TECHNICAL REPORT
AND RESOURCE ESTIMATE

ON THE

SNOWFIELD PROPERTY

SKEENA MINING DIVISION
BRITISH COLUMBIA, CANADA
LATITUDE 56° 29’ N by LONGITUDE 130° 12’ W

For

SILVER STANDARD RESOURCES INC.

By

P & E Mining Consultants Inc.

NI 43-101 & 43-101F1
TECHNICAL REPORT

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P & E Mining Consultants Inc.
Report No. 161

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EXECUTIVE SUMMARY

The following report was prepared to provide a NI 43-101 compliant Technical Report and independent Resource Estimate of the gold and copper mineralization at the Snowfield Property, Skeena Mining Division, British Columbia, Canada. Silver Standard has a 100% outright interest in the property.

This report was prepared by P&E Mining Consultants Inc., ("P&E") at the request of Mr. Ken McNaughton, Vice President, Exploration for Silver Standard. Silver Standard is a Vancouver based company trading on the Toronto Stock Exchange.

In 1999, Silver Standard acquired all of the shares (100%) of Newhawk Gold Mines ("Newhawk"), a junior resource company, under a plan of arrangement. At the time, Newhawk owned the Snowfield Property and adjacent Sulphurets Project claims. Subsequent to the acquisition of Newhawk, Silver Standard reorganized the claim ownership, and all of the Snowfield and Sulphurets mineral claims are now held by 777666 B.C. Ltd., a wholly-owned subsidiary of Silver Standard. Silver Standard remains the operator of the Property.

The Snowfield Property and adjacent Sulphurets Project, owned by Silver Standard, are comprised of nine mineral claims, totalling 5341.48 ha, and cover an area measuring 10 kilometres north-south by 4 kilometres east-west. There is one small internal mineral claim owned by Triple G Gold Corp. within the claim holdings.

The Snowfield Property is situated within the Sulphurets District in the Iskut River region, approximately 20 kilometres northwest of Bowser Lake or 65 kilometres north-northwest of the town of Stewart, British Columbia. The geographic centre of the property is at 56˚29' North latitude by 130˚12' West longitude or U.T.M. Zone 09 (NAD 83) at 6264193 m North by 434777 m East; within N.T.S. map sheet 104B/9 East.

The Property is accessible with the use of a chartered helicopter from the town of Stewart, or seasonally from the settlement of Bell II. The flight time from Stewart is approximately 30 minutes and slightly less from Bell II, but Stewart has an established year-round helicopter base.

Heavy exploration equipment, fuel and camp provisions can be transported along a good gravel road from Stewart to the Granduc staging site and then flown by helicopter to the property. This combined truck and helicopter transportation method cuts the more expensive helicopter flight time in half from Stewart.

The property is located in the Boundary Ranges of the Coast Mountain physiographic belt along the western margin of the Intermontane tectonic belt. The local terrain is generally steep with local reliefs of 1,000 metres from valleys occupied by receding glaciers to ridges at elevations of 1,200 metres A.S.L. Elevations within the property range from 1,000 metres along the Mitchell Glacier to 1,960 metres A.S.L. along the ridge between the Mitchell and Hanging Glaciers. However, within several areas of the property, such as at the gossanous Snowfield Deposit, the relief is relatively low to moderate.

There are no local resources other than abundant water for any drilling work. The nearest infrastructure is the town of Stewart, which has a minimum of supplies and personnel.

The exploration history of the Sulphurets-Mitchell Creek area dates back to 1933 when placer gold miners worked on Sulphurets Creek. This early work between 1935 and 1959 led to the discovery of several small copper and gold-silver showings in the Sulphurets-Mitchell Creek and Brucejack Lake areas. In 1959 Granduc Mines staked the original Sulphurets claim group.

In 1999, Silver Standard acquired the Sulphurets claim through the acquisition of all of the shares of Newhawk, including the subject claims.

The Sulphurets District is situated along the western margin of the Intermontane Tectonic Belt, underlain by Stikine Terrane. This district has been the subject of several geological studies since the mid-1980's when it was being actively explored for porphyry copper-molybdenum and copper-gold, exhalative volcanogenic and lode gold-silver vein deposits.

The Snowfield Property and the surrounding Sulphurets District are underlain by the Upper Triassic and Lower to Middle Jurassic Hazelton Group of volcanic, volcaniclastic and sedimentary rocks.

Metamorphic grade throughout the area is, at least, lower greenschist. Such metamorphism typically produces propylitic assemblages: chloritized mafic minerals and saussuritized plagioclase. Alteration facies are most pronounced in intermediate and mafic volcanic rocks. Regional foliations strike north-northwest and dip steeply to the east.

The Snowfield Deposit is underlain by Lower Jurassic andesitic volcanic rocks that correlate with the 'Upper Andesite' unit of the Unuk River Formation from the lower portion of the Hazelton Group. The rocks that host the gold mineralization at Snowfield have been pervasively altered to a lower greenschist facies. Subsequent pervasive hydrothermal alteration and formation of a moderate to strong foliation in these rocks makes the identification of protoliths difficult. Based upon geological mapping and petrographic studies undertaken by Margolis for his Ph. D. thesis on the area and recent drilling results, the mineralized rocks are interpreted as a marine volcanic back-arc sequence forming a moderately north-westerly-dipping sequence of predominantly andesitic autochthonous breccia flow, and lithic, crystal and lapilli tuff.

The Snowfield Deposit is a near-surface, low grade, bulk tonnage, porphyry-style, gold deposit that has the additional potential of copper-gold ± molybdenum mineralization at depth and west of the Snowfield Fault. The gold mineralization at the Snowfield Deposit is interpreted to be genetically related to one or more Jurassic-age alkaline intrusions.

The gold mineralization at the Snowfield Deposit is hosted by schistose, pervasively altered (quartz-sericite-chlorite) volcanic and volcaniclastics that contain one to five percent disseminated pyrite, minor disseminations and veinlets of tourmaline and molybdenite, and abundant younger calcite veinlets.

Gold mineralization occurs as microscopic grains (≤30 microns) of electrum that are encased within fine-grained, pervasively disseminated pyrite in close association with trace amounts of galena and sphalerite. Other associated minerals within the gold-mineralized zone include: tetrahedrite-tennantite, barite, acanthite, minor Mn-rich calcite and rare chalcopyrite. Minute clusters, approximately 75 microns, of pyrite and rutile (± barite) are also observed within the gold-bearing mineralization.

The most significant result from the 2007 exploration drilling was the discovery of what was referred to as the 'Mitchell East' (aka Moly) Zone of gold and copper mineralization on trend with Seabridge Gold Corporation's Mitchell copper-gold deposit which is situated immediately east of and contiguous to the Snowfield Property. The Mitchell East Zone is now recognized as the northern extension of the Snowfield Zone. The one drill hole that was targeted in this area, (MZ-001) intersected 259 metres of 0.71 g/t Au and 0.14% copper. The hole ended in mineralization with the bottom 31 metres grading 1.38 g/t Au and 0.31% copper.

The 2008 drill program followed up on hole MZ-001, drilling 16,945 metres in 31 holes.

P&E 2009 Snowfield Deposit Resource Estimate at AuEq 0.50g/t cutoff:

Class	Tonnes x M	Au g/t	Au ozs x 1000	Ag g/t	Ag ozs x 1000	Cu %	Mo %
Measured	31.9	1.49	1,528	1.43	1,470	0.033	0.014
Indicated	102.8	0.86	2,834	1.58	5,205	0.072	0.011
Measured + Indicated	134.7	1.01	4,362	1.54	6,675	0.063	0.012
Inferred	661.8	0.67	14,276	1.83	39,000	0.137	0.008

The estimated resources at the Snowfield Deposit have increased greatly as a result of the 2008 diamond drilling program, with the discovery of and subsequent follow-up drilling on the northern portion of the Snowfield Zone.

There is no doubt that the Snowfield Project is one of merit and warrants further work. P&E is of the opinion that Silver Standard should continue with a comprehensive exploration program in 2009 with the main focus being to:

1) Attempt to convert a large portion of the Inferred resources to Measured and Indicated;
2) Test for extensions of the known mineralization; and
3) Prospect, map, and trench numerous other showings which were located as part of historical programs.

A 16,000 metre diamond drilling program is recommended to potentially upgrade the Inferred resources to the Measured and Indicated categories. A portion of the drilling should be used to test possible deposit extensions.

In addition to the drilling programs, a portion of the budget should be allocated to prospecting in the area.

A budget of $6.3 M is proposed for this work.

1.0 INTRODUCTION AND TERMS OF REFERENCE

1.1 TERMS OF REFERENCE

The following report was prepared to provide a NI 43-101 compliant Technical Report and independent Resource Estimate of the gold and copper mineralization at the Snowfield Property, Skeena Mining Division, British Columbia, Canada (the "Property" or the "Project"). Silver Standard has a 100% outright interest in the property.

This report was prepared by P&E Mining Consultants Inc., ("P&E") at the request of Mr. Ken McNaughton, Vice President, Exploration for Silver Standard. Silver Standard is a Vancouver based company trading on the Toronto Stock Exchange (TSX) under the symbol of "SSO", with its corporate office at:

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This report is considered current as of January 31, 2009.

Mr. Antoine Yassa, P. Geo., a qualified person under the terms of NI 43-101, conducted a site visit to the Property on September 23, 2008. An independent verification sampling program was conducted by Mr. Yassa at that time.

In addition to the site visit, P&E carried out a study of all relevant parts of the available literature and documented results concerning the project and held discussions with technical personnel from the company regarding all pertinent aspects of the project. The reader is referred to these data sources, which are outlined in the "Sources of Information" section of this report, for further detail on the project.

The purpose of the current report is to provide an independent Technical Report and Resource Estimate of the gold and copper mineralization present on the Snowfield Property, in conformance with the standards required by NI 43-101 and Form 43-101F. The estimate of mineral resources contained in this report conforms to the CIM Mineral Resource and Mineral Reserve definitions (December, 2005) referred to in National Instrument (NI) 43-101, Standards of Disclosure for Mineral Projects.

1.2 SOURCES OF INFORMATION

This report relies heavily upon material contained within the report titled, "Technical Report on the Snowfield Property, Skeena Mining Division, British Columbia, Canada" authored by J. Douglas Blanchflower, P. Geo. of Minorex Consulting Ltd., and dated April 21, 2008.

This report is also based, in part, on internal company technical reports, and maps, published government reports, company letters and memoranda, and public information as listed in the "References" Section 19.0 at the conclusion of this report. Several sections from reports authored by other consultants have been directly quoted in this report, and are so indicated in the appropriate sections. P&E has not conducted detailed land status evaluations, and has relied upon previous qualified reports, public documents and statements by Silver Standard regarding property status and legal title to the project.

1.3 UNITS AND CURRENCY

Unless otherwise stated all units used in this report are metric. Gold assay values are reported in grams per metric tonne (“g/t”) and copper is reported in percent (“%”) unless some other unit is specifically stated. The CDN$ is used throughout this report.

2.0 RELIANCE ON OTHER EXPERTS

The authors wish to make clear that they are qualified persons only in respect of the areas in this report identified in their “Certificates of Qualified Persons” submitted with this report to the Canadian Securities Administrators.

Although copies of the licenses, permits and work contracts were reviewed, an independent verification of land title and tenure was not performed. P&E has not verified the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties.

A draft copy of the report has been reviewed for factual errors by Silver Standard. Any changes made as a result of these reviews did not involve any alteration to the conclusions made. Hence, the statement and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are neither false nor misleading at the date of this report.

3.0 PROPERTY DESCRIPTION AND TENURE

3.1 DESCRIPTION AND TENURE

In 1999, Silver Standard acquired all of the shares (100%) of Newhawk Gold Mines ("Newhawk"), a junior resource company, under a plan of arrangement. At the time, Newhawk owned the Snowfield Property and adjacent Sulphurets Project claims. Subsequent to the acquisition of Newhawk, Silver Standard reorganized the claim ownership and all of the Snowfield and Sulphurets mineral claims are now held by 777666 B.C. Ltd., a wholly-owned subsidiary of Silver Standard. Silver Standard remains the operator of the Property.

The Snowfield Property and adjacent Sulphurets Project, owned by Silver Standard, are comprised of nine mineral claims, totalling 5341.48 ha, and cover an area measuring 10 kilometres north-south by 4 kilometres east-west. There is one small internal mineral claim owned by Triple G Gold Corp. within the claim holdings. The list of claims is presented in Table 3-1 and the location and configuration of the subject claims and the third-party internal claim are shown in Figure 3.1.

Table 3-1: Claims Listing for the Snowfield Property

Tenure Number	Type	Hectares	Map	Expiry	Status	Owner
509216	Mineral	1267.42	104B	Jan 31 2017	Good	777666B.C. Ltd.
509223	Mineral	428.62	104B	Jan 31 2017	Good	777666B.C. Ltd.
509397	Mineral	375.15	104B	Jan 31 2017	Good	777666B.C. Ltd.
509400	Mineral	178.63	104B	Jan 31 2017	Good	777666B.C. Ltd.
509463	Mineral	482.57	104B	Jan 31 2017	Good	777666B.C. Ltd.
509464	Mineral	1144.53	104B	Jan 31 2017	Good	777666B.C. Ltd.
509506	Mineral	589.78	104B	Jan 31 2017	Good	777666B.C. Ltd.
594266	Placer	428.39	104B	Nov 14 2009	Good	777666B.C. Ltd.
594267	Placer	446.39	104B	Nov 14 2009	Good	777666B.C. Ltd.

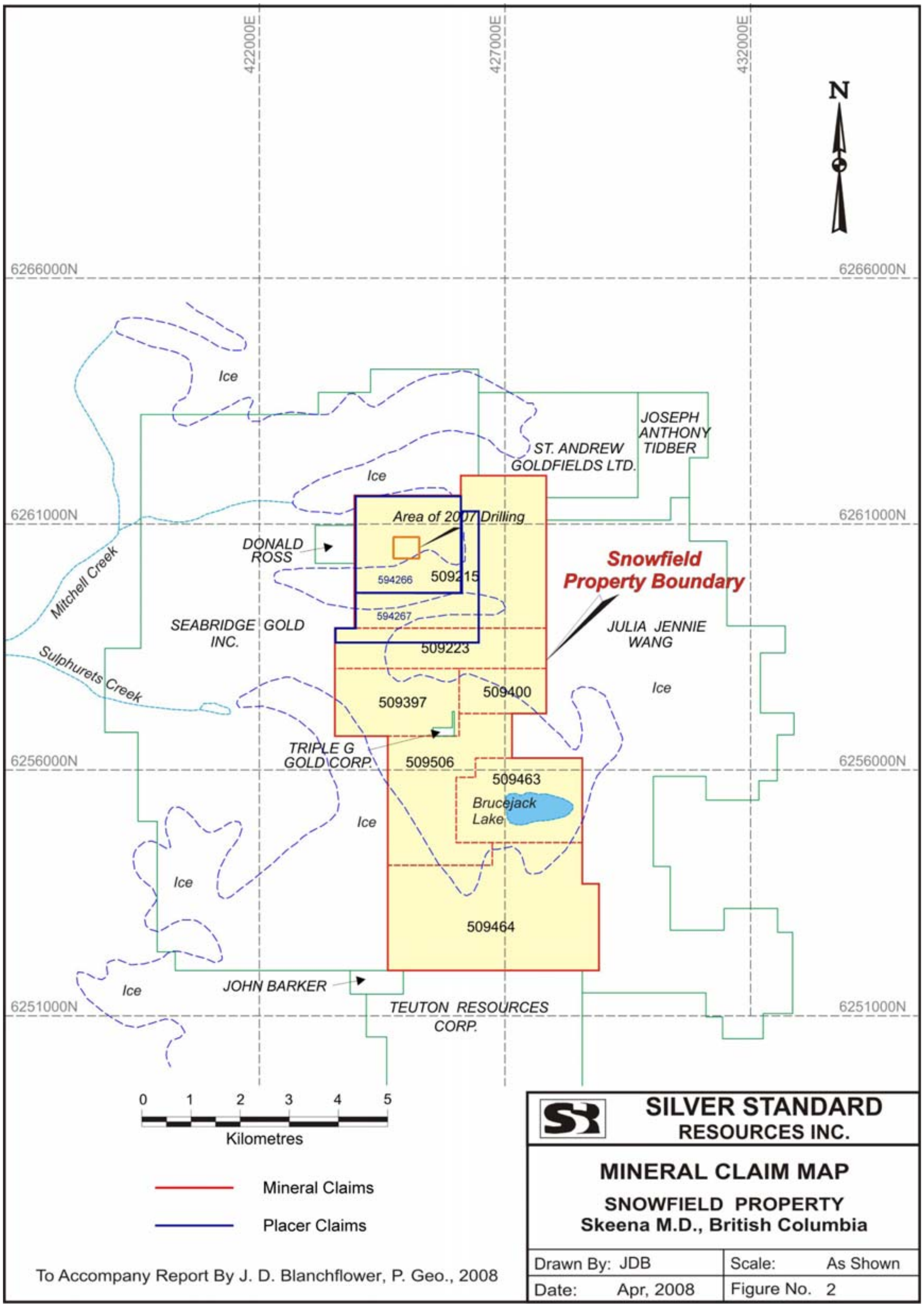


Figure 3.1: Claims Location Map, (after Blanchflower, 2008)

4.0 LOCATION, ACCESS, CLIMATE, PHYSIOGRAPHY & INFRASTRUCTURE

4.1 LOCATION AND ACCESS

The Snowfield Property is situated within the Sulphurets District in the Iskut River region, approximately 20 kilometres northwest of Bowser Lake or 65 kilometres north-northwest of the town of Stewart, British Columbia. The geographic centre of the property is at 56˚29’ North latitude by 130˚12’ West longitude or U.T.M. Zone 09 (NAD 83) at 6264193 m North by 434777 m East; within N.T.S. map sheet 104B/9 East (see Figure 4.1).

The Property is accessible with the use of a chartered helicopter from the town of Stewart, or seasonally from the settlement of Bell II. The flight time from Stewart is approximately 30 minutes and slightly less from Bell II, but Stewart has an established year-round helicopter base.

Heavy exploration equipment, fuel and camp provisions can be transported along a good gravel road from Stewart to the Granduc staging site and then flown by helicopter to the property. This combined truck and helicopter transportation method cuts the more expensive helicopter flight time in half from Stewart.

A summer road, (which no longer exists) was established in the late 1980’s by Newhawk Gold Mines to access their Brucejack Lake camp which was situated approximately seven kilometres south of the Snowfield Property. The route led from Highway 37 to Bowser Lake, a landing-craft was used to transport the supplies along Bowser Lake, and then there was a rough seasonal gravel road from the western end of Bowser Lake to the camp. During the early 1990’s, an exploration road was constructed from the Brucejack Lake camp northward to the southern edge of Hanging Glacier, terminating less than three kilometres from the Snowfield Property. Since then the Brucejack camp and equipment, including the landing-craft used on Bowser Lake, have been removed, however the possibility remains to resurrect this old route, if warranted.

4.2 CLIMATE AND PHYSIOGRAPHY

The property is located in the Boundary Ranges of the Coast Mountain physiographic belt along the western margin of the Intermontane tectonic belt. The local terrain is generally steep with local reliefs of 1,000 metres from valleys occupied by receding glaciers to ridges at elevations of 1,200 metres A.S.L. Elevations within the property range from 1,000 metres along the Mitchell Glacier to 1,960 metres A.S.L. along the ridge between the Mitchell and Hanging Glaciers. However, within several areas of the property, such as at the gossanous Snowfield Deposit, the relief is relatively low to moderate.

