the loading pocket operation. The conveyance run on timber guides throughout the shaft at speeds of 7.6 m/s for skipping and 5.1 m/s for personnel travel. The hoisting system has a skipping capacity in excess of 200 tph. There is a smaller 4.9 m diameter shaft from surface to a depth of 441 m. This shaft was sunk for exploration but is now primarily used for ventilation and as an escape way. This shaft is equipped with an Ingersoll Rand 373 kW (500 hp) AC powered, double drum, double clutch hoist.

The hoist room is equipped to monitor compressed air and pumping.

Ramps

Development from the shaft is for rubber tire equipment (i.e. no track headings). There is no ramp connection to surface, but there are three internal ramp systems that provide access to the mine workings:

- The West Block is serviced by a ramp from the 260 to 520 levels.
- The East Block ramp extends from the 445 East level to the 650 level, ending on the 870 level. A haulage drift on the 505 level connects the East and West blocks.
- The third ramp system services the Smoke Deep Zone and extends from the 865 level to the 765 level. The Smoke Deep Zone is connected to the East Block ramp via a 1.4 km incline from the 845 level to the 730 level.

Smoke Deep Zone

Planned development in the Smoke Deep Zone will be concentrated on completing existing levels above 845 level and establishing ramp connection to 885 level and 905 level to the east of the main mining area.

Lightning/Middle Zone

Planned development in the Lightning/Middle Zone will be concentrated in two areas:

- Establishing a 770 level and 750 level mining front to the west of the previously mined areas on 780 level. This will include the development of a ramp and the widening of existing workings.
- Development headings will also be driven on the 550 level and 650 level where the remainder of the planned development will be needed.

Total development requirements for the Holloway Mine are shown in Table 15-10.

	2013	2014	Total
Total Capital Development	1,103	0	1,103
Total Operating Development	817	450	1,267
Total Development	1,920	450	2,370

Table 15-10: Development requirements at the Holloway Mine.

15.2.6 Capital Development

Capital development requirements for the Holloway mine includes the completion of the Smoke Deep Zone ramp system and access to the Middle Zone mining areas on the 780 m level. Details of capital development are listed in Table 15-11.

	2013	2014	Total
Ramps	543	0	543
Raising	0	0	0
Lateral	560	0	560
Total	1,103	0	1,103

Table 15-11: Capital development at the Holloway Mine.

15.2.7 Operating Development

Details are provided in Table 15-12.

	2013	2014	Total
Lateral	817	450	1,267
Raising	0	0	0
Total	817	450	1,267

Table 15-12: Operating development at the Holloway Mine.

15.2.8 Equipment

The equipment fleet consists of 7 yd^3 LHDs for production and development, single and two boom electrical hydraulic jumbos, longhole drills, 26 t haulage trucks, 30 t haulage trucks and support equipment (cable reel handler and a vehicle with a lift bucket). The equipment was, for the most part, in service and in use at the suspension of operations by Newmont. The equipment has been used since that time for the service, development and exploration work carried out by SAS.

The list of major mobile equipment is shown in Table 15-13.

Equipment	Unit #	Type	Year
Cubex 6200LH1	108	Longhole drill	1996
MTI CDL360	109	Longhole drill	-
200G Grader			-
426 Wagner Truck	303	26 t truck	2003
426 Wagner Truck	304	26 t truck	2003
EJC 430 Dump Truck	305	30 t truck	-
EJC 430 Dump Truck	306	30 t truck	-
Jumbo CDJ120/HC80	100	Montabert two boom	1995
Jumbo CDJ120/HC80	103	Montabert single boom	1995
Mine Master Fork Lift	576	Kubota	2000
Scissor Lift Truck	413	Marcotte	1995
Scissor Lift Truck	416	Marcotte	
Boom Truck	417	Dux	1990
EJC 210	600	EJC 6 $yd.^3$	
700 M Scoop (Remote)	372	MTI 7 $yd.^3$	1996
700 M Scoop (Remote)	374	MTI 7 $yd.^3$	1997
375 7 Yard Scoop (Remote)	375	7 $yd.^3$	
700 M Scoop (Remote)	376	MTI 7 $yd.^3$	2004/1997
Toyota	504		
Tractor	421	NCE	1996
Tractor	422	Miller	1996
Tractor	423	Miller	1996
Tractor Man Carrier	424	NCE	1995

Table 15-13: Major mobile equipment at Holloway.

15.2.9 Production Rate and Life of Mine Plan

Based on the current level of mineral reserves, Holloway is nearing the end of its mine life (i.e. 2014). The mining rate is planned at approximately 1,100 tpd. The LOM plan includes the Smoke Deep Zone and the remaining stopes in the Middle and Lightning

Zones. As it has been the case in the past few years, SAS is confident that conversion of mineral resources into mineral reserves will extend the mine life at Holloway.

The LOM plan is shown in Table 15-14.

(in 000)	2013	2014	Total
Tonnes	211	87	298
Grade	4.15	4.54	4.26
Ounces	28	13	41
Mining rate (tpd)	1,100	1,100	

Table 15-14: Holloway Mine LOM plan.

16.0 RECOVERY METHODS

16.1 Process Plant Flow Sheet

Description of the current milling process is summarized from the previous NI 43-101 technical report[1].

The Holt Mill was constructed in 1988 and was originally designed for a throughput of 1,360 tpd. Expansions in 1988 and 2001 increased the throughput to 2,500 tpd and 3,000 tpd, respectively.

Surface ore storage is a total of 4,900 t in three silos, the Holt headframe bin (900 t) and two other separate storage bins (1,000 t and 3,000 t). Ore can be delivered to the mill from the Holt Mine by conveyor or from a separate surface dump that enters a 100 tonne hopper, and then can be fed to either of the two storage bins.

The grinding circuit consists of a 5 m diameter by 6.1 m long Allis Chalmers ball mill, converted to a SAG mill, a 4 m diameter by 5.5 m long Allis Chalmers ball mill and a 3.6 m diameter by 4.9 m long tertiary ball mill, all operating in series and in closed circuit. The details of the grinding circuit are shown below in Table 16-1. The grinding circuit is controlled by a Wonderware system and Modicom programmable logic.

The primary cyclone cluster consists of six 381 mm (15") Krebs D15B cyclones. A secondary cyclone cluster consists of twelve 254 mm (10") Krebs gMAX cyclones with an Outokumpu PSI-200 online analyzer. The secondary cyclone cluster feeds a 27 m (90 ft) Eimco thickener. The thickener underflow feeds a pre-aeration tank, which gravity feeds five carbon-in-leach (CIL) tanks in series. The tank system is conventional gravity flow for slurry with counter-current carbon advancement

Precious metal stripping is performed in batch operations, advancing 2.7 t of loaded carbon through a 1.2 m by 2.4 m (4 ft x 8ft) Simplicity screen. Carbon is transferred to an adsorption column where a Zadra process is utilized as the gold elution method. Barren solution is circulated through two shell and tube heat exchangers and a 360 kW electric inline heater.

The resulting pregnant solution is pumped from the solution tank to an electro-winning cell. The gold precipitate is further refined using a 125 kW Inductotherm furnace and the doré bars are poured in a seven mould cascade arrangement. After stripping, the carbon is regenerated in a rotary kiln, quenched, screened and returned to the

[1] Technical Report on the Holloway-Holt Project, Ontario, Canada. NI 43-101 technical report from SWRPA. July 9th, 2008.

process. Carbon fines are collected in a tank, filtered in a Perrin press, and packaged for sale.

The process flow sheet is shown in Figure 16-1.

Reagents and operating supplies for the mill, such as process chemicals and grinding steel, are stored in the reagent storage building attached to the concentrator at the south end of the building.

<u>Tailings Disposal</u>

The tailings storage facility is located 2.5 km south of the process facilities. Tailings are pumped (at about 50% solids) via primary and booster pumps in a 254 mm HDPE pipe. The tailings pipe is equipped with two magnetic flow meters – one at the mill and the other at the tailings pond to monitor pressure differential. Excessive differences in flow will trigger an audible alarm. The tailings pipe is laid in a secondary containment capable of handling rock slurry in the event of a line burst.

The tailings storage facility is subdivided into four separate areas to receive the mill tailings and treat the solution that results from the milling of up to 3,000 tpd.

The quality of water discharge relies on natural degradation of cyanide and precipitants of other metals through the use of ferric sulphate. The annual discharge to the environment is closely monitored. The annual allowable discharge is a function of the water quality in the polishing pond and the flow rate in the receiving waters.

All of the tailings dams were designed by Golder, and Golder has carried out the dam safety inspections. The tailings management facility (TMF) is divided into a series of four basins: the North basin, the Southwest Basin, the Southeast Basin and the Polishing Pond (Figure 16-2). The North Basin was originally formed in a valley by the construction of perimeter dams. The capacity of the North Basin was increased in 1995 by raising the dams and constructing additional dams. The Southwest Basin, Southeast Basin and the Polishing Pond are contained by dams.

To date all of the tailings deposition has been into the North and Southwest basins. The current practice is to transfer tailings contact water from the North and Southwest basins into the Southeast Basin by pumping. Water is then transferred to the Polishing Pond from which it is released to the Magusi River. The effluent discharge is not permitted to exceed one-tenth of the flow in the Magusi River in the summer months and one-fifth during spring and in the fall.

There are five stages of TMF development, with associated permitted water levels and tailings levels. Up to 3.6 Mt of the tailings will be deposited in the Southwest and Southeast basins. Tailings deposition design is based upon an in situ void ratio of 1.0, a specific gravity of 2.65 and an inferred dry density of 1.33 t/m^3. Slopes of 0.6% were assumed for sub-aerial deposition and slopes underwater were assumed to be 2.5% slopes.

The ultimate storage capacity of the Southwest Basin is calculated to be 1.43 Mt of tailings. There is space for the deposition of 0.7 Mt before the dam heights must be increased. The Southeast Basin has the capacity for 2.17 Mt of tailings. Golder has also developed the water management plan to be used with the deposition plan.

Laboratory

The assay laboratory is located at the Holt site in an area near but separate from the mill and previously used as an assay lab. The building was renovated and a sample preparation area, fire assay facilities and an AA facility were established to provide analytical services for the site."

Data	Primary SAG mill	Secondary Ball mill #1	Tertiary Ball mill #2
Diameter (m)	5.0	4.0	3.6
Length (m)	6.1	5.5	4.9
Motor (hp)	3,400	1,650	1,250
Ball charge (%)	8-12	45	40
Grinding media	5" balls	2" balls	1" balls
Media consumption (kg/t)	0.75	0.30	0.45
Speed (rpm)	13.9	16.2	17.3
Critical speed (%)	72.5	76.5	71.0
Circulating load (%)	10-15	350	225
Power draw (kWh)	2,250	1250-1450	750-900
Lifters	Polymet	Rubber	Rubber
Liners	Polymet	Rubber	Rubber
Discharge grates (mm)	18-30 mm by 40 mm	Overflow mill	

Table 16-1: Details of the grinding circuit.

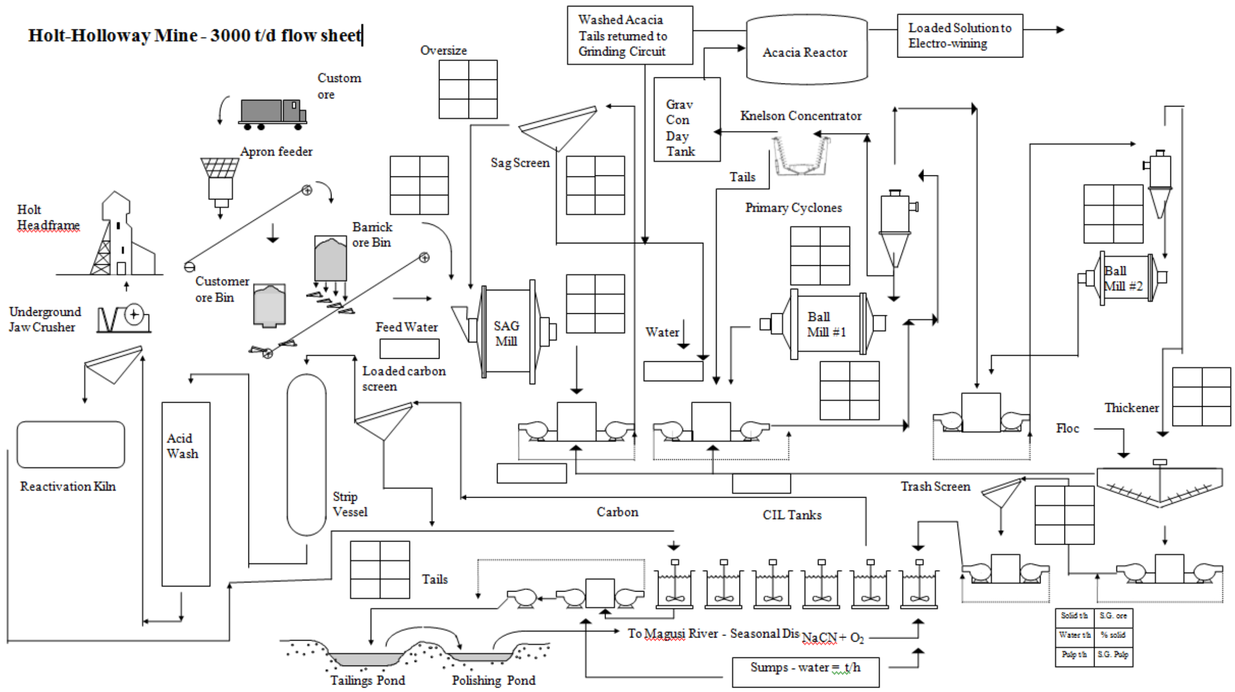

Figure 16-1: Process flow sheet.

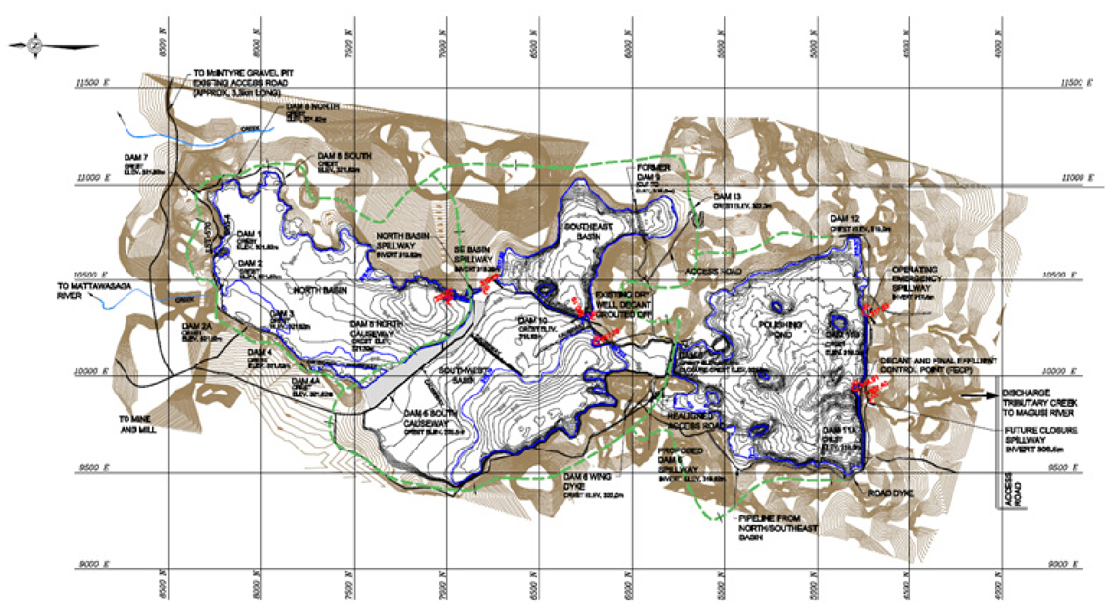

Figure 16-2: Tailings management facilities.

In the QP's opinion, there are no processing factors or deleterious elements that could have a significant effect on potential economic extraction at the Holt-Holloway mines.

17.0 PROJECT INFRASTRUCTURE

17.1 HOLT

17.1.1 Surface Buildings

Surface buildings at the Holt property were erected by previous owners. The main ones are:

- A security gate house;
- A hoist house;
- A headframe;
- Administration building (housing Engineering, Geology, Operations, Administration, two dries and conference rooms);
- Surface Maintenance Shop and offices;
- Assay lab building;
- Exploration Trailer;
- Mill building (including two bins, conveyor and thickener);
- Surface sub-station and control room;
- Various storage buildings;
- Backfill Plant and Silos; and,
- A scale house.

The Holt surface general layout is shown in Figure 17-1.

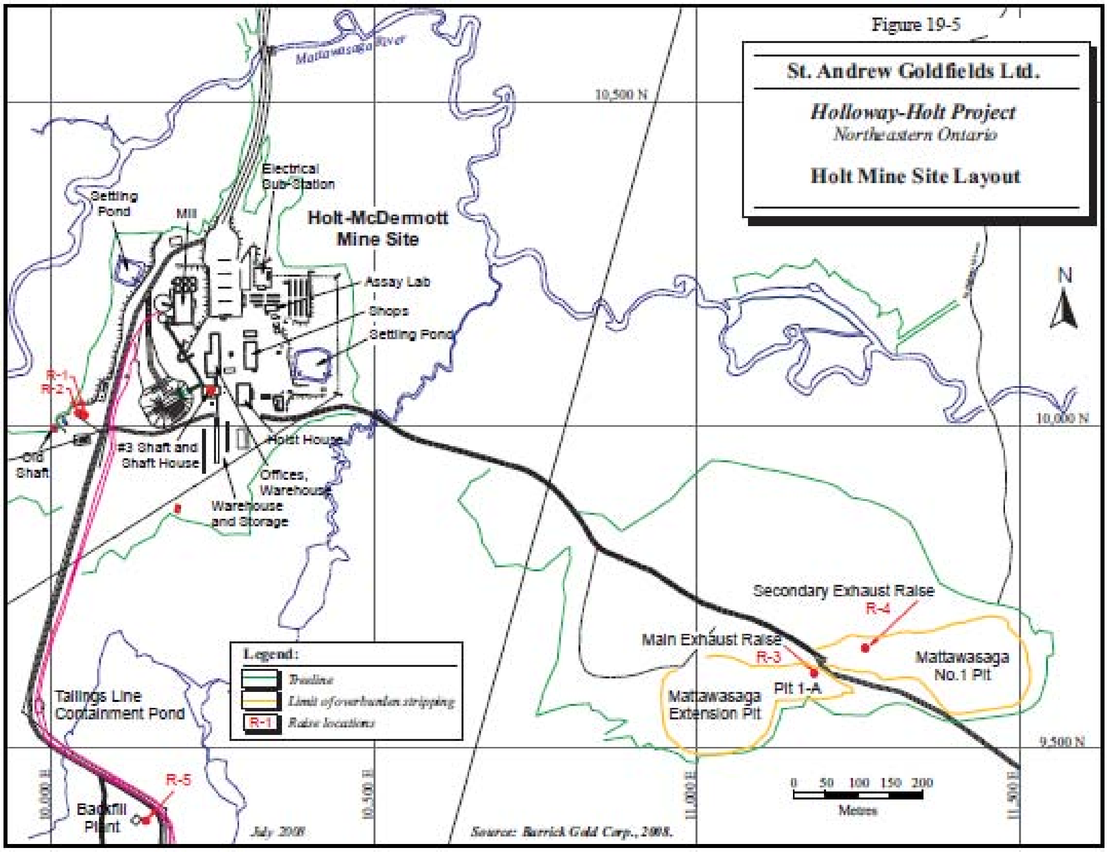

Figure 17-1: Holt property surface general arrangement (After SWRPA, 2008).

17.1.2 Road Upgrade and Ore Transportation

Ore from the Holt Mine is dumped directly into the surface ore bins from the skips via a conveyor belt. Construction of an approximately 3 km long haulage road will need to occur once the Tousignant project commences. The road will start at the portal and end at the grizzly already established near the Holt Mill.

17.1.3 Power

Power is supplied from the provincial electrical grid by OPG and is delivered to transformers for the mine and mill at Holt. The site has a limited amount of emergency standby diesel generation capacity to maintain critical items in the mine and mill. There is one 800kW generator at the Holt Mine.

The underground is serviced by two feeders. Power is supplied to the mine and distributed at 4,160 V with 4,160 V/600 V transformers as needed, to supply areas. The feeder cables have been expanded to Zone 4 and Zone 6.

17.1.4 Underground Mine Dewatering and Fresh Water Requirements

Fresh Water

Water from the abandoned upper workings is directed via a ditch flow and a series of drain holes to the 400 m level and the 530 discharge pump staging level. A dam is located on the 400 m level. It supplies all of the required clean water to the levels below 400 m level. The excess water is sent to the 530 pump staging area.

Dewatering

All active heading water discharge is directed via a series of drain holes to a clean and dirty water sump complex in each mining area. Excess fine particles are removed from the dirty water sumps by LHDs. Clean water from these sumps is pumped by air or electric pumps. The water is discharged to each levels main sump. From the main sumps water is pumped by electric pumps to the 1110 m Geho pump dam or the 1075 m Jet pump dam.

The 1110 m Geho pump discharges to the 530 m pump staging area at a rate of 35 m^3/h and can handle up to 60% solids. The 149 kW (200 hp) 1075 m jet pump is a backup system for the Geho and can pump up to 40 m^3/h of clean water. It also discharges to the 530 m pump staging area.

All discharge water from the Geho or Jet pump report to a cone sump on the 530 m level. A flocculent is added to the cone sump to precipitate solids to the bottom of the sump. These solids are then pumped via a SLR pump to abandoned stopes in the south zone. The clean water overflow is pumped to surface via two 149 kW (200 hp) Jet pumps capable of pumping 40 m^3/h each.

Total mine discharge averages 1,200 m^3/day to 1,500 m^3/day.

17.1.5 Underground Mine Ventilation

Primary ventilation at Holt is delivered by a 3-stage push-pull system, as described in Table 17-1.

Stage	Power	Location
1st Stage	250 hp	Surface fresh air raise
	125 hp	Surface fresh air raise
2nd stage	100 hp	650 Level
	100 hp	650 Level
	75 hp	700 Level
3rd stage	250 hp	Surface return air raise
	125 hp	Surface return air raise

Table 17-1: Primary ventilation system at the Holt Mine.

The primary ventilation system delivers a total airflow of 117 m^3/s to the underground workings. Both fresh air raise intake fans are equipped with propane burners (capacity of 117 MWh or 40 MBTU), which are used to heat the mine air during winter. The 186 kW (250 hp) surface fresh air fan feeds a 3.0 m diameter fresh air raise (FAR) to the 350 m level. The 93 kW (125 hp) surface fresh air fan feeds a 1.8 m diameter FAR to the 300 m level. Fresh air then travels through a series of raises to the 1075 m level.

At the 1075 m level, the fresh air stream splits: the first air stream ventilates the mining areas of C-104 and Zone 6, while the second air stream ventilates the mining areas of Lower Zone 4, then ascends an Alimak raise to 925 level, where it ventilates the mining areas of Upper Zone 4.

Both air streams join and ascend the C-104 ramp and stopes to the 2^{nd} stage fans. After the 2^{nd} stage fans, the air ascends raises to the 435 m level, 350 m level, and upwards to the 3^{rd} stage Return Air Raise (RAR) fans.

17.1.6 Underground Material Handling

Ore and Waste Handling

In Upper and Lower Zone 4 and in Zone 6, ore and waste from development headings are mucked with 3.5 yd^3 LHDs. Stope ore is mucked via remote controlled 3.5 yd^3 LHDs. The ore and waste is dumped into an ore or waste pass system. Waste is re-mucked into excavated stopes and used as back fill. Ore is re-mucked with another 3.5 yd^3 LHD and loaded into ore cars.

Zone 6B ore is mucked to an ore pass equipped with a grizzly and a mobile rock breaker located on each level. This ore reports to a series of chutes on the 1075 level where it is pulled into ore cars.

By the 3rd quarter of 2013, the ore from both Upper and Lower Zone 4 will report to a central ore pass system with grizzlies and rock breakers and will be pulled from a chute into ore cars. This system will also be implemented in Zone 6, later in 2013.

Muck is transported from the active zones on 40 lb rail using tandem five ton Warren Loci's and five ton ore cars. These tandem Loci's can pull as many as eight ore cars at a time.

This muck is dumped using a Teledyne car dumpers near the shaft stations into the main ore pass, which reports to the 1110 crusher where the muck is reduced to an appropriate size for the mill grinder. From the crusher the muck is sent to the 1145 loading pocket where it is skipped to surface in eight ton skips.

The ore from Zone 6 will be transported by the same system but will report the 845 crusher and then to the 890 loading pocket.

<u>Material Handling</u>

Supplies required daily are sent underground via flat cars. Fuel and oils are sent via fuel/oil tanks mounted on flat cars and pumped into satellite fueling stations. All supplies are trammed to the active headings via locomotives.

Large gear and equipment are stripped down to fit in the shaft and are slung under the cage and re-assembled in the underground shops.

17.1.7 Communications

The communication network allows interfacing between the telephone system and the fibre optic system. A site-wide leaky feeder communication system has been installed. Communication facilities include site wide two-way radios, underground and surface paging phones, digital telephone service to offices and specific areas underground, and a cellular phone for the security staff.

17.2 HOLLOWAY

17.2.1 Surface Buildings

Surface buildings at the Holloway property were erected by previous owners. The main ones are:

- A security gate house;
- A main shaft hoist house;

- The production shaft headframe;
- The exploration shaft Headframe;
- The exploration shaft hoistroom;
- An administration building (housing Engineering, Geology, Operations, Administration, dry, maintenance shop, core shack and conference rooms);
- A surface sub-station and control room;
- A backfill plant and silos;
- A Quansa hut; and,
- A contractor's garage.

The Holt surface general layout is shown in Figure 17-2.

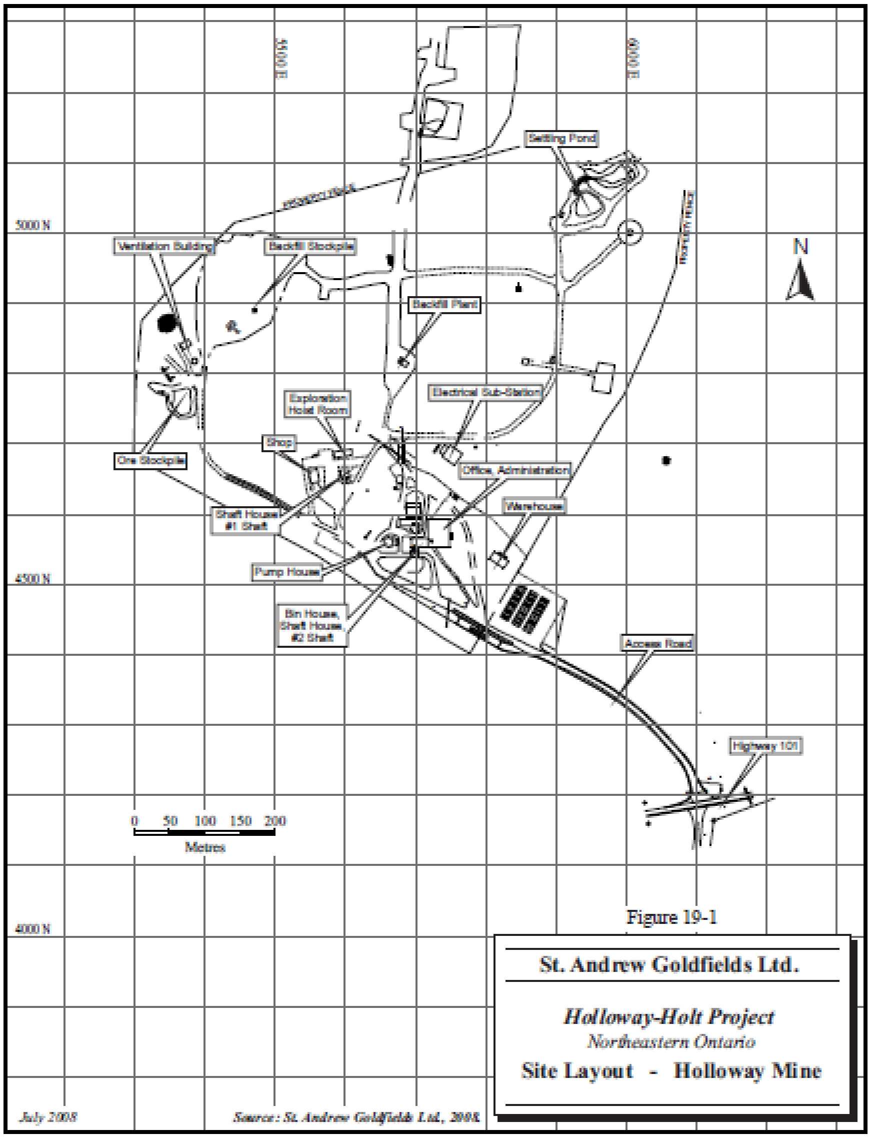

Figure 17-2: Holloway property surface general arrangement (After SWRPA, 2008).

17.2.2 Road Upgrade and Ore Transportation

Ore is transported from the Holloway shaft ore pile to the Holt mill via 20 t truck via the mine site access road.

17.2.3 Power

Power is supplied from the provincial electrical grid by OPG and delivered to separate transformers, one at each of the sites. The Holloway surface power substation is equipped with two matched 115 kV to 4,160 V, 7.5 MVA step down transformers, a primary circuit interrupter and five kV switchgear. The substation also includes a tie breaker, which allows the plant to be operated from one transformer, and a 540 kW generator, which can operate essential services such as pumping and heating.

Two 4,160 V feeder cables in the shaft supply electricity to underground substations. Transformers located underground distribute electricity throughout the mine. None of the existing work areas will require any significant changes to the power distribution system in the near future.

17.2.4 Underground Mine Dewatering and Fresh Water Requirements

Fresh water comes from well for utility purpose (e.g. shower, taps). Water is processed through a water softener and chlorine is added. Water is transferred to two 2.3 m^3 (500 gallons) tanks. Water goes to hot water tanks and services.