The climate is typical of north-western British Columbia with cool, wet summers and relatively moderate but wet winters. Annual temperatures range from the mid +20^{o}’s to mid -20^{o}’s C. Precipitation is high with heavy snowfall accumulations ranging from 10 to 15 metres at higher elevations and two to three metres along the lower river valleys. Snow packs cover the higher elevations from October to May. The optimum field season is from late June to mid-October.

Treeline is at approximately 1,200 metres elevation. Sparse fir, spruce and alder grow along the valley bottoms with only scrub alpine spruce and juniper with alpine grass, moss and heather covering the steep valley walls. The Snowfield Deposit, at an elevation above 1,500 metres, has only sparse mosses along drainages. Rocky glacial moraine and polished glacial-striated outcrops dominate the terrain above tree line.

The Snowfield Deposit is centered between the Mitchell Glacier to the north and the Hanging Glacier to the south. The southern limit of the zone is covered by a small snowfield that has been rapidly receding.

4.3 INFRASTRUCTURE

There are no local resources other than abundant water for any drilling work. The nearest infrastructure is the town of Stewart, which has a minimum of supplies and personnel.

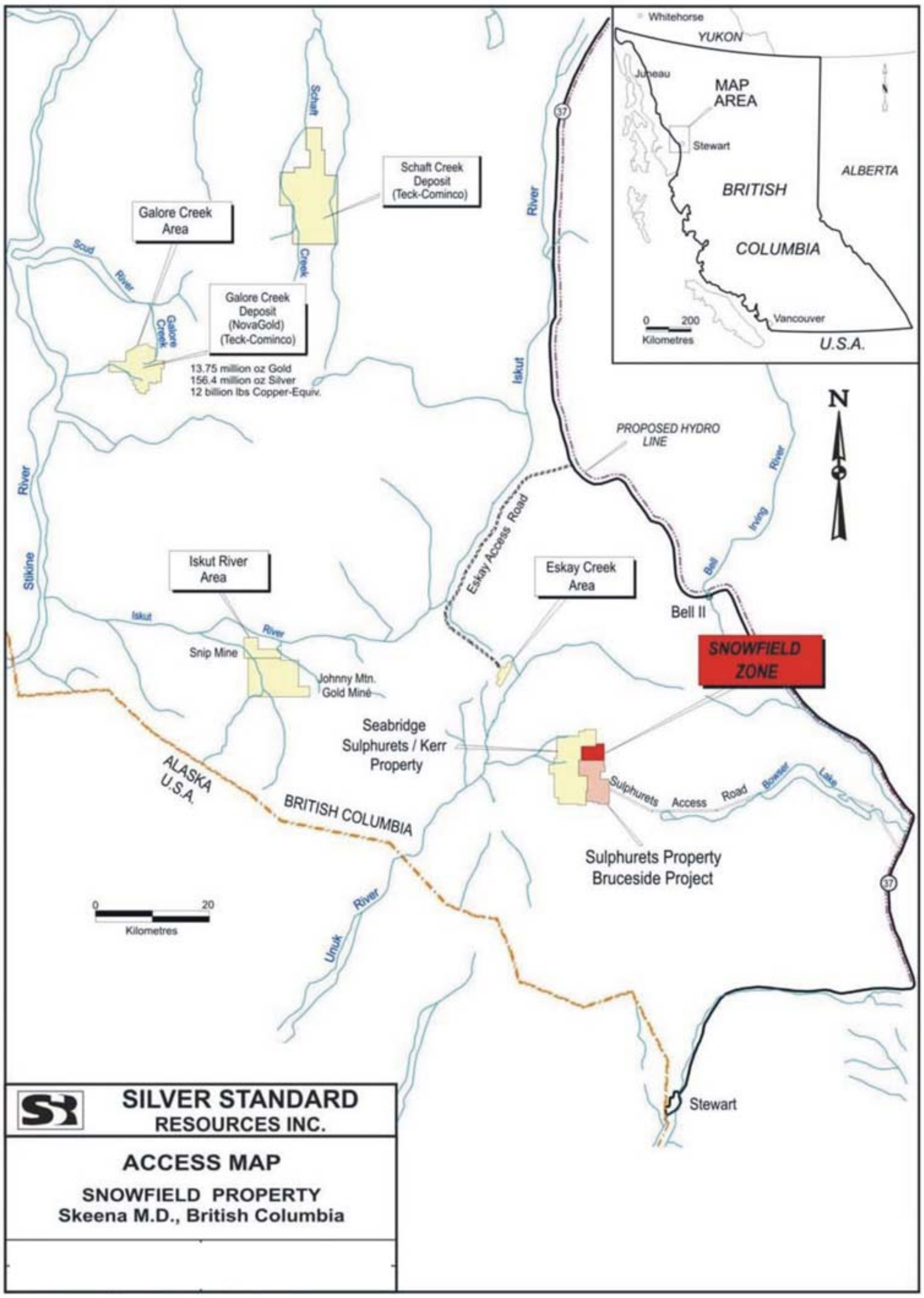


Figure 4.1: Location Map of Snowfield Property (after McCrae, 2007, modified by Blanchflower, 2008)

5.0 HISTORY AND PREVIOUS EXPLORATION

5.1 HISTORY

The exploration history of the Sulphurets-Mitchell Creek area dates back to 1933 when placer gold miners worked on Sulphurets Creek. This early work between 1935 and 1959 led to the discovery of several small copper and gold-silver showings in the Sulphurets-Mitchell Creek and Brucejack Lake areas. In 1959 Granduc Mines staked the original Sulphurets claim group (McCrea, 2007).

Exploration History (after McCrea, 2007)

1960 to 1980 – Granduc Mines ('Granduc') carried out regional reconnaissance prospecting, mapping and rock sampling over the entire Sulphurets area resulting in the discovery of several porphyry copper-molybdenum and copper-gold occurrences plus a few gold-silver vein showings. In 1968, Granduc completed two diamond drill holes, totalling 711 metres, in a quartz stockwork zone that hosted anomalous gold values of less than 0.015 oz/t but no significant base metal values;

1980 – Esso Minerals ('Esso') optioned the Sulphurets Property and conducted detailed geological mapping, trenching and rock geochemical sampling. The results of this work led to the discovery of the Snowfield, Quartz Stockwork and Moly Zones;

1981 to 1983 – Esso continued exploring the Snowfield Zone which appeared to have the potential for a large, low grade gold deposit. They also carried out regional mapping and sampling within the Sulphurets-Mitchell Ridge area;

1983 – Esso excavated and sampled 24 trenches, totalling 192 metres, in the Snowfield Zone outlining a 240 by 120 metre area of gold mineralization with an average grade of 0.088 oz/t gold (McCrea, 2007). Their work also discovered the Josephine Zone with vein-hosted gold-silver mineralization;

1985 – Esso terminated their option of the Sulphurets Property, and Newhawk Gold Mines ('Newhawk') and Granduc entered into a 60:40 joint venture agreement with Newhawk operating;

1985 to 1988 – Newhawk tested the Snowfield Zone with five diamond drill holes totalling 740 metres. At the time the mineralization was interpreted to be a tabular, shallow, southwardly dipping body averaging 70 metres thick. Preliminary metallurgical testing was carried out on the drill core, and prospecting continued on the property until 1989;

1989 – Newhawk-International Corona Corporation joint venture established a property-wide control grid (8 line-km) and conducted a rock sampling program which led to the discovery of the Coffeepot gold-silver bearing quartz vein zone. The Snowfield Zone was also explored with further rock sampling and trenching;

1991 - Two drill holes, totalling 350 metres, tested the Snowfield Zone with additional rock sampling along its eastern exposed limits. The Newhawk-International Corona Corporation joint venture also funded a doctoral thesis on the property by Jake Margolis which was published in 1993;

1993 – Three deep diamond drill holes, totalling 1,164 metres, tested the southern extension of the Snowfield Zone and another three drill holes, totalling 295 metres, tested the nearby Josephine Vein Zone;

1999 - Silver Standard acquired the Sulphurets claim through the acquisition of all of the shares of Newhawk, including the subject claims;

2006 – Silver Standard evaluated the Snowfield Zone with 27 diamond drill holes, totalling 6,141 metres, and rock sampling to test the lateral and vertical limits of the gold mineralization;

2007 – Silver Standard drilled 29 NQ-2 size diamond drill holes, totalling 8,666.29 metres. Twenty-one drill holes tested the Snowfield Zone; six drill holes tested the nearby Coffeepot Zone situated immediately west of the Snowfield Zone; and one drill hole tested the Mitchell East Zone, (now recognized to be the northern extension of the Snowfield Zone). A total of 5,484 samples were collected from the 2007 drill core.

5.2 PREVIOUS FEASIBILITY STUDIES

There have been no previous feasibility studies undertaken on the Snowfield Property.

5.3 PREVIOUS METALLURGICAL TESTING

Metallurgical testing is reported on in Section 15.0 of this current Technical Report.

5.4 PREVIOUS RESOURCE ESTIMATES

The only existing previous resource estimate is reported on in Section 16.2 of this current Technical Report.

6.0 GEOLOGICAL SETTING

The following descriptions of the regional and local geology have been taken directly from the Technical Report titled, “Technical Report on the Snowfield Property, Skeena Mining Division, British Columbia, Canada”, authored by Minorex Consulting and dated April 21, 2008.

The Sulphurets District is situated along the western margin of the Intermontane Tectonic Belt, underlain by Stikine Terrane. This district has been the subject of several geological studies since the mid-1980’s when it was being actively explored for porphyry copper-molybdenum and copper-gold (i.e. Kerr), exhalative volcanogenic (i.e. Eskay) and lode gold-silver vein deposits (i.e. Snip, Brucejack Lake, Snowfield). Researchers include: Anderson, Kirkham and Bevier (Geological Survey of Canada); Alldrick, Britton and co-workers (British Columbia Geological Survey); Bridge (M.A.Sc., U.B.C.); Margolis (Ph.D., Univ. of Oregon), and MacDonald (M.D.R.U., U.B.C.). The following discussion of the regional geology is a brief summary of their findings. Figure 6.1 of this report show the geology of the Sulphurets area.

6.1 REGIONAL GEOLOGY

The Snowfield Property and the surrounding Sulphurets District are underlain by the Upper Triassic and Lower to Middle Jurassic Hazelton Group of volcanic, volcaniclastic and sedimentary rocks. According to Roach and MacDonald (1992), the lithostratigraphic assemblage comprises a package, from oldest to youngest, of:

- alternating siltstones and conglomerates (lower Unuk River Formation, Norian to Hettangian);

- alternating intermediate volcanic rocks and siltstones (upper Unuk River Formation; Hettangian to Pliensbachian);

- alternating conglomerates, sandstones, intermediate and mafic volcanic rocks (Betty Creek Formation, Pliensbachian to Toarcian);

- felsic pyroclastic rocks and flows, including tuffaceous rocks ranging from dust tuff to tuff breccias and localized welded ash tuffs (Mount Dilworth Formation, Toarcian); and

- alternating siltstones and sandstones (Salmon River and Bowser Formations, Toarcian to Bajocian).

Britton and Alldrick (1988) have described three intrusive episodes in the area including: intermediate to felsic plutons that are probably coeval with volcanic and volcaniclastic supracrustal rocks; small stocks related to the Cretaceous Coast Plutonic Complex; and minor Tertiary dykes and sills.

The Hazelton Group lithologies display fold styles ranging from gently warped to tight disharmonic folds (Britton and Alldrick, 1988). Northerly striking, steep normal faults are common, and syn-volcanic, syn-sedimentary and syn-intrusive faults have been inferred in the region. Minor thrust faults, dipping westerly, are common in the region and are important in the northern and western parts of the Sulphurets area in regard to the interpretation of mineralized zones (Roach and MacDonald, 1992).

Metamorphic grade throughout the area is, at least, lower greenschist. Such metamorphism typically produces propylitic assemblages: chloritized mafic minerals and saussuritized plagioclase. Alteration facies are most pronounced in intermediate and mafic volcanic rocks. Regional foliations strike north-northwest and dip steeply to the east (Britton and Alldrick, 1988).

There are more than seventy documented mineral occurrences and showings in the Sulphurets area. Copper, molybdenum, gold and silver mineralization found within gossans have affinities to both porphyry and mesothermal to epithermal types of vein deposits. Most mineral deposits occur in the upper members of Unuk River Formation or the lower members of the Betty Creek Formation (Britton and Alldrick, 1988).

6.2 LOCAL GEOLOGY

The following geological description is focused on the Snowfield Zone which is situated in the northern portion of the claim holdings and has been the subject of most exploration work by Silver Standard. The geological setting of the southern portion of the property which surrounds Brucejack Lake, is well documented by MacDonald (1993), Roach and MacDonald (1992) and Britton and Alldrick (1988).

The Snowfield Zone is underlain by Lower Jurassic andesitic volcanic rocks that correlate with the 'Upper Andesite' unit of the Unuk River Formation from the lower portion of the Hazelton Group (Alldrick and Britton, 1991). The rocks that host the gold mineralization at the Snowfield Zone have been pervasively altered to a lower greenschist facies. Subsequent pervasive hydrothermal alteration and formation of a moderate to strong foliation in these rocks makes the identification of protoliths difficult. Based upon geological mapping and petrographic studies undertaken by Margolis for his Ph. D. thesis on the area and recent drilling results, the mineralized rocks are interpreted as a marine volcanic back-arc sequence forming a moderately north-westerly-dipping sequence of predominantly andesitic autochthonous breccia flow, and lithic, crystal and lapilli tuff.

Pale to dark green-coloured, pervasively altered andesitic tuff outcrops throughout the Snowfield Zone. The unit is commonly well foliated and fine-grained with lenses of homolithic fragmental lapilli tuff and flow breccia varying from two to six metres thick. The lithic and breccia fragments are commonly sub-angular and less than 10 centimetres in size.

A sequence of ash, crystal and lithic tuff underlies the andesitic tuff and breccia. The very fine-grained, dense and well-indurated ash tuff is interbedded with fine- to medium-grained crystal and minor lithic tuff. Massive andesite underlies the tuffaceous sequence at 350 to 410 metres beneath the surface, and a crystal and lithic tuff sequence in turn underlies the andesitic flows, see Figure 6.2.

The entire volcanic sequence appears to be cut by cogenetic dykes and sills of basic to intermediate composition. These weakly deformed massive, fine-grained dykes exhibit weak propylitic alteration and are observed to have erratic pinch and swell, boudinage-like features (Margolis, 1993).

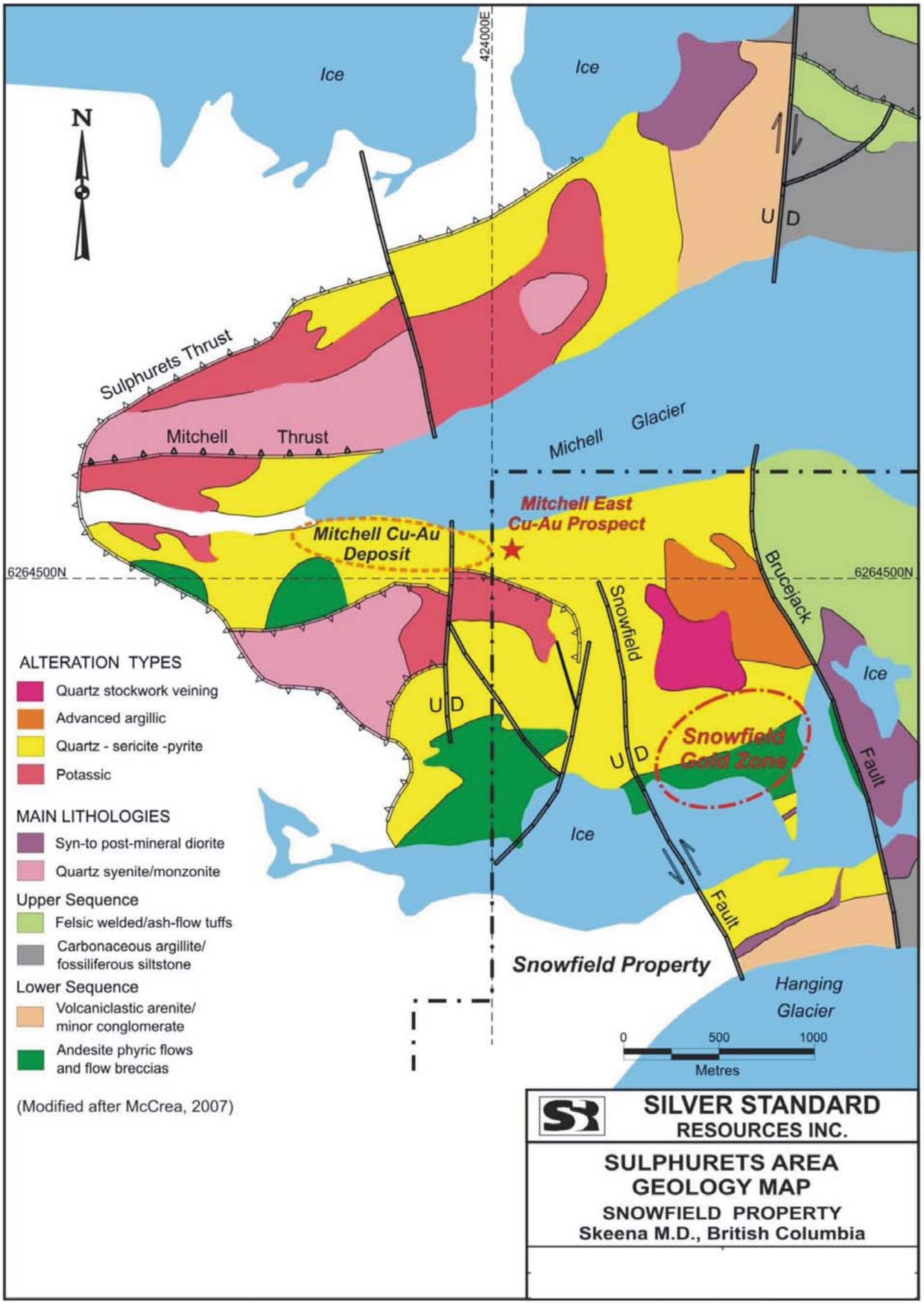


Figure 6.1: Geology of the Sulphurets Area **(after Blanchflower, 2008).**

A megacrystic diorite stock, with an elliptical, 1,500 metre by 700 metre surface outline, outcrops less than one kilometre east of the Snowfield Zone. This intrusion has been dated at 189.6 ± 2.2 Ma using U-Pb isotopes (Margolis, 1993). Medium-grained to porphyritic quartz-syenite is exposed approximately three kilometres west of the Snowfield Zone where it occurs in the upper plate of the Sulphurets thrust fault. A U-Pb age date of 192.7 + 5.4/-3.6 Ma was obtained for this felsic intrusive which is believed to underlie the Snowfield Zone at depth as well as the surrounding ground to the north and west (Margolis, 1993).

Two northerly-striking, post-mineralization high-angle faults occur east and west of the Snowfield Zone, are called the Brucejack and Snowfield Faults respectively (see Figure 6.1). The left-lateral and eastside-down, vertical Snowfield Fault was apparently formed during southeast-directed thrusting which produced the Mitchell and Sulphurets thrusts (Margolis, 1993). The Brucejack Fault is a regional northerly-striking structure that transects the Sulphurets District, truncating geological features and influencing topography. According to Margolis (1993), the Brucejack Fault is a right-lateral, normal, eastside-down and oblique-slip structure that dips steeply (-60^{o}) eastward.

6.2.1 STRUCTURE

The Sulphurets thrust fault, situated one to two kilometres west of the property, is a west-dipping, northerly-striking structure that places Triassic Stuhini Group over the Lower Jurassic Hazelton Group rocks, part of the regional Late Mesozoic Skeena fold and thrust belt (Margolis, 1993). Approximately two kilometres west of the Snowfield Zone this thrust separates upper-plate, monzonitic intrusive rocks from propylitically altered basaltic andesite flows of the Lower Sequence and is a complex, locally bifurcating structure. Structural interpretation of this feature indicates south-east convergence (Margolis, 1993).

The Mitchell Thrust Fault, on the south side of the Mitchell Valley, separates potassically-altered quartz-syenite and other rocks above it from dominantly sericitically-altered rocks and the Mitchell quartz stockwork beneath (Margolis, 1993). The structure is apparently north-westerly dipping (-10^{o} to -15^{o}) which suggests that its south-east-vergent, low-angle thrust has been transferred to a higher-angle, oblique-slip movement along the Snowfield Fault; thus, producing a horst within the Snowfield Zone (Margolis, 1993).

According to Margolis (1993), "*Most altered rocks in the study area (Snowfield) contain a closely-spaced cleavage (foliation); the degree of cleavage development is directly proportional to the concentrations of phyllosilicates, chiefly hydrothermal sericite, pyrophyllite and chlorite. Unaltered fine-grained rocks without K-feldspar, such as the argillites and siltstones of the Upper Sequence, are also foliated. Potassically-altered rocks are unfoliated, apparently owing to a low content of phyllosilicates and an abundance of equant, fine-grained hydrothermal K-feldspar. Similarly, quartz-syenite and monzonite are unfoliated.*"

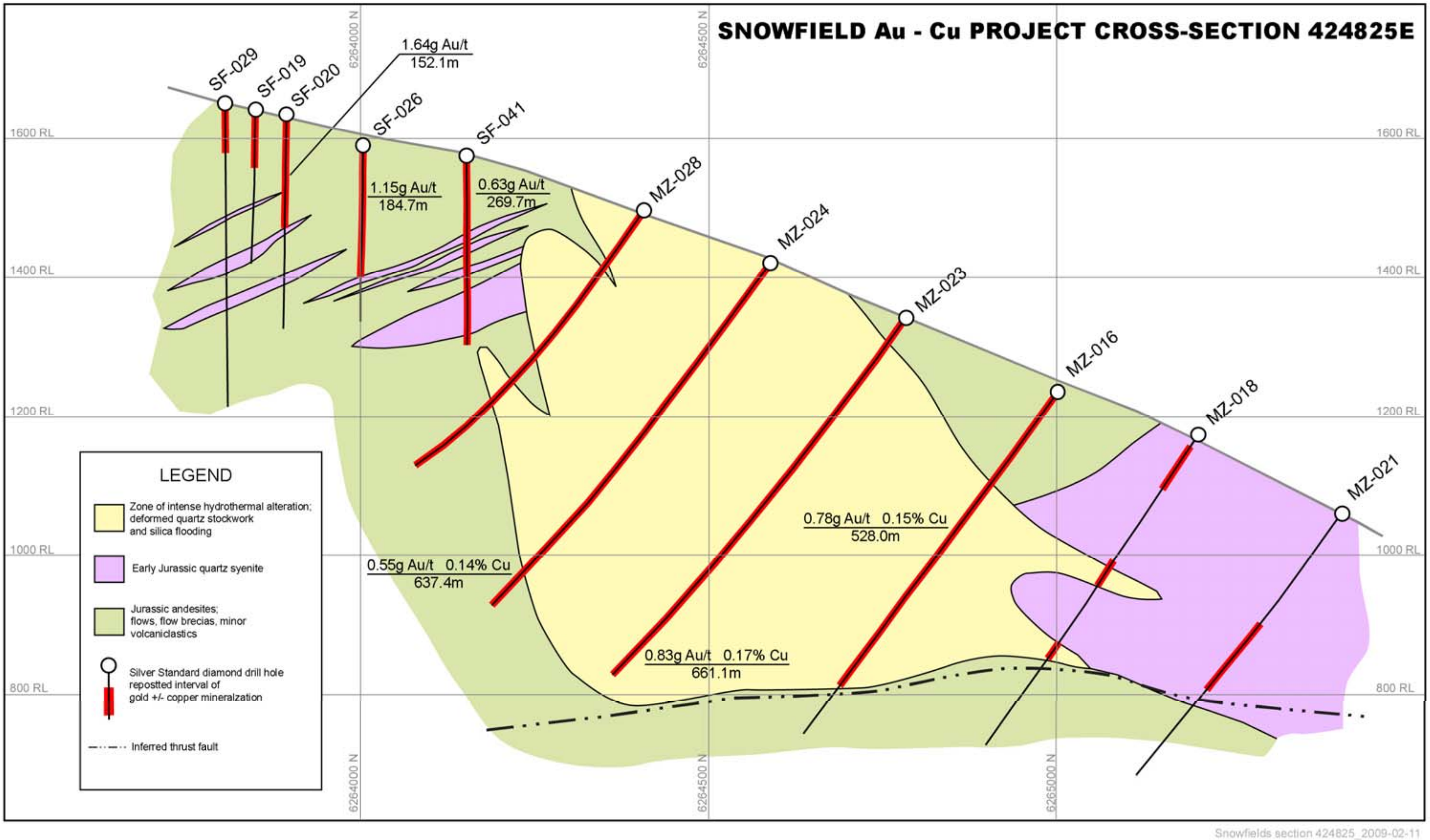


Figure 6.2: Cross Section 424825E through the Snowfield Deposit showing 2008 (MZ series) holes.

6.2.2 ALTERATION

The Snowfield Zone is situated within the eastern one of two structural blocks separated by the northerly-trending Snowfield Fault. The eastern, down-dropped block of volcanic rocks has been pervasively altered to advanced argillic facies, has a quartz stockwork zone, and there is only rare potassic alteration east of the fault. In contrast, the western block which has been uplifted has potassic, sericitic and rare advanced argillic alteration with the intrusion of quartz-syenite (Margolis, 1993).

According to Margolis (1993), green, chlorite-rich quartz-sericite-pyrite alteration of the andesitic volcanic rocks is pervasive east of the Snowfield Fault and throughout the Snowfield Zone; in contrast with the white, chlorite-poor alteration west of the fault. The altered host rocks contain abundant disseminations and fracture filling molybdenite and tourmaline which are cut by pyrophyllite veins in the advanced argillic zone and by massive pyrite veins elsewhere in the area. There is evidence that the quartz-sericite-pyrite-chlorite alteration replaced potassic alteration which was rich in hydrothermal biotite, magnetite and chalcopyrite (Margolis, 1993). Beyond the known limits of the Snowfield Zone, the quartz-sericite-pyrite-chlorite altered rocks are poorly mineralized, except for molybdenite.

Within the eastern structural block, approximately 50 metres east of the known Snowfield Zone, there is a zone of dense quartz veining covering an area of approximately 400 by 600 metres, elongated north-north-westerly. According to Margolis (1993), its contacts with the surrounding un-veined rock are gradational over three to 20 metres. Quartz veins are typically one to three centimetres wide, clear to white with only trace amounts of pyrite, molybdenite and chalcopyrite, and highly contorted. The sheeted veins are commonly oriented north-north-easterly (010^{o}) consistent with the northerly elongation of the zone. The veins lie in a variably foliated sericitic or pyrophylite-rich matrix; both alteration types apparently post-dating the emplacement of the stockwork veins.

Potassic alteration facies were identified at only one site east of the Snowfield Fault, south-east of the Snowfield Zone. Margolis (1993) infers that this 400 square metre area was preserved from propylitic or later quartz-sericite-pyrite-chlorite alteration.

An advanced argillic zone of alteration was identified by Margolis (1993) cutting across the upper part of the quartz stockwork zone. It is reportedly 1.5 kilometres long by 500 metres wide, and is truncated to the east by the Brucejack Fault and covered by the Mitchell glacier to the north. This zone has rare pyrophyllite at its centre with some relict molybdenite but is generally poorly mineralized.

7.0 DEPOSIT TYPES

The Snowfield Deposit is a near-surface, low grade, bulk tonnage, porphyry-style, gold deposit that has the additional potential of copper-gold ± molybdenum mineralization at depth and west of the Snowfield Fault. The gold mineralization at the Snowfield Deposit, as well as the copper-gold ± molybdenum porphyry-style mineralization of the Mitchell Deposit that is currently being tested by Seabridge Gold Inc. on the adjacent Kerr-Sulphurets Property to the north and west, is interpreted to be genetically related to one or more Jurassic-age alkaline intrusions (Margolis, 1993; Alldrick and Britton, 1991).

The following deposit description is taken from the Geology of Canadian Mineral Deposit Types edited by O.R. Eckstrand, W.D. Sinclair, and R.I. Thorpe.

7.1 PORPHYRY DEPOSITS

7.1.1 GEOLOGICAL FEATURES

Porphyry deposits occur in close association with epizonal and mesozonal, felsic to intermediate intrusions. Possible exceptions are some porphyry gold deposits such as Porgera, Papua New Guinea and QR, British Columbia that show a close association with small alkaline mafic intrusions emplaced at very shallow depths (Richards and Kerrich, 1993). Intrusions related to porphyry deposits show a wide range in compositions and petrogenetic associations and occur in a variety of tectonic settings. For example, **porphyry copper** deposits typically occur in the root zones of andesitic stratovolcanoes in subduction-related, continental-arc and island-arc settings (Mitchell and Garson, 1972; Sillitoe, 1973, 1988a; Sillitoe and Bonham, 1984). **Porphyry copper-gold** deposits, such as those associated with Triassic and Lower Jurassic silica saturated, alkaline intrusions in British Columbia, formed in an island-arc setting, but possibly during periods of extension; Ladolam, a bulk-tonnage epithermal gold deposit with an early porphyry stage of mineralization, formed in the Tabar-Feni alkaline island-arc during late stage rifting related to spreading in the adjacent Manus Basin (Moyle et al., 1990; McInnes and Cameron, 1994). Grasberg and Porgera formed in a continental-island-arc collisional zone during or immediately following subduction (MacDonald and Arnold, 1993, 1994; Richards and Kerrich, 1993). **Porphyry gold** deposits of Tertiary age in the Maricunga belt in Chile appear to have formed in a continental-arc setting along strike to the north from major porphyry copper deposits of the same general age (Sillitoe, 1992, 1993b).

Porphyry molybdenum deposits are typically associated with anorogenic or A-type granites that have been emplaced in continental settings, particularly rift or extensional environments. The Climax and Henderson Deposits, for example, are genetically related to small cupolas (small plugs and stocks) of regional batholiths emplaced during active extension in the Rio Grande rift (Bookstrom, 1981; Carten et al., 1988b, 1993). The Questa Deposit farther south in New Mexico also formed during active extension and bimodal volcanism along the Rio Grande rift system (Leonardson et al., 1982; Lipman, 1988; Johnson et al., 1989; Meyer and Foland, 1991). The Pine Grove porphyry molybdenum deposit is likewise associated with bimodal igneous rocks that were emplaced during regional extension in the Basin and Range Province of Nevada (Keith et al., 1986; Keith and Shanks, 1988). Other porphyry molybdenum deposits appear to have formed during extension in areas adjacent to strike-slip faults (e.g., northern Cordillera - Quartz Hill, Adanac, Casmo, and Mount Haskins). **A** few deposits, such as Mount Pleasant, New Brunswick and Questa, New Mexico, are associated with high-silica rhyolites and granites that formed in continental calderas (Lipman, 1988; McCutcheon, 1990; McCutcheon et al., in press). For most porphyry deposits, however, the depth of erosion is such that caldera settings are conjectural (e.g., Lipman, 1984).

Some **porphyry molybdenum** deposits, along with **porphyry tungsten-molybdenum** and **porphyry tin** deposits, formed in areas of great continental thickness related to collisional tectonic settings, although the deposits generally postdate the collision event. Porphyry tin deposits in Bolivia, in particular, are related to S-type peraluminous intrusions that were emplaced above deep levels of a Benioff Zone (Ishihara, 1981; Kontak and Clark, 1988; Lehmann, 1990).

Details of each setting and related controls on magma generation, composition, and emplacement conceivably had a major influence on the size, metal contents, and nature of individual deposits. However, exceptions to typical settings, such as the Tribag and Jogran porphyry copper (molybdenum, tungsten) deposits in Ontario that apparently are related to a continental rift environment (Kirkham, 1973; Norman and Sawkins, 1985), and the Malmbjerg porphyry molybdenum deposit in East Greenland that is related to the Iceland mantle plume, indicate that individual porphyry deposits can occur in diverse and unique settings.

Age of Host Rocks and Ore

Most porphyry deposits are Triassic or younger, but individual deposits range in age from approximately 3.0 Ga to recent. Examples of Precambrian deposits include McIntyre and Setting Net Lake, Ontario; Clark Lake, Queylus, McLeod Lake, and Lac Dasserat, Quebec; Malanjkhand, India; Haib, Namibia; Tongkuangyu, China; and Nuggetty Gully, Australia. Porphyry mineralization is characteristically superimposed on host rocks although in virtually all cases contemporaneous, genetically related intrusions are present (Kirkham, 1971; Shannon et al., 1982; Carten et al., 1988a; Kirkham and Sinclair, 1988). Sillitoe and Bonham (1984) and Sillitoe (1988a) suggested that many porphyry copper deposits formed in the root zones of andesitic stratovolcanoes.

Associated Structures

At the scale of ore deposits, associated structures, such as veins, vein sets, stockworks, fractures, 'crackled zones', and breccia pipes are of fundamental importance. In large, complex, economic porphyry deposits, mineralized veins and fractures have a very high density. Orientations of mineralized structures can be related to local stress environments around the tops of plutons or can reflect regional stress conditions (Rehrig and Heidrick, 1972; Heidrick and Titley, 1982; Titley et al., 1986; Carten et al., 1988a). Where they are superimposed in a large volume of rock, the combination of mineralized structures results in higher grade zones and the characteristic large size of porphyry deposits (e.g., Carten et al., 1988a). Regional structures are thought to be important in controlling the distribution of porphyry deposits; for example, the Rio Grande rift system in the western United States is the locus for porphyry molybdenum deposits (Bookstrom, 1981). The West Fault along strike of the Eocene porphyry copper belt in northern Chile, from El Salvador in the south to beyond Collahausi in the north, was active both during and following porphyry emplacement and hydrothermal activity (Baker and Guilbert, 1987). Also within this belt, cross-structures apparently controlled the distribution of individual deposits such as Quebrada Blanca and Collahausi (Rosario -Ujina) (Sillitoe, 1992). The major strike-slip fault system in the northern part of the Philippine island arc system, similar to the West Fault in northern Chile, was probably also a control on the location of major magmatic and hydrothermal centres, which might be localized in areas that are pull-apart structures at dilational bends. In many districts, however, perhaps because of intense alteration and multiple intrusions, regional structural control is obscure.

Form of Deposits

The overall form of individual porphyry deposits is variable and includes irregular, oval, solid, or "hollow" cylindrical and inverted cup shapes (Sutherland Brown, 1969; James, 1971; McMillan and Panteleyev, 1980). Orebodies may occur separately or overlap and, in some cases, are stacked one on top of the other (Wallace et al., 1968; White et al., 1981; Carten et al., 1988a). Individual orebodies measure hundreds to thousands of metres in all three dimensions. Orebodies are characteristically zoned with barren cores and crudely concentric metal zones that are surrounded by barren pyritic halos with or without peripheral veins, skarns, replacement manto zones, and epithermal precious-metal deposits (Einaudi, 1982; Sillitoe, 1988a, b; Jones, 1992). Complex, irregular ore and alteration patterns are due, in part, to the superposition or overlap of mineral and alteration zones of different ages.

Mineralogy

The mineralogy of porphyry deposits is highly varied, although pyrite is typically the dominant sulphide mineral in porphyry copper, copper-molybdenum, copper-gold, gold, and silver deposits, reflecting the fact that large amounts of sulphur were added to the deposits. In porphyry deposits of the more lithophile elements, i.e., tin, tungsten, and molybdenum, the overall sulphur and sulphide mineral contents are lower. Principal ore and associated minerals of the different porphyry deposit subtypes are as follows:

Porphyry copper-gold deposits: Principal ore minerals are chalcopyrite, bornite, chalcocite, tennantite, other copper minerals, native gold, electrum, and tellurides; associated minerals include pyrite, arsenopyrite, magnetite, quartz, biotite, K-feldspar, anhydrite, epidote, chlorite, scapolite, albite, calcite, fluorite, and garnet.

Porphyry gold deposits: Principal ore minerals are native gold, electrum, chalcopyrite, bornite, and molybdenite; associated minerals include pyrite, magnetite, quartz, biotite, K-feldspar, muscovite, clay minerals, epidote, and chlorite.

Alteration

Hydrothermal alteration is extensive and typically zoned both on a deposit scale and around individual veins and fractures. In many porphyry deposits, alteration zones on a deposit scale consist of an inner potassic zone characterized by biotite and/or K-feldspar (+/- amphibolite+/-magnetite+/-anhydrite) and an outer zone of propylitic alteration that consists of quartz, chlorite, epidote, calcite and locally albite associated with pyrite. Zones of phyllic alteration (quartz+sericite+pyrite) and argillic alteration (quartz+illite+pyrite+/-kaolinite+/-smectite+/-montmorillonite+/-calcite) may be part of the zonal pattern between the potassic and propylitic zones, or can be irregular or tabular, younger zones superimposed on older alteration and sulphide assemblages (e.g. Ladolam; Moyle et al., 1990).

Economic sulphide zones are most closely associated with potassic alteration, as demonstrated by Carson and Jambor (1974) for several porphyry copper (+/- molybdenum) deposits. Sodic alteration (mainly as secondary albite) is associated with potassic alteration in some porphyry copper-gold deposits, such as Copper Mountain and Ajax, British Columbia (Preto, 1972; Barr et al., 1976; Ross et al., 1995). Albitic alteration partly overlaps potassic alteration and copper zones on the north side of the Ingerbelle Deposit at Copper Mountain. At the Ajax Deposit, highest copper grades occur near, but not in the most intensely altered albitic rocks. Eaton and Setterfield (1993) indicated that the low grade Nasivi 3 porphyry copper deposit in the centre of the shoshonitic Tovua caldera, adjacent to the epithermal Emperor Gold Mine in Fiji, contains an albitic, copper-bearing core surrounded by peripheral propylitic alteration and overprinted by younger phyllic alteration. Sodic-calcic alteration (oligoclase+quartz+sphene+apatite+/-actinolite+/-epidote) has been documented in the deep root zones beneath, and peripheral to, potassically altered porphyry copper deposits at Yerington and Ann-Mason, Nevada (Carten, 1986; Dilles and Einaudi, 1992).

Alteration is controlled in part by the composition of the host rocks. In mafic host rocks with significant iron and magnesium, biotite (+/- lesser hornblende) is the dominant alteration mineral in the potassic alteration zone, whereas K-feldspar dominates in more felsic rocks.

In carbonate-bearing host rocks, calc-silicate minerals such as garnet and diopside are abundant. Alteration mineralogy is also controlled by the composition of the mineralizing system. In more oxidized environments, minerals such as pyrite, magnetite (+/-hematite), and anhydrite are common, whereas pyrrhotite is present in more reduced environments. Fluorine-rich systems, such as those related to many porphyry tin and tungsten molybdenum deposits, and some porphyry molybdenum deposits, commonly contain fluorine-bearing minerals as part of the alteration assemblages. At Mount Pleasant, for example, potassic alteration is rare and the principal alteration associated with the tungsten-molybdenum deposit consists of quartz, topaz, fluorite, and sericite, and the surrounding propylitic alteration consists of chlorite+sericite (Kooiman et al., 1986). Similarly, alteration in some low-grade tin deposits in Australia (e.g., Ardlethan) grades out from a central zone of quartz+topaz to zones of sericite and chlorite+/-carbonate (Scott, 1981). Siems (1989) suggested that lithium silicate alteration (e.g., lithium-rich mica and tourmaline, with associated fluorite), which accompanies tin, tungsten, and molybdenum in some granite-related deposits, is analogous to potassic alteration in porphyry copper and molybdenum deposits.