All active heading water discharge is directed via a series of drain holes to a clean and dirty water sump complex in each mining area. Excess fine particles are removed from the dirty water sumps by LHDs. Clean water from these sumps is pumped by air or electric pumps. The water is discharged to each levels main sump.

Two Flygt pumps at shaft bottom pump to the 750 conical sump down to the 780 level dam. From the 780 level the water is pumped to the 505 level dam (one Jet pump and one Mather Platt pump). On the 505 level, the water is pumped to surface with two Mather Platt pumps. Water on surface is directed to the Holloway pond. The water in the pond is pumped to a 9.1 m^3 (2,000 gallons) tank while the excess water in the pond is directed to Holt East pond. The water on the 505 level supplies the water for mine services purpose as well. The water is then pumped to the 400 level #1 shaft dam via one jet pump. The water on the 400 level #1 shaft dam is pumped to the 400 water box at #2 shaft. The water supplies underground mine services. If there is not sufficient water available, water will be drawn from a 9.1 m^3 (2,000 gallons) tank on surface to the 200 water box down to 400 to mine services.

The 9.1 m^3 (2,000 gallons) surface tank supplies water in case of fire (75% of the tank).

17.2.5 Underground Mine Ventilation

The mine ventilation system has a capacity of 212 m^3/s and uses one fresh air raise. The airflow is distributed independently to the east and west sides of the mine using two internal ventilation raises. Return air is exhausted through the ramps to the two shafts and one exhaust ventilation raise. The main surface fans have variable speed motors. As a result, the amount of air sent to the underground workings can be adjusted based on the operating requirements, yielding power and propane savings.

The fans are 2.1 m diameter fixed blade Alpha Air fans, driven by two variable speed, 373 kW (500 hp) squirrel cage motors. Six vertical propane heaters provide direct firing capacity to 11.7 MWh (40 MBTU per hour). The fan speeds and stench gas injection system can be controlled from the hoist room. Monitoring of the plant includes measurement of carbon dioxide and temperature in the air stream, fan vibration, and speed output of the fans.

With production from all areas simultaneously, there is sufficient capacity in the ventilation system to service the mine. A system of auxiliary ventilation using portable fans and ducting and short ventilation raises are used to move air to work places.

17.2.6 Underground Material Handling

<u>Ore and Waste handling</u>

The ore and waste material from development headings are mucked with 7 yd^3 LHDs. Stope ore is mucked via remote controlled 7 yd^3 LHDs.

The ore and waste is dumped into an internal ore or waste pass system. The material from the Smoke Deep Zone is hauled with 426 truck to the shaft ore and waste pass system. The capacity of the trucks is 20 t. The waste material is either used as back fill or is hauled to the shaft waste pass depending on stopes availability. The material from the Middle and Lightning Zones is hauled with 7 yd^3 LHDs into internal pass system. The material is transferred to the shaft pass system with an LHD. The ore material is crushed (~89 mm diameter) via a jaw crusher and loaded into a 9.6 tonnes skip.

Material handling

Supplies required daily are sent underground via the cage. Fuel and oils are sent via fuel/oil tanks mounted and pumped into satellite fueling stations. All supplies are moved to the active headings via a forklift.

Large gear and equipment are stripped down to fit in the shaft and are slung under the cage and re-assembled in the underground shops.

17.2.7 Communications

The communication network allows interfacing between the telephone system and the fibre optic system. A site-wide leaky feeder communication system has been installed. Communication facilities include site wide two-way radios, underground and surface paging phones, digital telephone service to offices and specific areas underground, and a cellular phone for the security staff.

18.0 MARKET STUDIES AND CONTRACTS

18.1 Market for the Product

The QP has reviewed SAS contract with the refiner and he is satisfied that the contract reflects industry norms and reasonable market terms for selling Holt and Holloway gold production.

18.2 Material Contracts

Surface exploration drilling was recently tendered and awarded to Orbit Garant based in Val d'Or (QC). Underground contract drilling at the Holt and Holloway mines is being conducted by Boreal Drilling based in Val d'Or (QC). Both contractors possess the necessary equipment, well trained personnel, replacement part inventory and have well documented drill experience on the property. These contracts can be discontinued by SAS at any time with advance written notification.

Explosives products are provided by Nordex. The main products used are: ANFO, cartridge explosives and detonators.

Security services at the Holt and Holloway sites are provided by Garda. Security personnel are always available on site, 24 hours per day.

Contracts are awarded through a tender process. The duration of the contracts is usually less than two years.

19.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

The Holt-Holloway mine site utilizes an Environmental Management System (EMS). This system embodies a recurrent review process of site environmental policies and procedures, permits and approvals. The EMS system repeatedly audits and sustains waste and hazardous waste management, recycling, landfill management, water and wastewater treatment and monitoring programs throughout the site.

This process is kept current though EMS revisions included as part of the continuous improvement review cycle. The EMS thus forms the basis for the monitoring, sampling, and reporting program requirements under each of the pertinent governmental agencies. More importantly, this allows verification that all the activities at the Holt and Holloway mines comply with government and company standards.

The Holt and Holloway mines utilize underground and surface water as part of the mining and milling process, in addition to domestic consumption. Water is collected, monitored, treated and released through an approved, regulated industrial sewage works permit. This results in primarily controlled effluent discharge to the environment from the Holt and Holloway mines.

19.1 Summary of Environmental Studies

19.1.1 Terrestrial Environment

Surveys have been undertaken to provide further details on terrestrial vegetation and wildlife in areas that may be affected by mining activity, such as in the vicinity of the overburden and waste rock storage piles. Depending on the final detailed designs, additional studies may be undertaken.

19.1.2 Hydrogeological Characterization

Regional Surface Water Hydrology

Holt (Shaft #3)

The Holt Mine traverses two drainage systems, the Mattawasaga River system to the north and the Magusi River system to the south. The mine and mill site drains into the Mattawasaga River, which has an upstream drainage basin of approximately 45 km^2. The Tailings Management Facilities (TMF) area drains into the Magusi River system, which has a drainage basin of approximately 215 km^2. Both systems carry heavy suspended solids loading during high water, owing to the prevalence of clay and silt substrates.

Water Survey of Canada stream flow records for two non-regulated watercourses (the Porcupine River - watershed area of 410 km^2 near Timmins - and the Blanche River - watershed area of 1,780 km^2 near Englehart) are available to calculate average runoff yield for the region. For the period between 1977 and 1993, the mean annual runoff was measured at 439.0 mm for the Porcupine River at Hoyle, and 400.5 mm for the Blanche River above Englehart. The average runoff value from the two watersheds is 420 mm.

The majority of runoff occurs in the spring, coincident with the snow melt. A second, much smaller, runoff peak typically occurs in October or November. Lowest runoff conditions normally occur during the mid-winter months (January through March), when precipitation is accumulated and held as snow and ice. A second period of relatively low flow occurs in mid to late summer.

Holloway (Shaft #2)

The Holloway project site straddles two watersheds: the Lightning River watershed and the Mattawasaga River watershed, both of which drain into Lake Abitibi.

Water pumped from the Holloway Mine is discharged into a polishing pond system. The decant in the polishing pond system allows the clarified mine water to either be discharged through a MISA control point into the Lightning River watershed. Alternatively, it can be pumped through a pipeline into the Holt Tailings Management Facility (TMF) permitted municipal industrial sewage works. In recent years, all mine water discharge has been directed into the Holt TSF.

Surface runoff from the Holloway yard area drains into the Mattawasaga River.

Mine discharge contributes approximately 250 m^3/day during normal operations. The baseline flow is estimated at 150 m^3/day during periods without mining operations.

Results of a baseline study suggest that the flow in the Lightning River averaged 2,500 m^3/day. This provides a minimum dilution ratio of 10:1 during normal operations and 16.7:1 during temporary suspension or inactivity.

The hydrological characteristics of the Lightning River watershed drains an area of 105 km^2, directly to the north and encompassing a portion of the project site. There are three main tributaries, Trollope Creek and two un-named branches (Branch 1 and Branch 2), which drain the western and southern portions of the watershed.

The upper system is characterized by a hydrograph, which peaks rapidly in response to rainfall and snow melt events.

Very little base flow is evident in the system and can be related to the predominance of relatively impervious clay solids with a high run-off coefficient and limited groundwater inputs.

The Mattawasaga watershed drains an area of 45 km^2, opposite the mine site, and is of strongly meandering form and low gradient.

Surface Water Quality – Pre-Development Conditions

In general, the pre-discharge conditions for the Magusi and Mattawasaga rivers are characterized by brown coloured water imparted by humic acids and turbid conditions. Suspended solids levels range from lows of less than 5 mg/L during periods of ice cover and low flows, to highs in the range of 30 mg/L to 60 mg/L during high flow conditions. Elevated suspended solids values are characteristic of local rivers flowing over a predominantly clay and silt substrate.

Closely associated with elevated suspended solids levels are high background concentrations of iron. Average iron concentrations during the pre-discharge monitoring period ranged from 0.90 mg/L to 1.55 mg/L. These background levels are higher than the Provincial Water Quality Objective (PWQO) for iron of 0.3 mg/L, but are typical of local river systems.

Copper concentrations in the Magusi and Mattawasaga Rivers during the pre-discharge period were also characteristically high, ranging from 0.001 mg/L to 0.044 mg/L, frequently exceeding the PWQO value of 0.005 mg/L. Concentrations of nickel were generally low and below the PWQO objective of 0.025 mg/L. Zinc concentrations fluctuated markedly throughout the year with mean values of 0.008 mg/L to 0.025 mg/L, with values exceeding occasionally the PWQO value of 0.030 mg/L. Arsenic concentrations were quite low, being less than 0.02 mg/L and generally less than 0.002 mg/L.

High variability in water temperature was observed, with spring and summer temperatures reaching 24°C in May 1991. Dissolved oxygen levels were between 7 mg/L and 12 mg/L, which are consistent with what might be expected in a northern watershed. Turbid conditions were observed on the Lightning River with Secchi depth measurements of 7 cm to 49 cm. Branch 1 was notably clearer, with Secchi depths of up to 50 cm to 70 cm.

Streams in the project vicinity are described as neutral to slightly acidic, with pH values ranging between 5.5 and 8.3. Only three samples taken during field sampling were outside of the PWQO values of between 6.5 and 8.5. Alkalinity ranged from 3 mg/L to 180 mg/L, while hardness ranged from 17 mg/L to 162 mg/L.

Nitrogen content, (in the form of nitrite, nitrate, Total Kjeldahl Nitrogen and total ammonia), was measured at all stations. Ammonia concentration tended to increase during winter months when ice cover leads to lower oxygen levels.

All monitoring stations along the Lightning River during the baseline study showed iron levels greater than the PWQO of 0.3 mg/L. The average iron concentration was 1.6 mg/L, ranging from 0.54 mg/L to 11 mg/L. These levels are naturally occurring and are common in northern Ontario. They are commonly associated with high suspended solids levels. Suspended solids levels ranged from less than2 mg/L to 44 mg/L.

19.1.3 Hydrological and Aquatic Habitat Assessments

Hydrological assessments in the past were in large part developed by pro-rating regional flow data to the local watershed areas. Current studies are focusing on developing more accurate estimates of stream flows, runoff volumes and site drainage patterns associated with the existing mine site and future developments. Efforts include detailed watershed mapping initiatives, as well as the development of a stream flow monitoring station on the Magusi River. This information will be important in assessing potential adverse environmental effects to the downstream aquatic receiving environment and assisting in storm water management planning activities. Aquatic habitat assessments undertaken in the past were based on data collection initiatives recommended in prior studies, in the context of the proposed project, and additional sampling of stream sediments, water chemistry and benthic macro invertebrates were also undertaken. As well, future aquatic assessment programs will be expanded to include areas that could potentially be affected by future mining activity. Of particular importance is the thorough assessment of potential fisheries habitat areas in the areas of proposed mine development.

19.1.4 Waste Characterization Studies

A comprehensive geochemical characterization of all mine waste materials is to be completed to support the development of an integrated water and waste management plan for the site. In developing the mine model, waste and host rock materials have undergone a comprehensive geological classification to ascertain the total volumes of materials that will be generated. Representative samples from each type of waste material were selected and tested for their acid generating and metal leaching potential as per the relevant guidance documents.

19.2 Tailing Management Plan

Ore will be processed at the Holt site process plant where there are four individual ponds: two tailing ponds, one sludge precipitate pond and one polishing pond. Within these tailings facilities are 18 individual dam structures, a total of 465.4 ha of watershed area and 212 ha of tailings area. The remaining storage capacity is approximately 1.9 Mm^3. The tailings facilities are in compliance with all governmental regulations.

19.3 Permits Status and Posted Bonds

Permits related to the operation of the Holt and Holloway mines and mill complex are displayed in Table 19-1.

Agency	Item	Description	Site	Expiration	Status
MOE	CA# 3380-8JBGKZ	Tailings Basin	Shaft #3	N/A	Active
MOE	CA # 7071501	Waste Disposal Site (WDS)	Shaft #3	N/A	Active
MOE	CA # A770114	Landfill	Shaft #2	N/A	Active
MOE	CA # 4-0077-85-006	East Settling Pond	Shaft #3	N/A	Active
	CA # 4-0077-85-006 Rev.1	East Settling Pond	Shaft #3	N/A	Active
	CA # 4-0077-85-006 Notice 1	East Settling Pond	Shaft #3	N/A	Active
MOE	CA # 3-0013-87-958	Sewage Treatment Plant	Shaft #3	N/A	Active
	CA # 3-0013-87-958 Notice 1	Sewage Treatment Plant	Shaft #3	N/A	Active
MOE	CA # 4-0135-94-956	Mine Water Settling Pond	Shaft #2		Active
MOE	Use Permit No. T-94-170	Raised Septic System	Shaft #2	N/A	Active
MOE	Use Permit No. M-92-13	Ten Man Camp and Kitchen	Shaft #2	N/A	Inactive
MOE	Use Permit No. M-92-14	Twenty Man Camp and Dry	Shaft #2	N/A	Inactive
MOE	CA # 70-0008-87-006	Potable Water Plant	Shaft #3	N/A	Active
MOE	CA# 7-0657-95-006	Potable Water Treatment System	Shaft #2	N/A	Active
MOE	CA #6148-6G8GMP	Mine Ventilation System & Blacktop Exhaust Raise	Shaft #2	-	Active
MOE	CA # 3388-4U4KB7 Revoked	Shaft #3 (Holt-McDermott Air Emission)	Shaft #3	N/A	Active
	CA # 5756-65ZNG7 Notice 1			Permit Pending	
MOE	CA # 8-5075-94-006	Service Building Ventilation Exhausts	Shaft #2	N/A	Active
MOE	CA# 8-6010-95-006	Diesel Engine for Fire Pump	Shaft #2	N/A	Active
MOE	CA # 8-6061-95-006	Mine Ventilation System	Shaft #2	N/A	Active
MOE	CA # 8-5085-93-957	Backfill Baghouse and Scrubbers	Shaft #2	N/A	Active
MOE	CA # 4518-4WRNJS	Fire Equipment, Welding Exhausts, Diesel Generators	Shaft #2	N/A	Revoked
MOE	PTTW # 00-P-6063	Construction 2000	Shaft #3	Oct. 31/01	Inactive
	PTTW # 01-P-6013	Construction 2001		May 1/02	Inactive
MOE	PTTW #5261-6UXJKV	Holt-McDermott Mine Dewatering Camp and Drill Water	Shaft #3	Oct.. 27/16	Renewal
MOE	PTTW # 6643-7PRL3	Mattawasaga & Holloway Lake Water Supply	Shaft #3	Feb 12/14	Active
MOE	PTTW # 1824-6UXPMC	Holloway Mine Dewatering	Shaft #3	Apr 28/14	Active
MOE	PTTW # 7010-7RHPXH	Potable Water Supply	Shaft #3	Feb 12/14	Inactive
MOE	PTTW # 2106-7P6SP7	Mine Dewatering and Diamond Drill Hole	Shaft #2	Nov. 01/15	Active
MOE	PTTW # 5024-6UXQRW	Well #1	Shaft #2	Nov. 01/15	Active
MOE	PTTW # 4408-6UYP2J	Well #2	Shaft #2	Nov. 01/15	Active
MOE	MOE Letter	Name Change	Shaft #3	N/A	Active
MOE	MOE Letter	Waste Registration Numbers	Shaft #3	N/A	Active
		On Line Registration for 2002/2003 HWIN			
MOE	Waste Generator Registration	Generator No. ON2610201	Shaft #2	N/A	Active
MOE	MOE Letter	Magusi River Flow Calibration	Shaft #3		Active
MOE	CA # 8-5025-92-006	Underground Backfill	Shaft #3	N/A	Active
TC	Transportation of Dangerous Good Registration	TDG Registration	Shaft #2	N/A	Active
MNR	No. 15622 No. 33724 No. 17950	Aggregate Permit	Shaft #3	Each Year End Dec. 31st	Active
MNR	No. TM-KL-77	Polishing Pond Expansion	Shaft #3		Inactive
MNR	Permit # KLK-05-13	Fire Permit	Shaft #2 & 3	Annual	Active
MNR	Work Permit KL01-01	Construction 2001	Shaft #3	Mar. 31/02	Active
	Work Permit	Construction 2002-2003		TBA	
DFO	Authorization and Amendment	Polishing Pond Expansion	Shaft #3	Oct. 1/05	Active
DFO	Sediment and Erosion Protection Acceptance	Polishing Pond Expansion	Shaft #3	N/A	Inactive
AECB	No. 08957-1-09.1	Radioisotope License	Shaft #3	Sept. 30/09	Active
MOL	T148 C, D,&E	Hoist Permit	Shaft #3	N/A	Active
MOL	96047A&B, 96048U,J&K	Explosive Magazines	Shaft #3	N/A	Active
MNDM	Closure Plan 2006	Director Acceptance	Shaft #2	N/A	Active
MNDM	Closure Plan 2006	Director Acceptance	Shaft #3	N/A	Active
MNDM	Closure Plan 2005	Director Acceptance	Blacktop	N/A	Active

Table 19-1: Permits related to the Holt and Holloway mines and mill complex.

19.4 Social and Community

As part of the Closure Plan process Aboriginal and Public consultation informs the communities of the project.

SAS has recently signed an Impact and Benefit Agreement (IBA) with the Wahgoshig First Nation.

19.5 Closure Plan

As part of the Holloway Mine development phase, a Closure Plan was submitted to government agencies as required under the Mining Regulations. The mine received government approval of this Closure Plan in 1996. In 2005, an addendum to the Holloway Shaft #1 and #2 Closure Plan included additional closure costs for the Blacktop Project and was submitted to government agencies as required, under the Mining Regulations. In 2006, an addendum to the Holloway Shaft #1 and #2 Closure Plan cost update was submitted to government agencies as required under the Mining Regulations.

In addition, an addendum to the Holt Shaft #3 (former Holt McDermott) Closure Plan was also submitted for a cost update, to government agencies as required under the Mining Regulations.

SAS in currently in the process of compiling detailed updated closure plans for all sites located within the Holt and Holloway property. All sites will be amalgamated under one closure plan.

20.0 CAPITAL AND OPERATING COSTS

20.1 Capital Costs

20.1.1 Basis of Estimate

Capital costs estimate for major items is based on historical costs at the Holt and Holloway mines, costs included in the 2013 Budget or budgetary quotations from suppliers in the industry.

20.1.2 Cost Estimate

Holt Mine

Capital expenditures budgeted for the Holt Mine, before net capital lease additions of $2.1 M, are $22.0 M in 2013. The majority of these expenditures, $14.6 M (66% of Holt budgeted capital expenditures), will be incurred developing the Zone 4 and the Zone 6 (vertical and lateral). In addition to the deferred development, a further $6.4 M (29% of Holt budgeted capital expenditures) will be spent on purchasing fixed and mobile equipment. The remaining amount will be spent on infrastructure, mainly in Zone 4 and Zone 6.

Details on capital expenditures for 2013 are provided in Table 20-1.

	2013	2014	2015	2016	2017	2018	Total
Holt Mine ($M)							
Development	$14.6	$13.2	$14.8	$12.4	$6.8	$0.9	$62.7
Equipment	$6.4	$0.0	$2.0	$0.0	$0.0	$0.0	$8.4
Infrastructure	$1.0	$0.0	$1.0	$0.0	$1.0	$0.0	$3.0
Sub-total	*$22.0*	*$13.2*	*$17.8*	*$12.4*	*$7.8*	*$0.9*	*$74.1*
Tousignant Project ($M)							
Development	$0.0	$0.0	$3.4	$2.6	$0.0	$0.0	$6.1
Equipment	$0.0	$0.0	$5.1	$0.0	$0.0	$0.0	$5.1
Infrastructure	$0.0	$0.0	$2.0	$1.0	$1.8	$0.0	$4.8
Sub-total	*$0.0*	*$0.0*	*$10.5*	*$3.6*	*$1.8*	*$0.0*	*$16.0*
Total by Category ($M)							
Development	$14.6	$13.2	$18.2	$15.0	$6.8	$0.9	$68.8
Equipment	$6.4	$0.0	$7.1	$0.0	$0.0	$0.0	$13.5
Infrastructure	$1.0	$0.0	$3.0	$1.0	$2.8	$0.0	$7.8
Total ($M)	$22.0	$13.2	$28.3	$16.0	$9.6	$0.9	$90.1

Table 20-1: LOM capital expenditures breakdown for the Holt Mine.

<u>Holloway Mine</u>

Capital expenditures budgeted for Holloway Mine in 2013 are approximately $7 M. Based on current reserves and LOM plan, there are no capital expenditures planned beyond 2013.

The majority of the capital expenditures will be spent on deferred development ($5.0 M) and mobile equipments ($1.2 M for electrical distribution and communication, rebuild the 108 longhole drill and a 3.5 yd^3 LHD and pumps). Approximately $0.6 M is budgeted for exploration diamond drilling at the Smoke Deep Zone (12,000 m).

Details of the capital expenditure program at the Holloway mine are presented in Table 20-2.

Holloway Mine Capital Expenditures	Total
Deferred Development	$5,053,000
Diamond Drilling	$600,000
Fixed Equipment	$844,000
Mobile Equipment	$430,000
Total	$6,927,000

Table 20-2: Capital expenditures breakdown for the Holloway Mine in 2013.

20.2 Operating Costs

20.2.1 Basis for Estimate

Operating costs for units of work that will be carried out by SAS personnel were based on SAS budget figures for 2013.

20.2.2 Cost Estimate

Holt Mine

Operating unit costs for the Holt Mine average $95/t, based on the 2013 Budget, or $120/t when including royalties. Details are provided in Table 20-3.

Holt Mine	2013 Budget Unit Costs ($/t)
Definition Drilling	1.34
Stope preparation	31.53
Stoping	21.75
Services (ind & Mtce)	47.32
G&A	9.79
Milling	20.13
Deferred Development	-37.32
Inventory Adjustment	0.00
Total Operating Cost (w/o royalties)	94.55
Royalties	25.21
Total Operating Cost (w royalties)	119.76

Table 20-3: Holt Mine operating unit cost breakdown.

Holloway Mine

Operating unit costs for the Holt Mine average $103/t, based on the 2013 Budget, or $131/t when including royalties. Details are provided in Table 20-4.

Holloway Mine	2013 Budget Unit Costs ($/t)
Definition Drilling	0.71
Stope preparation	20.10
Stoping	14.55
Services (Ind & Mtce)	56.61
G&A	14.15
Milling	20.12
Deferred Development	-23.96
Inventory Adjustment	0.00
Total Operating Cost (w/o royalties)	102.28
Royalties	28.17
Total Operating Cost (w royalties)	130.44

Table 20-4: Holloway Mine operating unit cost breakdown.

21.0 ECONOMIC ANALYSIS

SAS is a producing issuer and, following instructions contained in Form 43-101F1 *Technical Report*, may exclude information required under Item 22 (Economic Analysis) for technical reports on properties currently in production unless the technical report includes a material expansion of current production.

22.0 ADJACENT PROPERTIES

SAS Timmins properties are centrally located in the Abitibi greenstone belt in the Superior Province of the Canadian Shield. The Abitibi Belt is the largest Archaean belt of its kind in the world and one of the most prolific in terms of mining production. It is a 750 km long by 250 km wide belt of deformed and metamorphosed volcanic and sedimentary rocks and granitoid batholiths ranging in age from approximately 2,745 to 2,680 Ma.

The major structural features in the area are the DPDZ and the Pipestone Fault. Gold deposits are commonly localized within and proximal to the DPDZ along its 200 km length from west of Timmins through the Matheson area and eastward beyond the Destor area of Québec. The fault zone was recognized in the early 1900s with the discovery of the gold deposits in the Timmins area. Numerous gold deposits occur in the vicinity of the DPDZ and related structures such as the Pipestone Fault. These include the major mines of the Timmins camp (Dome, Hollinger, McIntyre, Pamour and Hoyle Pond), which have produced over 70 million ounces of gold since 1910. A number of gold deposits have been discovered in more recent years, including the Holt-McDermott Mine and Holloway Mines (now operated by SAS), Owl Creek Mine, Bell Creek Mine, Aquarius Mine (SAS), Stock, Taylor (SAS), Clavos (Sage/SAS Joint Venture), Hislop (SAS), Brigus Black Fox (Brigus), Fenn-Gib deposit (Lake Shore Gold), Southwest Zone (Moneta Porcupine), Jonpol (Northern Gold) and a number of other prospects. Location and status of gold properties in northeastern Ontario and northwestern Québec in the mineral endowed Abitibi greenstone belt is displayed in Figure 22-1.

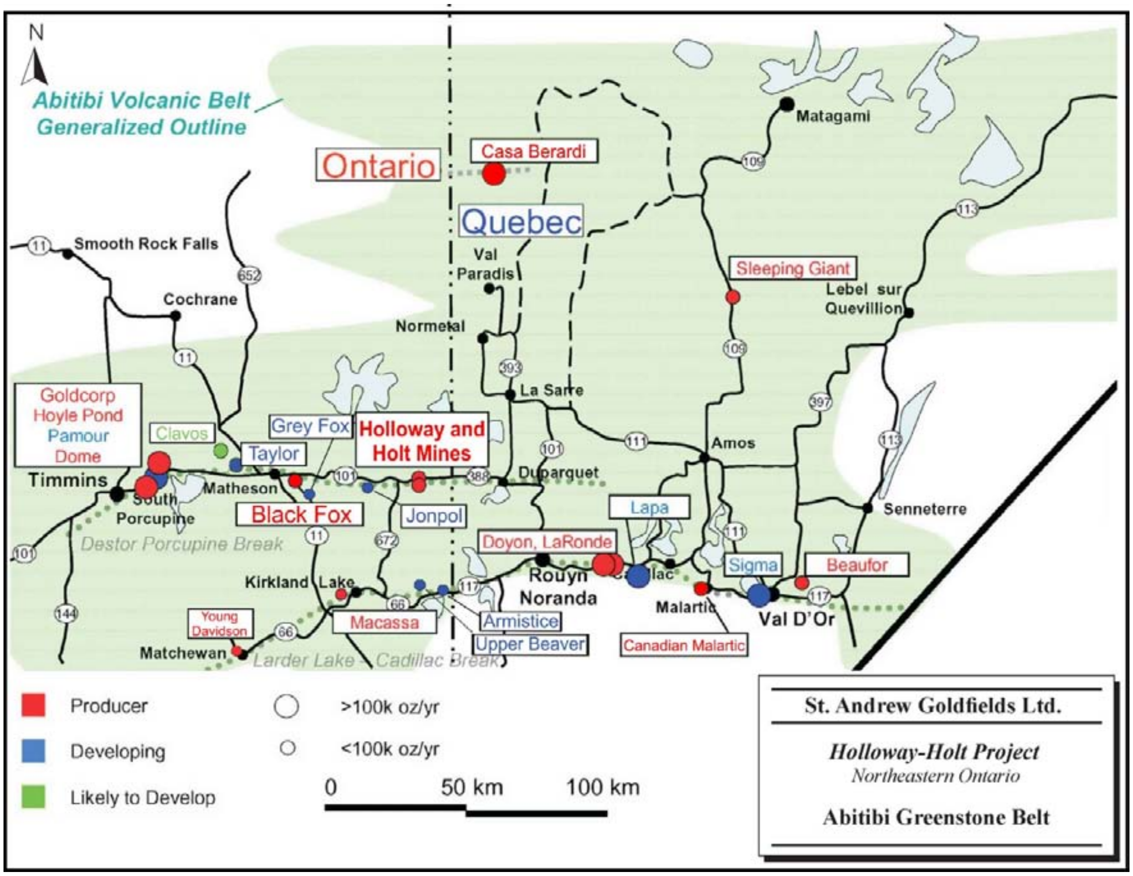

Figure 22-1: Mines and exploration properties in the Abitibi Greenstone belt.

23.0 OTHER RELEVANT DATA AND INFORMATION

There is no other relevant data or information on the Holt-Holloway property known to the QPs that, if undisclosed, would make this NI 43-101 technical report misleading or more understandable.

24.0 INTERPRETATION AND CONCLUSIONS

24.1 General

The general consensus from an exploration perspective is that many of the mineral deposits at the Holt- Holloway property remain open or poorly drill tested along strike and dip and therefore they offer excellent potential for both surface and underground exploration programs. One sign of a robust project or mine is its ability to replenish and grow its mineral resources and mineral reserves. This has been the case at SAS's Holt and Holloway since SAS re-started the operations in 2009-10.

This technical report was compiled by SAS employees.