Phyllic alteration zones are not present in all porphyry deposits. In many deposits in which they are present, however, phyllic alteration is superimposed on earlier potassic alteration assemblages (Carson and Jambor, 1979). At Chuquicamata in Chile, for example, a zone of intense phyllic alteration extends to depth in the core of the deposit and is superimposed on earlier potassic alteration and small amounts of associated copper sulphides with low copper grades. This phyllic zone contains higher than average copper grades and associated arsenic-bearing copper minerals and molybdenite.

Advanced argillic (high sulphidation) and adularia-type (low sulphidation) epithermal alteration zones with associated precious-metal deposits occur above or near several porphyry copper and copper-molybdenum deposits. These alteration zones in places, show a marked telescoping of older potassic and younger epithermal alteration; (Sillitoe, 1990, 1993a, b; Moyle et al., 1990; Vila and Sillitoe, 1991; Setterfield et al., 1991; Eaton and Setterfield,1993; Richards and Kerrich, 1993). The advanced argillic assemblages include illite, quartz, alunite, natroalunite, pyrophyllite, diaspore, and a high pyrite content. Adularia assemblages, with quartz, sericite, and clay minerals, have lower pyrite contents. Sillitoe (1993a) suggested that advanced-argillic or high-sulphidation-type epithermal systems can occur in spatial association with porphyry copper, copper-molybdenum, copper-gold, and gold deposits, but not with porphyry molybdenum deposits. Adularia or low-sulphidation-type epithermal systems probably form from more dilute ore fluids and may or may not occur on the peripheries of porphyry systems. Furthermore, Sillitoe (1993a) suggested that base-metal-rich epithermal deposits form from more concentrated NaCl brines and, similar to porphyry deposits, are parts of magmatic-hydrothermal systems.

7.2 DEFINITIVE CHARACTERISTICS

The following features serve to distinguish porphyry deposits from other types of deposits: large size, widespread alteration, structurally-controlled ore minerals superimposed on pre-existing host rocks, distinctive metal associations, and spatial, temporal, and genetic relationships to porphyritic epizonal and mesozonal intrusions.

7.2.1 GENETIC MODEL

The most applicable model for porphyry deposits is a magmatic hydrothermal one, or variations thereon, in which the ore metals were derived from temporally and genetically-related intrusions (Fig. 7.1). Large polyphase hydrothermal systems developed within and above genetically-related intrusions and commonly interacted with meteoric fluids (and possibly seawater) on their tops and peripheries. During the waning stages of hydrothermal activity, the magmatic-hydrothermal systems collapsed inward upon themselves and were replaced by waters of dominantly meteoric origin. Redistribution, and possibly further concentration of metals, occurred in some deposits during these waning stages.

Variations of the magmatic-hydrothermal model for porphyry deposits, commonly referred to as the "orthomagmatic" model, have been presented by such authors as Burnham (1967, 1979), Phillips (1973), and Whitney (1975, 1984). These authors envisaged felsic and intermediate magma emplacement at high levels in the crust and border zone crystallization along the walls and roof of the magma chamber. As a consequence of this crystallization, supersaturation of volatile phases occurred within the magma, resulting in separation of volatiles due to resurgent, or second, boiling. Ore metals and many other components were strongly partitioned into these volatile phases, which became concentrated in the carapace of the magma chamber (Christiansen et al., 1983; Candela and Holland, 1986; Manning and Pichavant, 1988; Candela, 1989; Cline and Bodnar, 1991; Heinrich et **al.,** 1992). When increasing fluid pressures exceeded lithostatic pressures and the tensile strength of the overlying rocks, fracturing of these rocks occurred, permitting rapid escape of hydrothermal fluids into newly created open space. A fundamental control on ore deposition was the pronounced adiabatic cooling of the ore fluids due to their sudden expansion into the fracture and/or breccia systems, thus the importance of structural control on ore deposition in porphyry deposits. Aplitic and micrographic textures in granitic rocks associated with porphyry deposits are the result of pressure-quench crystallization related to the rapid escape of the ore fluids (Shannon et al., 1982; Kirkham and Sinclair, 1988).

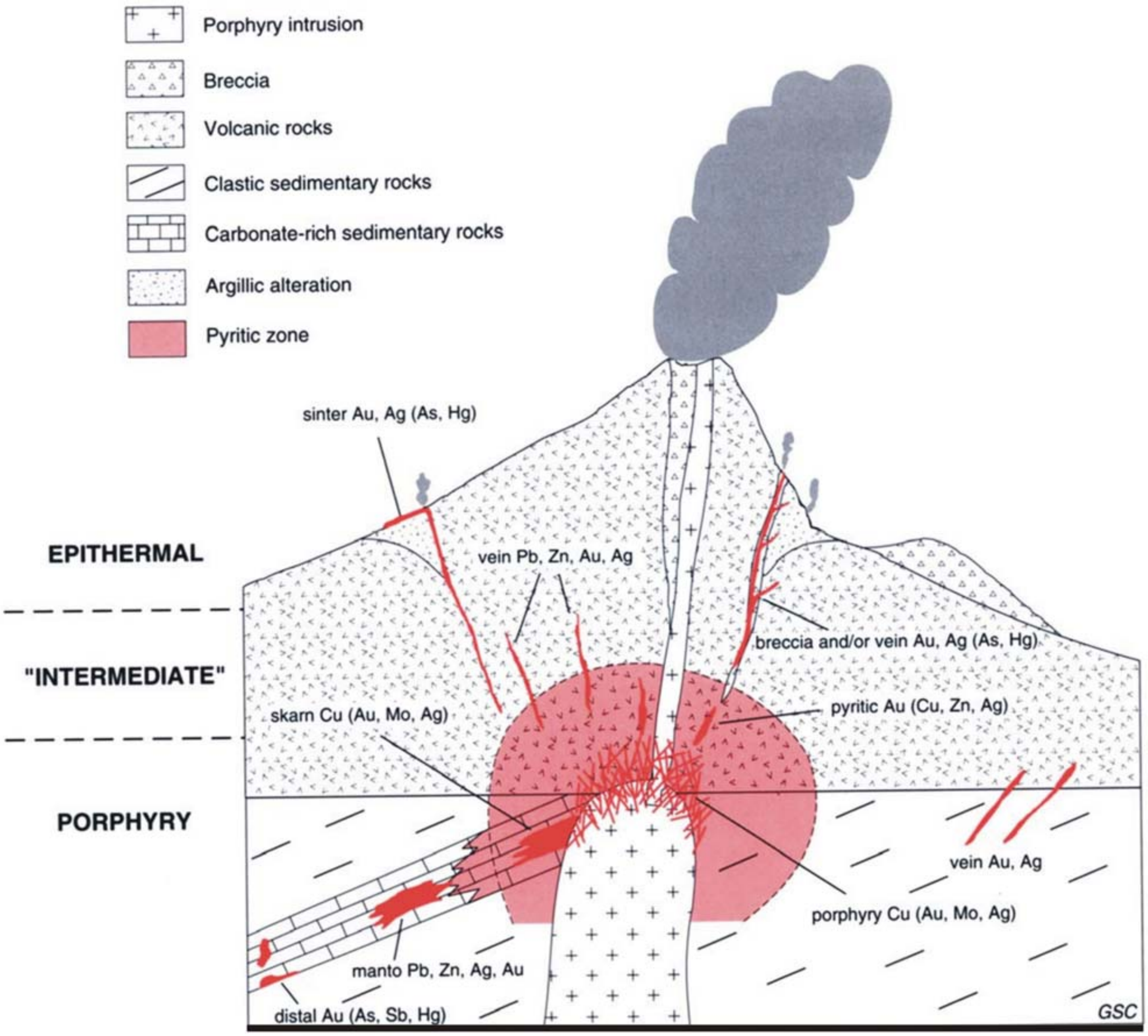


Figure 7.1: Schematic diagram of a porphyry copper system in the root zone of an andesitic stratovolcano showing mineral zonation and possible relationship to skarn, manto, "mesothermal" or "intermediate" precious metal and base metal vein and replacement, and epithermal precious-metal deposits.

Some modification of the above orthomagmatic model is required for at least some, if not most, porphyry deposits, in view of studies by Shannon et al. (1982), Carten et al. (1988a), and Kirkham and Sinclair (1988). These authors concluded that, in several deposits, the underlying genetically related intrusions were largely liquid in their carapaces until ore formation was essentially complete. Kirkham and Sinclair (1988) suggested that crystallization deep within a batholithic magma chamber (Figure 7.2) could have been the cause of resurgent boiling, rather than local border zone crystallization as envisaged by Burnham (1967, 1979), Whitney (1975,1984), and Carten et al. (1988b). According to this model, volatiles that streamed through large volumes of magma, stripping it of its metal content, accumulated in small cupolas at the top of the magma chambers. These volatile-rich, ore-forming fluids would have lowered the liquidus temperature of the magmas in the cupolas, keeping them largely liquid during the ore-forming process. Areas where these ore-forming fluids accumulated in cupolas of siliceous intrusions associated with some porphyry molybdenum, copper-molybdenum, and tungsten-molybdenum deposits are indicated by abundant comb quartz layers (Shannon et al., 1982;

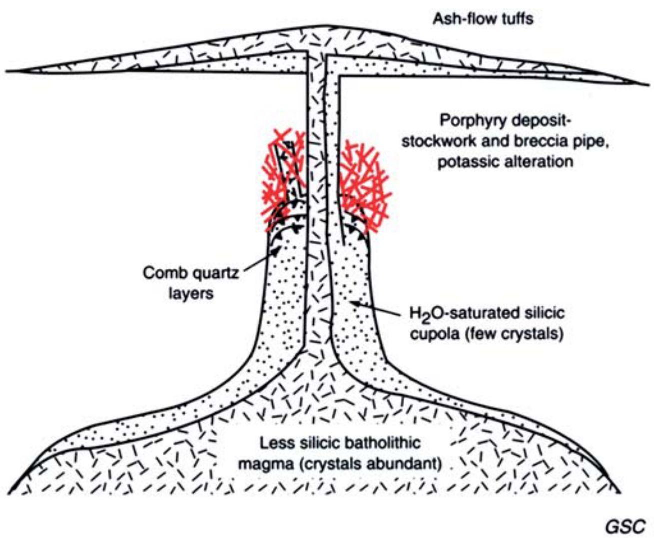


Figure 7.2: Schematic diagram of a crystallizing batholithic mass with an overlying volatile-saturated cupola and related ash-flow tuffs illustrating the environment of formation of porphyry deposits (modified from Kirkham and Sinclair, 1988).

Carten et al., 1988a; Kirkham and Sinclair, 1988). Such a model is consistent with the sequence of erupted products from large-volume ash-flow tuff eruptions - that is, early high-silica eruptive products with few crystals followed by more mafic eruptive products rich in crystals (Hildreth, 1979, 1981; Smith, 1979; Keith et al., 1986; Keith and Shanks, 1988). Similarities in chemical characteristics of siliceous intrusions associated with the Quartz Hill porphyry molybdenum deposit in Alaska and the Bishop Tuff in California (Hudson et al., 1981) indicate that the magmas responsible for the Quartz Hill deposit could have been similar to those that produced the Bishop Tuff. Carten et al. (1993) suggested an interesting alternative for high-grade porphyry molybdenum deposits, namely that volatiles (F, C1, S, CO2) released from underlying saturated mafic magmas are responsible for stripping metals from the overlying felsic magmas. Keith and Shanks (1988) suggested that the Pine Grove porphyry molybdenum deposit in Utah formed from a large volume of silicic magma with a low molybdenum content. Similarly, calculations by Westra (1978) for the porphyry copper deposit at Ely, Nevada and by Heithersay et al. (1990) for the porphyry copper-gold deposits at Goonumbla, Australia, indicated that very large volumes of magma, much greater than that in the exposed intrusions, were required for the formation of these deposits. Wall rocks of the intrusions and deposits are not considered to be viable sources for the metals in porphyry deposits.

Perhaps the most convincing argument against a wall rock source for metals is the strong, universal petrogenetic and temporal association of deposits of specific metals with intrusions of specific compositions and petrogenesis. With the exception of some gold deposits, such as Porgera in Papua New Guinea, no known significant porphyry-type deposits are related to gabbros or more mafic rocks, suggesting that heat engine models for genesis of porphyry deposits have little or no relevance. Furthermore, the metal content of most porphyry deposits is related to one or more specific phase(s) of intrusion, as at Henderson, Colorado, where two of the eleven identified phases, the Seriate and the Henderson stocks, together provided an estimated 62% of the molybdenum in the deposit (Carten et al., 1988a). At Bingham, Utah the early Last Chance augite monzonite intrusion has no known significant associated mineralization, although it was emplaced at a time when a scavenging heat engine should have been most effective; on the other hand, the subsequent quartz monzonite phases of the Bingham stock and the related small, but not insignificant, latite porphyry phases (Wilson, 1978) have huge amounts of associated metals. Another example is the Battle Mountain district in Nevada where, at essentially the same place in the Earth's crust at different times, a porphyry molybdenum deposit, and a porphyry copper deposit with related gold-rich skarn zones, were formed (Theodore et al., 1982, 1992; Kirkham, 1985). Such evidence indicates strongly that input of metal-rich magmatic-hydrothermal fluids was essential for the formation of these deposits.

8.0 MINERALIZATION

The gold mineralization at the Snowfield Deposit is hosted by schistose, pervasively altered (quartz-sericite-chlorite) volcanic and volcaniclastics that contain one to five percent disseminated pyrite, minor disseminations and veinlets of tourmaline and molybdenite, and abundant younger calcite veinlets.

Gold mineralization occurs as microscopic grains (≤30 microns) of electrum that are encased within fine-grained, pervasively disseminated pyrite in close association with trace amounts of galena and sphalerite (Margolis, 1993). Other associated minerals within the gold-mineralized zone include: tetrahedrite-tennantite, barite, acanthite, minor Mn-rich calcite and rare chalcopyrite. Minute clusters, approximately 75 microns, of pyrite and rutile (± barite) are also observed within the gold-bearing mineralization (Margolis, 1993).

Molybdenite mineralization appears to have been emplaced during an earlier hydrothermal event. Pyrite-tetrahedrite veinlets from the gold-bearing mineral assemblage are observed cutting molybdenite veinlets. Weakly disseminated and minor fracture filling molybdenite mineralization is widespread and common throughout the Snowfield Deposit and nearby area. Fine-grained tourmaline crystals are often associated with molybdenite in quartz veinlets (Margolis, 1993).

Hydrothermal alteration within the Snowfield Deposit includes quartz-sericite-pyrite with varying amounts of chlorite, calcite and garnet. The dark reddish-brown, rounded garnets are less than 7 mm and appear to have been crystallized during the gold mineralizing event(s). They are probably of hydrothermal origin as they are well fractured and exhibit deformational features consistent with the tectonic event that caused the deformation, alteration and schistosity of the host rocks (Margolis, 1993).

The resource as outlined in this Technical Report is approximately two kilometres north-south by one kilometre east-west at the widest point (between 424000 E and 425000 E). The highest gold grades (> 2.0 g/t Au) are at surface, yielding in excess of 2.0 to 3.2 g/t Au.

The deposit has a keel shape and attains up to 650 metres at the thickest part.

Chalcopyrite mineralization with minor sphalerite and galena increases with depth beneath the < 0.5 g/t Au cuff-off grade shell coincident with a change in lithology from the medium-grained andesitic tuffs to fine-grained ash-crystal-lithic tuffs (McCrea, 2007). Increasing base metal mineralization with depth may indicate possible porphyry-style copper mineralization associated with the cupola of a buried alkalic intrusion (Margolis, 1993).

9.0 EXPLORATION

There was no other exploration work undertaken on the Snowfield Property in 2008 apart from diamond drilling which is described in detail in Section 10.0.

10.0 DRILLING

For a complete account of the diamond drilling prior to the 2008 program, the reader is referred to the technical report titled, "Technical Report on the Snowfield Property, Skeena Mining Division, British Columbia, Canada", authored by J. D. Blanchflower of Minorex Consulting and dated April 21, 2008.

10.1 2008 SNOWFIELD DIAMOND DRILL PROGRAM

At the end of the 2007 field season, Silver Standard had drilled twenty-nine (29) NQ-2 size diamond drill holes, totalling 8,666 metres. Twenty-one drill holes tested the Snowfield Zone; six drill holes tested the nearby Coffeepot Zone; and one drill hole tested the Mitchell East Zone, (now recognized to be the northern extension of the Snowfield Zone). The focus of the Snowfield Zone drilling was to test the lateral limits of the gold-molybdenum mineralization and infill drill hole spacing for mineral resource estimation. Diamond drilling of the Coffee Pot Zone and the northern extension of the Snowfield Zone tested known surface copper – molybdenum ± gold mineralization.

The most significant result from the 2007 exploration drilling was the discovery of the northern extension of the Snowfield Zone on trend with Seabridge Gold Corporation's Mitchell copper-gold deposit which is situated immediately east of and contiguous to the Snowfield Property, and south of Mitchell Creek. The one drill hole that was targeted in this area, (MZ-001) intersected 259 metres of 0.71 g/t Au and 0.14% copper. The hole ended in mineralization with the bottom 31 metres grading 1.38 g/t Au and 0.31% copper.

The 2008 drill program followed up on hole MZ-001, drilling 16,945 metres in 31 holes. Diamond Drilling was undertaken by Radius Drilling Corp. with approximately 85% NQ diameter core and 15% BQ diameter core. BQ size was used when drilling conditions or recoveries were poor, typically for deeper sections of the longer holes.

Down-hole tests were taken at regular intervals using an E-Z shot instrument. Deviation on azimuths was a maximum of 15 degrees for a 700 metre long hole, with little movement on dip. Core recovery was excellent at +/- 95%.

Drill hole collars were surveyed toward the end of the drilling campaign by Mcllhenney Consulting Services using a differential GPS.

Drill holes were named from MZ-002 through MZ-031. A table of best intersections is presented below.

Table 10-1: 2008 Table of Best Intersections Snowfield Zone

Hole Number	From (m)	To (m)	Interval (m)	Au g/t	Cu %
MZ-2	25.80	110.00	84.20	0.50	0.09
MZ-4	42.50	514.50	472.00	0.32	0.08
MZ-9	9.10	160.00	150.90	0.51	0.09
MZ-10	3.00	623.00	620.00	0.75	0.17
MZ-11	3.10	117.00	113.90	0.52	0.05
MZ-13	4.70	429.50	424.80	0.95	0.20
MZ-14	10.80	163.50	152.70	0.52	0.12
MZ-15	3.10	53.00	49.90	0.48	0.05
MZ-16	5.00	533.00	528.00	0.78	0.15
MZ-17	151.00	268.00	117.00	0.63	0.09
MZ-18	19.30	109.50	90.20	0.53	0.03
MZ-18	189.50	388.00	198.50	0.48	0.06
MZ-19	82.50	164.30	81.80	0.62	0.08
MZ-20	1.20	663.00	661.80	0.86	0.18
MZ-21	82.50	311.00	228.50	0.43	0.02
MZ-22	138.50	515.40	376.90	0.82	0.17
MZ-23	4.20	341.80	337.60	0.91	0.18
MZ-24	2.70	640.10	637.40	0.55	0.14
MZ-25	58.00	658.00	600.00	0.56	0.13
MZ-26	3.40	624.50	621.10	0.52	0.12
MZ-27	4.30	20.00	15.70	0.32	0.01
MZ-27	151.00	167.50	16.50	0.78	0.02
MZ-28	8.60	496.20	487.60	0.46	0.11
MZ-29	4.20	346.50	342.30	1.22	0.18
MZ-30	3.30	664.40	661.10	0.83	0.17
MZ-31	3.60	484.00	480.40	0.59	0.12

Seven of the drill holes ended in mineralization, predominantly because of the depth limitation of the drilling machines that were used at Snowfield. The holes were pushed to down-hole depths in excess of 600 metres and at these depths the technical capacity of the rigs was being exceeded. Silver Standard also decided that it was less important to identify Au-Cu resources existing at depths of more than 600 metres than it was to expand the deposit laterally.

11.0 SAMPLING METHOD AND APPROACH

All drill core was transported by helicopter to the core handling, logging and storage facility on site at the end of each drill shift. Prior to any geotechnical and geological logging, the entire drill core was photographed in detail. Digital colour photographs were taken and the images were uploaded daily to the on-site computer. The best images for each interval of core were later filed with the digital geological logs.

Core boxes were placed on the logging tables in chronologic order and a trained geotechnician recorded the core recovery and rock quality data for each measured drill run. Each piece of drill core was measured between consecutive depth blocks. The cumulative length measured by the geotechnician divided by the length of core between two consecutive blocks recorded by the drillers gives the percentage recovery of each interval. The process was repeated for all depth intervals in each core box. The first few metres of overburden were not considered in the recovery calculations.

All lithological, structural, alteration and mineralogical features of the drill core were observed and recorded during the geological logging procedure. This information was later transcribed into the computer using a program that was compatible with Gemcom software.

The geologist responsible for logging assigned drill core sample intervals with the criteria that the intervals did not cross geologic contacts and the maximum sample length was 2 metres. Within any geologic unit sample intervals of 1.5 metres long could be extended or reduced to coincide with any geologic contact. Sample lengths were rarely greater than 2 metres or less than 0.5 metre, averaging 1.52 metres long.

Once the logging was complete the samples were sawn in half lengthwise. One-half of the drill core was placed in a plastic sample bag and the other half was returned to its original position in the core box. The individual sample bags were tied with plastic tie-wraps. Several sample bags were placed into large woven nylon 'rice' bags, their contents were marked on each bag, and each bag was securely sealed. These bags were stored in the core storage facility until they were shipped to the assay laboratory.

Drill core was kept on-site in an outdoor storage area. Due to the remote location of the site, no additional security measures were deemed necessary.

It is the author's opinion that the core logging procedures employed are thorough and provide sufficient geotechnical and geological information. There are no apparent drilling or recovery factors that would materially impact the accuracy and reliability of the drilling results.

12.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

The drill core samples were flown by helicopter directly to the Granduc staging site where they were transferred to a truck for transport to Stewart. From Stewart, the samples were trucked to either the ALS Chemex assay laboratory in Terrace for preparation or to Assayers Canada in Vancouver for preparation and analysis. The 2008 program necessitated the use of both labs due to the lengthy turn-around times.

The samples that were prepped at ALS Chemex in Terrace were then forwarded to the Chemex facility in Vancouver for analysis.

12.1 ALS CHEMEX LAB

ALS Chemex Laboratories is an internationally recognized minerals testing laboratory operating in 16 countries and has an ISO 9001:2000 certification. The laboratory in Vancouver has also been accredited to ISO 17025 standards for specific laboratory procedures by the Standards Council of Canada (SCC)**.**

Samples at ALS Chemex were crushed to 70% passing two millimetres. They were riffle split and 1000 grams were pulverized to 85% passing 75 microns. The remaining coarse reject material was returned to Silver Standard for storage in their Smithers warehouse for possible future use.

Gold was determined using fire assay on a 30 gram aliquot with an AA finish. Copper was determined using four acid digest with either ICP-AES or AA analysis. In addition, a 33 element package was completed using a four acid digest and ICP-AES analysis.

12.2 ASSAYERS CANADA

Assayers Canada has consistently achieved Certificates of Laboratory Proficiency from the Standards Council of Canada for precious and base metal analysis, and the lab is steadily working towards ISO 17025 Certification (the new ISO standard specifically for testing and calibration laboratories).

Samples at Assayers were crushed to 60% passing two millimetres. They were riffle split and 250 grams was pulverized to 90% passing 150 mesh (approximately 95 microns). The remaining coarse reject material was returned to Silver Standard for storage in their Smithers warehouse for possible future use.

Gold was determined using fire assay on a 30 gram aliquot with an AA finish. Copper was determined using four acid digest with either ICP-AES or AA analysis. In addition, a 35 element package was completed using a four acid digest and ICP-AES analysis.

13.0 DATA VERIFICATION

13.1 SITE VISIT AND INDEPENDENT SAMPLING 2008

The Snowfield Project was visited by Mr. Antoine Yassa, P. Geo. on September 23, 2008. Independent verification sampling was done on diamond drill core, with 12 samples distributed in six holes collected for assay. An attempt was made to sample intervals from a variety of low and high-grade material. The chosen sample intervals were then sampled by taking quarter splits of the remaining half-split core. The samples were then documented, bagged, and sealed with packing tape and were brought by Mr. Yassa to his residence in Quebec and from there they were sent via courier to the offices of P&E in Brampton. P&E submitted them to SGS Mineral Services in Toronto, Ontario for analysis.

At no time, prior to the time of sampling, were any employees or other associates of Silver Standard advised as to the location or identification of any of the samples to be collected.

A comparison of the P&E independent sample verification results versus the original assay results can be seen in Figures 13.1 and 13.2.

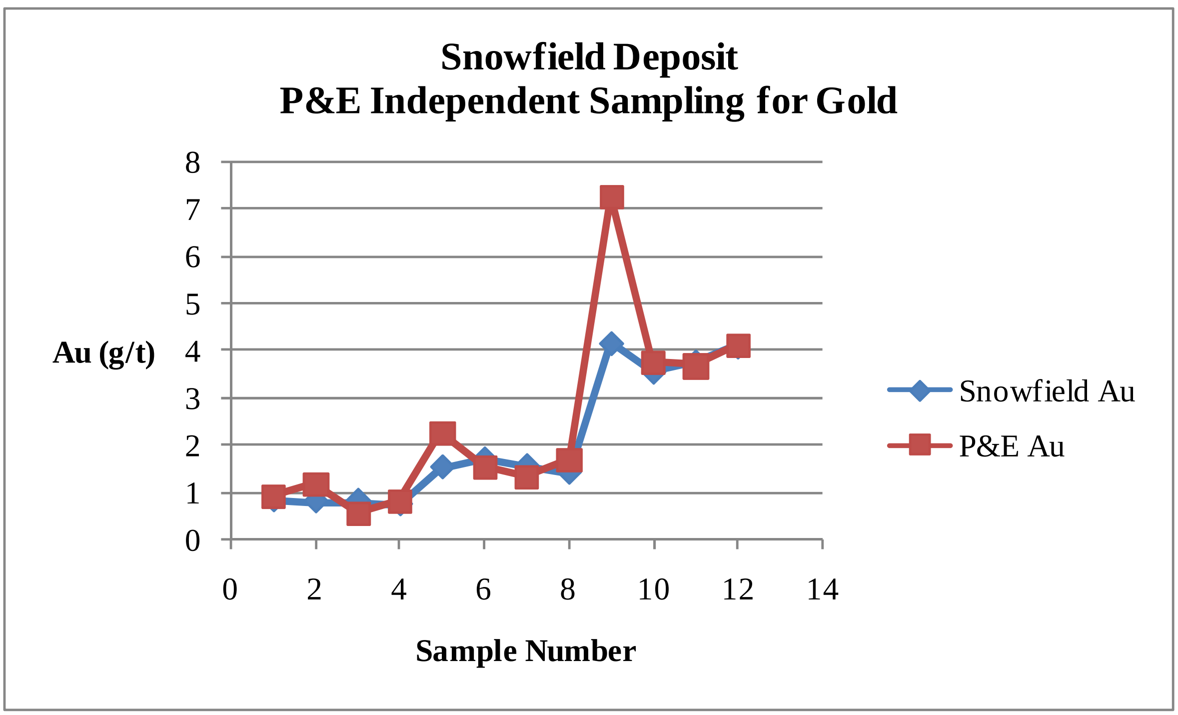


Figure 13.1: P&E Independent Site Visit Sample Results for Gold.

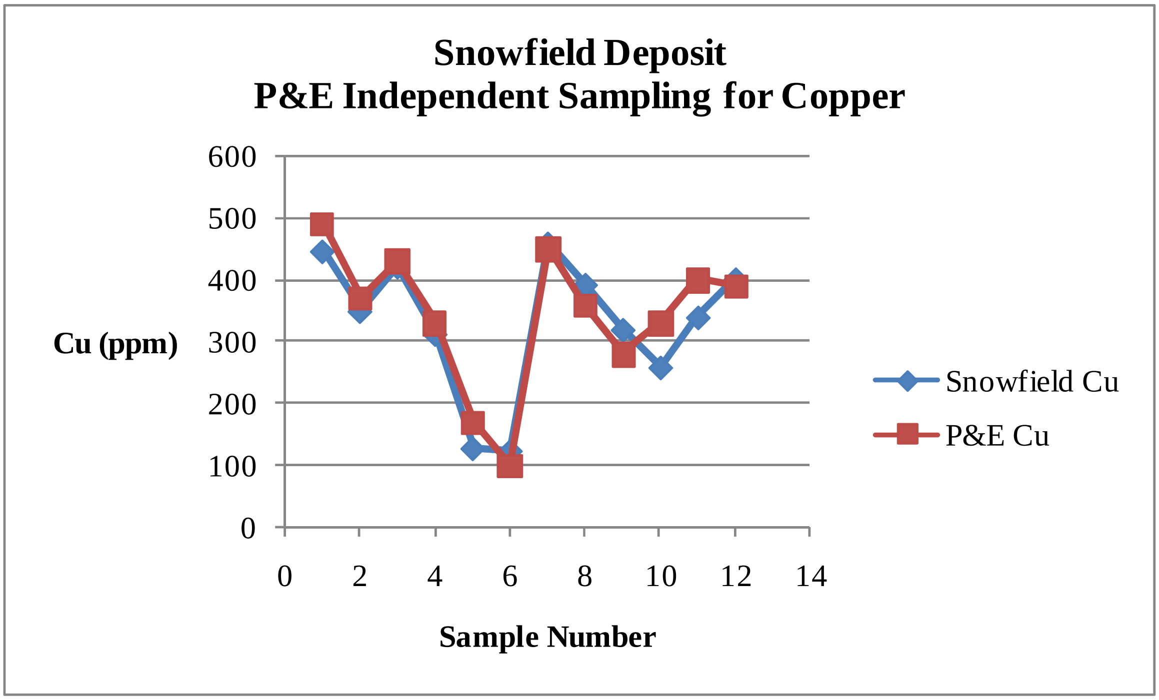


Figure 13.2: P&E Independent Site Visit Sample Results for Copper.

13.2 SILVER STANDARD QUALITY CONTROL

The QA/QC program was maintained throughout the 2008 drilling. Certified reference material standards named CGS-17 and CGS-18 were purchased from CDN Resource Labs in Delta, British Columbia. Both of these standards were certified for copper, however values for gold in both of the standards were provisional only. One standard sample, one blank sample and one field duplicate sample (1/4 split core) were inserted every 20 samples. In addition, the lab inserted their own internal QC, which included standards, blanks and both coarse reject and pulp duplicates.

13.3 2008 DATA VERIFICATION RESULTS

The QC program was monitored on a real-time basis by Silver Standard throughout 2008 and any standards failing the Silver Standard QC protocols were re-run. The author received all the data for the 2008 drilling and verified the performance of the standards, blanks and duplicates.

13.3.1 PERFORMANCE OF CERTIFIED REFERENCE MATERIAL

Generally both the standards CGS-17 and CGS-18 performed well for Au and Cu. In spite of the fact that the Au values were provisional only the values usually fell within +/- two standard deviations from the mean in most cases. Copper was slightly more variable.

The author examined any and all failures great than plus (+) or minus (–) three standard deviations from the mean, and a table of failures was created. The table of failures was then compared to the constrained model in order to determine which failed standards fell within the resource estimate. For any failures falling within the constrained model, the corresponding analytical certificate was examined in order to make a decision as to how to proceed for each failure. In all cases where a standard failed in a certificate, there was at least one, and in the majority of instances many other standards in the same certificate that passed the QC. No re-runs were requested. P&E recommends that Silver Standard purchase reference materials certified for Au and Cu instead of being provisional-only for Au.

13.3.2 PERFORMANCE OF BLANK MATERIAL

The blank material used for the 2008 drill program was ¾" crushed granite sold by Imasco Minerals as landscape material. Prior to its use, Silver Standard had 10 samples assayed at ALS Chemex. All 10 samples assayed below detection limit for gold and silver. Copper was not requested.

The blanks in general were at detection limit for Au for most of the samples. Two values were as high as 0.03 g/t Au.

For Cu, the average grade of the blank material was 0.0007% and the highest value was 0.0089%. Without having analyzed for Cu prior to use, it is impossible to know what the Cu grade of the blank material was, however at these low grades, the author considers that any contribution the blanks grade may make to the Cu resource grade is nil.

13.3.3 2008 DUPLICATE STATISTICS

For the 2008 drill program, there were 633 field core duplicate pairs and 618 pulp duplicate pairs graphed for gold. Copper had little to no data for either type of duplicate. There were no coarse reject duplicates done.

Data for the two duplicate types were graphed and three types of graphs were created. Scatter plots were made, as well as a graph of the sample pair mean versus the Absolute Relative Difference of the sample pairs (ARD). A Thompson-Howarth (T-H) Precision Plot was also created.

The gold field duplicates had very good precision, which is not surprising for a porphyry deposit. The ARD demonstrated a precision of 17% for the core duplicates and the T-H yielded a precision of 22%.

The pulp duplicate pairs yielded slightly different values for the ARD and T-H plots. The ARD was 5%, while the T-H demonstrated a precision of 12%.

The author considers that the data used in this resource estimate are of good quality.

14.0 ADJACENT PROPERTIES

Within the adjacent Kerr-Sulphurets-Mitchell property there are three notable copper-gold mineral deposits, namely the 'Kerr' (aka Kerr-Sulphside, Sulphurets Gold Zone), 'Mitchell' (aka Mitchell-Sulphurets) and 'Sulphurets' (aka Mitchell-Sulphurets Ridge). All of these occurrences are situated within the claim holdings currently owned and operated by Seabridge Gold Inc. ("Seabridge").

Seabridge acquired the property from Placer Dome in June 2000. In 2008, Resource Modeling Inc. completed revised NI 43-101 compliant resource estimates for the Kerr, Sulphurets and Mitchell Zones. According to a March 25, 2008 news release the current estimated mineral resources for the Mitchell, Kerr and Sulphurets Zones at a 0.50 gram per tonne equivalent gold cut-off grade are:

Table 14-1: Seabridge Gold 2008 Kerr-Sulphurets-Mitchell Resources

	Indicated Mineral Resources					Inferred Mineral Resources				
Zone	Tonnes (000)	Gold (g/t)	Copper (%)	Gold ounces (000)	Copper pounds (millions)	Tonnes (000)	Gold (g/t)	Copper (%)	Gold ounces (000)	Copper pounds (millions)
Mitchell	734,163	0.69	0.18	16,287	2,913	667,421	0.62	0.15	13,304	2,206
Kerr	206,272	0.25	0.45	1,651	2,037	51,387	0.21	0.45	352	506
Sulphurets	74,655	0.75	0.24	1,798	388	33,636	0.62	0.2	675	147
Total	**1,015,090**	**0.61**	**0.24**	**19,736**	**5,338**	**752,444**	**0.59**	**0.18**	**14,331**	**2,859**

Seabridge conducted an intense diamond drilling program in 2008, subsequent to this March 2008 resource estimate.

In a Press Release dated January 7, 2009, Seabridge states that the 2008 results, "continue to confirm an expansion of the Sulphurets higher grade breccia zone. Our recently completed Preliminary Assessment for KSM delineated separate open pits for the Sulphurets and Mitchell zones. We are becoming more confident that the Sulphurets and Mitchell zones could be exploited in a single pit, which would provide numerous operational advantages. A new resource estimate for KSM will be completed in February, after which we will construct new mine plans and update the 2008 Preliminary Assessment."

Based on results of this year's and previous drilling, Seabridge believes that the Sulphurets Zone is a continuously mineralized, moderately dipping, roughly tabular gold-copper deposit measuring approximately 1,300 metres along strike and up to 170 metres thick which remains open down-dip and along strike.

The Mitchell Zone was also a priority target in 2008 and results for the drilling were released in a separate press release date December 22, 2008.

The Mitchell Zone is now defined as a continuously mineralized zone between 300 and 800 metres thick, 1000 metres in a northeast-southwest direction and 1600 metres in a northwest-southeast direction. The zone remains open to the northwest along the recently confirmed plunge of the core higher grade zone. Figures 14.1 and 14.2 were retrieved directly from the Seabridge website and show the proposed Sulphurets and Mitchell Zones open pits.

SULPHURETS ZONE PLAN MAP – Jan. 06, 2009

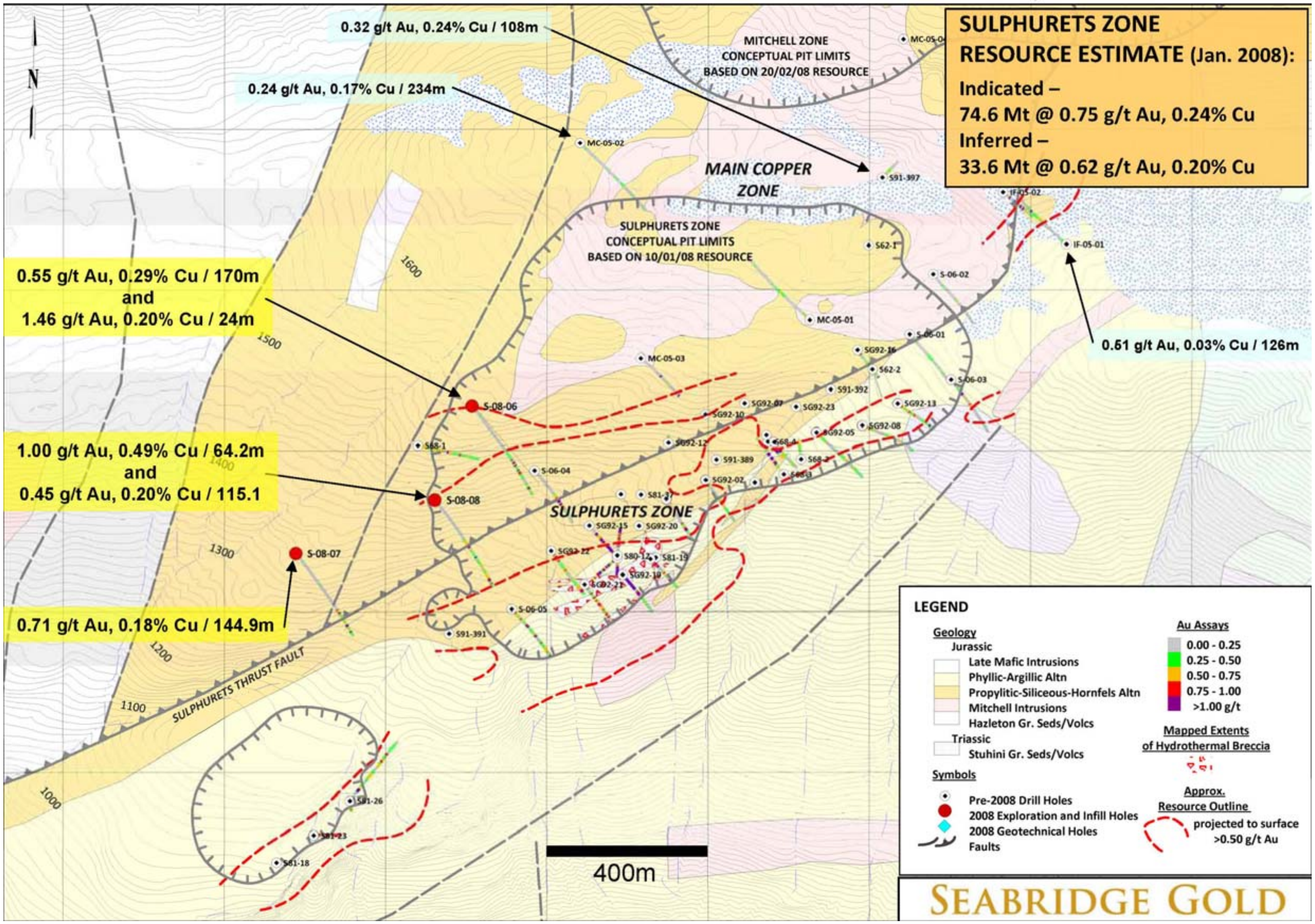


Figure 14.1: Sulphurets Zone Conceptual Pit Limits as of January 10, 2008 (after Seabridge website).