24.2 Opportunities

Opportunities at the Holt and Holloway mine are as follows:

- Significant mineralized Extensions to Zone 4, Worvest, Tousignant to the west at Holt, and extensions of the Smoke Deep, Ghost and Sediment zone to the east at Holloway;
- Significant increase in mineralized extensions of the C97, C104 mineral zones. These sub-vertical tabular zones are structurally associated with the McKenna Fault zone;
- Discovery of a repetition of any one of the mineralized zones being actively developed at the Holt-Holloway operation;
- A new mineral discovery on the Holt-Holloway property ideally one situated proximal to the Holloway shaft;
- Potential for en-echelon flat mineralized zones similar to Zone 4 either above the present Zone 4 location or at depth;
- Reduction or re-negotiation of the underlying production royalties;
- Increase in production rate by de-bottlenecking the ore flow system at Holt and Holloway;
- Reduction in capital or operating costs by improving the planning and mining processes via the Company Continuous Improvement Program;

- A higher gold price and lower operating costs could lower the cut-off grade, enhance cash flow and likely increase mineral reserves replacement rate;
- Higher development productivity than budgeted will create more flexibility in the production plan as ore may become available sooner than originally planned;
- Increase of productivity in general could results in additional lower grade ore mining on an incremental basis; and,
- On-going exploration near the mines could result the discovery of new ore zone(s) near the operations and be brought into production quickly with lower capital expenses than another zone located further away from the Company current infrastructure.

24.3 Risks

Risks that could be present at the operation are summarized as follows:

- Future exploration programs are unable to keep pace with mining that in turn results in mineral resources and mineral reserves being depleted;
- Mineral resources may not be converted up to mineral reserves due to a lack of economic support;
- Drop in gold price to a level whereby it becomes uneconomic to continue mining and developing the mine complex;
- Increased costs for skilled labour, power, fuel, reagents, trucking, etc. could lead to an increase the cut-off grade and decrease the level of mineral resources and mineral reserves;
- Mechanical breakdown of critical equipment (hoist, conveyance, mill, etc.) or infrastructure that could decrease or halt the production throughput at the mine;
- Cost pressure on materials required to sustain development and production could impact negatively the profitability of the operations; and,
- Production throughput relies on completing development activities as per the mining plan schedule. If lower development productivity than budgeted are encountered, this will likely affect the production profile of the current mining plan.

25.0 RECOMMENDATIONS

A number of recommendations arising from the Technical Report are found below:

- That a Standardized Drillhole database be available to both the Matheson office and Mine complex;
- Exploration personnel need shared server;
- On-going exploration data compilation and target work-ups;
- Work to standardize mine grids (local mine grids Holt-Holloway vs. UTM grids);
- Follow-up on SRK's and Rhys' report recommendations. The key recommendation being the exploration for repetitions of mineral deposits at Holloway;
- Undertake a "Lab-Lab" comparative check program for core samples developed in the Holt mine assay lab as part of the QC-QA program;
- Consider using crushed barren limestone for blank material, instead of locally harvested gabbro dyke core, which can be anomalous in gold;
- Continued follow-up on certified reference standards and blanks which fall outside of the accepted assay range performance gates;
- Mine Geologist should monitor the QC-QA performance at the Holt assay lab on a monthly basis; and,
- Annual Mineral Resources and Mineral Reserves updates should be presented on longitudinal sections.
- It is recommended to continue to develop the Holt and Holloway mines by continually explore and define any potential zone surrounding the operations. It is believed that the land package near the mines is hosting a number of superior exploration targets.
- The technical team on site should continue to optimize the LOM plan with a view to maximize profitability and minimize potential shortage of mill feed.

In 2013, the Company's exploration efforts will continue to focus on identifying additional mineral resources near existing operations. SAS will also initiate "grass roots" exploration on high priority targets, based on a compilation and assessment of targets currently in SAS' extensive database.

The 2013 exploration program, at a cost of $8.7M, consists primarily of core drilling, as summarized in Table 25-1. More than 50% of the 2013 budget is planned for drilling on the Holt and Holloway properties.

Project	Target/Zone	Metres
Holloway East Area	Lightning Vein, Canamax 42E, Deep Thunder	11,113
Holloway Mine Area	Smoke Deep, Blacktop East, Holloway West, Holloway Deep	10,134
Holt Mattawasaga	Ghost Zone/Mattawasaga Deep	4,756
Holt East	Ghost East/Plato	2,648
Holt West	Zone 4-SW Extension	5,172
Hislop North	North property boundary	10,344
Taylor Property	Expand known resources	5,067
Garrison Creek	Follow-up 2010/11 Drilling	5,881
Grass Roots/New Acquisitions	New targets from compilation work and new acquisitions	7,445
Total Drilling		62,560

Table 25-1: Exploration drilling program for 2013.

Generally, the 2013 exploration program plans to utilize four drills in the early part of the year, possibly expanding to five drills depending on productivity.

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27.0 SIGNATURE PAGE AND DATE

The undersigned prepared this technical report titled "Holt-Holloway Property, Ontario, Canada, Updated NI 43-101 Technical Report". The effective date of this Technical report is December 31, 2012 and the disclosure date is March 13, 2013.

Signed,

"signed and sealed"

Pierre Rocque, P. Eng.	March 13, 2013	St Andrew Goldfields Ltd. 20 Adelaide Street East, Suite 1500 Toronto, Ontario, M5C 2T6 Canada

"signed and sealed"

Doug Cater, P. Geo.	March 13, 2013	St Andrew Goldfields Ltd. 20 Adelaide Street East, Suite 1500 Toronto, Ontario, M5C 2T6 Canada

CERTIFICATE OF QUALIFIED PERSON

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procque@sasgoldmines.com

I, Pierre Rocque, P. Eng., am employed as the Vice President of Engineering with St Andrew Goldfields Ltd.

This certificate applies to the technical report entitled “Holt-Holloway Property, Ontario, Canada, Updated NI 43-101 Technical Report” with an effective date of December 31, 2012.

I am a member of Professional Engineers of Ontario and Ordre des ingénieurs du Québec. I graduated in 1986 from École polytechnique de Montréal with a Bachelor’s degree in Mining Engineering (B. Ing.) and in 1992 from Queen’s University at Kingston with a Master’s degree in Mining Engineering (M.Sc.Eng.).

I have practiced my profession for twenty five years. I have been directly involved in mine design of underground gold mines and, since 1997 I have overseen the mining engineering department at three narrow veins underground gold mines, providing relief to the Mine Manager and General Manager on site. Since 2008, I have provided corporate direction for the engineering function at junior gold exploration and producing companies.

I have read the definition of “qualified person” set out in National Instrument 43-101 (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “qualified person” for the purposes of NI 43-101 for this report.

I visited the Holt-Holloway property on numerous occasions since 2010.

I am responsible for the preparation of the Summary and Sections 1 to 5, 12, 14 to 21 and 23 to 27 of the technical report entitled “Holt-Holloway Property, Ontario, Canada, Updated NI 43-101 Technical Report” dated March 13, 2013 and with an effective date of December 31, 2012.

I am not independent of St Andrew Goldfields Ltd. Independence is not required under Section 5.3 (3) of NI 43–101.

I have read NI 43–101 and this report has been prepared in compliance with that Instrument.

As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

“Signed and Sealed”

Pierre Rocque, P. Eng.
Vice President of Engineering

CERTIFICATE OF QUALIFIED PERSON

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I, Douglas Cater, P.Geo., am employed as the Vice President Exploration with St Andrew Goldfields Ltd.

This certificate applies to the technical report entitled "Holt-Holloway Property, Ontario, Canada, Updated NI 43-101 Technical Report" with an effective date of March 13, 2013.

I am a member in good standing of the Association of Professional Geoscientist of Ontario (APGO #0161) and with NAPEG in the Northwest Territories and Nunavut (L-2238).

I graduated in 1981 from the University of Waterloo in Waterloo, ON Canada with an Honours B.Sc. specializing in Earth Science.

I have practiced my profession for over thirty years. I have been an Exploration Manager / Chief Geologist at several gold mines and advanced stage exploration projects since 1991 and have been responsible for all geological functions including calculating and reporting Resources and Reserves. Since 2012, I have been Vice President Exploration responsible for surface exploration activities on the company's extensive land package.

I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101 for this report.

I have visited the Holt and Holloway properties on numerous occasions since June 2012.

I am responsible for the preparation of the Summary and Sections 3, and 6 to 11, 13 and 22 to 25 of the technical report entitled "Holt-Holloway Property, Ontario, Canada, Updated NI 43-101 Technical Report" dated March 13, 2013 and with an effective date of December 31, 2012.

I am not independent of St Andrew Goldfields Ltd. Independence is not required under Section 5.3 (3) of NI 43–101. I have read NI 43–101 and this report has been prepared in compliance with that Instrument.

As of the date of this certificate, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

"Signed and Sealed"

Douglas Cater, P. Geo.
Vice President Exploration

Appendix A: Claim list and royalties agreements.

HARKER Township						
Claim #	PCL #	Pin#	SR	MR	Size (ha)	Group
529376		UPMC	N	Y	12.77	Canamax 10-39
529377		UPMC	N	Y	15.34	Canamax 10-39
529378		UPMC	N	Y	20.06	Canamax 10-39
529379		UPMC	N	Y	15.38	Canamax 10-39
529380		UPMC	N	Y	12.94	Canamax 10-39
529381		UPMC	N	Y	12.28	Canamax 10-39
586435		UPMC	N	Y	29.07	Canamax 10-39
586436		UPMC	N	Y	10.42	Canamax 10-39
586437		UPMC	N	Y	6.06	Canamax 10-39
586455		UPMC	N	Y	12.20	Canamax 10-39
586456		UPMC	N	Y	18.46	Canamax 10-39
586457		UPMC	N	Y	11.47	Canamax 10-39
586458		UPMC	N	Y	12.60	Canamax 10-39
632511		UPMC	N	Y	10.88	Canamax 10-08
632512		UPMC	N	Y	15.28	Canamax 10-08
632513		UPMC	N	Y	20.07	Canamax 10-08
641387		UPMC	N	Y	11.20	West Block
641388		UPMC	N	Y	6.95	West Block
641389		UPMC	N	Y	8.40	West Block
641390		UPMC	N	Y	6.79	West Block
641391		UPMC	N	Y	19.09	West Block
641392		UPMC	N	Y	19.64	West Block
641393		UPMC	N	Y	19.26	West Block
641394		UPMC	N	Y	19.48	West Block
641395		UPMC	N	Y	18.21	West Block
641396		UPMC	N	Y	18.17	West Block
641397		UPMC	N	Y	18.37	West Block
641398		UPMC	N	Y	17.42	West Block
641399		UPMC	N	Y	19.43	West Block
641400		UPMC	N	Y	22.87	West Block
641401		UPMC	N	Y	21.97	West Block
641402		UPMC	N	Y	21.84	West Block
641403		UPMC	N	Y	19.87	West Block
641404		UPMC	N	Y	19.53	West Block

641405	UPMC	N	Y	20.74	West Block
641406	UPMC	N	Y	16.55	West Block
641410	UPMC	N	Y	10.27	West Block
641411	UPMC	N	Y	6.20	West Block
641412	UPMC	N	Y	6.34	West Block
641413	UPMC	N	Y	15.68	West Block
641516	UPMC	N	Y	19.32	Canamax 10-39a
641517	UPMC	N	Y	16.18	Canamax 10-39a
641518	UPMC	N	Y	27.23	Canamax 10-39a
641524	UPMC	N	Y	12.11	Canamax 10-39a
650690	UPMC	N	Y	15.56	Canamax 10-39a
650691	UPMC	N	Y	18.41	Canamax 10-39a
650692	UPMC	N	Y	17.14	Canamax 10-39a
661901	UPMC	N	Y	9.68	Canamax 10-39b
661902	UPMC	N	Y	18.09	Canamax 10-39
661903	UPMC	N	Y	22.70	Canamax 10-39b
661904	UPMC	N	Y	10.67	Canamax 10-39b
667727	UPMC	N	Y	4.86	Canamax 10-39b
667728	UPMC	N	Y	9.07	Canamax 10-39b
802656	UPMC	N	Y	7.54	West Block
802657	UPMC	N	Y	7.80	West Block
802658	UPMC	N	Y	13.49	West Block
802659	UPMC	N	Y	9.31	West Block
802668	UPMC	N	Y	12.54	West Block
802669	UPMC	N	Y	11.40	West Block
802671	UPMC	N	Y	16.12	West Block
802672	UPMC	N	Y	13.18	West Block
802673	UPMC	N	Y	16.49	West Block
802674	UPMC	N	Y	4.46	West Block
1034617	UPMC	N	Y	7.23	Canamax 10-31
1132678	UPMC	N	Y	13.91	Canamax 10-08
1132679	UPMC	N	Y	20.14	Canamax 10-08
1132680	UPMC	N	Y	16.94	Canamax 10-08
1132681	UPMC	N	Y	16.45	Canamax 10-08
1132682	UPMC	N	Y	16.99	Canamax 10-08
1132683	UPMC	N	Y	15.53	Canamax 10-08
1132684	UPMC	N	Y	18.56	Canamax 10-08
1132685	UPMC	N	Y	14.91	Canamax 10-08

1137349		UPMC	N	Y	13.25	Canamax 10-08
1137369		UPMC	N	Y	17.94	Canamax 10-08
1137389		UPMC	N	Y	14.68	Canamax 10-08
1184131		UPMC	N	Y	69.36	West Block
1201109		UPMC	N	Y	20.26	Canamax 10-31
1201110		UPMC	N	Y	9.34	Canamax 10-31
1206020		UPMC	N	Y	40.42	NYE
1211775		UPMC	N	Y	130.20	NYE
1211776		UPMC	N	Y	225.05	NYE
1211777		UPMC	N	Y	86.18	NYE
1242261		UPMC	N	Y	263.11	NYE
3013893		UPMC	N	Y	84.77	Canamax 10-31
3016950		UPMC	N	Y	90.62	Canamax 10-31
3016967		UPMC	N	Y	9.33	Canamax 10-31
4203533		UPMC	N	Y	26.34	Canamax 10-31
CLM313	1535LC	65376-099	Y	Y	189.13	BG-Newmex
CLM323	1569LC	65376-106	Y	Y	149.37	Holt Mine
CLM373	1635LC	65376-120	Y	Y	140.15	BG-Canamax
CLM374	1730LC	65376-101	Y	Y	79.74	BG-Lenora
CLM390	1730LC	65376-101	Y	Y	154.72	BG-Manville
L10084	4261SEC	65376-161	N	Y	17.43	Holloway Mine
L10085	4261SEC	65376-161	N	Y	16.03	Holloway Mine
L10478	4261SEC	65376-161	N	Y	15.52	Holloway Mine
L10696	4261SEC	65376-161	N	Y	15.26	Holloway Mine
L10735	4261SEC	65376-161	N	Y	16.32	Holloway Mine
L11081	4045SEC	65376-158	Y	Y	13.09	Teddy Bear
L11166	4046SEC	65376-159	Y	Y	11.23	Teddy Bear
L11167	4047SEC	65376-160	Y	Y	8.96	Teddy Bear
L11168	4261SEC	65376-161	N	Y	7.52	Holloway Mine
L11244	4119SEC	65376-104	Y	Y	6.63	Holt Mine
L11245	4120SEC	65376-092	Y	Y	17.57	Holt Mine
L11246	4121SEC	65376-103	Y	Y	15.93	Holt Mine
L11247	4103SEC	65376-093	Y	Y	15.76	Holt Mine
L11248	4104SEC	65376-102	Y	Y	21.37	Holt Mine
L11249	4105SEC	65376-105	Y	Y	21.38	Holt Mine
L11570	4087SEC	65376-117	Y	Y	20.64	Harker Patents
L11571	3970SEC	65376-119	Y	Y	14.88	Harker Patents

L11671	4261SEC	65376-161	N	Y	11.56	Holloway Mine
L11927	4075SEC	65376-118	Y	Y	24.12	Harker Patents
L29745	8315SEC	65376-036	Y	Y	17.07	Lightvale
L29746	8961SEC	65376-035	Y	Y	18.35	Lightvale
L29747	8962SEC	65376-033	Y	Y	24.69	Lightvale
L29748	8963SEC	65376-034	Y	Y	23.92	Lightvale
L29749	8964SEC	65376-048	Y	Y	20.69	Lightvale
L29750	8965SEC	65376-029	Y	Y	18.85	Lightvale
L29751	8316SEC	65376-049	Y	Y	19.99	Lightvale
L29752	8966SEC	65376-028	Y	Y	14.35	Lightvale
L29753	8967SEC	65376-050	Y	Y	9.95	Lightvale
L30150	8960SEC	65376-060	Y	Y	16.59	Lightvale
L30151	8993SEC	65376-059	Y	Y	12.24	Lightvale
L30152	8994SEC	65376-058	Y	Y	13.46	Lightvale
L30153	8979SEC	65376-051	Y	Y	20.45	Lightvale
L30154	8980SEC	65376-021	Y	Y	23.09	Lightvale
L30155	8981SEC	65376-022	Y	Y	26.30	Lightvale
L30278	8989SEC	65376-020	Y	Y	17.19	Lightvale
L30279	8990SEC	65376-052	Y	Y	15.23	Lightvale
L30280	8991SEC	65376-057	Y	Y	15.42	Lightvale
L32635	8984SEC	65376-097	Y	Y	10.43	Lightvale
L32636	8985SEC	65376-098	Y	Y	19.68	Lightvale
L32637	8986SEC	65376-076	Y	Y	16.77	Lightvale
L32638	8992SEC	65376-073	Y	Y	17.31	Lightvale
L32639	8995SEC	65376-074	Y	Y	25.36	Lightvale
L32640	8996SEC	65376-075	Y	Y	13.94	Lightvale
L32641	8982SEC	65376-081	Y	Y	17.67	Lightvale
L32642	8983SEC	65376-082	Y	Y	15.20	Lightvale
L32643	8987SEC	65376-096	Y	Y	13.38	Lightvale
L32726	8997SEC	65376-083	Y	Y	11.94	Lightvale
L32727	8988SEC	65376-084	Y	Y	8.84	Lightvale
L32728	8998SEC	65376-095	Y	Y	9.57	Lightvale
L32729	8999SEC	65376-053	Y	Y	17.32	Lightvale
L32730	9000SEC	65376-056	Y	Y	20.55	Lightvale
L32731	9201SEC	65376-077	Y	Y	25.87	Lightvale
L34845	8968SEC	65376-013	Y	Y	19.03	Lightvale
L34846	8969SEC	65376-011	Y	Y	24.16	Lightvale
L34847	8970SEC	65376-054	Y	Y	21.34	Lightvale

L34848	8971SEC	65376-055	Y	Y	27.09	Lightvale
L34849	8972SEC	65376-078	Y	Y	38.92	Lightvale
L34850	8973SEC	65376-079	Y	Y	14.10	Lightvale
L34851	8974SEC	65376-080	Y	Y	11.78	Lightvale
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L40538	11329SEC	65376-025	Y	Y	13.73	Lightvale
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L40541	11332SEC	65376-023	Y	Y	15.59	Lightvale
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L40544	11335SEC	65376-019	Y	Y	17.63	Lightvale
L40545	11336SEC	65376-027	Y	Y	17.15	Lightvale
L40546	11337SEC	65376-031	Y	Y	13.63	Lightvale
L43925	11338SEC	65376-014	Y	Y	6.78	Lightvale
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L43927	11340SEC	65376-007	Y	Y	20.77	Lightvale
L43928	11341SEC	65376-015	Y	Y	15.03	Lightvale
L43929	11342SEC	65376-009	Y	Y	13.67	Lightvale
L43930	11343SEC	65376-006	Y	Y	20.70	Lightvale
L43931	11344SEC	65376-016	Y	Y	17.99	Lightvale
L43932	11345SEC	65376-008	Y	Y	17.26	Lightvale
L43933	11346SEC	65376-005	Y	Y	16.12	Lightvale
L525486	1601LC	65376-151	Y	Y	33.84	Canamax 10-08
L525487	1601LC	65376-151	Y	Y	24.56	Canamax 10-08
L525488	1601LC	65376-151	Y	Y	18.77	Canamax 10-08
L525489	1601LC	65376-151	Y	Y	26.57	Canamax 10-08
L528967	1851LC	65376-154	N	Y	18.52	Canamax 10-31
L528968	1851LC	65376-154	N	Y	18.63	Canamax 10-31
L528969	1851LC	65376-154	N	Y	19.66	Canamax 10-31
L528970	1851LC	65376-154	N	Y	18.11	Canamax 10-31
L528971	1851LC	65376-154	N	Y	16.49	Canamax 10-31
L528972	1851LC	65376-154	N	Y	17.92	Canamax 10-31
L529369	1601LC	65376-151	Y	Y	14.95	Canamax 10-39
L529370	1601LC	65376-151	Y	Y	11.47	Canamax 10-39
L529371	1601LC	65376-151	Y	Y	24.36	Canamax 10-39

L529372	1601LC	65376-151	Y	Y	16.01	Canamax 10-39
L529373	1601LC	65376-151	Y	Y	22.82	Canamax 10-39
L529375	1601LC	65376-151	Y	Y	14.13	Canamax 10-39
L586459	1601LC	65376-151	Y	Y	9.32	Canamax 10-39
L586460	1601LC	65376-151	Y	Y	20.21	Canamax 10-39
L586465	1601LC	65376-151	Y	Y	12.16	Canamax 10-39
L586466	1601LC	65376-151	Y	Y	8.09	Canamax 10-39
L586467	1601LC	65376-151	Y	Y	15.42	Canamax 10-39
L586468	1601LC	65376-151	Y	Y	14.74	Canamax 10-39
L628520	1534LC	65376-111	Y	Y	8.27	Barrick East
L628533	1534LC	65376-111	Y	Y	10.87	Barrick East
L628534	1534LC	65376-111	Y	Y	15.85	Barrick East
L633298	1534LC	65376-112	Y	Y	8.20	Barrick East
L633299	1534LC	65376-112	Y	Y	11.17	Barrick East
L633300	1534LC	65376-111	Y	Y	5.02	Barrick East
L633301	1534LC	65376-111	Y	Y	3.39	Barrick East
L633303	1534LC	65376-111	Y	Y	4.04	Barrick East
L633305	1534LC	65376-111	Y	Y	11.93	Barrick East
L633306	1534LC	65376-111	Y	Y	5.63	Barrick East
L633308	1534LC	65376-111	Y	Y	18.19	Barrick East
L633309	1534LC	65376-111	Y	Y	15.39	Barrick East
L633310	1534LC	65376-111	Y	Y	12.73	Barrick East
L633311	1534LC	65376-111	Y	Y	8.09	Barrick East
L70976	205LC	65377-063	Y	Y	21.33	Canamax 13-23
L70977	206LC	65377-062	Y	Y	15.24	Canamax 13-23
L70978	207LC	65376-003	Y	Y	13.65	Canamax 13-23
L70979	208LC	65376-004	Y	Y	16.35	Canamax 13-23
L802663	1534LC	65376-111	Y	Y	2.91	Barrick East
L802666	1534LC	65376-111	Y	Y	6.19	Barrick East
L802667	1534LC	65376-111	Y	Y	3.88	Barrick East
L9862	3917SEC	65376-043	Y	Y	15.86	Holloway Mine

HOLLOWAY

586632	UPMC	N	Y	13.01	Canamax 10-42
588014	UPMC	N	Y	15.05	FN-Holloway 3
588165	UPMC	N	Y	13.14	FN-Holloway 3
588169	UPMC	N	Y	14.34	FN-Holloway 3
588170	UPMC	N	Y	15.25	FN-Holloway 3
588171	UPMC	N	Y	15.83	FN-Holloway 3
588172	UPMC	N	Y	16.16	FN-Holloway 3
588175	UPMC	N	Y	14.21	FN-Holloway 3
588176	UPMC	N	Y	15.61	FN-Holloway 3
588177	UPMC	N	Y	17.27	FN-Holloway 3
588178	UPMC	N	Y	16.03	FN-Holloway 3
588179	UPMC	N	Y	16.75	FN-Holloway 3
588182	UPMC	N	Y	14.52	FN-Holloway 3
588183	UPMC	N	Y	15.48	FN-Holloway 3
588184	UPMC	N	Y	17.10	FN-Holloway 3
588185	UPMC	N	Y	15.85	FN-Holloway 3
588186	UPMC	N	Y	16.93	FN-Holloway 3
588187	UPMC	N	Y	14.41	FN-Holloway 3
588188	UPMC	N	Y	15.35	FN-Holloway 3
588189	UPMC	N	Y	16.79	FN-Holloway 3
588190	UPMC	N	Y	15.81	FN-Holloway 3
588191	UPMC	N	Y	16.93	FN-Holloway 3
588192	UPMC	N	Y	15.61	FN-Holloway 3
588193	UPMC	N	Y	16.73	FN-Holloway 3
588194	UPMC	N	Y	18.42	FN-Holloway 3
588195	UPMC	N	Y	17.80	FN-Holloway 3
588196	UPMC	N	Y	18.71	FN-Holloway 3
588197	UPMC	N	Y	16.08	FN-Holloway 3
588198	UPMC	N	Y	16.95	FN-Holloway 3
588388	UPMC	N	Y	10.90	FN-Holloway 2
588389	UPMC	N	Y	15.27	FN-Holloway 2
588468	UPMC	N	Y	16.21	FN-Holloway 2
588469	UPMC	N	Y	12.48	FN-Holloway 2
588470	UPMC	N	Y	14.60	FN-Holloway 2
588471	UPMC	N	Y	17.71	FN-Holloway 2
588476	UPMC	N	Y	15.88	FN-Holloway 2
588477	UPMC	N	Y	10.96	FN-Holloway 2

588540	UPMC	N	Y	11.12	FN-Polishing Pond
588558	UPMC	N	Y	16.39	FN-Holloway 3
588559	UPMC	N	Y	15.68	FN-Holloway 3
588560	UPMC	N	Y	14.05	FN-Holloway 3
588563	UPMC	N	Y	24.61	FN-Holloway 3
588564	UPMC	N	Y	16.63	FN-Holloway 3
588565	UPMC	N	Y	17.03	FN-Holloway 3
588566	UPMC	N	Y	16.14	FN-Holloway 3
588567	UPMC	N	Y	17.06	FN-Holloway 3
588568	UPMC	N	Y	17.81	FN-Holloway 3
588569	UPMC	N	Y	17.56	FN-Holloway 3
588570	UPMC	N	Y	25.47	FN-Holloway 3
588573	UPMC	N	Y	16.78	FN-Holloway 3
588574	UPMC	N	Y	15.49	FN-Holloway 3
588575	UPMC	N	Y	17.12	FN-Holloway 3
596245	UPMC	N	Y	14.37	Canamax 10-42
596246	UPMC	N	Y	15.28	Canamax 10-42
596251	UPMC	N	Y	12.95	Canamax 10-42
596252	UPMC	N	Y	9.90	Canamax 10-42
596253	UPMC	N	Y	9.31	Canamax 10-42
596254	UPMC	N	Y	8.26	Canamax 10-42
596255	UPMC	N	Y	16.22	Canamax 10-42
596256	UPMC	N	Y	8.90	Canamax 10-42
596257	UPMC	N	Y	8.77	Canamax 10-42
599010	UPMC	N	Y	16.46	FN-Holloway 3
599011	UPMC	N	Y	15.27	FN-Holloway 3
599012	UPMC	N	Y	16.02	FN-Holloway 3
599013	UPMC	N	Y	17.58	FN-Holloway 3
599014	UPMC	N	Y	25.48	FN-Holloway 3
599020	UPMC	N	Y	22.09	FN-Holloway 3
599021	UPMC	N	Y	15.96	FN-Holloway 3
599022	UPMC	N	Y	15.86	FN-Holloway 3
599023	UPMC	N	Y	15.09	FN-Holloway 3
599024	UPMC	N	Y	13.21	FN-Holloway 3
599025	UPMC	N	Y	20.41	FN-Holloway 3
632507	UPMC	N	Y	20.71	Canamax 10-42
632508	UPMC	N	Y	7.94	Canamax 10-42

632509		UPMC	N	Y	8.05	Canamax 10-42
632510		UPMC	N	Y	8.10	Canamax 10-42
632515		UPMC	N	Y	38.79	Canamax 10-42
632516		UPMC	N	Y	11.85	Canamax 10-42
632517		UPMC	N	Y	14.87	Canamax 10-42
632518		UPMC	N	Y	15.79	Canamax 10-42
632519		UPMC	N	Y	18.97	Canamax 10-42
632520		UPMC	N	Y	15.18	Canamax 10-42
632818		UPMC	N	Y	15.89	Canamax 10-42
632819		UPMC	N	Y	15.51	Canamax 10-42
632821		UPMC	N	Y	15.80	Canamax 10-42
632822		UPMC	N	Y	8.17	Canamax 10-42
632823		UPMC	N	Y	18.43	Canamax 10-42
632824		UPMC	N	Y	20.30	Canamax 10-42
632825		UPMC	N	Y	27.67	Canamax 10-42
667156		UPMC	N	Y	15.46	Canamax 10-47
667157		UPMC	N	Y	15.66	Canamax 10-47
667158		UPMC	N	Y	13.35	Canamax 10-47
678846		UPMC	N	Y	18.73	Canamax 10-47
678847		UPMC	N	Y	15.09	Canamax 10-47
678848		UPMC	N	Y	15.11	Canamax 10-47
678849		UPMC	N	Y	15.39	Canamax 10-47
678850		UPMC	N	Y	13.50	Canamax 10-47
1111610		UPMC	N	Y	17.70	Canamax 10-25
1116486		UPMC	N	Y	12.73	Canamax 10-25
1137350		UPMC	N	Y	11.61	Canamax 10-25
1137360		UPMC	N	Y	13.87	Canamax 10-25
1137370		UPMC	N	Y	14.62	Canamax 10-25
4207023		UPMC	N	Y	2.22	Holloway Wedge
CLM321	1570LC	65375-086	Y	Y	344.46	FN-Holloway 3
CLM322	1578LC	65375-085	Y	Y	363.41	Holt Mine
CLM323	1569LC	65376-106	Y	Y	218.29	Holt Mine
CLM345	1626LC	65375-092	Y	Y	75.74	Holt Mine
CLM346	1626LC	65375-092	Y	Y	271.76	Holt Mine
CLM351	1634LC	65375-107	Y	Y	153.42	PGC 2
L10080	17179SEC	65376-178	Y	N	8.81	Holloway Mine
L10080	4261SEC	65376-161	Y	Y	8.81	Holloway Mine

L10081	17182SEC	65376-181	Y	N	14.45	Holloway Mine
L10081	4261SEC	65376-161	Y	Y	14.45	Holloway Mine
L10082	17172SEC	65376-175	Y	N	21.72	Holloway Mine
L10082	4261SEC	65376-161	N	Y	21.72	Holloway Mine
L10083	17171SEC	65376-174	Y	N	14.19	Holloway Mine
L10083	4261SEC	65376-161	Y	Y	14.19	Holloway Mine
L10218	21000SEC	65375-090	Y	N	23.54	Holt Mine
L10219	21001SEC	65375-089	Y	N	19.03	Holt Mine
L10220	21002SEC	65375-087	Y	N	16.25	Holt Mine
L10220A	21002SEC	65375-087	Y	Y	13.95	Holt Mine
L10221	21003SEC	65375-080	Y	N	16.48	Holt Mine
L10221A	21003SEC	65375-080	Y	Y	14.57	Holt Mine
L10222	21004SEC	65375-079	Y	N	22.43	Holt Mine
L10476	3972SEC	65375-008	Y	Y	17.56	Holloway Mine
L10477	3971SEC	65375-009	Y	Y	16.11	Holloway Mine
L10534	3991SEC	65375-082	Y	Y	16.51	Holloway Mine
L10697	17180SEC	65376-179	Y	N	16.42	Holloway Mine
L10697	4261SEC	65376-161	Y	Y	16.42	Holloway Mine
L10698	3990SEC	65375-056	Y	Y	15.22	Holloway Mine
L10699	3989SEC	65375-054	Y	Y	9.47	Holloway Mine
L10904	4261SEC	65375-001	N	Y	6.34	Holloway Mine
L11009	8168SEC	65375-071	Y	Y	8.38	Holt Mine
L11010	8164SEC	65375-072	Y	Y	5.71	Holt Mine
L11011	8167SEC	65375-074	Y	Y	6.11	Holt Mine
L11012	8165SEC	65375-075	Y	Y	8.28	Holt Mine
L11087	4069SEC	65375-067	Y	Y	22.57	Holt Mine
L11160	3988SEC	65375-055	Y	Y	12.35	Holloway Mine
L11169	4261SEC	65376-161	Y	Y	11.03	Holloway Mine
L11170	4261SEC	65376-161	Y	Y	12.92	Holloway Mine
L11171	4261SEC	65376-161	Y	Y	16.34	Holloway Mine
L11312	4411SEC	65375-060	Y	Y	9.12	Holt Mine
L11313	4412SEC	65375-073	Y	Y	8.78	Holt Mine
L11314	4413SEC	65375-077	Y	Y	15.82	Holt Mine
L11315	4421SEC	65375-076	Y	Y	11.70	Holt Mine
L11316	4422SEC	65375-078	Y	Y	13.85	Holt Mine
L11381	4106SEC	65375-070	Y	Y	10.27	Holt Mine
L11382	4107SEC	65375-069	Y	Y	8.38	Holt Mine

L11383	4108SEC	65375-068	Y	Y	9.24	Holt Mine
L11417	4109SEC	65375-058	Y	Y	16.51	Holt Mine
L11418	4110SEC	65375-057	Y	Y	7.78	Holt Mine
L11535	4112SEC	65375-063	Y	Y	10.64	Holt Mine
L11548	4111SEC	65375-062	Y	Y	9.38	Holt Mine
L11614	4113SEC	65375-059	Y	Y	9.04	Holt Mine
L1213841	12731LC	65375-120	Y	Y	24.53	Holt Mine
L12314	8166SEC	65375-061	Y	Y	7.75	Holt Mine
L13137	4194SEC	65375-066	Y	Y	12.37	Holt Mine
L13997	21005SEC	65375-091	Y	N	23.46	Holt Mine
L13998	21006SEC	65375-088	Y	N	30.84	Holt Mine
L13999	21007SEC	65375-081	Y	N	23.98	Holt Mine
L27220	17532SEC	65375-004	Y	N	16.33	Holloway Mine
L27221	17529SEC	65375-002	Y	N	10.94	Holloway Mine
L27222	17530SEC	65375-003	Y	N	16.53	Holloway Mine
L27223	17531SEC	65375-005	Y	N	17.50	Holloway Mine
L36699	8305SEC	65375-065	Y	Y	8.21	Holt Mine
L43058	11395SEC	65375-036	Y	Y	21.51	Canamax 10-46c
L43061	11396SEC	65375-035	Y	Y	17.15	Canamax 10-46c
L43062	11397SEC	65375-034	Y	Y	19.39	Canamax 10-46c
L43067	11399SEC	65375-032	Y	Y	24.48	Canamax 10-46c
L43068	11398SEC	65375-033	Y	Y	21.21	Canamax 10-46c
L43072	11400SEC	65375-030	Y	Y	19.84	Canamax 10-46c
L43073	11501SEC	65375-029	Y	Y	15.15	Canamax 10-46c
L43076	11383SEC	65375-031	Y	Y	21.17	Canamax 10-46c
L43077	11502SEC	65375-026	Y	Y	23.48	Canamax 10-46c
L43078	11503SEC	65375-027	Y	Y	24.75	Canamax 10-46c
L43079	11504SEC	65375-028	Y	Y	15.05	Canamax 10-46c
L43921	23703SEC	65375-011	Y	Y	9.37	Holloway Mine
L43922	23703SEC	65375-011	Y	Y	7.18	Holloway Mine
L43923	23703SEC	65375-011	Y	Y	11.40	Holloway Mine
L579576	1520LC	65375-025	Y	Y	14.46	Canamax 10-45
L579577	1508LC	65375-104	Y	Y	15.68	Canamax 10-45
L579586	1508LC	65375-104	Y	Y	15.48	Canamax 10-45
L579587	1508LC	65375-104	Y	Y	19.35	Canamax 10-45
L579588	1508LC	65375-104	Y	Y	15.53	Canamax 10-45
L579589	1508LC	65375-104	Y	Y	16.63	Canamax 10-45

L579590	1508LC	65375-104	Y	Y	16.87	Canamax 10-45
L579591	1508LC	65375-104	Y	Y	16.95	Canamax 10-45
L579592	1508LC	65375-104	Y	Y	12.56	Canamax 10-45
L579593	1508LC	65375-104	Y	Y	12.28	Canamax 10-45
L579594	1508LC	65375-104	Y	Y	17.77	Canamax 10-45
L579595	1508LC	65375-104	Y	Y	29.57	Canamax 10-45
L579654	1519LC	65375-022	Y	Y	3.05	Canamax 10-42
L579654	1519LC	65375-022	N	Y	15.66	Canamax 10-42
L579655	1519LC	65375-022	N	Y	14.02	Canamax 10-42
L579656	1519LC	65375-022	N	Y	17.19	Canamax 10-42
L579657	1519LC	65375-022	N	Y	22.96	Canamax 10-42
L579658	1519LC	65375-022	N	Y	11.25	Canamax 10-42
L579659	1519LC	65375-022	N	Y	11.43	Canamax 10-42
L579660	1519LC	65375-022	N	Y	21.60	Canamax 10-42
L579661	1519LC	65375-022	N	Y	14.05	Canamax 10-42
L579662	1519LC	65375-022	N	Y	14.46	Canamax 10-42
L579663	1519LC	65375-022	Y	Y	4.01	Canamax 10-42
L579663	1519LC	65375-022	N	Y	17.67	Canamax 10-42
L579664	1519LC	65375-022	Y	Y	1.51	Canamax 10-42
L579664	1519LC	65375-022	N	Y	13.80	Canamax 10-42
L579665	1519LC	65375-022	N	Y	13.55	Canamax 10-42
L579666	1519LC	65375-022	N	Y	13.63	Canamax 10-42
L579667	1519LC	65375-022	N	Y	23.14	Canamax 10-42
L579668	1519LC	65375-022	N	Y	13.96	Canamax 10-42
L579669	1518LC	65375-084	Y	Y	17.70	Holt Mine
L579670	1518LC	65375-084	Y	Y	24.90	Holt Mine
L579671	1519LC	65375-022	N	Y	15.02	Canamax 10-42
L579672	1519LC	65375-022	N	Y	15.47	Canamax 10-42
L579673	1519LC	65375-022	N	Y	14.47	Canamax 10-42
L588478	12731LC	65375-120	Y	Y	24.97	Holt Mine
L588479	12731LC	65375-120	Y	Y	28.59	Holt Mine
L588534	12731LC	65375-120	Y	Y	16.04	Holt Mine
L588535	12731LC	65375-120	Y	Y	12.20	Holt Mine
L588536	12731LC	65375-120	Y	Y	20.88	Holt Mine
L588537	12731LC	65375-120	Y	Y	18.26	Holt Mine
L588571	1574LC	65375-095	Y	Y	2.34	FN-Holloway 3
L588572	1574LC	65375-095	Y	Y	3.02	FN-Holloway 3

L596247	1547LC	65375-106	N	Y	25.25	Holt Mine
L596248	1518LC	65375-084	Y	Y	16.43	Holt Mine
L596249	1518LC	65375-084	Y	Y	16.45	Holt Mine
L596250	1547LC	65375-106	N	Y	21.89	Holt Mine
L596258			N	Y	17.50	Holloway Mine
L596259			N	Y	16.33	Holloway Mine
L596260			N	Y	16.53	Holloway Mine
L596261			N	Y	10.94	Holloway Mine
L599015	1574LC	65375-095	Y	Y	14.55	FN-Holloway 3
L599016	1574LC	65375-095	Y	Y	2.88	FN-Holloway 3
L599018	1574LC	65375-095	Y	Y	7.52	FN-Holloway 3
L599019	1574LC	65375-095	Y	Y	16.45	FN-Holloway 3
L616488	1505LC	65375-083	Y	Y	24.02	Holt Mine
L616489	1505LC	65375-083	Y	Y	8.66	Holt Mine
L628048	1520LC	65375-025	Y	Y	22.88	Canamax 10-42
L628049	1508LC	65375-104	Y	Y	29.38	Canamax 10-42
L628463	1543LC	65375-017	Y	Y	16.17	Canamax 10-42
L632501	1543LC	65375-017	Y	Y	10.17	Canamax 10-42
L632502	1543LC	65375-017	Y	Y	12.66	Canamax 10-42
L632503	1543LC	65375-017	Y	Y	19.59	Canamax 10-42
L632504	1543LC	65375-017	Y	Y	21.68	Canamax 10-42
L632505	1543LC	65375-017	Y	Y	18.62	Canamax 10-42
L632506	1543LC	65375-017	Y	Y	31.69	Canamax 10-42
L632820	1544LC	65375-016	Y	Y	15.92	Canamax 10-42
L632826	1543LC	65375-017	Y	Y	17.74	Canamax 10-42
L632827	1543LC	65375-017	Y	Y	11.76	Canamax 10-42
L632828	1543LC	65375-017	Y	Y	5.35	Canamax 10-42
L632829	1543LC	65375-017	Y	Y	12.45	Canamax 10-42
L633296	1534LC	65376-112	Y	Y	2.67	Barrick East
L633297	1534LC	65376-112	Y	Y	4.42	Barrick East
L7135	2795SEC	65375-098	Y	Y	27.72	Holt Mine
L7219	2799SEC	65375-099	Y	Y	18.06	Holt Mine
L7220	2796SEC	65375-097	Y	Y	16.29	Holt Mine
L7221	2800SEC	65375-096	Y	Y	19.91	Holt Mine
L7241	3201SEC	65375-101	Y	Y	28.27	Holt Mine
L7242	3202SEC	65375-102	Y	Y	22.25	Holt Mine
L7246	3203SEC	65375-103	Y	Y	20.17	Holt Mine

L7248	3204SEC	65375-100	Y	Y	19.50	Holt Mine
L799696	1540LC	65375-105	Y	Y	17.45	FN-Holloway 3
L799697	1540LC	65375-105	Y	Y	17.73	FN-Holloway 3
L801063	1505LC	65375-083	Y	Y	8.81	Holt Mine
L801065	1505LC	65375-083	Y	Y	4.92	Holt Mine
L802768	1505LC	65375-083	Y	Y	3.49	Holt Mine
L8246	3752SEC	65375-010	Y	Y	7.95	Holloway Mine
L8247	3752SEC	65375-010	Y	Y	12.29	Holloway Mine
L9863	3918SEC	65375-006	Y	Y	8.78	Holloway Mine
L9864	3919SEC	65375-007	Y	Y	10.04	Holloway Mine

UPMC= Unpatented Mining Claim(staked claim)
LC= Lease Cochrane
SEC= South East Cochrane

Appendix B: Lab-Lab Check Near Holt-Holloway Mine Exploration 2012 Report

SUMMARY

This report summarizes the Lab-Lab check for the near Holt Holloway mine exploration program for 2012. A total of 209 samples with 12 standards and 11 blanks for a total of 233 units were sent to the SGS Lab in Cochrane Ontario on December 12th, 2012. The purpose of this process was to randomly check assay results from the year 2012. All assays for this project for 2012 were originally assayed at Lab Expert situated in Rouyn-Noranda QC. Below are the attached results from this lab check program.

SAMPLING

A total of nine (9) surface holes which were drilled and sampled throughout 2012 were randomly selected to be re-assayed based on a mixture of high grade and low grade samples. They include GZ12-006, GZ12-007, GZ12-014, GZ12-038, GH12-001, Zn412-002, Zn412-002W1, Zn412-003B and SL12-002.

PROCESS

In mid-December 2012 sample rejects from the 2012 Exploration drill program were sorted and samples were randomly selected. The sample rejects were re-marked and re-bagged if necessary and put in rice bags for easy transfer to SGS lab. Sample sequences containing blanks simply used the reject. Sample sequences containing standards, had a new standard of similar value re-inserted into the sequence.

RESULTS

The lab-lab check program had a one month sample turn around time from shipment of samples to the lab to return of the assay results. When compared to Lab Expert assays results, the values are relatively close (generally within +/-10%). The highest variation, as expected, is seen within the highest grade samples.

Six of the twelve reference standards sent failed, as they returned assay results outside of the recommended performance gates. All of standards which failed were on the low side of the expected value; Three (3) OR-2pd, two (2) OR-65a and one (1) OR-66a). It should be noted that these standards failed very close to the lower assay permitted limits. As a follow-up to the 2012 Lab / Lab assay check program at Holt / Holloway, in speaking with the QC / QA Manager for SGS, it was determined that the lab had problems with the flux for the Oreas certified reference standard causing it to return assay results outside the accepted performance gates. (The samples returned assay results which were biased on the low side). The samples were re-checked by SGS and the internal QC / QA lab samples inserted by SGS into the SAS sample stream performed within the acceptable assay ranges

Overall this process, verified the presence of high grade, confirmed low grade values and gave confidence that Lab Expert is producing accurate, consistent results. In the future we may need to re-check standards against their given values and possibly reconsider which standards are beings used. A summary of comparative assay results for lab check samples is found below:

BHID	Sample Number	Assay (Expert)	Checked Assay (SGS)
GZ12-006B	339149	0.015	0.015
GZ12-006B	339150	0.11	0.091
GZ12-006B	339151	2.05	2.07
GZ12-006B	339152	2.02	2.33
GZ12-006B	339153	5.86	5.5
GZ12-006B	339154	11.35	11.6
GZ12-006B	339156	8.4	10.6
GZ12-006B	339157	10.97	12.9
GZ12-007	335789	5.35	6.39
GZ12-007	335790	3.19	2.59
GZ12-007	335791	1.16	1.42
GZ12-007	335792	2.04	2.07
GZ12-007	335793	4.18	2.55
GZ12-007	335794	1.06	0.89

GZ12-007	335796	1.5	1.89
GZ12-007	335797	3.26	3.45
GZ12-007	335798	1.8	1.68
GZ12-007	335799	0.22	0.122
GZ12-007	335800	0.22	0.25
GZ12-007	338801	0.015	0.013
GZ12-007	338802	0.015	0.015
GZ12-007	338803	0.015	0.006
GZ12-007	338804	0.015	0.015
GZ12-007	338806	0.03	0.127
GZ12-007	338807	0.05	0.05
GZ12-014	336180	0.11	0.137
GZ12-014	336181	0.07	0.005
GZ12-014	336182	0.14	0.137
GZ12-014	336183	3.34	2.87
GZ12-014	336184	2.54	3.06
GZ12-014	336186	3.22	3.68
GZ12-014	336187	2.98	3.64
GZ12-014	336188	2.57	2.6
GZ12-014	336189	3.94	3.77
GZ12-014	336190	5.49	4.94

GZ12-014	336191	8.74	9.5
GZ12-014	336192	7.03	7.59
GZ12-014	336193	8.09	8.87
GZ12-014	336194	3.94	4.1
GZ12-014	336196	4.19	4.41
GZ12-014	336197	3.84	3.37
GZ12-014	336198	2.57	2.31
ZN412-002	365504	0.14	0.147
ZN412-002	365506	0.24	0.164
ZN412-002	365507	3.33	3.11
ZN412-002	365508	7.2	6.58
ZN412-002	365509	4.08	4.45
ZN412-002	365510	1.37	1.27
ZN412-002	365511	1.3	0.898
ZN412-002	365512	8.3	7.56
ZN412-002	365513	0.32	0.713
ZN412-002	365514	0.17	0.177
ZN412-002	365516	0.25	0.207
ZN412-002W1	365583	0.03	0.019
ZN412-002W1	365584	0.14	0.152
ZN412-002W1	365586	0.1	0.104

ZN412-002W1	365587	0.8	0.758
ZN412-002W1	365588	1.2	1.28
ZN412-002W1	365589	0.5	0.414
ZN412-002W1	365590	1.54	1.18
ZN412-002W1	365591	0.61	0.551
ZN412-002W1	365592	3.05	2.36
ZN412-002W1	365593	3.09	2.67
ZN412-002W1	365594	2.37	2.25
ZN412-002W1	365596	1.03	0.94
ZN412-002W1	365597	0.08	0.077
ZN412-002W1	365598	0.1	0.129
ZN412-002W1	365599	0.07	0.112
ZN412-002W1	365600	0.77	1.19
ZN412-002W1	365601	4.11	4.13
ZN412-002W1	365602	1.92	1.82
ZN412-002W1	365603	1.58	1.46
ZN412-002W1	365604	2.5	1.73
ZN412-002W1	365606	1.89	1.6
ZN412-002W1	365607	1.37	1.13
ZN412-002W1	365608	0.69	0.726
ZN412-002W1	365609	1.3	0.994

ZN412-002W1	365610	0.09	0.087
ZN412-002W1	365611	0.35	0.426
ZN412-002W1	365612	2.88	2.52
ZN412-002W1	365613	0.09	0.119
ZN412-002W1	365614	0.66	0.742
ZN412-002W1	365616	0.26	0.286
ZN412-002W1	365617	0.05	0.055
ZN412-002W1	365618	0.04	0.019
ZN412-002W1	365619	0.21	0.205
ZN412-002W1	365620	0.05	0.042
ZN412-002W1	365621	0.39	0.371
ZN412-002W1	365622	1.47	0.858
ZN412-002W1	365623	0.27	0.377
ZN412-002W1	365624	0.2	0.112
ZN412-002W1	365626	0.3	0.297
ZN412-002W1	365627	0.08	0.107
ZN412-002W1	365628	0.17	0.282
ZN412-002W1	365629	0.57	0.562
ZN412-002W1	365630	0.07	0.117
ZN412-002W1	365631	0.91	0.773
ZN412-002W1	365632	1.68	1.47

ZN412-003B	365699	0.25	0.15
ZN412-003B	365700	1.54	1.67
ZN412-003B	365701	4.77	4.86
ZN412-003B	365702	2.74	3.66
ZN412-003B	365703	0.29	0.496
ZN412-003B	365704	1.23	1.18
ZN412-003B	365706	1.75	1.76
ZN412-003B	365707	0.35	0.368
ZN412-003B	365708	0.62	0.631
ZN412-003B	365709	0.89	0.872
ZN412-003B	365710	2.4	2.26
ZN412-003B	365711	1.78	1.25
ZN412-003B	365712	1.2	1.36
ZN412-003B	365713	0.51	0.462
ZN412-003B	365714	1.3	1.5
ZN412-003B	365716	1.54	1.17
ZN412-003B	365717	1.06	0.91
ZN412-003B	365718	0.86	1.04
ZN412-003B	365730	0.28	0.307
ZN412-003B	365731	1.41	0.546
ZN412-003B	365732	0.23	0.259

ZN412-003B	365733	0.14	0.342
ZN412-003B	365734	0.09	0.093
ZN412-003B	365736	0.12	0.132
ZN412-003B	365737	0.3	0.268
ZN412-003B	365738	0.33	0.392
ZN412-003B	365739	0.41	0.542
ZN412-003B	365740	0.32	0.236
ZN412-003B	365741	0.47	0.428
ZN412-003B	365742	0.57	0.615
ZN412-003B	365743	0.81	0.729
ZN412-003B	365744	0.49	0.482
ZN412-003B	365746	0.3	0.313
ZN412-003B	365747	0.34	0.366
ZN412-003B	365748	0.4	0.349
ZN412-003B	365749	0.59	0.579
ZN412-003B	365750	0.41	0.368
ZN412-003B	365751	0.14	0.138
ZN412-003B	365752	0.3	0.274
SL12-002	337166	0.26	0.308
SL12-002	337167	1.89	1.59
SL12-002	337168	0.48	0.445

SL12-002	337169	1.27	1.09
SL12-002	337170	0.45	0.501
SL12-002	337171	0.015	0.027
SL12-002	337172	0.015	0.02
SL12-002	337173	0.015	0.022
SL12-002	337174	5.62	5.78
SL12-002	337176	0.19	0.202
SL12-002	337177	0.18	0.194
SL12-002	337178	0.75	0.732
SL12-002	337179	0.76	0.777
SL12-002	337180	0.33	0.398
SL12-002	337181	0.34	0.398
SL12-002	337182	0.015	0.026
SL12-002	337183	0.31	0.418
SL12-002	337184	0.51	0.492
SL12-002	337186	2.09	2.47
SL12-002	337151	0.015	0.01
SL12-002	337152	3.6	3.24
SL12-002	337153	8.26	8.4
SL12-002	337154	5.73	6.31
SL12-002	337156	0.07	0.065

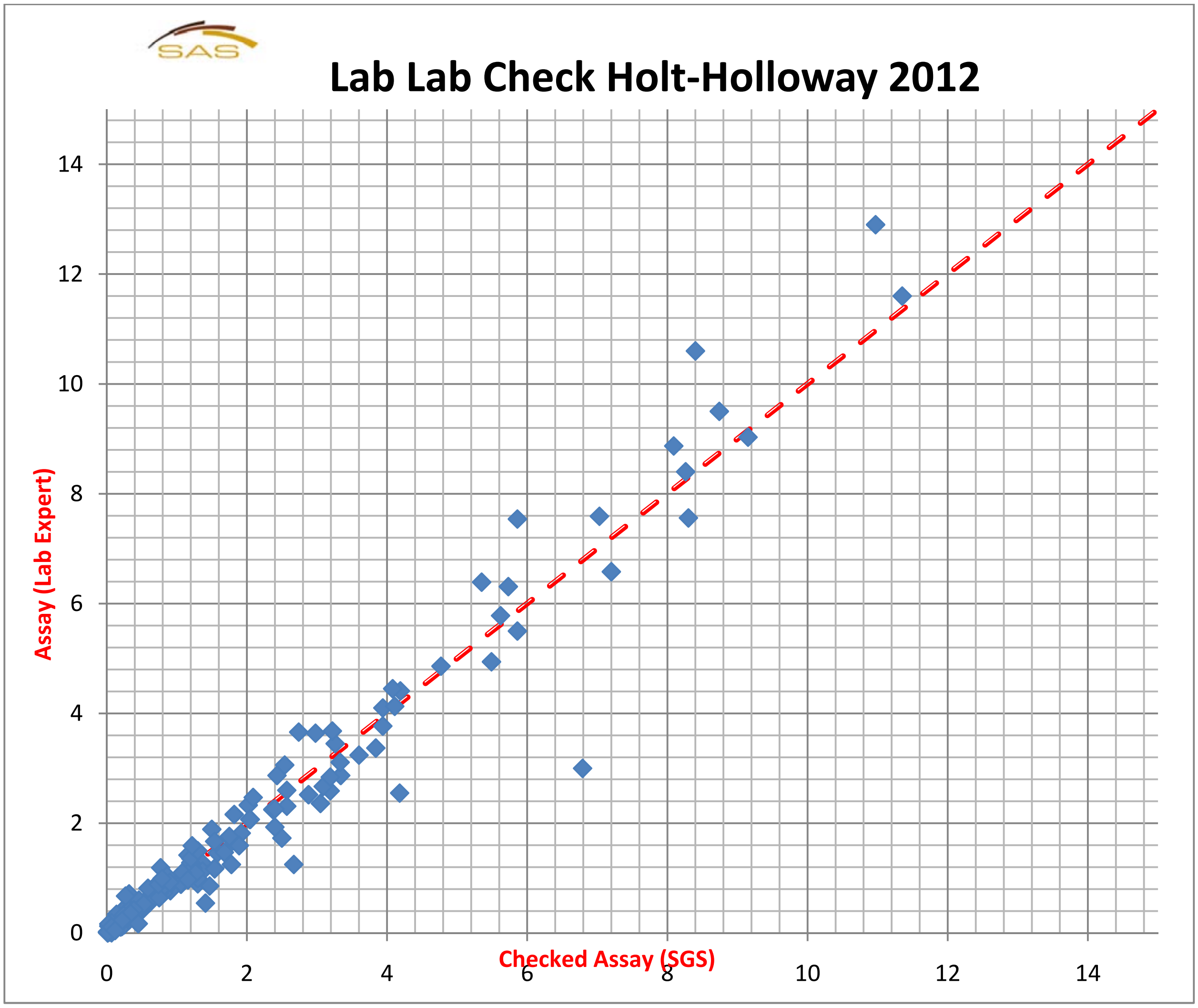
SL12-002	337157	0.09	0.096
SL12-002	337158	0.68	0.843
SL12-002	337159	0.03	0.029
SL12-002	337160	0.015	0.006
GZ12-038	368273	0.015	0.006
GZ12-038	368274	0.46	0.601
GZ12-038	368276	0.09	0.044
GZ12-038	368277	6.79	3
GZ12-038	368278	3.19	2.84
GZ12-038	368279	0.59	0.816
GZ12-038	368280	0.24	0.326
GZ12-038	368281	0.24	0.232
GZ12-038	368282	1.08	1.1
GZ12-038	368283	1.22	1.59
GZ12-038	368284	0.75	0.644
GZ12-038	368286	0.09	0.091
GZ12-038	368287	0.16	0.157
GZ12-038	368288	1.16	0.97
GZ12-038	368289	0.53	0.53
GZ12-038	368290	0.1	0.067
GZ12-038	368291	0.07	0.189

GZ12-038	368292	0.39	0.423
ZN412-002	365471	0.03	0.166
ZN412-002	365472	0.45	0.172
ZN412-002	365473	0.06	0.029
ZN412-002	365474	0.34	0.36
ZN412-002	365476	0.22	0.228
ZN412-002	365477	0.27	0.675
ZN412-002	365478	2.4	1.93
ZN412-002	365479	0.74	0.885
ZN412-002	365480	2.67	1.25
ZN412-002	365481	5.86	7.54
ZN412-002	365482	1.82	2.16
ZN412-002	365483	0.9	0.924
ZN412-002	365484	0.79	0.992
GH12-001	368460	0.015	0.015
GH12-001	368461	0.015	0.015
GH12-001	368462	0.015	0.017
GH12-001	368463	0.015	0.01
GH12-001	368464	0.015	0.015
GH12-001	368466	0.015	0.015
GH12-001	368467	0.015	0.015

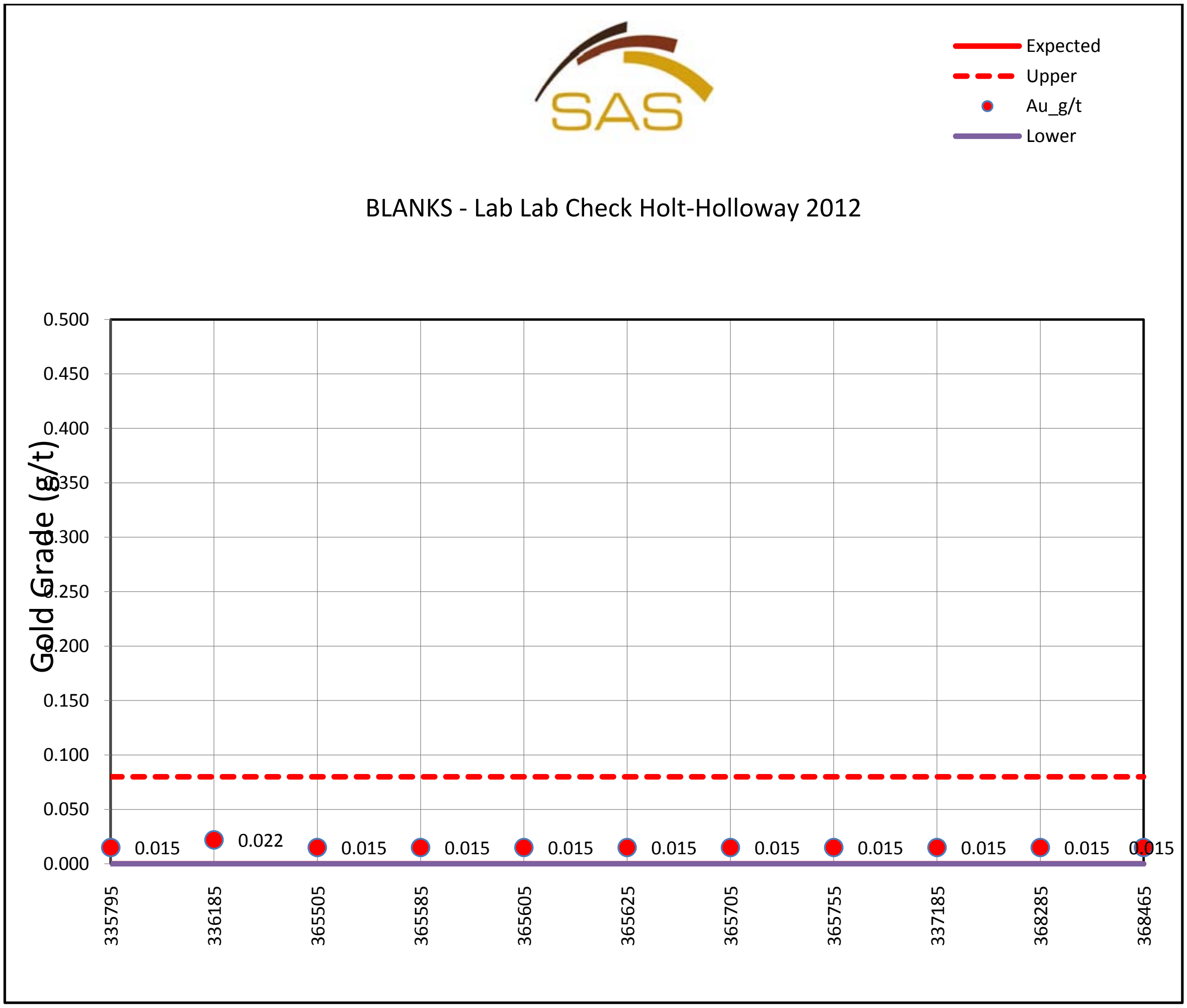
GH12-001	368468	0.015	0.015
GH12-001	368469	0.015	0.015
GH12-001	368470	0.07	0.111
GH12-001	368480	9.15	9.03
GH12-001	368481	2.43	2.87
GH12-001	368482	0.12	0.047