MITCHELL ZONE PLAN MAP – Dec. 22, 2008

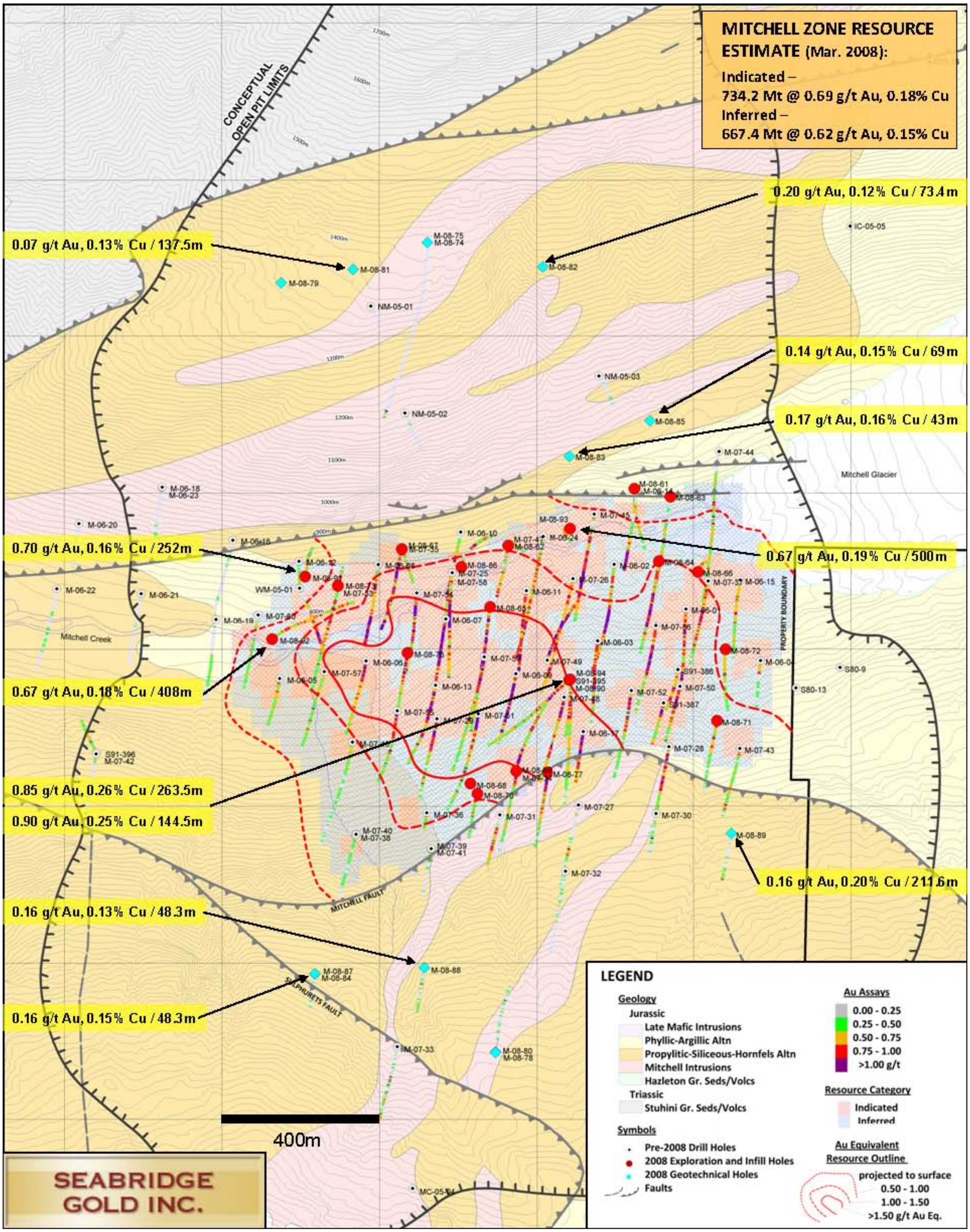


Figure 14.2: Mitchell Zone Conceptual Pit Limits as of March 25, 2008, (after Seabridge website).

In addition to the Seabridge Kerr-Sulphurets-Mitchell property, the Iron Cap and Bruceside properties border the Snowfield Property. The Iron Cap Property is owned by Seabridge, and is located above the north side of Mitchell Glacier, north of the Snowfield Zone. According to B.C. Geological Survey (Minfile No. 104B 173, 2008), "*The 500 by 1500-metre Iron Cap zone is a large area of well-exposed, intensely and pervasively quartz-sericite-pyrite altered intrusive and volcanic rock located in the northeast corner of the claim block. Alteration is controlled by northeast-trending, near-vertical structures with associated stockwork fractures and veins. Pyrite content varies from 10 per cent to 70 per cent and averages about 25 per cent. To the west, the intense quartz-sericite-pyrite alteration of the Iron Cap zone gradually weakens and primary intrusive textures can be observed. Mapping by Noranda has delineated a northeast trending intrusion intermittently exposed over 200 by 800 metres now referred to as the Iron Cap West zone. This zone is a strongly altered granodiorite, laced with a fine- to medium-grained quartz stockwork of varying intensity. Fracture coating and disseminated chalcopyrite and malachite, with minor pyrite, occurs throughout the intrusion. Forty partially leached rock chip samples collected by Noranda over an area of 1200 by 300 metres from the Iron Cap West and adjacent Iron Cap zone averaged 1.0 gram per tonne gold and 0.32 per cent copper (Press Release, Seabridge Gold Inc., July 25, 2005).*"

The Brucejack Lake area (including Bruceside, Sulphurets, West Zone, UTC, Red River prospects) has received intermittent exploration attention since the early exploration work by ESSO Minerals in 1981. This area is largely covered by other Silver Standard claim holdings, which are not the subject of this report or recent exploration work by Silver Standard.

The Brucejack Lake area prospects are underlain by sandstone, wackes and shale overlain by lapilli tuff of andesitic composition, all belonging to the Lower Jurassic Unuk River Formation (B.C.G.S. Minfile 104B 345, 2008). This stratigraphy is displaced by the Brucejack Fault and associated splay faults that cut the country rocks in a northwesterly direction. North of Brucejack Lake, the fault system is bounded on the east by rocks of the Lower Jurassic Betty Creek Formation, Hazelton Group. A variety of Jurassic-age hornblende syenite and alkali feldspar syenitic stocks intrude the country rocks.

Several epithermal quartz stockwork veins occur in the vicinity of Brucejack Lake hosted by intensely quartz-sericite altered tuff breccias adjacent to volcanic-sedimentary contacts. Newhawk Gold Mines Ltd. drill tested a number of these vein occurrences in the mid-1980's reportedly intersecting several significant precious metal intercepts (B.C.G.S. Minfile, 2008).

15.0 METALLURGICAL PROCESSING AND METALLURGICAL TESTING

15.1 MINERAL PROCESSING

There has been no mineral processing of any material from the Snowfield Deposit.

15.2 METALLURGICAL TESTING

Results of the 2008 metallurgical testing completed at Process Research Associates Ltd. (PRA) in Vancouver, British Columbia were reported in the April 2008 Technical Report authored by Blanchflower of Minorex Consulting, however the results are also summarized below, taken directly from Blanchflower's report.

Following the 2006 exploration work, Silver Standard contracted Mr. Frank Wright, P. Eng., and Process Research Associates Ltd. of Richmond, British Columbia to carry out preliminary metallurgical testing on twelve bulk samples composited from 2006 Snowfield diamond drill core. According to Wright and Tse (2008), a summary of the results were as follows:

"Process Research undertook preliminary metallurgical testing on mineral samples obtained from the Snowfields Project. The laboratory test program consisted of cyanidation and flotation studies, primarily to investigate gold recovery.

Twelve composites (labelled with SF prefix) were originally blended for baseline testing. These were subsequently re-blended into three additional composites (Comp. A, B and C), plus a master composite (Comp A+B+C) for further study. Head assays for these composites are provided in the table below.

Table 15-1: Head Assays for 12 Composites

Sample ID	Au gpT	S^T %	Cu %	Mo %
SF-03-A	3.66	4.27	0.040	0.02
SF-03-B	1.45	2.94	0.030	0.01
SF-03-C	1.02	3.56	0.030	0.01
SF-11-A	3.24	3.26	0.040	0.02
SF-11-B	1.37	3.10	0.030	0.02
SF-11-C	0.96	2.50	0.030	0.01
SF-12A	3.04	3.26	0.020	<0.01
SF-12-B	1.19	2.21	0.010	<0.01
SF-12-C	0.93	2.46	0.010	<0.01
SF-17-A	3.68	4.59	0.030	0.01
SF-17-B	1.49	3.89	0.020	0.01
SF-17-C	0.99	3.02	0.020	<0.01
Comp A	2.33	4.91	0.029	0.01
Comp B	1.46	4.79	0.029	0.01
Comp C	0.99	4.54	0.025	0.01
CompA+B+C	1.57	4.75	0.028	0.01

On the twelve original composites using a moderate grind, the whole ore cyanide leach recoveries *varied from 71% to 88% Au, with one lower exception at 64%. Additional work on the blended composites showed similar gold recoveries averaging ~75%. Further studies on various flotation products and using carbon in leach ('CIL') cyanidation procedures did not offer any significant improvement to the overall recovery. Incorporation of pre-treatment methods and establishing the response at finer grinds is recommended in order to evaluate if further improvements using cyanidation can be accomplished.*

Bulk rougher flotation provided gold recoveries in a range of 73% to 88%, which is similar to the whole ore cyanidation. There is a relatively low gold grade in the cleaned bulk concentrate due to a low mass concentration ratio that relates to the relatively high sulfide (pyrite) content of the feed. The cleaned bulk float concentrate from Comp SF-12-B produced the highest gold content at 115 g/t, due to having the lowest sulfide content of the samples, and having a relatively high gold to sulfur ratio. The remaining cleaned bulk concentrates ranged from 70 g/t or less for higher head grade composites, to less than 40 g/t for most of the lower head grade composites tested.

On the master composite (Comp. A+B+C) differential flotation procedures were performed to first produce a copper concentrate (with molybdenum). This provided a moderately higher gold content of 67 g/t, into a copper concentrate but at a lower gold recovery. Gold not recovered to the copper concentrate can report to a scavenger (pyrite) concentrate, but with grades of less than 10 g/t Au after cleaning. The low head grade of the copper and molybdenum in the samples tested would likely not permit production of a suitable base metal concentrate grade typically needed for by-product credit. Flotation as a stand-alone process will be challenging for optimizing the grade recovery relationships, but warrants further investigation."

There has been no further metallurgical testing of the Snowfield mineralization.

16.0 MINERAL RESOURCE ESTIMATES

16.1 INTRODUCTION

The mineral resource estimate presented herein is reported in accordance with the Canadian Securities Administrators' National Instrument 43-101 and has been estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the mineral resource will be converted into mineral reserve. The quantity and grade of reported inferred resources in this estimate are conceptual in nature.

All resource estimation work reported here was done by FH Brown, MSc (Eng) CPG Pr.Sci.Nat., and Antoine Yassa, P.Geo., of P&E Mining Consultants Inc. of Brampton Ontario, from data supplied by Silver Standard Resources Inc. The effective date of this estimate is 31 January 2009. A draft copy of this report was reviewed by Silver Standard Resources Inc. for factual errors.

Mineral resource modeling and estimation were carried out using the commercially available GEMS Gemcom (v6.1.4) and Snowden Supervisor (v7.10.11) software programs. Floating-cone optimization was done with MicroModel v6.0.

16.2 PREVIOUS RESOURCE ESTIMATES

A previous resource estimate dated 21 April 2008 for the Snowfield deposit was prepared by Minorex Consulting Ltd[1]. The resource estimate reported a Measured and Indicated resource of 3.08 million ounces Au and an Inferred resource of 0.46 million ounces Au in-situ (Table 16-1). The estimate was based on the results of fifty-one drillholes and fifteen sample trenches, and used a global density of 2.82 t/m^3.

Table 16-1. April 21, 2008 resource estimate at 0.1g/t Au cutoff.[1]

Class	Tonnes x M	Au g/t	Au ozs x 1000
Measured	1.5	2.18	101.5
Indicated	77.1	1.20	2,975.6
Measured + Indicated	78.6	1.22	3,077.1
Inferred	14.4	1.01	466.2

(1) Note: the above mineral resource estimate was prepared under the supervision of a Qualified Person as defined by NI43-101. P&E have not independently verified the mineral resource estimate.

16.3 SAMPLE DATABASE

Sample data were provided by Silver Standard Resources Inc. in the form of ascii text files, Excel spreadsheets and an Access database from a previous Gemcom project.

P&E prepared a Gemcom format Access database from the data supplied by Silver Standard Resources Inc. The database contained collar, survey and assay data from 98 drillholes and

[1] Technical report on the Snowfield property, Skeena Mining Division, British Columbia, Canada. Minorex Consulting Ltd, dated 21 April 2008.

fifteen sampling trenches (Table16-2). Assay data fields consisted of drillhole ID, downhole interval distances, sample number, and Au, Ag, Cu and Mo grade fields. All data are in metric units and grid coordinates are in the UTM (NAD27) system.

Table 16-2. Database records.

Data Type	Record Count
Collars	113
Survey Records	672
Assay Records (Au)	20,503

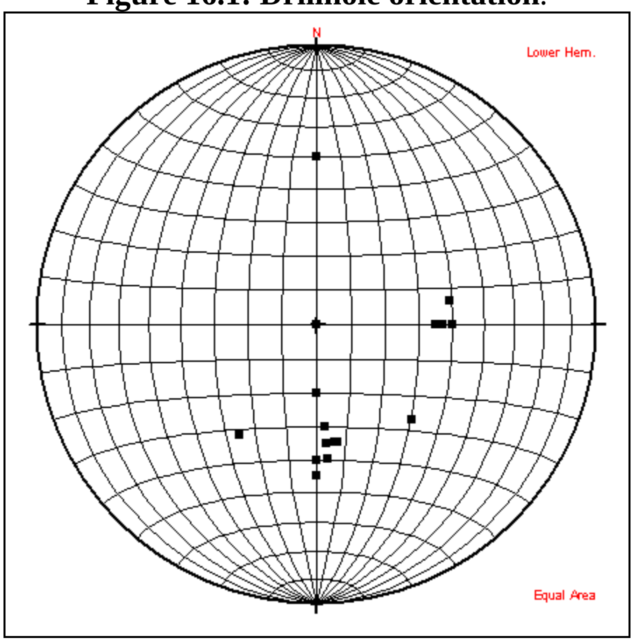
16.4 DATABASE VALIDATION

Industry standard validation checks were completed on the supplied database, and minor corrections made. No major discrepancies were noted.

Verification of assay data entry by P&E was performed on 20,337 assay intervals with a few very minor data entry errors observed and subsequently corrected. The 20,337 verified intervals were checked for Au, Cu and Mo values against digital assay lab certificates from ALS Chemex and Assayers Canada in Vancouver, B.C. Constrained and unconstrained checked assays represented 97.25% of the data to be used for the resource estimate and approximately 98.39% of the entire database.

Downhole surveys were completed by Silver Standard Resources Inc. with a Reflex EZ-Shot magnetic instrument. Measurements were taken every 100m unless drastic deviations occurred, in which case additional measurements were taken every 50m to eliminate error. Downhole survey data were examined by P&E for significant deviations. Of the ninety-eight drillholes in the database, eighteen drillholes displayed downhole survey deviations from the previous measurement of greater than 5°, in general at the bottom of the drillhole. While this will not have a material impact on the global resource estimate, P&E recommends that Silver Standard Resources Inc. review the downhole survey data. Drillhole orientations were also examined, and appear appropriate for the local geology (Figure 16.1).

Figure 16.1: Drillhole orientation.



16.5 TOPOGRAPHIC CONTROL

A detailed topographic surface was prepared by Silver Standard Resources Inc. as a dxf file from a combination of real-time GPS data and a local Total Station survey, corrected to drillhole collar survey measurements. P&E recommends that additional topographic control be obtained for the project by development of a digital elevation model from aerial photography.

16.6 DENSITY

A total of fifty-two specific density measurements were provided by Silver Standard Resources Inc., with an average specific gravity of 2.82 t/m^3. Silver Standard Resources Inc. density measurements were obtained from core samples by ALS Chemex. In addition, twelve check samples submitted by P&E to SGS of Mississauga, Ontario returned an average density of 2.69 t/m^3. The average of the sixty-four density measurements is 2.80 t/m^3, and this value was used for resource modeling. P&E recommends that Silver Standard Resources Inc. undertake a comprehensive program of specific gravity measurements.

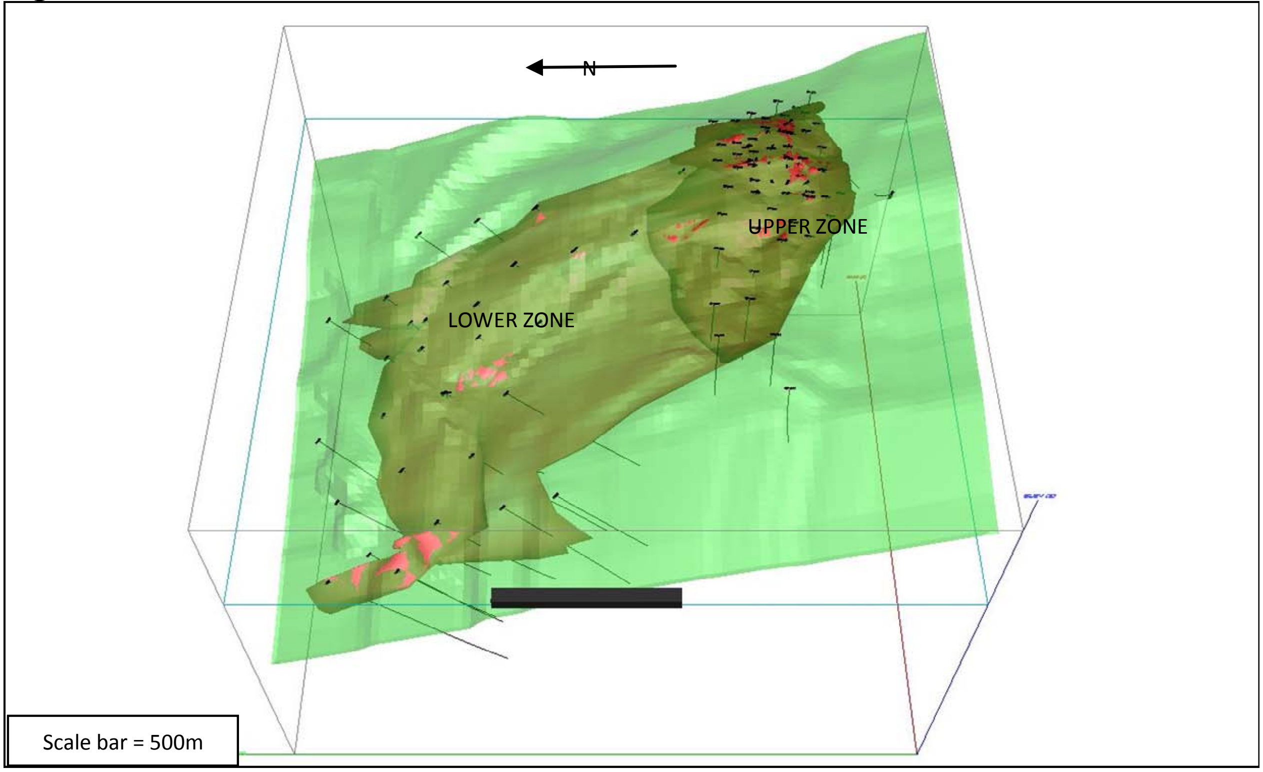
16.7 DOMAIN MODELING

In conjunction with Silver Standard Resources Inc., P&E geologists developed a 0.5g/t Au mineralization shell, which was clipped to the corrected topographic surface. The mineralization shell was created with computer screen digitizing of successive polylines on drillhole sections in Gemcom. Twenty-one cross sections were developed on a UTM grid looking west on an azimuth of 270°, spaced fifty to one-hundred meters apart. The outlines of the polylines were defined by the selection of mineralized material above 0.5g/t Au with demonstrated continuity along strike and down dip. In certain cases mineralization below 0.5g/t Au was included for the purpose of maintaining continuity. Smoothing was utilized to remove obvious jogs and dips in the polylines.