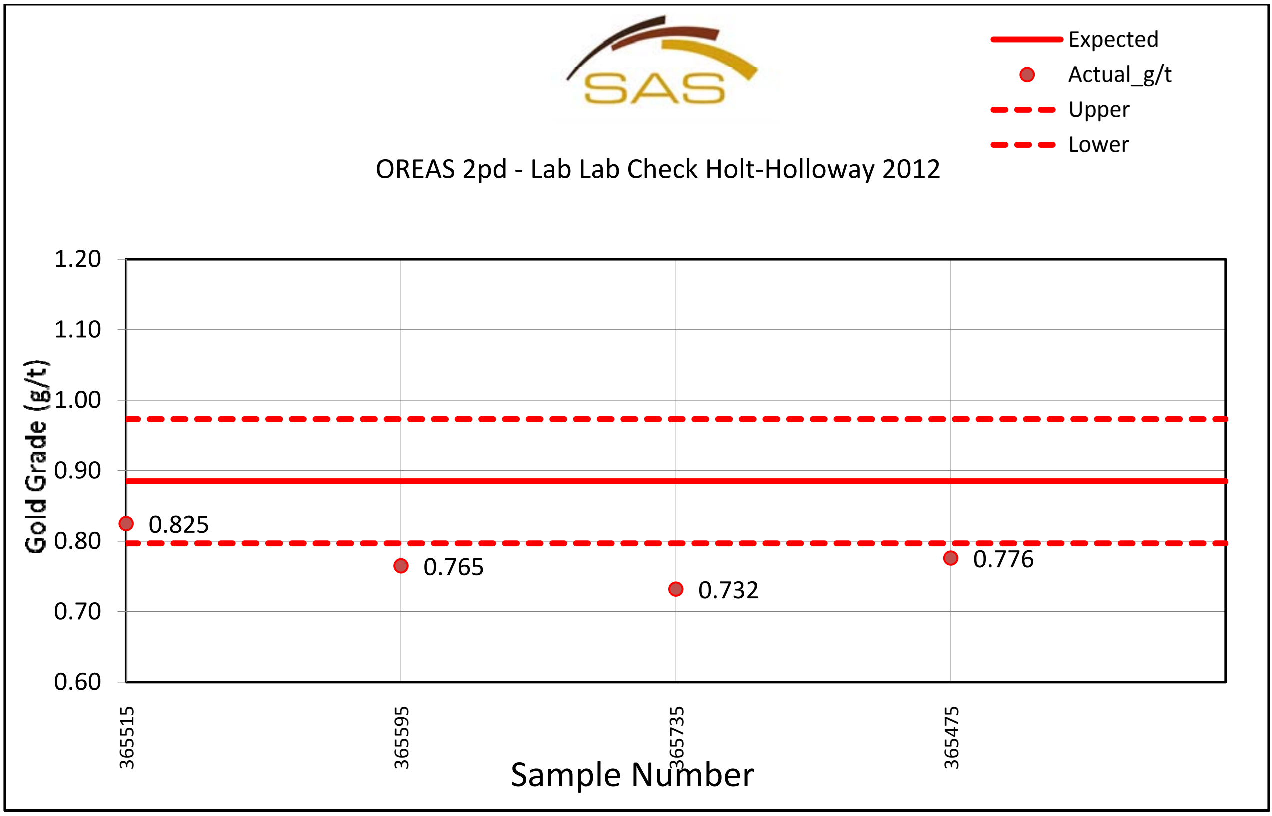
CHARTS OF STANDARDS, BLANK, AND DUPLICATE RESULTS FOR 2012, NEAR HOLT-HOLLOWAY MINE EXPLORATION LAB-LAB CHECK

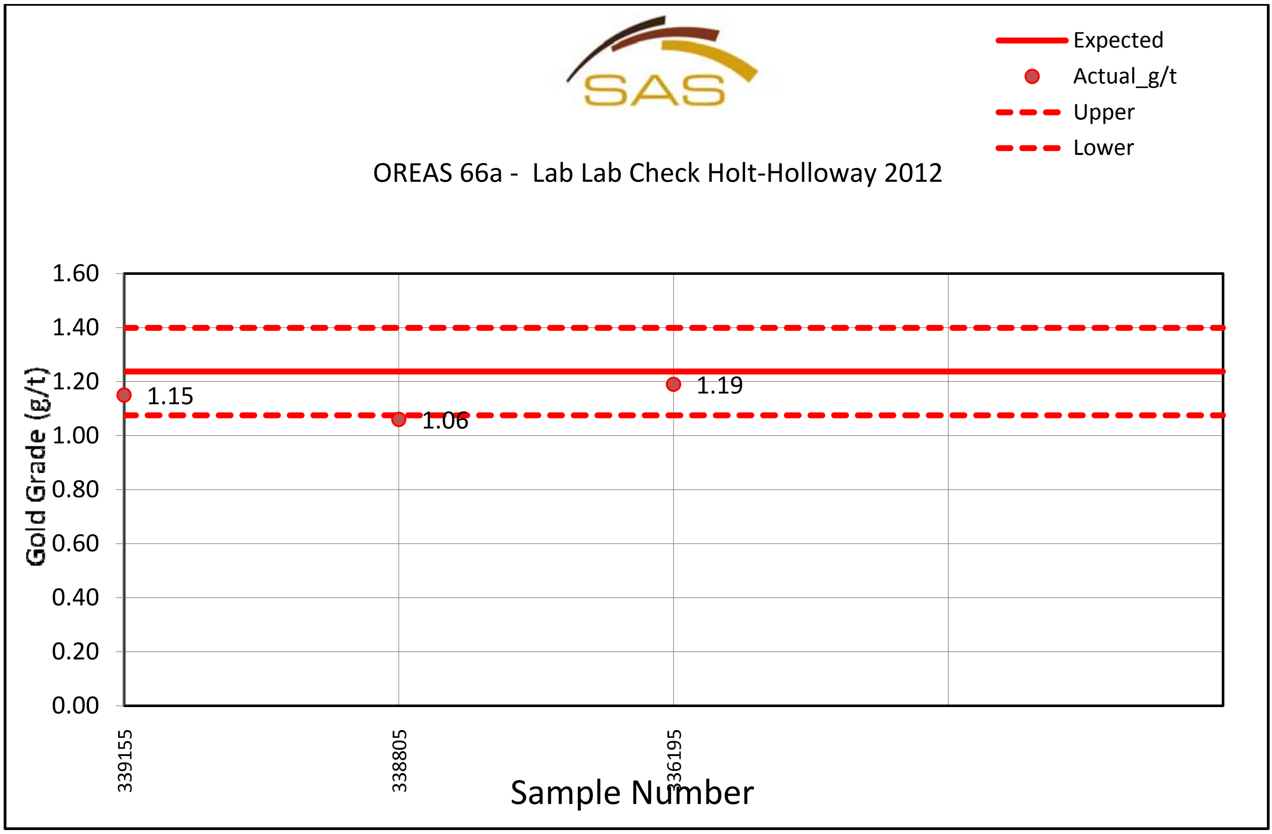
(0 represents samples not returned due to insufficient sample material.)

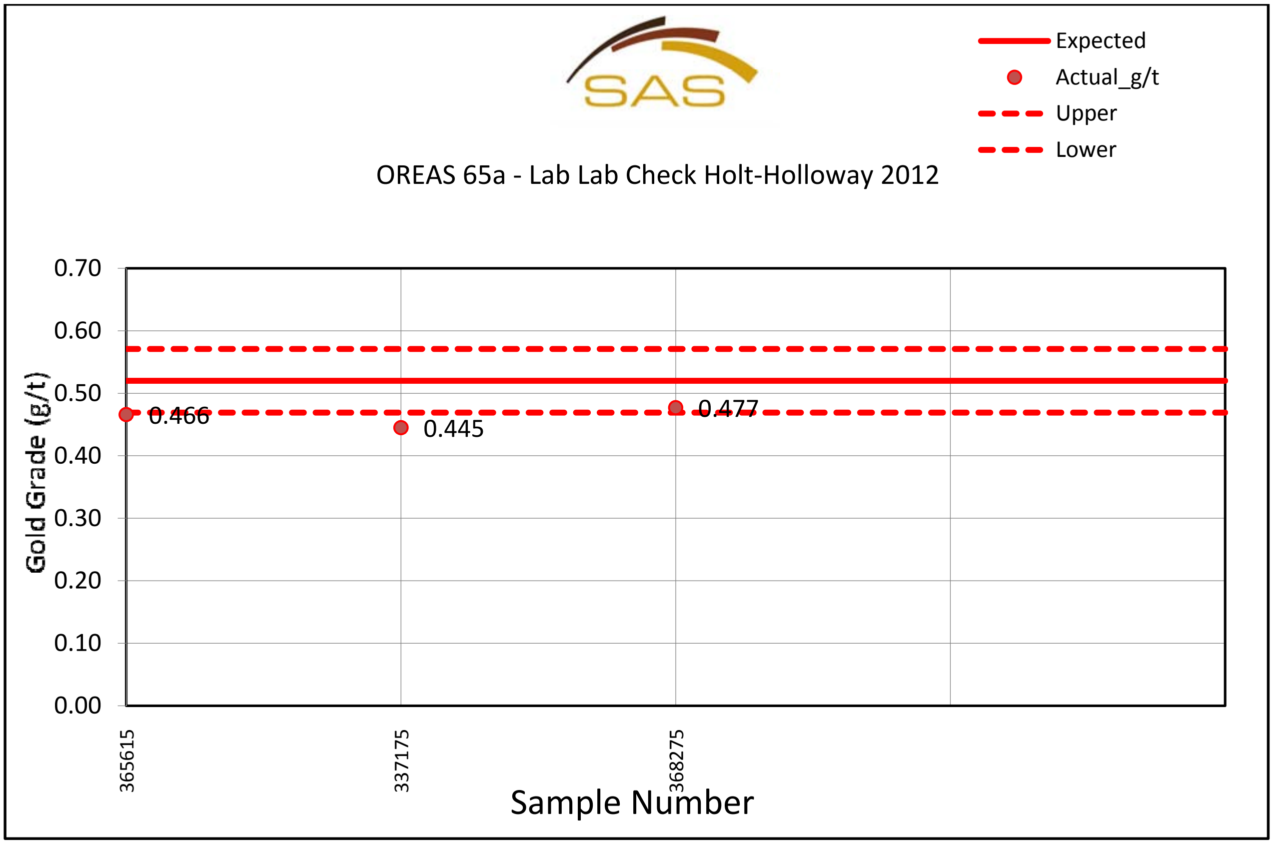

Lab Lab Check Holt-Holloway 2012
Assay (Lab Expert)
Checked Assay (SGS)
0
2
4
6
8
10
12
14

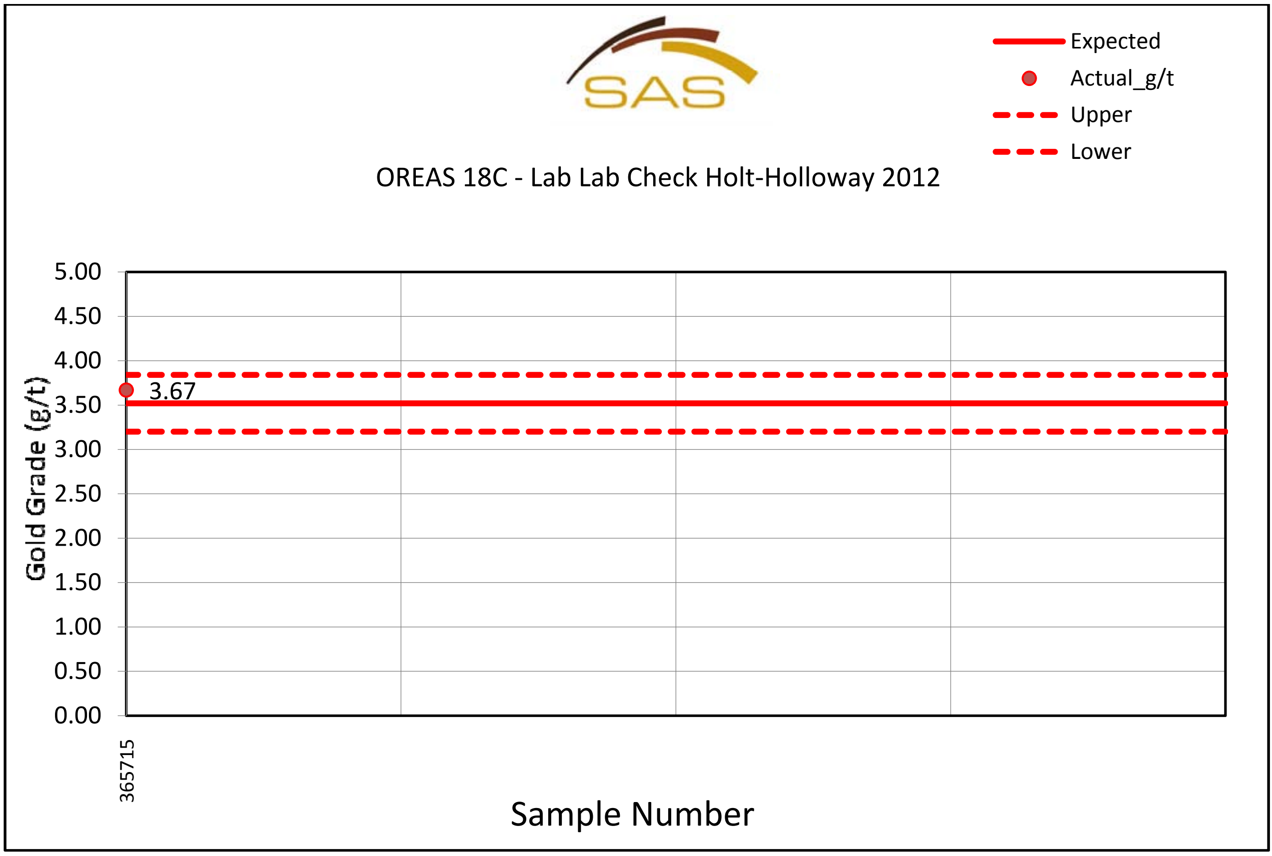
v


Expected
Upper
Au_g/t
Lower
BLANKS - Lab Lab Check Holt-Holloway 2012
Gold Grade (g/t)
0.500
0.450
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
0.000
0.015
0.022
0.015
0.015
0.015
0.015
0.015
0.015
0.015
0.015
0.015
335795
336185
365505
365585
365605
365625
365705
365755
337185
368285
368465


SAS
Expected
Actual_g/t
Upper
Lower
OREAS 2pd - Lab Lab Check Holt-Holloway 2012
Gold Grade (g/t)
1.20
1.10
1.00
0.90
0.80
0.70
0.60
0.825
0.765
0.732
0.776
365515
365595
365735
365475
Sample Number

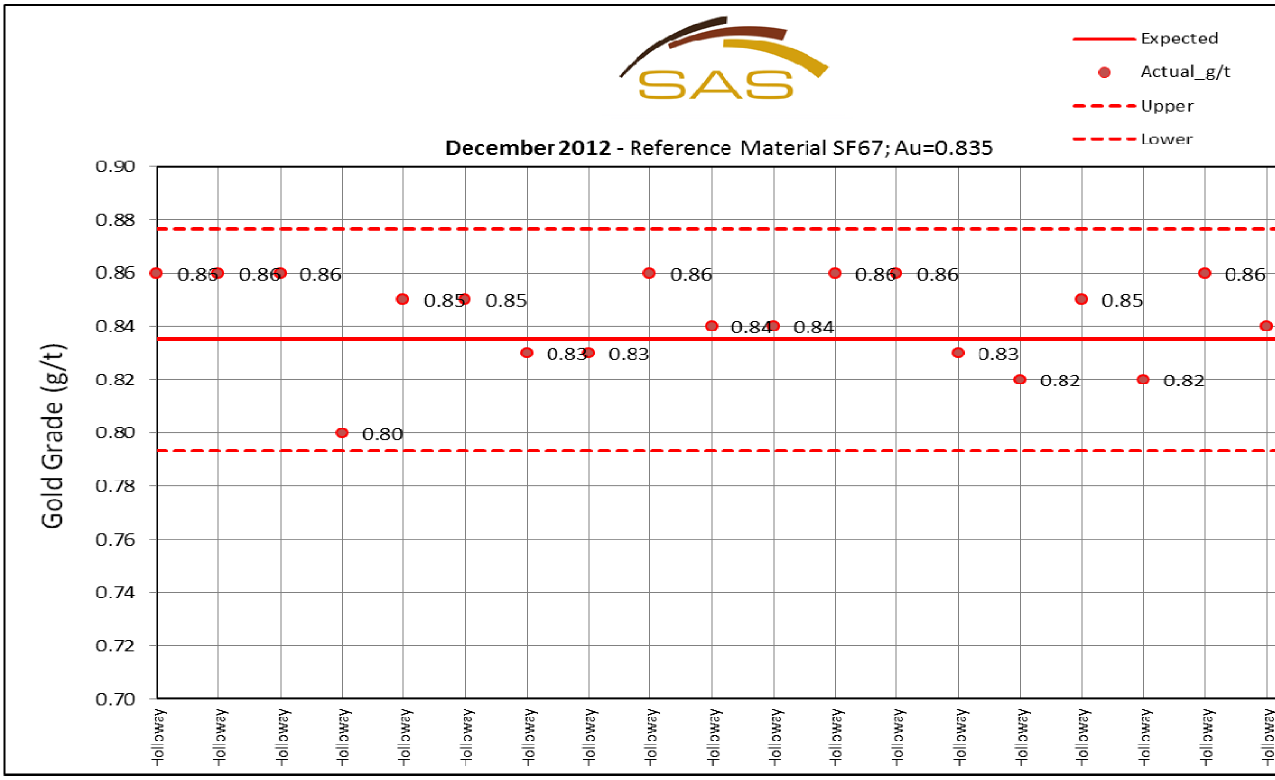

SAS
OREAS 66a - Lab Lab Check Holt-Holloway 2012
Expected
Actual_g/t
Upper
Lower
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Gold Grade (g/t)
1.15
1.06
1.19
339155
338805
336195
Sample Number

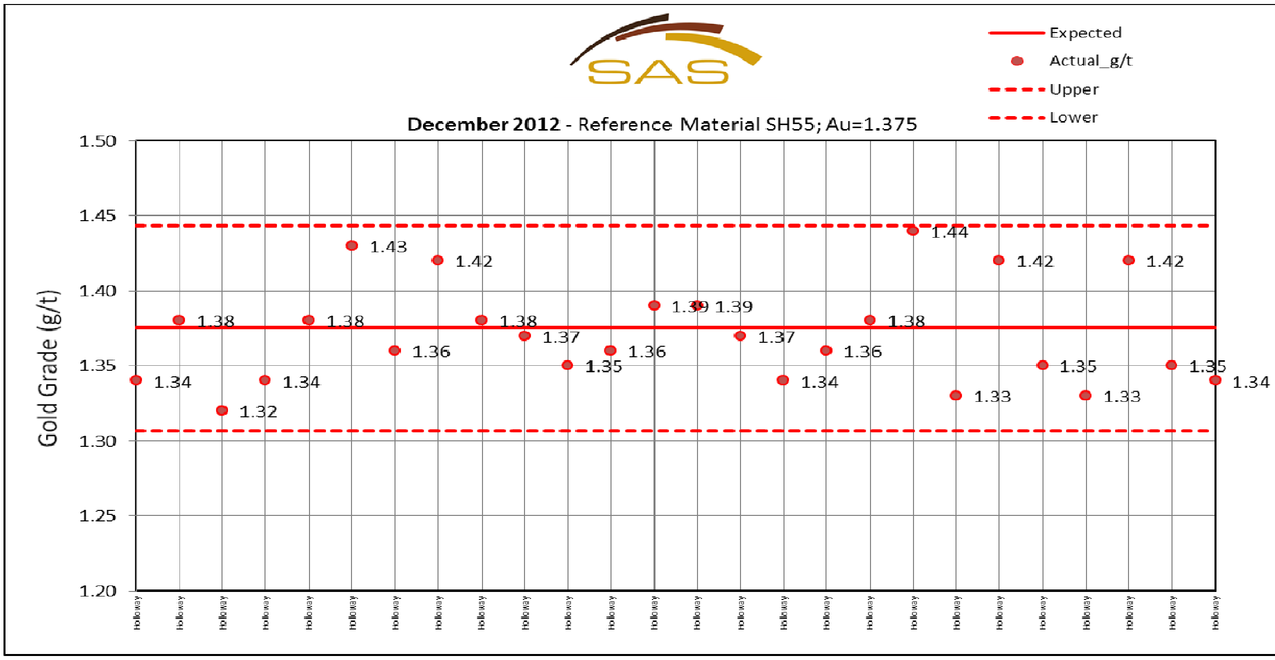

OREAS 65a - Lab Lab Check Holt-Holloway 2012
Expected
Actual_g/t
Upper
Lower
Gold Grade (g/t)
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
0.466
0.445
0.477
365615
337175
368275
Sample Number



Holt Mine QC / QA

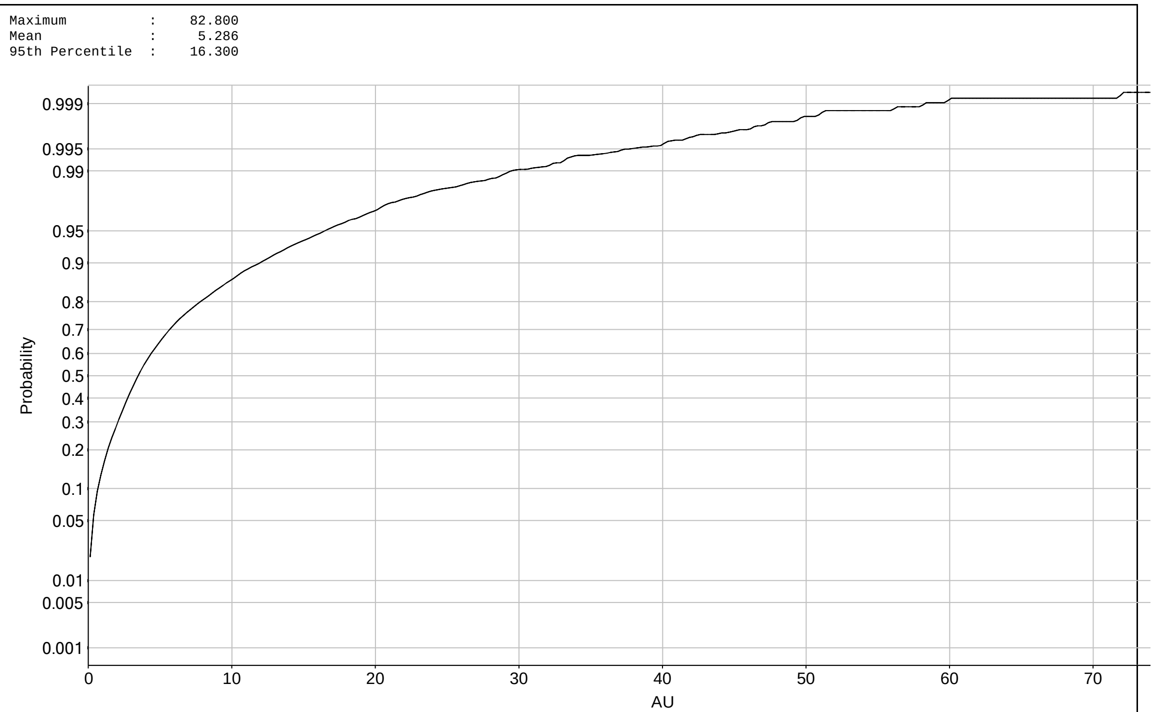
Certified reference standard sample results were provided by the Holt Mill Metallurgist for the period July – December 2012 used during the analysis of underground drill core. Quality control performance of the reference standards used during the month of December 2012 is found in the two graphs below. Both standards performed well within the acceptable assay range during the month.


SAS
Expected
Actual_g/t
Upper
Lower
December 2012 - Reference Material SF67; Au=0.835
Gold Grade (g/t)
0.90
0.88
0.86
0.84
0.82
0.80
0.78
0.76
0.74
0.72
0.70
0.86
0.86
0.86
0.80
0.85
0.85
0.83
0.83
0.86
0.84
0.84
0.86
0.86
0.83
0.82
0.85
0.82
0.86

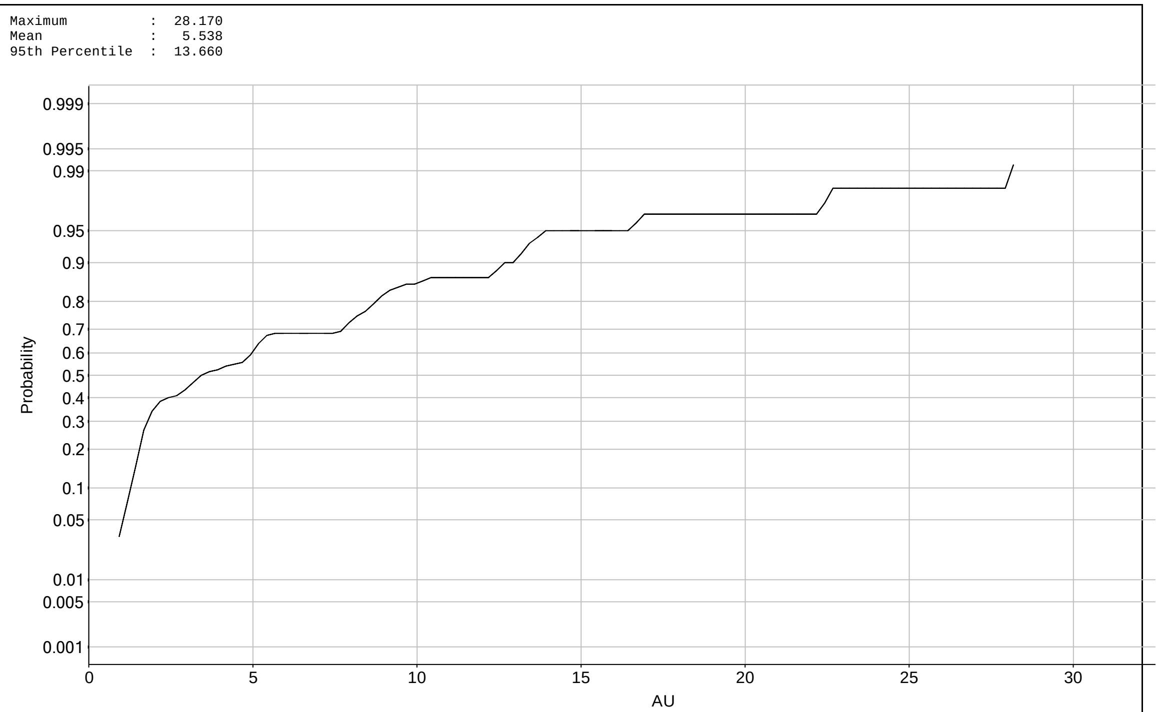

SAS
Expected
Actual_g/t
Upper
Lower
December 2012 - Reference Material SH55; Au=1.375
Gold Grade (g/t)
1.50
1.45
1.40
1.35
1.30
1.25
1.20
1.34
1.38
1.32
1.34
1.38
1.43
1.36
1.42
1.38
1.37
1.35
1.36
1.39
1.39
1.37
1.34
1.36
1.38
1.44
1.33
1.42
1.35
1.33
1.42
1.35
1.34

Appendix C: Probability Plots for Holt-Holloway mines (as of December 31, 2012).

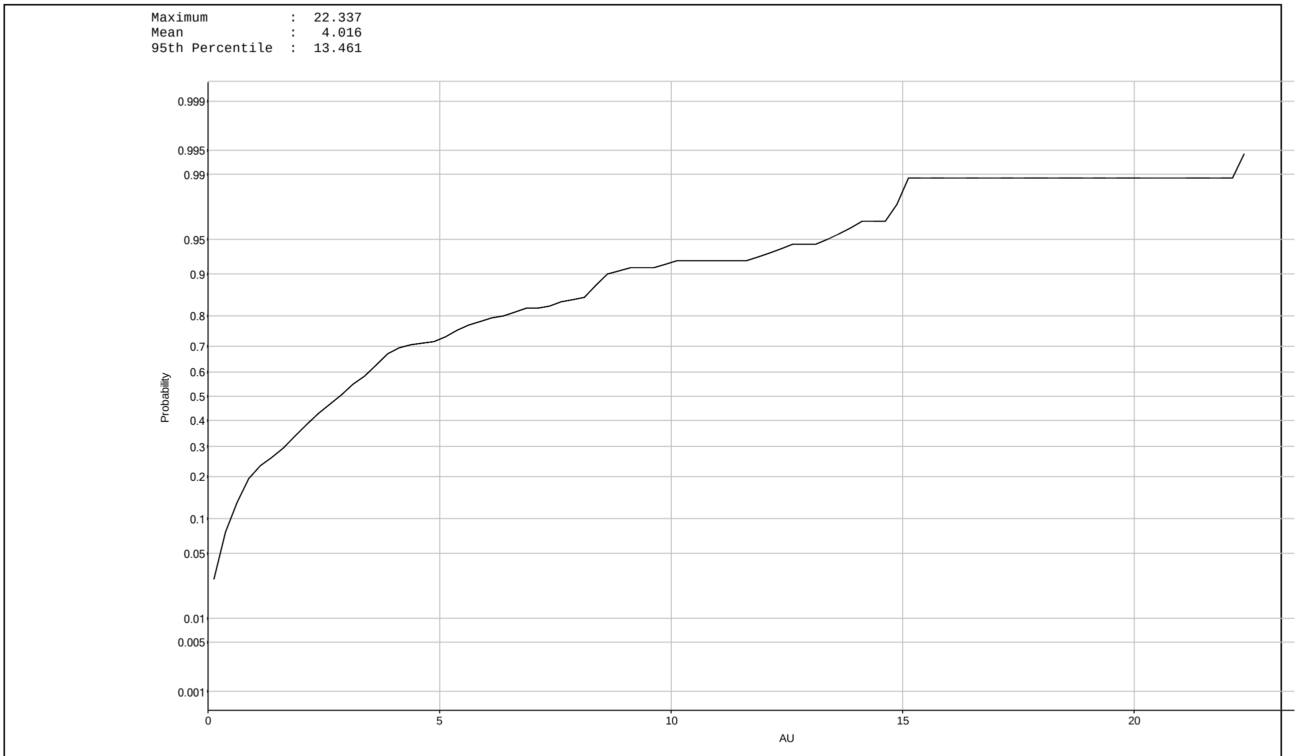
Note: Zone 4, C-95, C-97 and C-99 were included in Section 13.



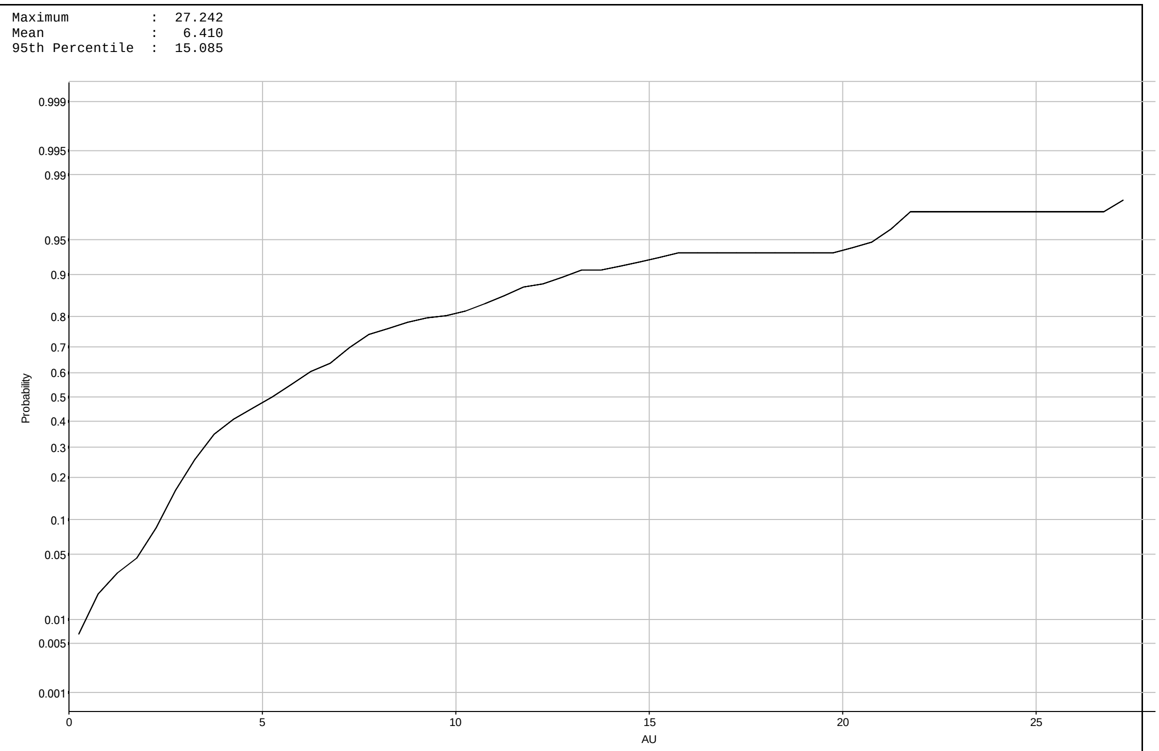
Probability plot for C-104 Lens 4.



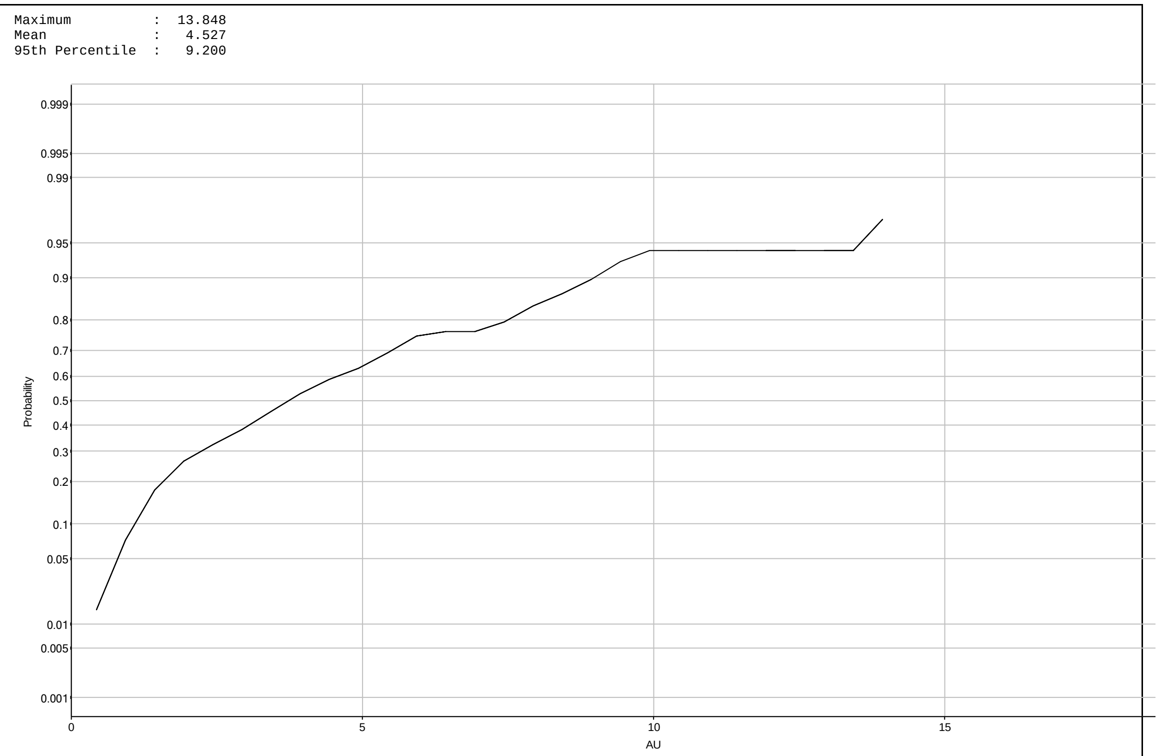
Probability plot for V-93. No capping was applied.



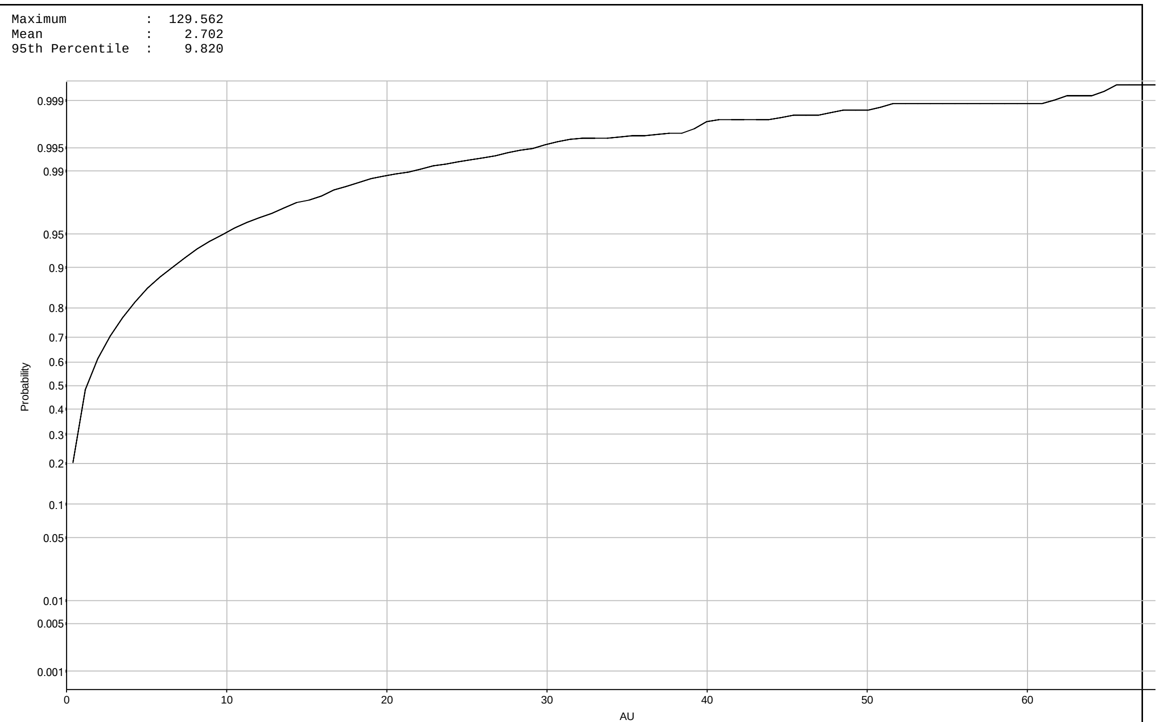
Probability plot for Tousignant Lens 1. Capping was at 20 g/t.



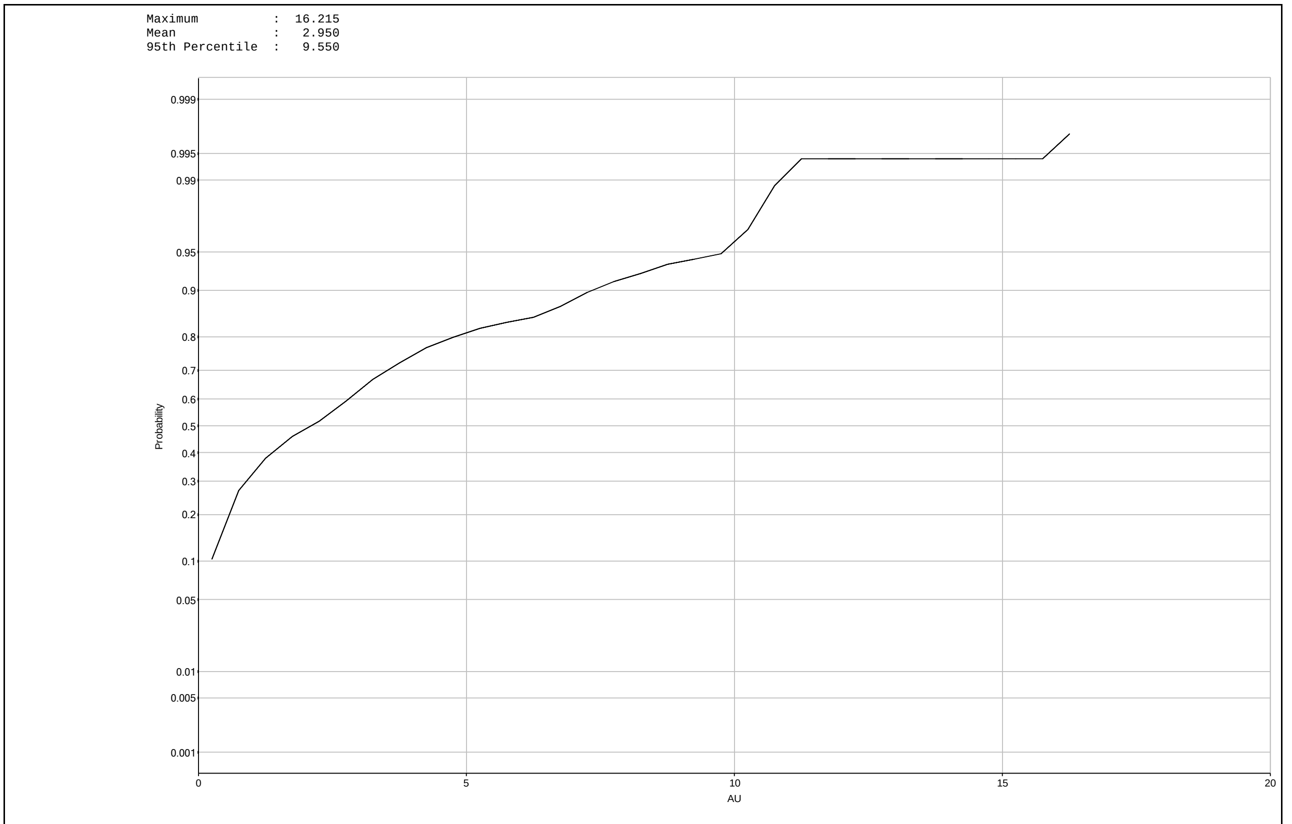
Probability plot for Tousignant Lens 2. Capping was at 20 g/t.



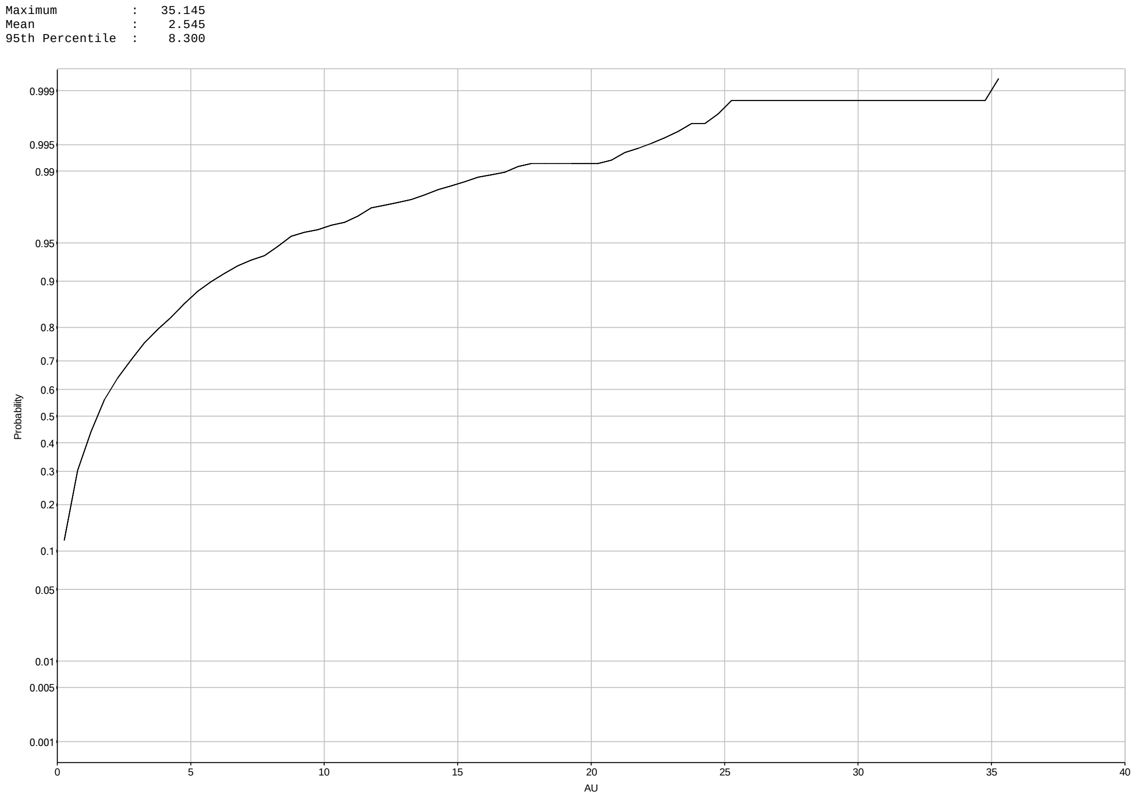
Probability plot for Tousignant Vertical Lens. No capping was required.



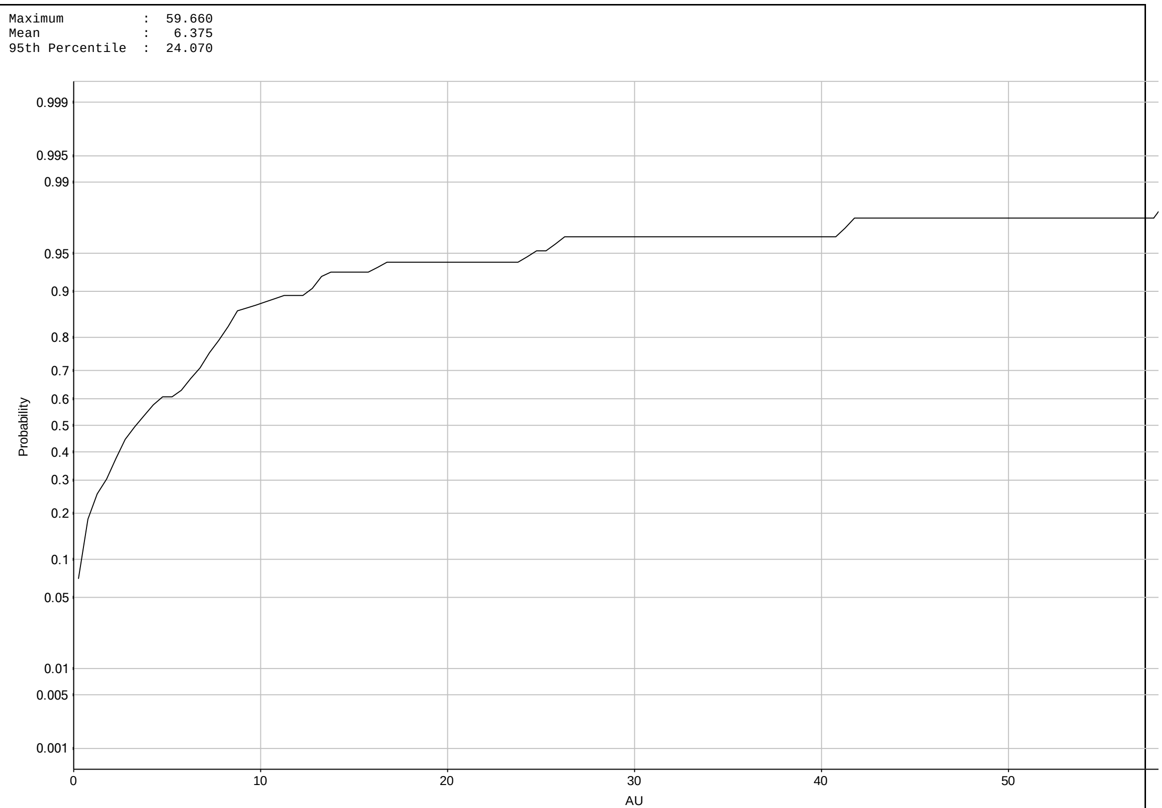
Probability plot for Smoke Deep Zone (Main West Upper, Main West Lower, Main East, East).



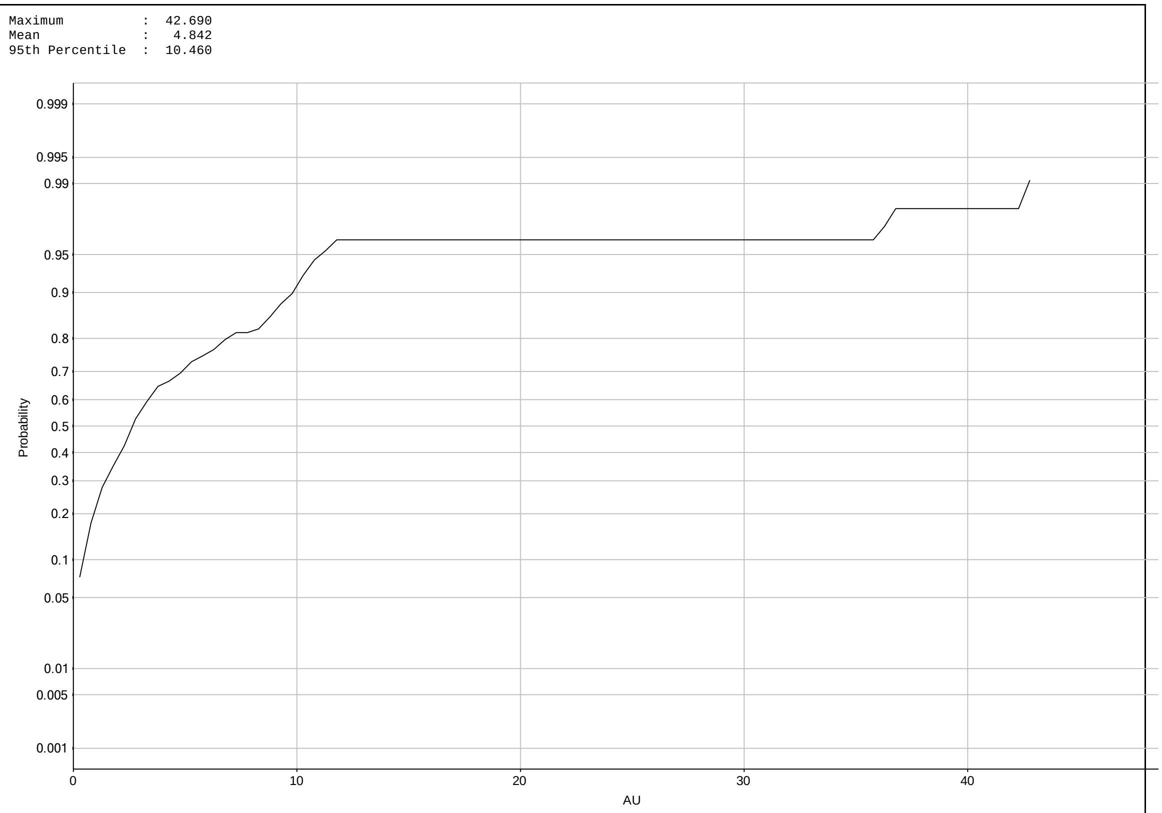
Probability plot for Ghost Zone Lens 1. Capping was applied at 10 g/t.



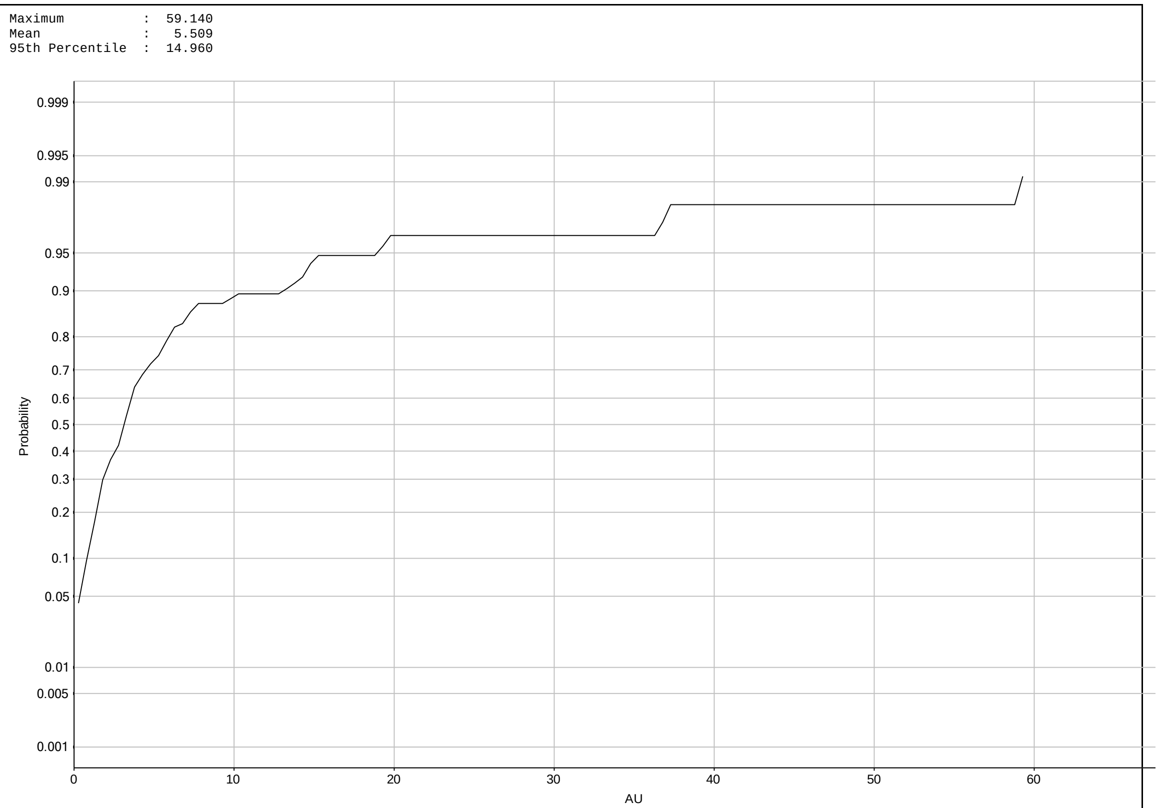
Probability plot for Ghost Zone Lens 2. Capping was applied at 17 g/t.



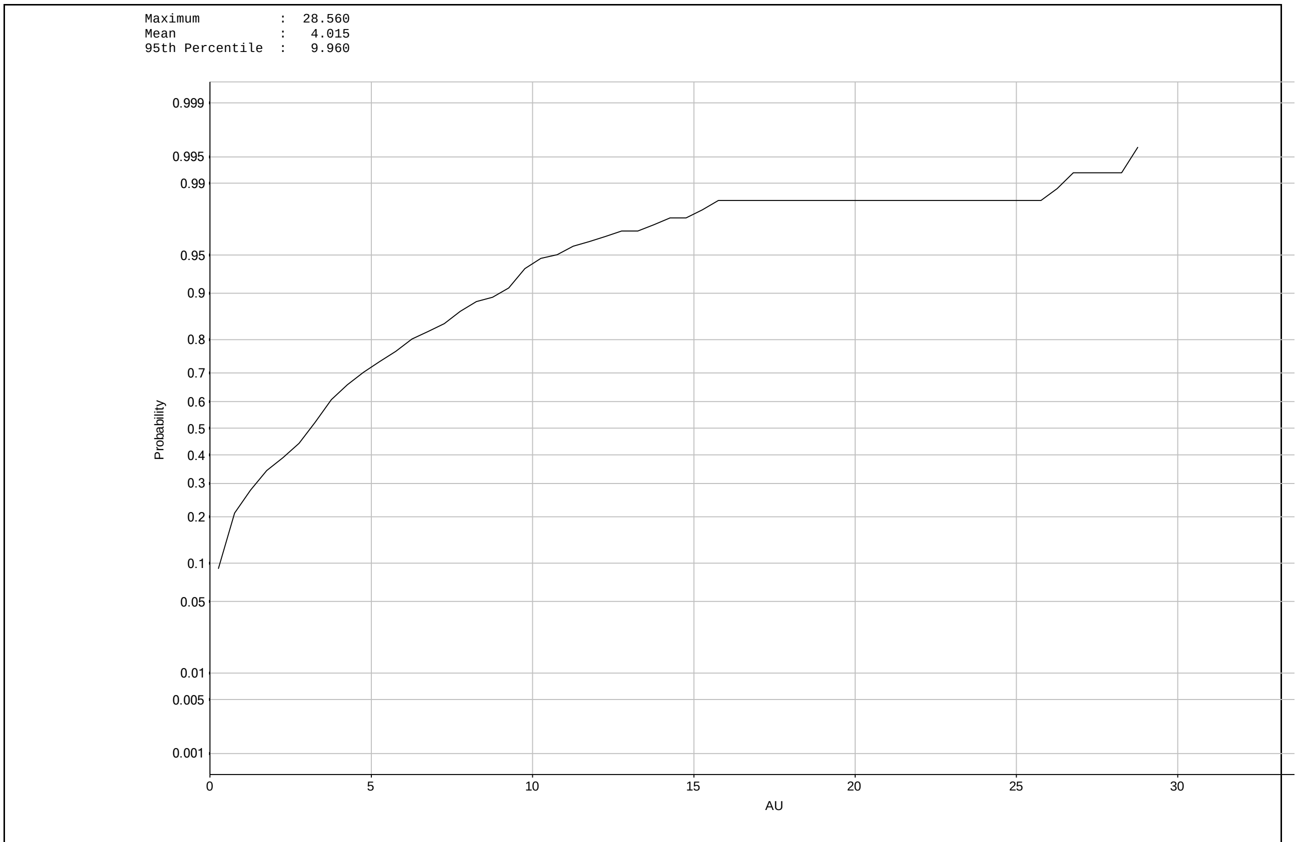
Probability plot for Lower Middle Zone Lens 1. Capping was applied at 16 g/t.