Sectional polyline interpretations were digitized from drillhole to drillhole but typically not extended more than the distance between two sections (fifty and one-hundred meters) into untested territory. Minimum constrained downhole width for interpretation was two samples (2.0m to 3.0m). A wireframe model of the mineralization shell was then created based on successive polygons combined into a three-dimensional model. A total of 103 drillholes and trenches intercept the mineralization shell.

Examination of the assay data indicates the presence of two distinct domains within the defined mineralization shell: an upper Au-rich/Cu-poor zone and a lower Au-poor/Cu-rich zone (Figure 16-2). P&E therefore further divided the mineralization shell into two domains, designated herein as the Upper (rock code 30) and Lower (rock code 20) domains, respectively. The resulting domains were used for statistical analysis, grade interpolation, rock coding and resource reporting purposes. The Upper domain corresponds approximately to the area covered by the 2008 Minorex resource estimate.

Figure 16.2: Isometric view of the Snowfield domains.



The mineralization shell wireframe was checked for triangulation errors and no discrepancies were observed.

16.8 COMPOSITING

Assay sample lengths for the database range from 0.22m to 13.11m, with an average sample length of 1.54m. A compositing length of 1.5m was therefore selected for use during estimation.

Length-weighted composites were calculated for Au, Ag, Cu and Mo within the defined domains. The compositing process started at the first point of intersection between the drillhole and the domain intersected, and halted upon exit from the domain wireframe. Composites that were less than 0.5m in length were discarded so as to not introduce a short sample bias into the estimation process. The wireframes that represented the interpreted mineralized domains were also used to back-tag a rock code field into the drillhole workspace. Each assay and composite were assigned a domain rock code value based on the domain wireframe that the interval midpoint fell within. The composite data were then extracted to Gemcom files for grade estimation.

16.9 EXPLORATORY DATA ANALYSIS

Summary assay statistics (Table 16-3) and composite statistics (Table 16-4) were calculated by domain for each commodity. Comparison of the two data sets indicates that no bias was introduced from the compositing process. A comparison of the data sets also demonstrates the difference in grade distributions within the two domains (Figure 16.3).

Table 16-3. Summary assay statistics by domain.

Au	LOWER+UPPER	LOWER-20	UPPER-30
Samples	10676	5367	5309
Minimum	0.00	0.00	0.00
Maximum	53.80	53.80	14.55
Mean	0.96	0.71	1.22
St Dev	0.95	0.88	0.94
CV	0.98	1.23	0.78
Variance	0.89	0.77	0.89

Ag	LOWER+UPPER	LOWER-20	UPPER-30
Samples	10676	5367	5309
Minimum	0.25	0.25	0.30
Maximum	91.20	91.20	38.10
Mean	1.68	1.96	1.39
St Dev	1.68	2.13	0.96
CV	1.00	1.08	0.69
Variance	2.82	4.53	0.93

Cu	LOWER+UPPER	LOWER-20	UPPER-30
Samples	10676	5367	5309
Minimum	0.00	0.00	0.00
Maximum	4.09	4.09	0.88
Mean	0.09	0.14	0.04
St Dev	0.09	0.09	0.03
CV	0.97	0.65	0.79
Variance	0.01	0.01	0.00

Mo	LOWER+UPPER	LOWER-20	UPPER-30
Samples	10676	5367	5309
Minimum	0.00	0.00	0.00
Maximum	0.26	0.14	0.26
Mean	0.01	0.01	0.01
St Dev	0.01	0.01	0.01
CV	0.82	0.78	0.77
Variance	0.00	0.00	0.00

Table 16-4. Summary composite statistics by domain.

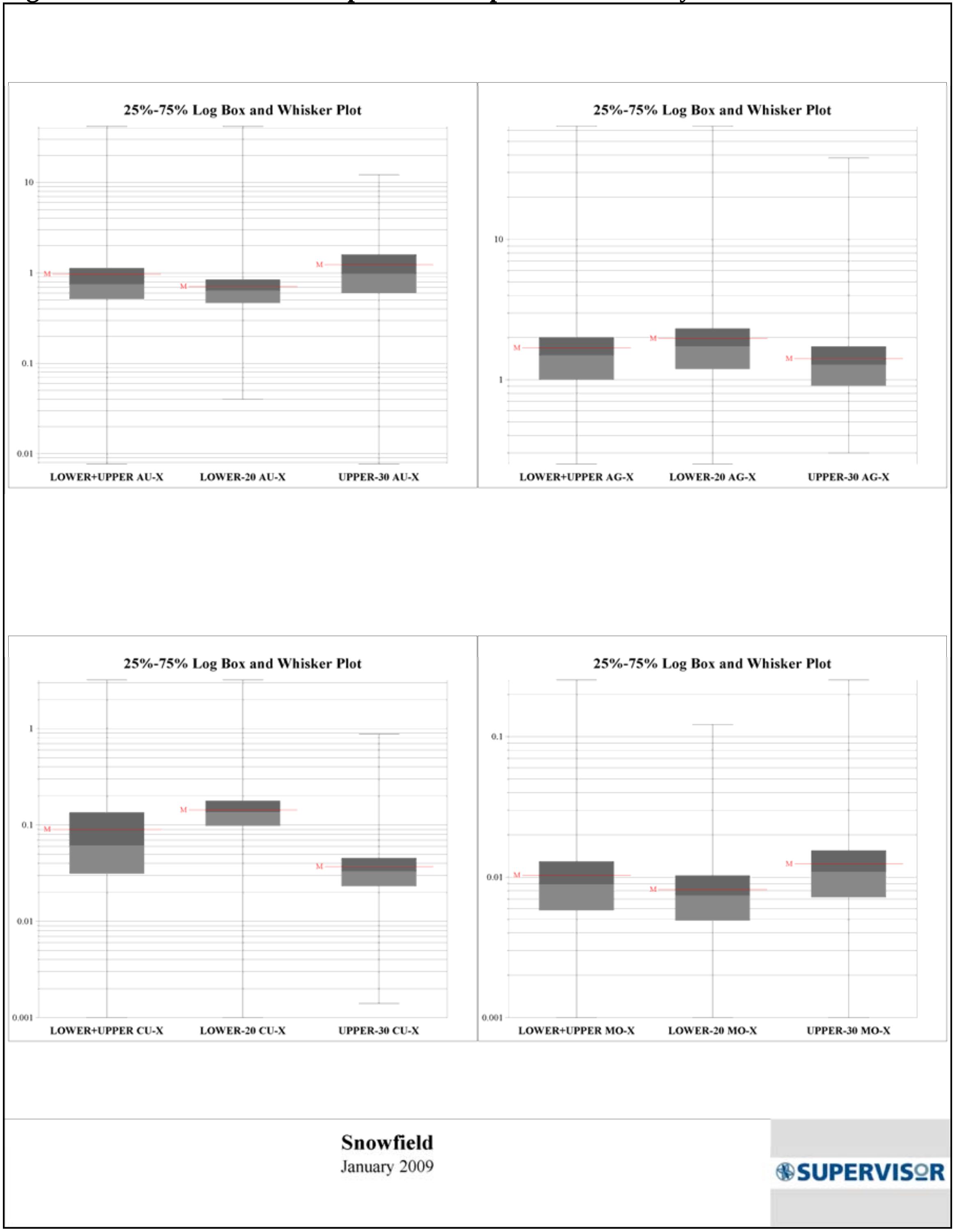
Au	LOWER+UPPER	LOWER-20	UPPER-30
Samples	11029	5480	5549
Minimum	0.01	0.04	0.01
Maximum	41.95	41.95	12.20
Mean	0.97	0.71	1.23
St Dev	0.87	0.75	0.90
CV	0.89	1.05	0.73
Variance	0.76	0.56	0.81

Ag	LOWER+UPPER	LOWER-20	UPPER-30
Samples	11029	5480	5549
Minimum	0.25	0.25	0.30
Maximum	64.14	64.14	38.10
Mean	1.69	1.97	1.41
St Dev	1.49	1.84	0.97
CV	0.88	0.93	0.69
Variance	2.23	3.37	0.95

Cu	LOWER+UPPER	LOWER-20	UPPER-30
Samples	11029	5480	5549
Minimum	0.00	0.00	0.00
Maximum	3.23	3.23	0.87
Mean	0.09	0.14	0.04
St Dev	0.08	0.09	0.03
CV	0.92	0.60	0.72
Variance	0.01	0.01	0.00

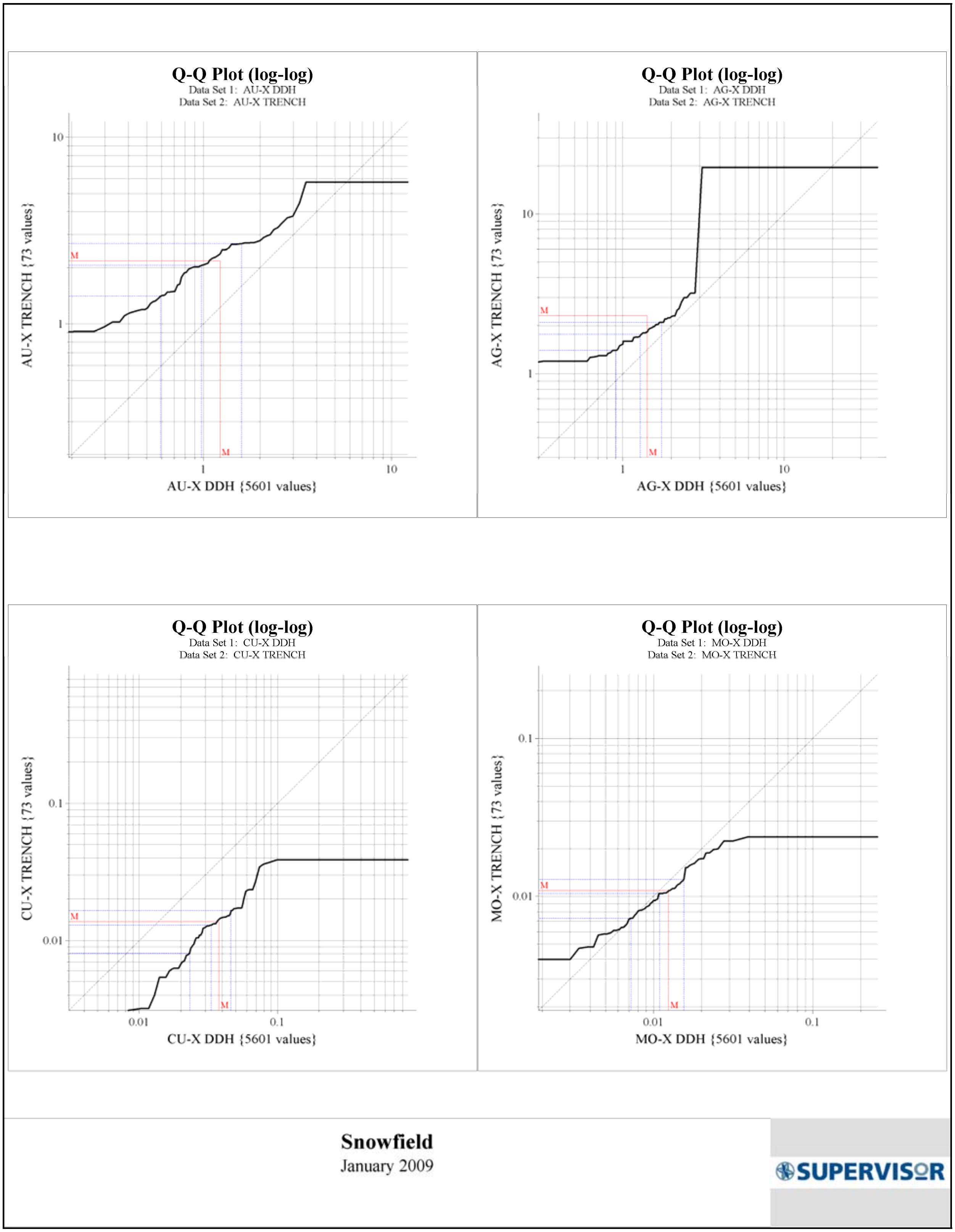
Mo	LOWER+UPPER	LOWER-20	UPPER-30
Samples	11029	5480	5549
Minimum	0.00	0.00	0.00
Maximum	0.26	0.12	0.26
Mean	0.01	0.01	0.01
St Dev	0.01	0.01	0.01
CV	0.75	0.70	0.70
Variance	0.00	0.00	0.00

Figure 16.3: Box and Whisker plots of composite statistics by domain.



Sample populations drawn from the trenching data and the drillhole data were also examined by commodity for the Upper domain. The trenching data show a positive bias for Au and Ag when compared to the drillhole data (Figure 16.4). A bias of this type often occurs in trenching data, and is typically the result of preferential sampling by the geologist, over-collection of softer mineralized material during sampling, or both. The trenching data were therefore used while defining the extent of the 0.5g/t mineralization shell, but were not used for estimation.

Figure 16.4: QQ plots of Upper domain DDH and trenching composite data.



16.10 TREATMENT OF EXTREME VALUES

The presence of high-grade outliers was evaluated by examining composite cutting graphs, histograms and log-probability graphs for the combined domain (Appendix). Threshold values were selected that minimize changes in the composite sample distribution (Table 16-5). The influence of composite samples equal to or higher than the threshold value selected was restricted during estimation to half of the combined Au semi-variogram range (55m). The use of a threshold strategy for a low-grade deposit honors the true distribution of the sample values while restricting the influence of high-grade outliers during linear estimation.

Table 16-5. Threshold values.

Ag	8.0g/t
Au	5.00g/t
Cu	0.40%
Mo	0.05%

16.11 VARIOGRAPHY

Standardized omni-directional semi-variograms were constructed for each commodity by domain and for the combined domains (Appendix). The nugget effects were determined from downhole semi-variograms, and experimental semi-variograms were then fitted to uncapped composite data (Table 16-6).

Table 16-6. Experimental semi-variograms.

Commodity	Domain	Experimental semi-variogram
Ag	Upper-30	0.4 + SPH(0.6, 100)
	Lower-20	0.4 + SPH(0.6, 450)
	Combined	0.4 + SPH(0.6, 450)
Au	Upper-30	0.1 + SPH(0.3, 20) + SPH(0.6, 120)
	Lower-20	0.7 + SPH(0.3, 70)
	Combined	0.2 + SPH(0.8, 110)
Cu	Upper-30	0.2 + SPH(0.8, 200)
	Lower-20	0.4 + SPH(0.6, 140)
	Combined	0.1 + GAU(0.9, 580)
Mo	Upper-30	0.4 + SPH(0.6, 30)
	Lower-20	0.5 + SPH(0.5 + 320)
	Combined	0.4 + SPH(0.6, 35)

16.12 BLOCK MODEL

A block model was constructed across the property (Table 16-7), and consisted of folders representing Au grades, Ag grades, Cu grades, Mo grades, associated rock codes, percent, density, kriging error and classification attributes as well as a calculated Au-equivalent ("AuEq") grade. A percent block model was set up to accurately represent the volume and tonnage that was contained by each block within the constraining domain. As a result, domain boundaries were properly represented by the percent model's capacity to measure infinitely variable inclusion percentages within a specific domain.

Table 16-7. Block model setup.

	Origin	Blocks	Size
X	423700	75	25
Y	6263500	80	25
Z	1800	130	10
Rotation	None		

16.13 ESTIMATION & CLASSIFICATION

Weighting of composite samples by linear Ordinary Kriging ("OK") was used for the estimation of block grades. A block discretization level of 5 x 5 x 2 was used during kriging. Composite data used during estimation were limited to samples located within their respective domain wireframe. Individual block grades were then used to calculate a Au-equivalent grade.

During the first pass, twelve composite samples from three drillholes within 55 meters of the block centroid were required. All block grades estimated during the first pass in the Upper domain were classified as Measured.

During the second pass, blocks not populated during the first pass were estimated. Twelve composite samples from three drillholes within 110 meters of the block centroid were required. All block grades estimated during the second pass were classified as Indicated.

During the third pass, blocks not populated during the first or second pass were estimated. Four composite samples from one or more drillholes within 330 meters of the block centroid were required. All block grades estimated during the third pass were classified as Inferred.

16.14 RESOURCE ESTIMATE

Mineral resources were classified in accordance with guidelines established by the Canadian Institute of Mining, Metallurgy and Petroleum, 2005:

• Inferred Mineral Resource
"An 'Inferred Mineral Resource' is that part of a mineral resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes."

• Indicated Mineral Resource
"An 'Indicated Mineral Resource' is that part of a mineral resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough for geological and grade continuity to be reasonably assumed."

• Measured Mineral Resource

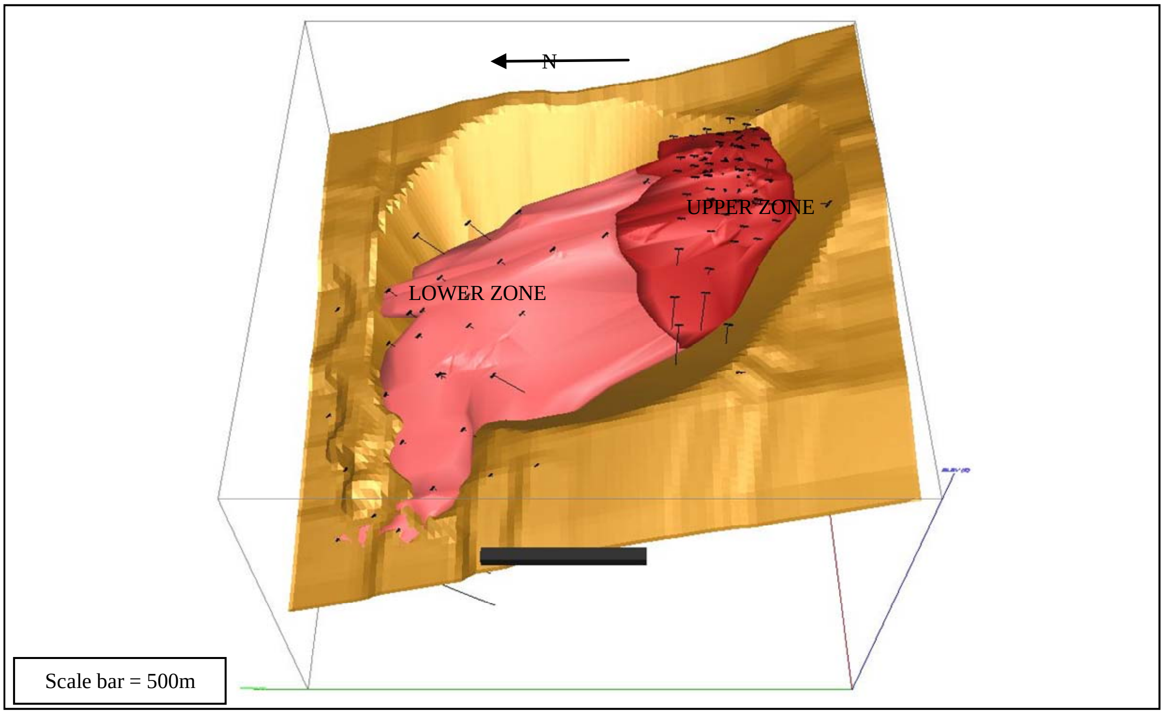
"A 'Measured Mineral Resource' is that part of a mineral resource for which quantity, grade or quality, densities, shape, and physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough to confirm both geological and grade continuity."