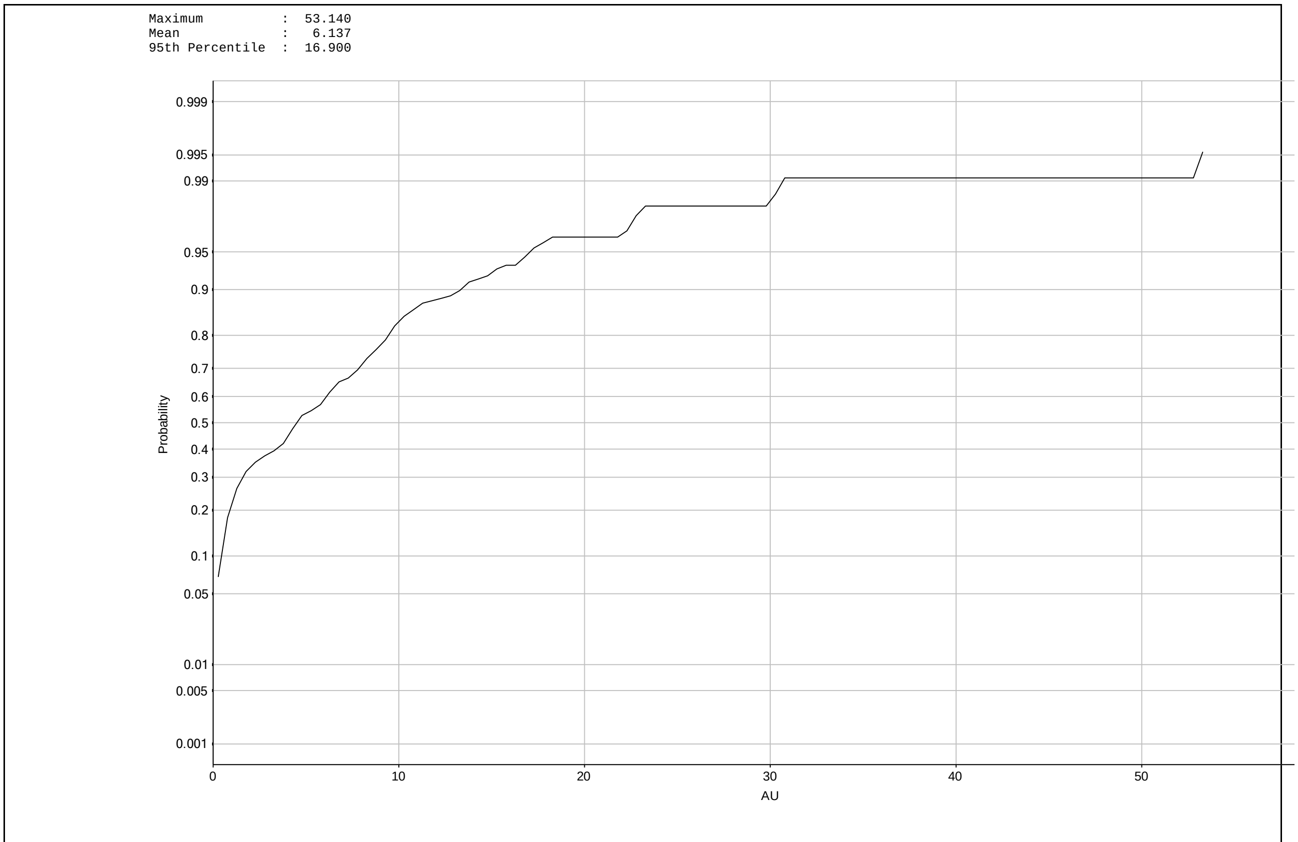
Probability plot for Lower Middle Zone Lens 2. Capping was applied at 11 g/t.



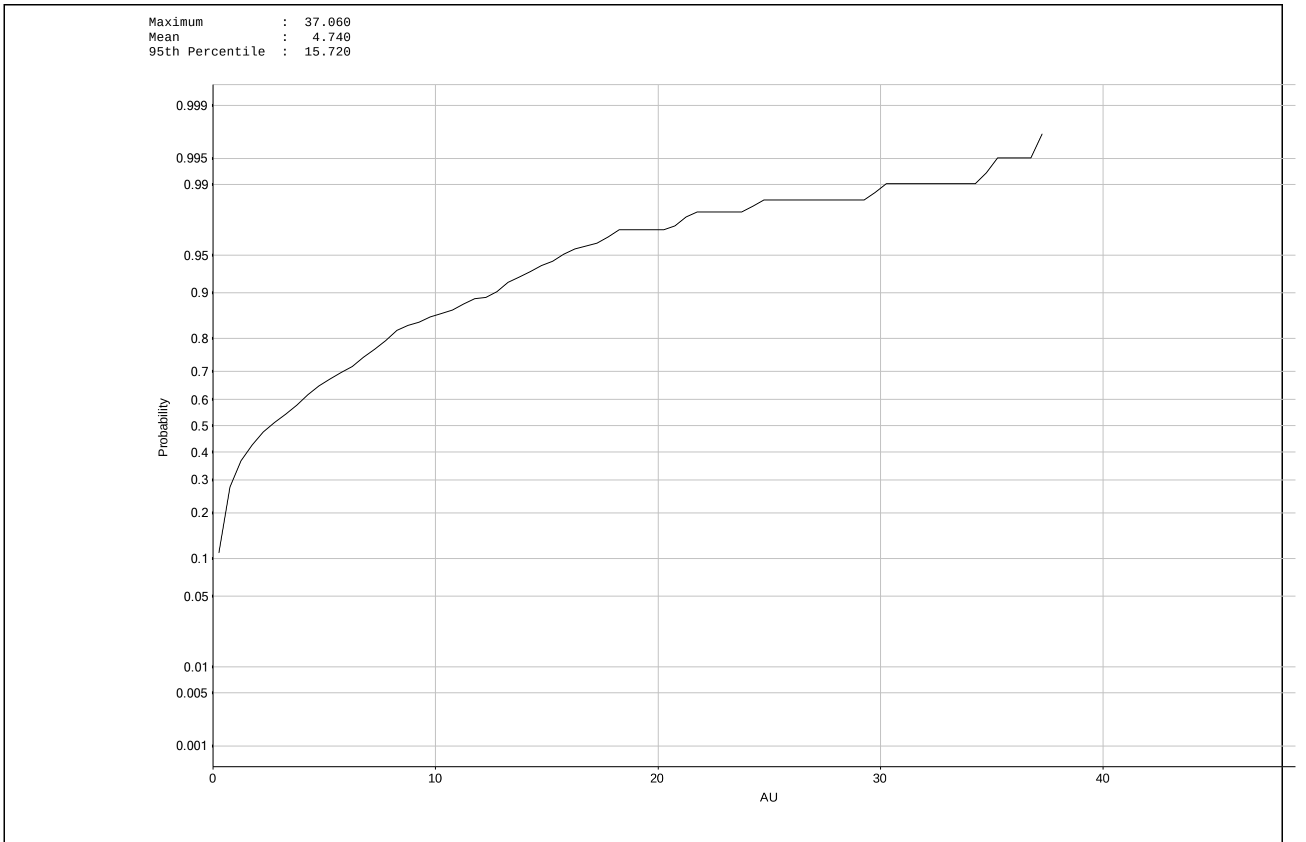
Probability plot for Lower Middle Zone Lens 3. Capping was applied at 10 g/t.



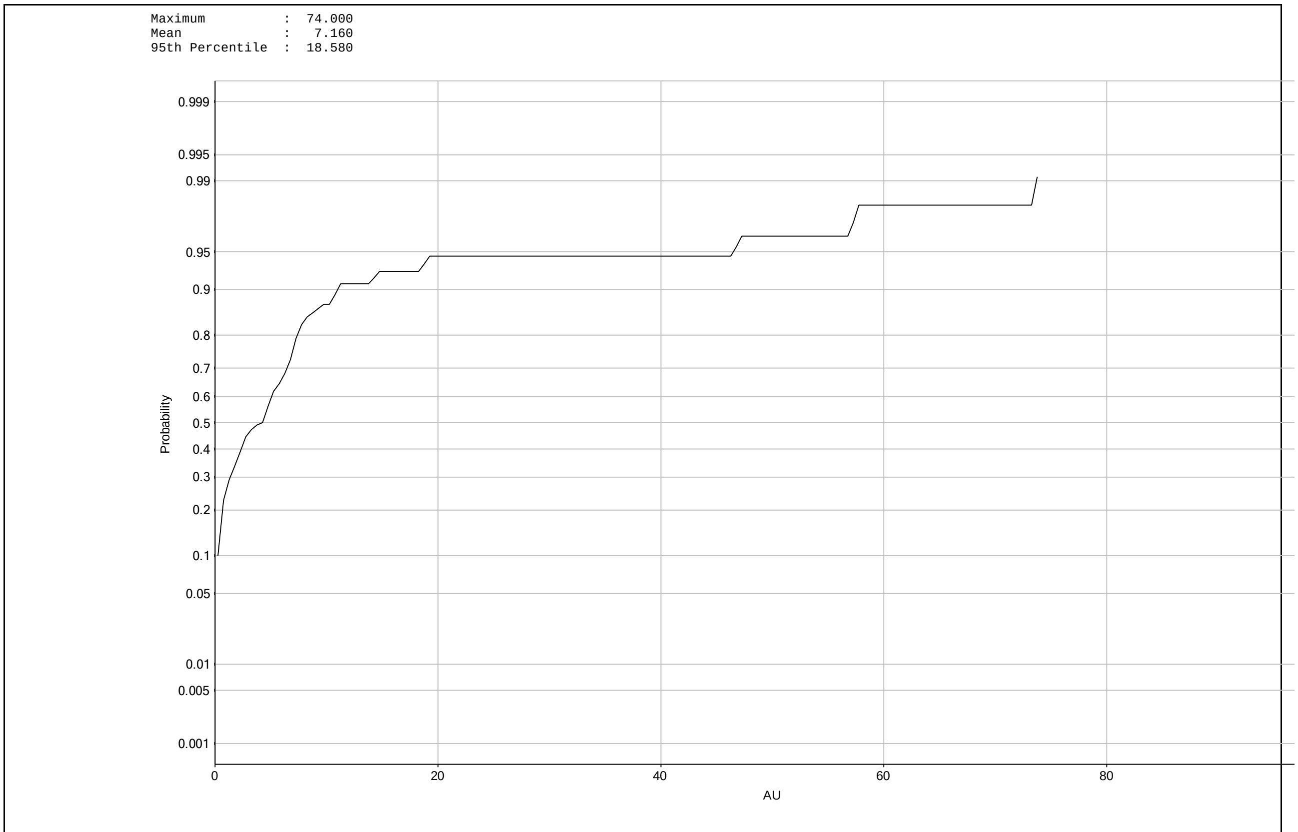
Probability plot for Lower Middle Zone Lens 4. Capping was applied at 16 g/t.



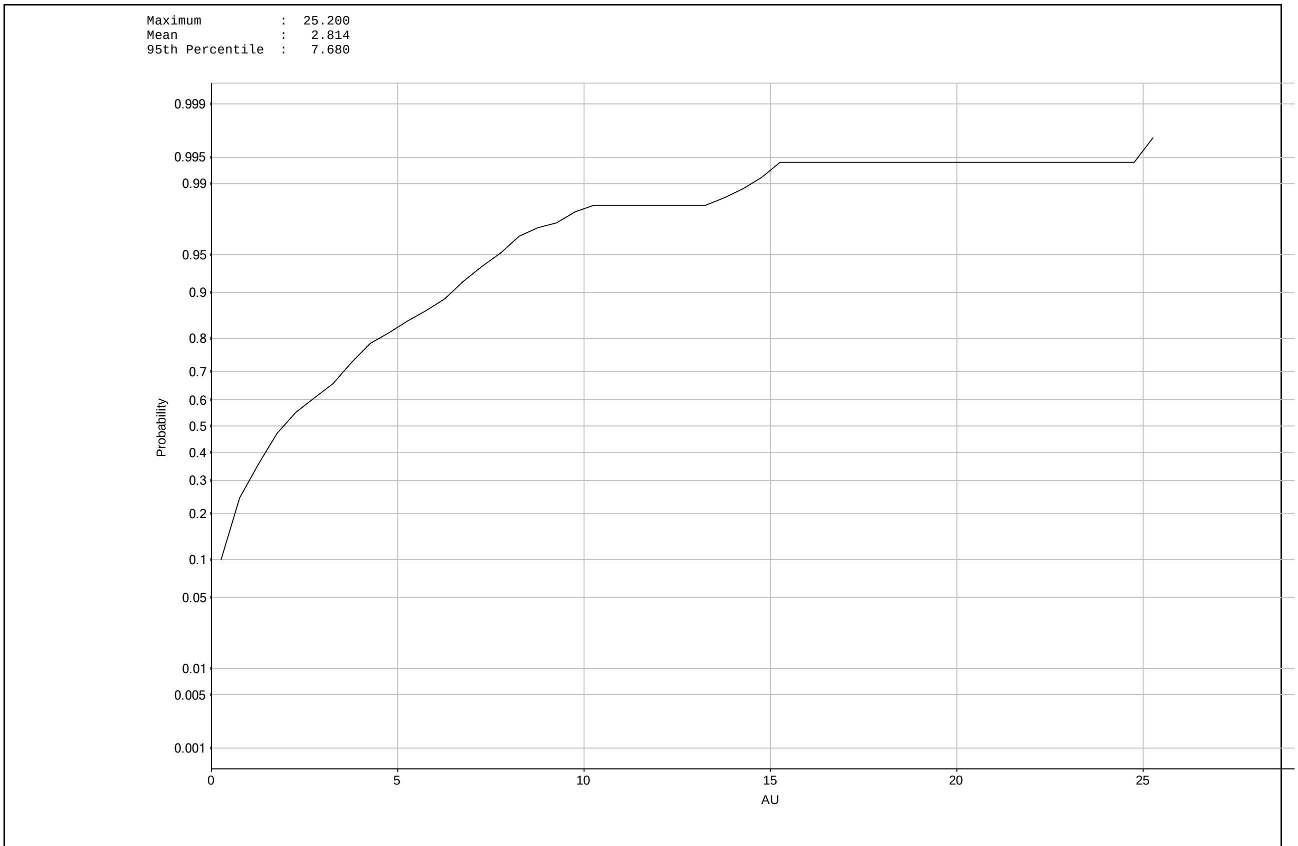
Probability plot for Lower Middle Zone Lens 5-01. Capping was applied at 18 g/t.



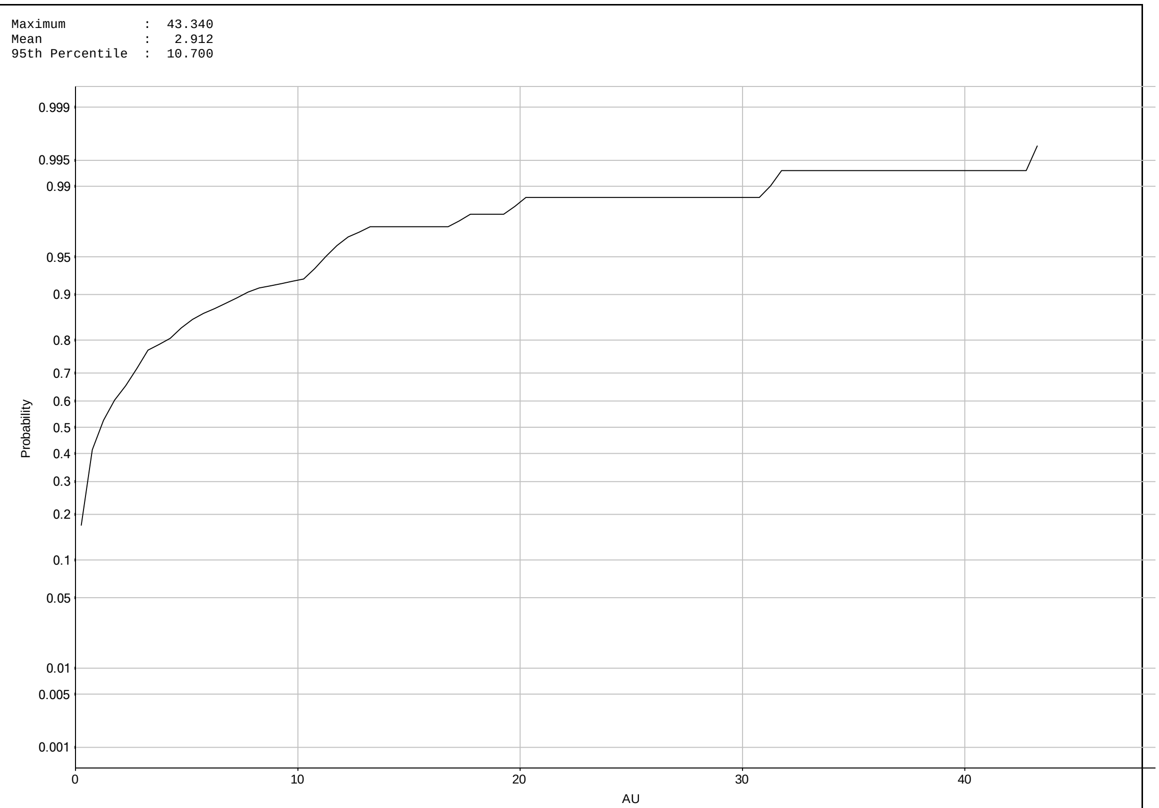
Probability plot for Lower Middle Zone Lens 5-02. Capping was applied at 16 g/t.



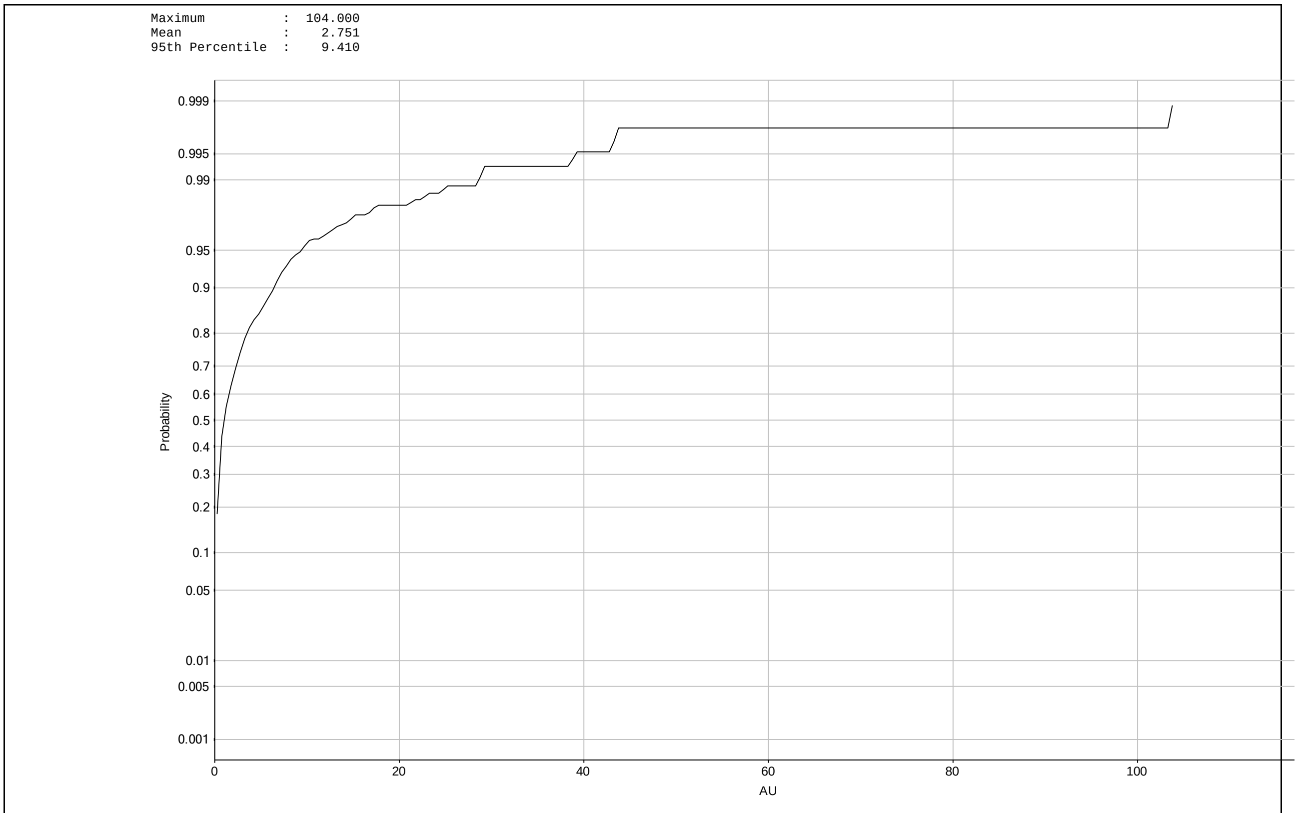
Probability plot for Lower Middle Zone Lens 6. Capping was applied at 11 g/t.



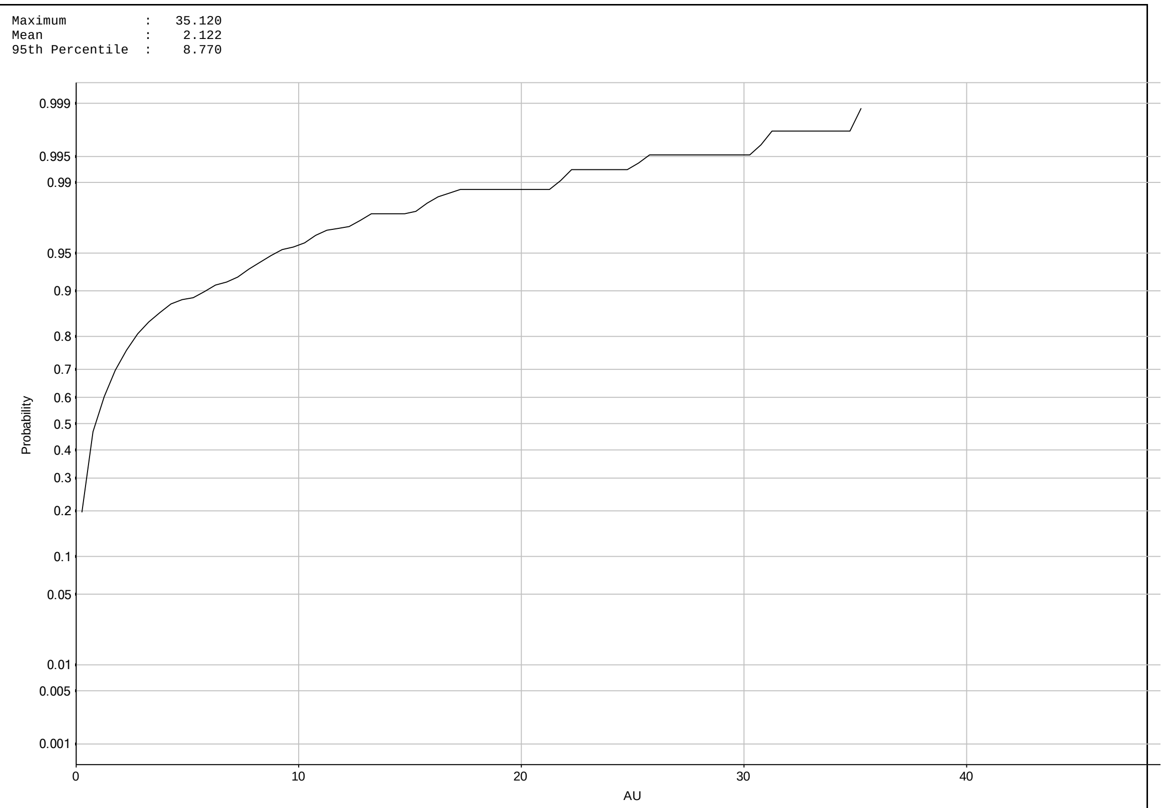
Probability plot for Lower Middle Zone Lens 7. Capping was applied at 10 g/t.



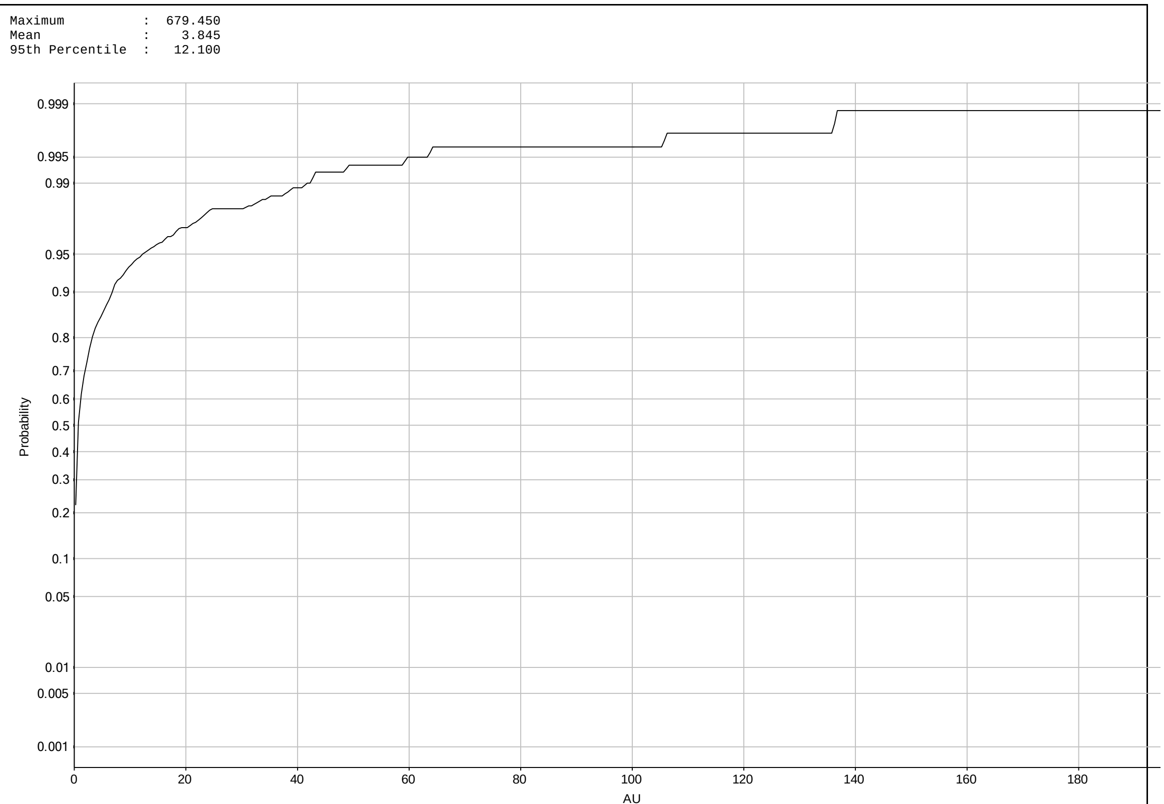
Probability plot for Lower Middle Zone Lens 8. Capping was applied at 11 g/t.



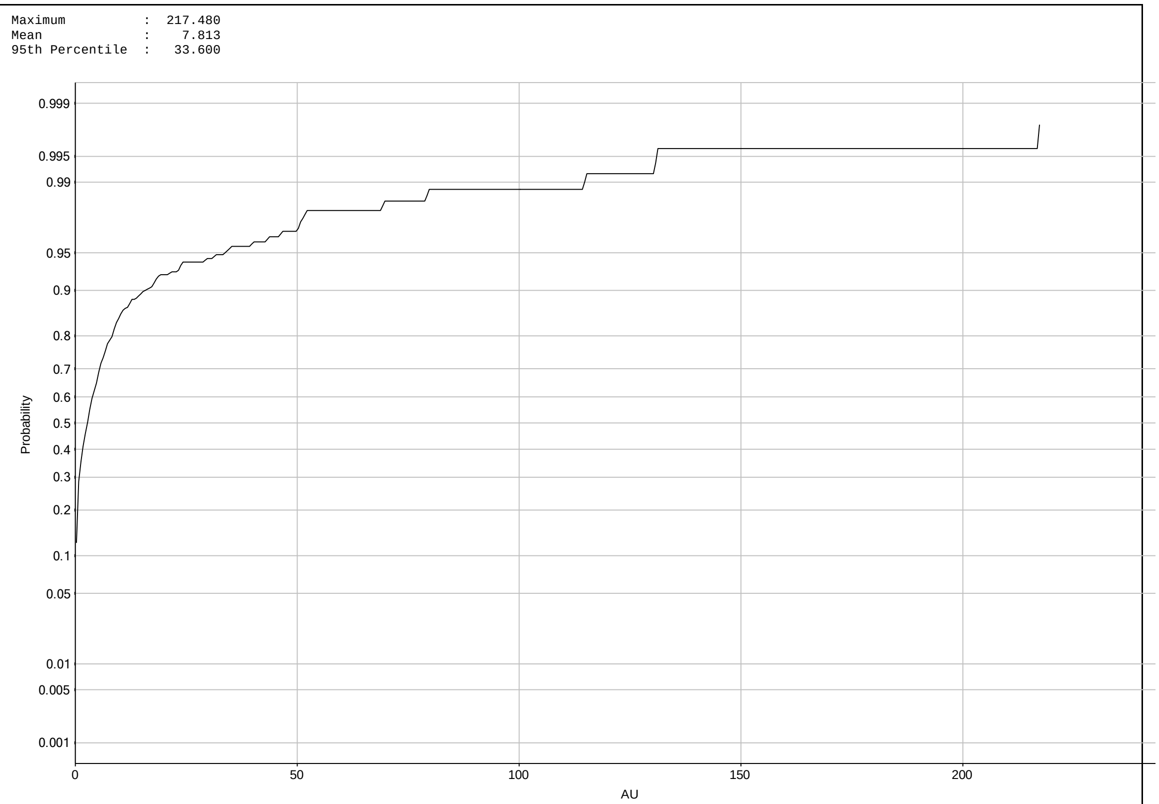
Probability plot for Upper Middle Zone Lens 1. Capping was applied at 30 g/t.



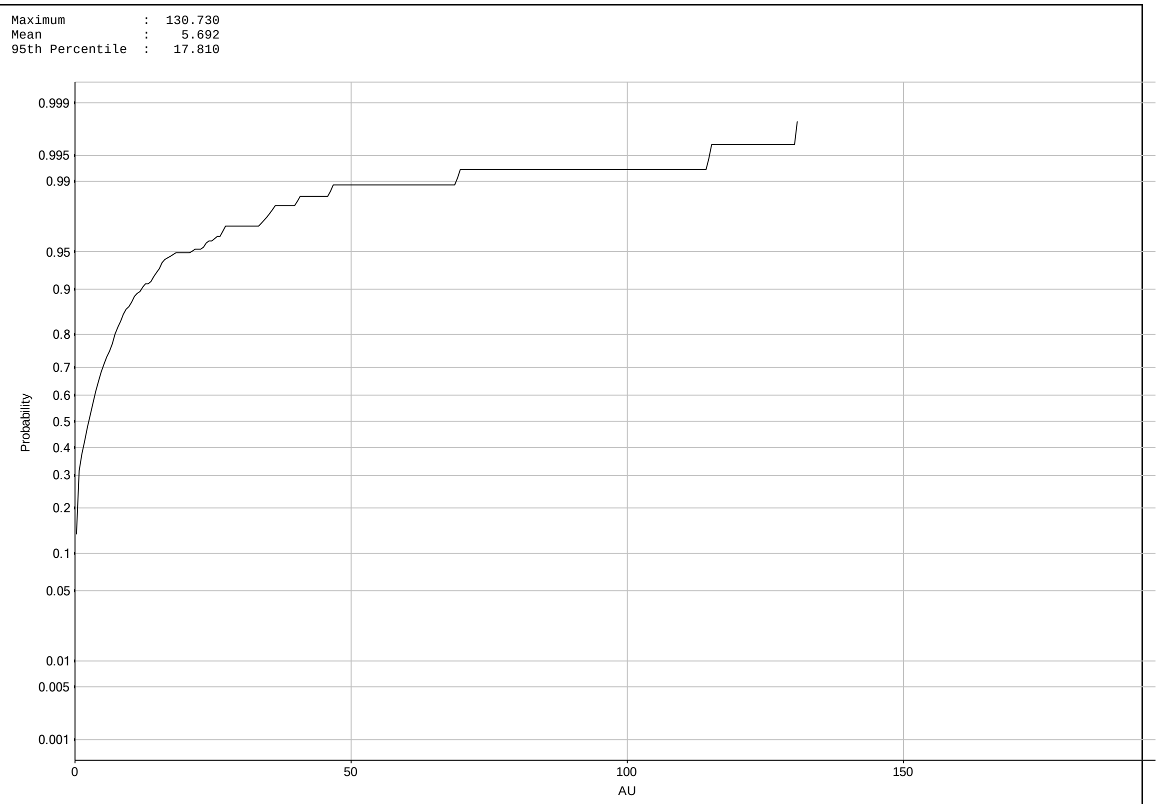
Probability plot for Upper Middle Zone Lens 2. No capping was applied



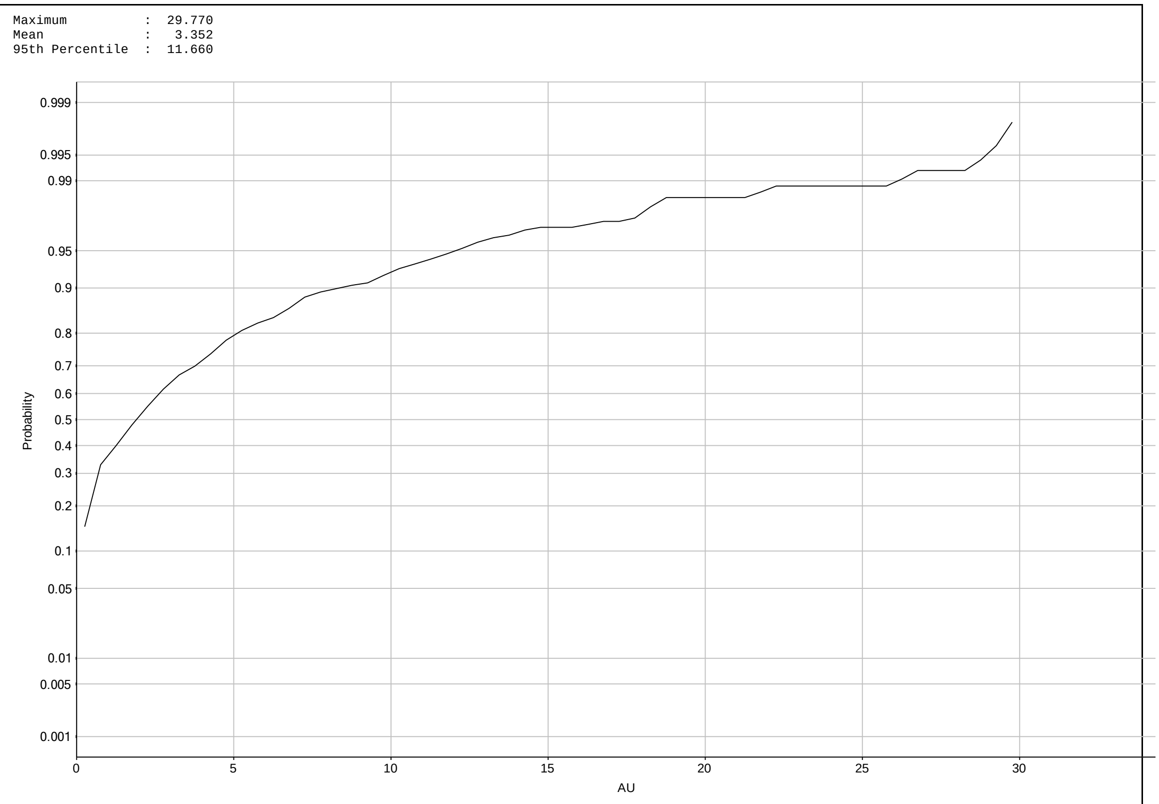
Probability plot for Upper Middle Zone Lens 3. Capping was applied at 30 g/t.



Probability plot for Upper Middle Zone Lens 4. Capping was applied at 50 g/t.



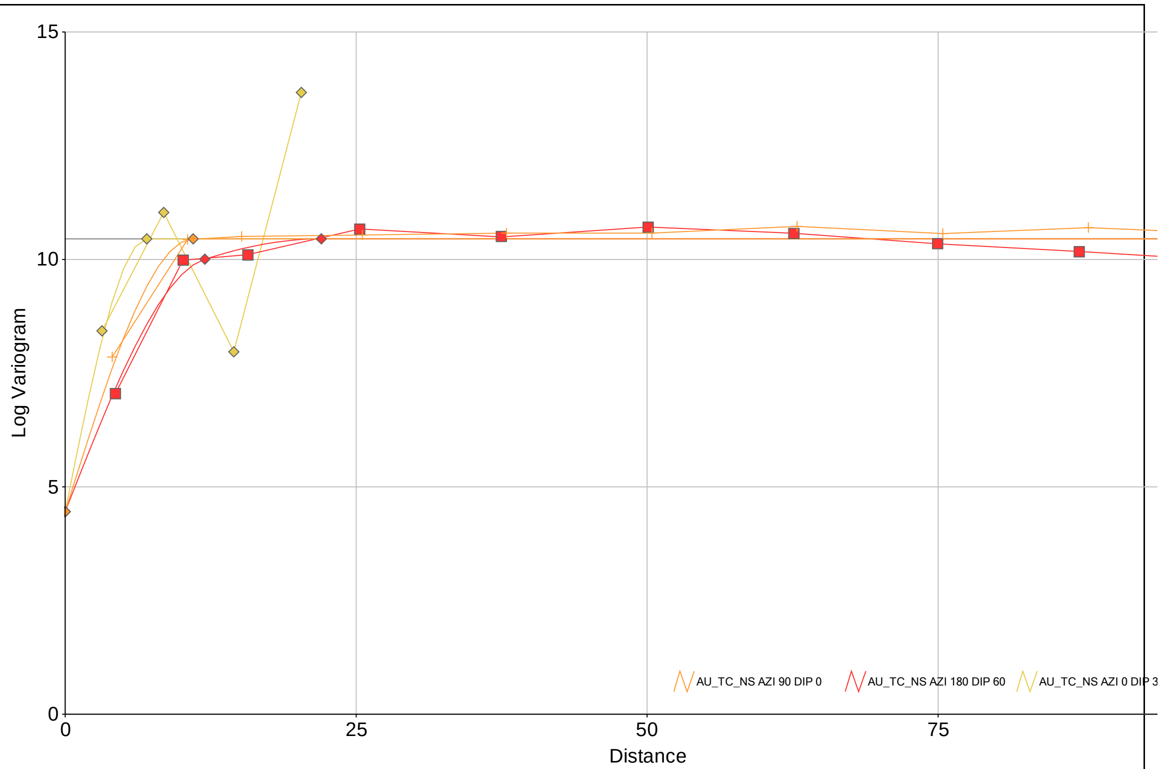
Probability plot for K Zone Lens 1. Capping was applied at 20 g/t.



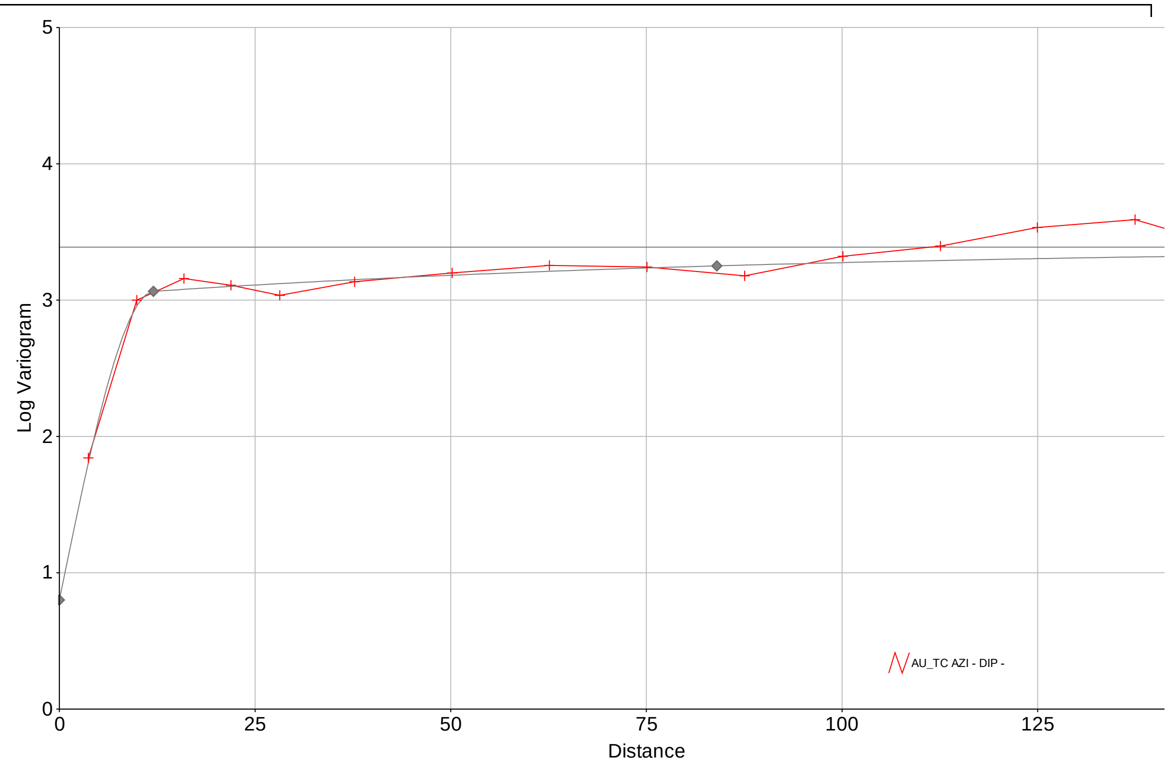
Probability plot for K Zone Lens 2. Capping was applied at 23 g/t.

Appendix D: Semi-variograms for all lenses (as of December 31, 2012).

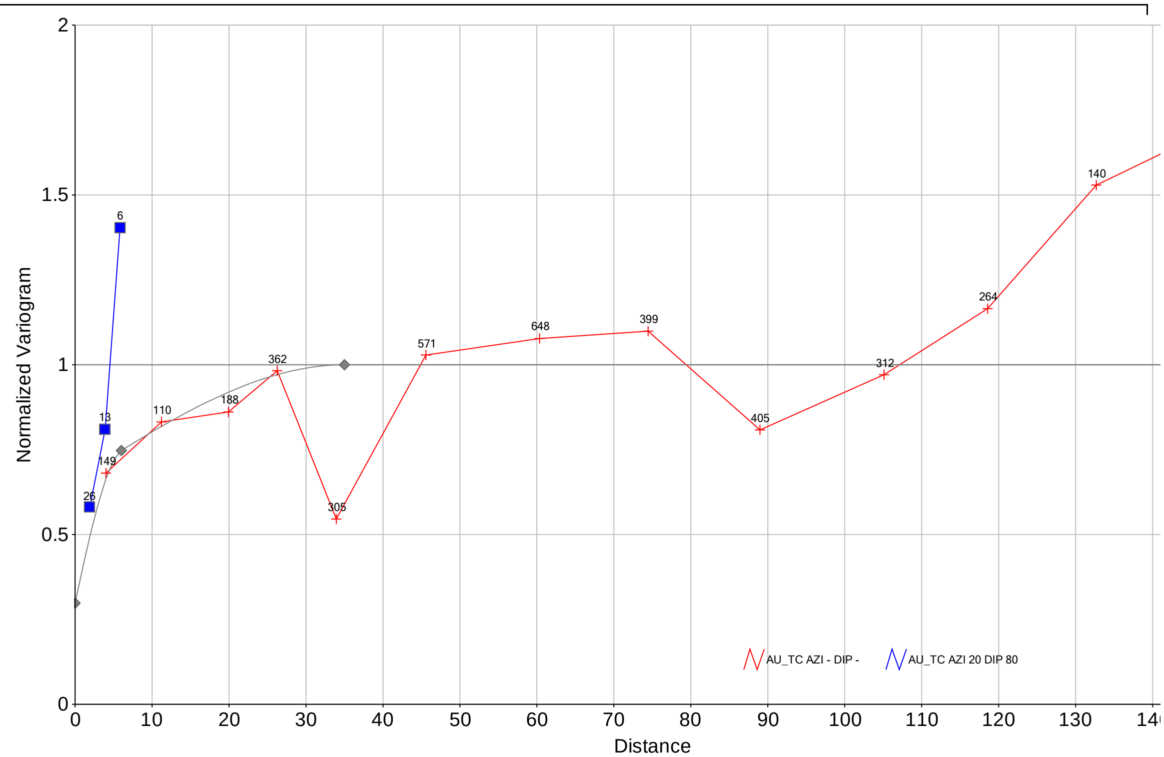
Note: Zone 4, C-95, C-97 and C-99 were included in Section 13.



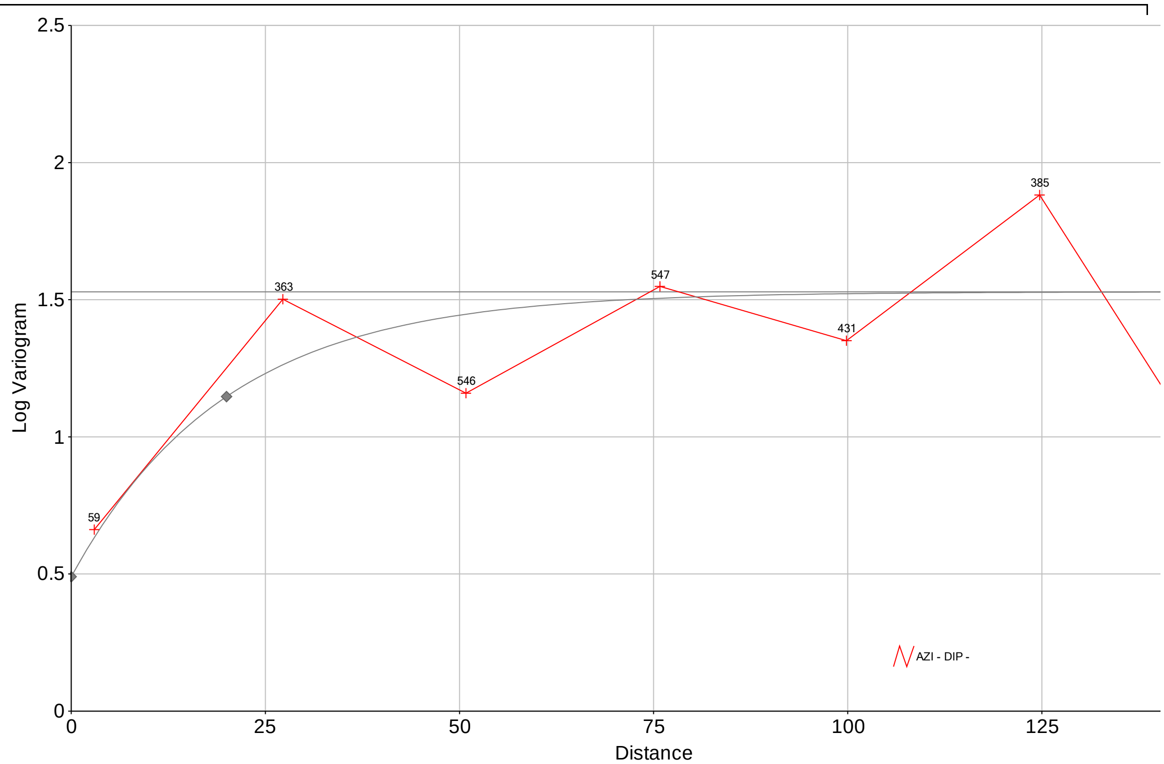
Anisotropic semi-variograms for C-104 Lens 4.



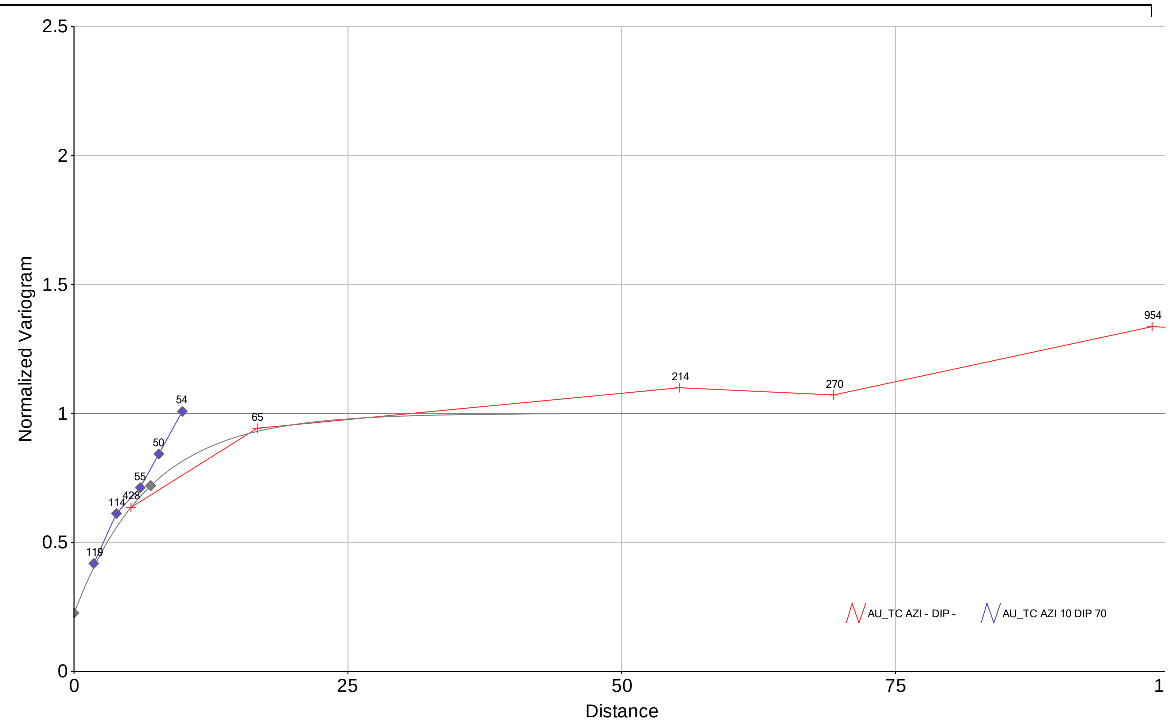
Omnidirectional semi-variogram for the Smoke Zone. Combination of composites from the Main West (upper and lower), Main East and East Wireframes.



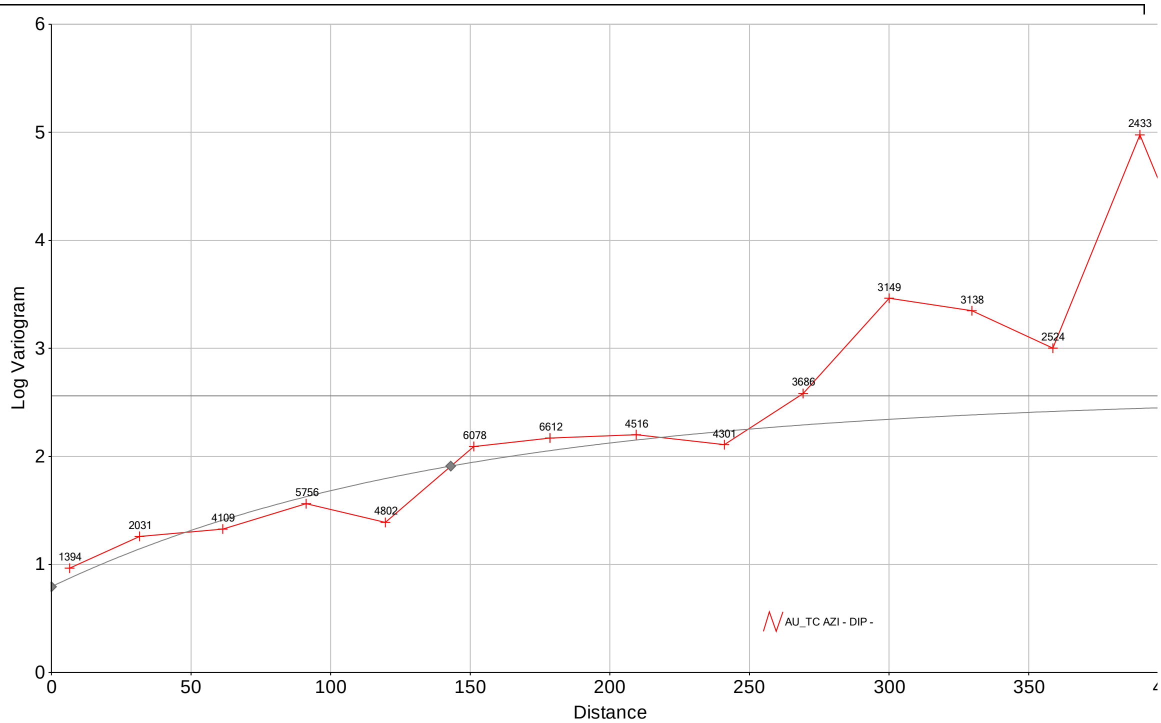
Tousignant Lens 1. Omnidirectional semi-variogram (red), and anisotropic vertical component, used to establish nugget value. Due to the low number of sample pairs an ID^2 model was used.



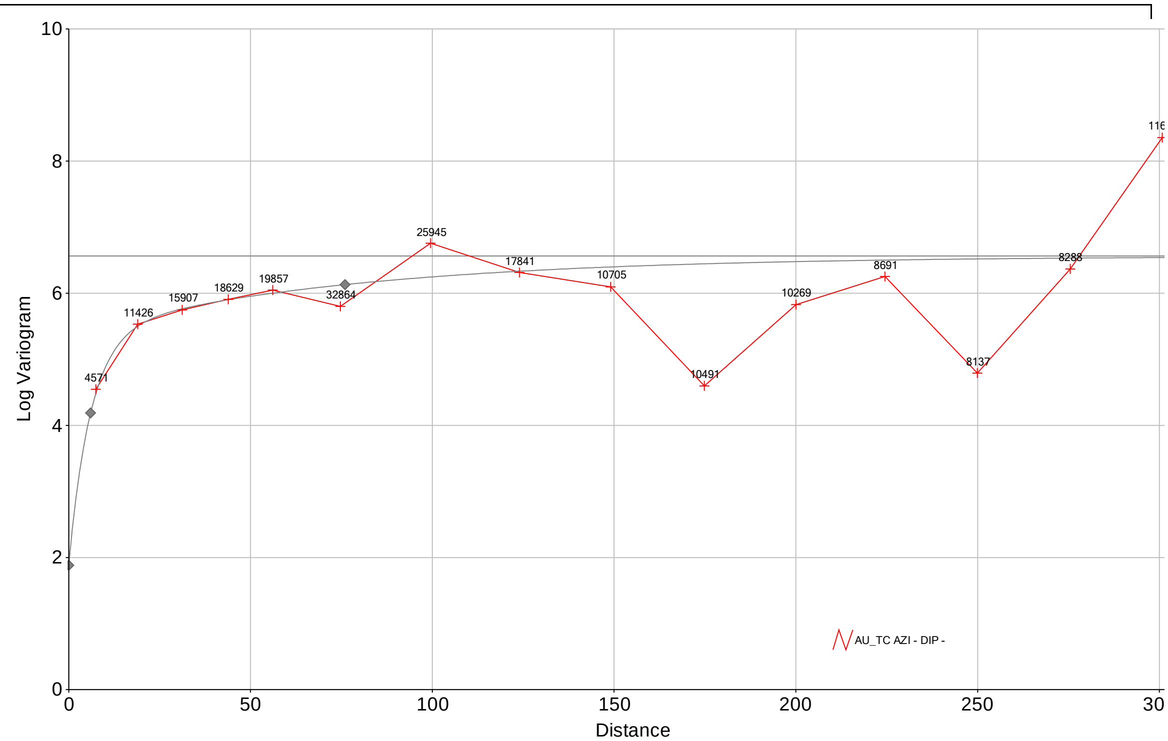
Tousignant Lens 2, omnidirectional semi-variogram. Due to the low number of sample pairs an ID^2 model was used.



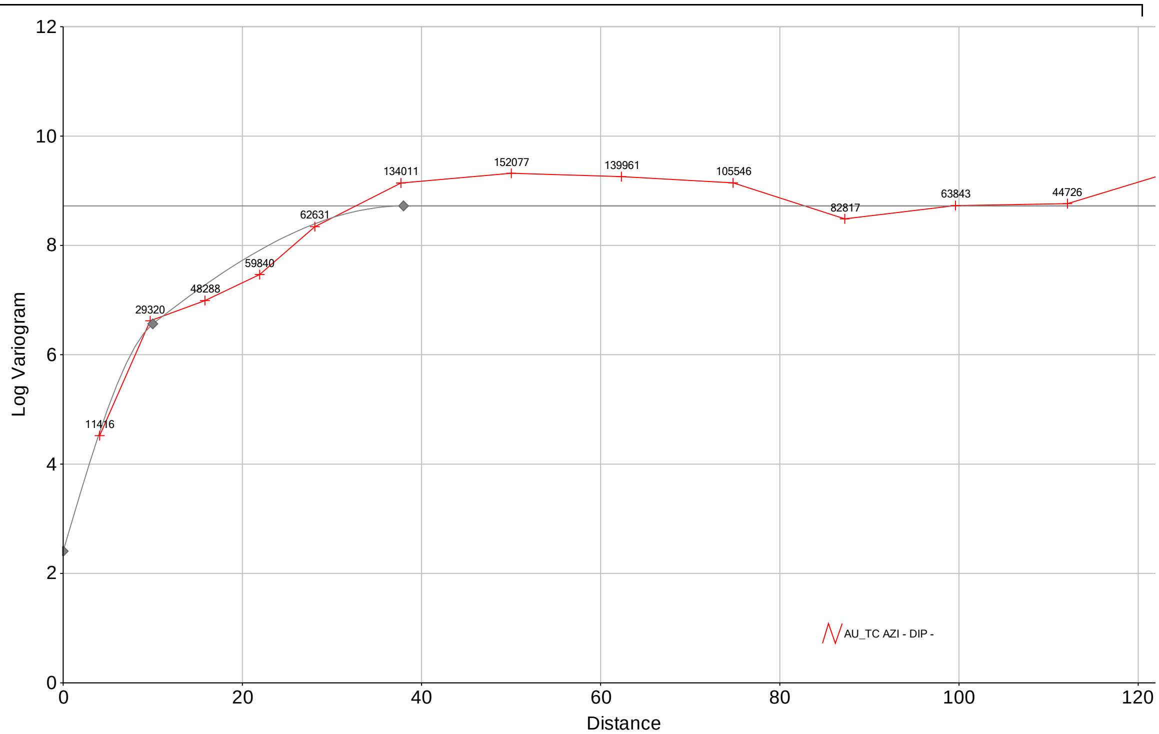
Ghost Zone Lens 1. The anisotropic "downhole" direction (purple) is shown as justification for the nugget value of the omni-variogram (red). Due to the low number of sample pairs an ID^2 model was used.



Ghost Zone Lens 2, omnidirectional semi-variogram. Reasonable anisotropic semi-variograms were found for the major and minor axes, but not for the downhole direction; this is probably do to the somewhat oblique nature of the drilling, relative to the dip of the zone.



Omnidirectional semi-variogram for the Lower Middle Zone, using composites for all nine lenses. The variogram at distances greater than 100 m is likely complicated by separation between the lenses. The sample population for the individual lenses was too low for variogram interpretation.



Omnidirectional semi-variogram for the Upper Middle Zone, using composites for all four lenses.