In order to ensure that the reported resources meet the CIM requirement for "reasonable prospects for economic extraction" a conceptual floating-cone pit shell was developed based on all available resources (Measured, Indicated and Inferred), using the optimization parameters presented in Table 16-8. Optimization parameters were derived from knowledge of similar projects, and an average recovery for each commodity was applied across the block model. The floating-cone pit shell generation was based on diluted whole-block AuEq values. The results from the floating-cone analysis are used solely for the purpose of reporting mineral resources that have reasonable prospects for economic extraction (Figure 16.5).

Table 16-8. AuEq and floating-cone parameters.

Commodity	Price	Recovery	$/% or $/g
Au	US$800.00/oz	75%	US$25.72
Ag	US$11.00/oz	73%	US$0.35
Cu	US$2.00/lb	85%	US$44.09
Mo	US$12.00/lb	60%	US$264.55
Exchange Rate	C$1.00 = US$0.90		
Mining Cost	C$1.80/rock tonne		
Processing Cost	C$9.00/ore tonne		
G&A	C$1.80/ore tonne		
Slope Angle	50°		

Figure 16.5: Conceptual floating-cone pit shell.



All resources were tabulated against a 0.5g/t AuEq cutoff, as constrained within the conceptual floating-cone pit shell (Table 16-9). P&E selected a 0.5g/t AuEq cutoff as a reasonable, conservative cutoff grade for the deposit.

Table 16-9: Resource estimate at a AuEq 0.5g/t cutoff[1,2,3]

Class	Tonnes x M	Au g/t	Au ozs x 1000	Ag g/t	Ag ozs x 1000	Cu %	Mo %
Measured	31.9	1.49	1,528	1.43	1,470	0.033	0.014
Indicated	102.8	0.86	2,834	1.58	5,205	0.072	0.011
Measured + Indicated	134.7	1.01	4,362	1.54	6,675	0.063	0.012
Inferred	661.8	0.67	14,276	1.83	39,000	0.137	0.008

(1) Resource sensitivities are accumulated within an optimized floating-cone pit shell.
(2) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
(3) The quantity and grade of reported inferred resources in this estimation are conceptual in nature. There is no guarantee that all or any part of the mineral resource will be converted into mineral reserve.

To demonstrate the sensitivity of the deposit to cutoff values, estimated resources were also tabulated using a cut-off grade of 1.0g/t Au. Total estimated resources at this cutoff are comprised of Measured and Indicated Au resources of 2,407,000 ounces and inferred Au resources of 2,458,000 ounces (Table 16-10).

Table 16-10: Resource sensitivity demonstrated at a 1.0g/t Au cutoff[1,2,3]

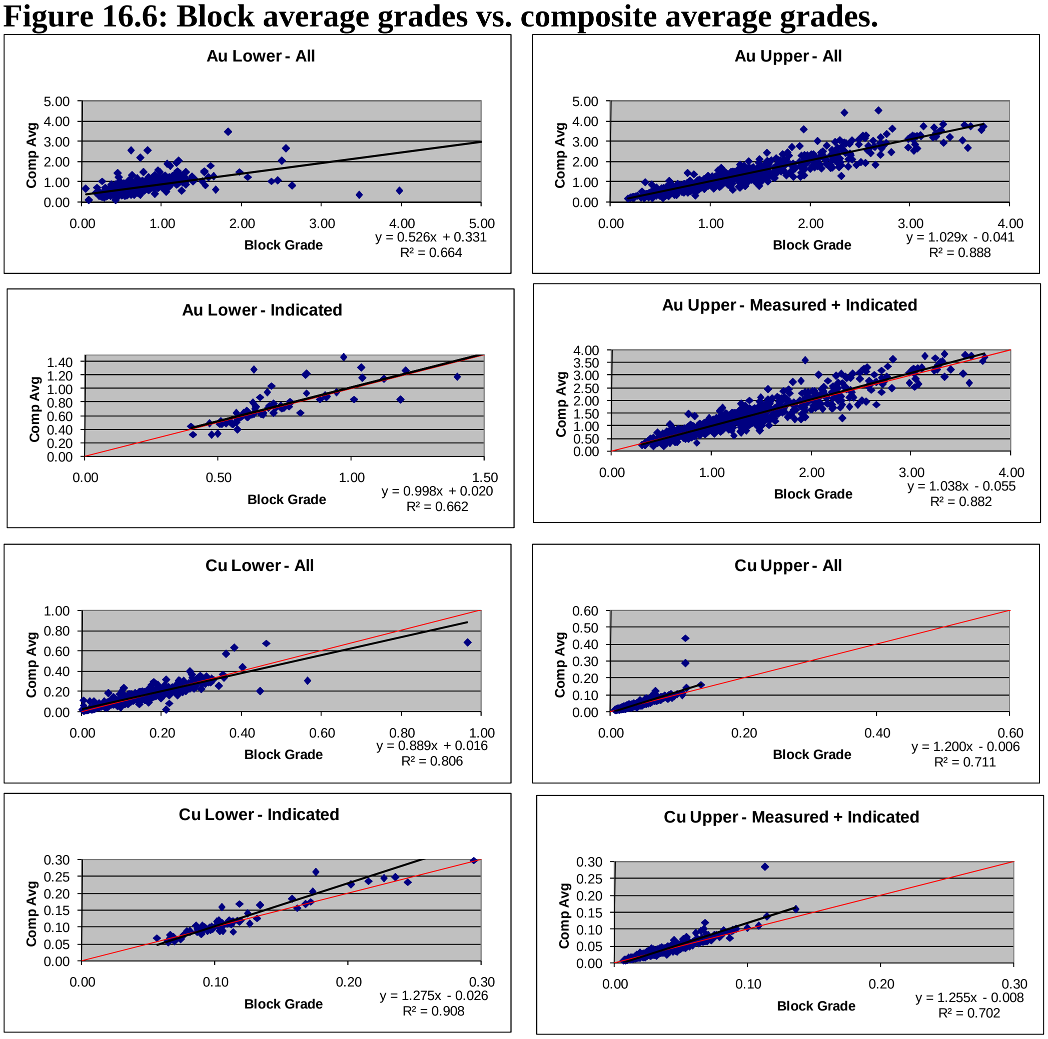
Class	Tonnes x M	Au g/t	Au ozs x 1000	Ag g/t	Ag ozs x 1000	Cu %	Mo %
Measured	21.8	1.85	1,293	1.54	1,076	0.033	0.015
Indicated	24.8	1.40	1,114	1.54	1,227	0.054	0.011
Measured + Indicated	46.6	1.61	2,407	1.54	2,303	0.044	0.013
Inferred	58.8	1.30	2,458	2.40	4,548	0.206	0.008

(1) Resource sensitivities are accumulated within an optimized floating-cone pit shell.
(2) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
(3) The quantity and grade of reported inferred resources in this estimation are conceptual in nature. There is no guarantee that all or any part of the mineral resource will be converted into mineral reserve.

16.15 VALIDATION

A validation check was completed by comparing average composite grades to the grade of the block containing the composites (Figure 16.6). The observed differences in grades are deemed acceptable for resource estimation.

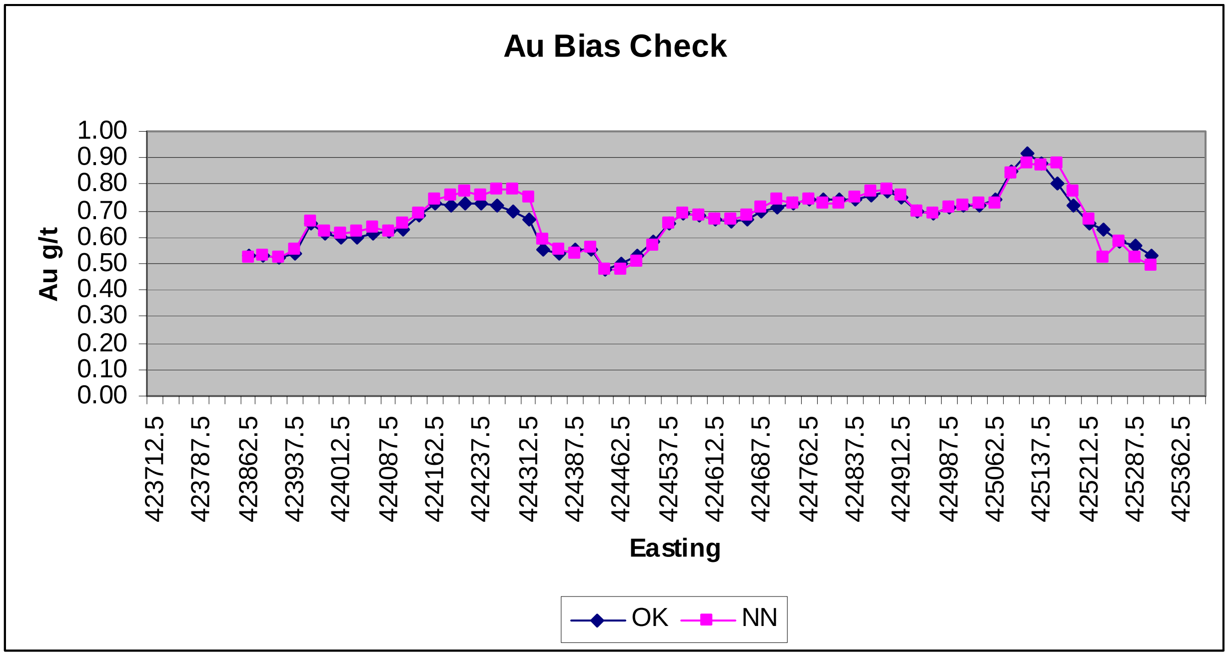
Figure 16.6: Block average grades vs. composite average grades.



The block model was also validated visually. Visual inspection of successive section lines demonstrates that the model correctly reflects the distribution of high-grade and low-grade samples (Appendix-I).

An additional validation check for global bias was also completed by comparing the OK block model estimates to a Nearest Neighbor ("NN") block model estimate generated using the same search criteria and tabulated at a zero cutoff without a constraining pit-shell. Results demonstrate a minimal global bias and very slight smoothing for the OK estimate as compared to the NN estimate (Figure 16.7).

Figure 16.7: Global Au bias check.



17.0 OTHER RELEVANT DATA AND INFORMATION

There are no other relevant data and information that have not previously been presented in this report.

18.0 CONCLUSIONS AND RECOMMENDATIONS

18.1 CONCLUSIONS

The estimated resources at the Snowfield Deposit have increased greatly as a result of the 2008 diamond drilling program, with the discovery of and subsequent follow-up drilling on the northern portion of the Snowfield Zone. A comparison of the 2008 and 2009 resources is presented in Table 18-1 below.

Table 18-1: Comparison of the 2008 and 2009 Resource Estimates for the Snowfield Deposit:

Category	Year	Au ounces	% Increase 2008 to 2009
Measured + Indicated	2008[1]	3,077,100	
Inferred	2008[1]	466,200	
Measured + Indicated	2009	4,362,000	29%
Inferred	2009	14,276,000	97%

[1] NI 43-101 compliant resources as estimated by Minorex Consulting Ltd.

There is no doubt that the Snowfield Project is one of merit and warrants further work. P&E is of the opinion that Silver Standard should continue with a comprehensive exploration program in 2009 with the main focus being to:

1) Attempt to convert a large portion of the Inferred resources to Measured and Indicated;
2) Test for extensions of the known mineralization; and
3) Prospect, map, and trench numerous other showings which were located as part of historical programs.

18.2 RECOMMENDATIONS

A 16,000 metre diamond drilling program is recommended to potentially upgrade the Inferred resources to the Measured and Indicated categories. A portion of the drilling should be used to test possible deposit extensions.

In addition to the drilling programs, a portion of the budget should be allocated to prospecting in the area.

A total budget of $6.3 M is proposed and is detailed in Table 18-2 below:

Table 18-2: Proposed Budget for 2009 Snowfield Exploration Program

Item	Cost (CDN$)
Miscellaneous, Salaries	12,000
Labour, Fuel, Expediting	500,000
Storage	9,000
Drilling - 16,000 meters	2,500,000
Assaying	600,000
Helicopter, Aircraft	1,500,000
Living costs Commercial Hotel, Meals	15,000
Living Costs Groceries, Camp, Communication	250,000
Travel, Transport	50,000
Core Boxes, Supplies, Tools	80,000
Government Fees, Licenses	6,000
Freight, Shipping	25,000
Light Equipment Rental	20,000
Metallurgy & Preliminary engineering	200,000
Maps, Prints, Film	20,000
Surveying	30,000
Computer Expense	35,000
Drafting	400
Geology Consulting	120,000
Consulting	12,000
Contingency (5%)	300,000
TOTAL	**6,300,000**

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20.0 CERTIFICATES

CERTIFICATE of AUTHOR

TRACY J. ARMSTRONG, P.GEO.

I, Tracy J. Armstrong, P.Geo., residing at 2007 Chemin Georgeville, res. 22, Magog, QC J1X 0M8, do hereby certify that:

1. I am an independent geological consultant contracted by P& E Mining Consultants Inc;

2. I am a graduate of Queen's University at Kingston, Ontario with a B.Sc (HONS) in Geological Sciences (1982);

3. I am a geological consultant currently licensed by the Order of Geologists of Québec (License No. 566) and the Association of Professional Geoscientists of Ontario (License No. 1204);

4. I have worked as a geologist for a total of 23 years since obtaining my B.Sc. degree;

5. I am responsible for Sections 1 through 15, 17, and co-authored Section 18, as well as the overall structuring of the technical report titled **"**Technical Report and Resource Estimate on the Snowfield Property, Skeena Mining Division, British Columbia, Canada," and dated February 13, 2009;

6. I did not visit the Snowfield Property;

7. I have not had prior involvement with the Snowfield Property that is the subject of this Technical Report.

8. 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;

9. 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 and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. This report is based on my personal review of information provided by the Issuer and on discussions with the Issuer's representatives. My relevant experience for the purpose of the Technical Report is:
    - Underground production geologist, Agnico-Eagle Laronde Mine 1988-1993;
    - Exploration geologist, Laronde Mine 1993-1995;
    - Exploration coordinator, Placer Dome 1995-1997;
    - Senior Exploration Geologist, Barrick Exploration 1997-1998;
    - Exploration Manager, McWatters Mining 1998-2003;
    - Chief Geologist Sigma Mine 2003;
    - Consulting Geologist 2003-to present.

10. I am independent of the issuer applying the test in Section 1.4 of NI 43-101;

11. I have read NI 43-101 and Form 43-101F1 and the Report has been prepared in compliance therewith;

12. I consent to the filing of the Report with any stock exchange and other regulatory authority and any publication by them of the Report for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public.

DATED this 13th Day of February, 2009.

{SIGNED AND SEALED}

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Tracy J. Armstrong, P. Geo.

CERTIFICATE of AUTHOR

ANTOINE R. YASSA, P. GEO

I, Antoine R. Yassa, P. Geo., residing at 241 Rang 6 West, Evain, Quebec, do hereby certify that:

1. I am an independent geological consultant contracted by P& E Mining Consultants Inc;
2. I am a graduate of Ottawa University at Ottawa, Ontario with a B.Sc (HONS) in Geological Sciences (1977);
3. I am a geological consultant currently licensed by the Order of Geologists of Québec (License No 224);
4. I have worked as a geologist for a total of 32 years since obtaining my B.Sc. degree;
5. I am responsible for co-authoring Section 16.0 of the technical report titled **"**Technical Report and Resource Estimate on the Snowfield Property, Skeena Mining Division, British Columbia, Canada", and dated February 13, 2009;
6. I visited the Snowfield Property on September 23, 2008;
7. I have not had prior involvement with the Snowfield Property that is the subject of this Technical Report.
8. 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;
9. 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 and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. This report is based on my personal review of information provided by the Issuer and on discussions with the Issuer's representatives. My relevant experience for the purpose of the Technical Report is:
   - Minex Geologist (Val d'Or), 3D Modeling (Timmins), Placer Dome 1993-1995;
   - Database Manager, Senior Geologist, West Africa, PDX, 1996-1998
   - Senior Geologist, Database Manager, McWatters Mine 1998-2000;
   - Database Manager, Gemcom modeling and Resources Evaluation (Kiena Mine) QAQC Manager (Sigma Open pit), McWatters Mines 2001-2003;
   - Database Manager and Resources Evaluation at Julietta Mine, Far-East Russia, Bema Gold Corporation, 2003-2006
   - Consulting Geologist 2006.
10. I am independent of the issuer applying the test in Section 1.4 of NI 43-101;
11. I have read NI 43-101 and Form 43-101F1 and the Report has been prepared in compliance therewith.

DATED this 13th Day of February, 2009

{SIGNED AND SEALED}

____

Antoine R. Yassa, P.Geo.
OGQ # 224

CERTIFICATE of AUTHOR

FRED H. BROWN, CPG, PrSciNat

I, Fred H Brown, residing at East Main St. Lynden WA 98264 USA, do hereby certify that:

1. I am an independent geological consultant contracted by P& E Mining Consultants Inc;

2. I graduated with a Bachelor of Science degree in Geology from New Mexico State University in 1987. I obtained a Graduate Diploma in Engineering (Mining) in 1997 from the University of the Witwatersrand and a Master of Science in Engineering (Civil) from the University of the Witwatersrand in 2005;

3. I am registered with the South African Council for Natural Scientific Professions as a Professional Geological Scientist (registration number 400008/04) and the American Institute of Professional Geologists as a Certified Professional Geologist (certificate number 11015);

4. I have worked as a geologist continuously since my graduation from university in 1987;

5. I am responsible for co-authoring Section 16 of this report titled "Technical Report and Resource Estimate on the Snowfield Property, Skeena Mining Division, British Columbia, Canada" and dated February 13, 2009;

6. I did not visit the Snowfield Property;

7. I have not had prior involvement with the Snowfield Property that is the subject of this Technical Report;

8. 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;

9. 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 and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101. This report is based on my personal review of information provided by the Issuer and on discussions with the Issuer's representatives. My relevant experience for the purpose of the Technical Report is:

   - Underground mine geologist, Freegold Mine, AAC....................... 1987-1995;
   - Mineral Resource Manager, Vaal Reefs Mine, Anglogold 1995-1997;
   - Resident Geologist, Venetia Mine, De Beers 1997-2000;
   - Chief Geologist, De Beers Consolidated Mines 2000-2004;
   - Consulting Geologist 2004-2009;

10. I am independent of the issuer applying the test in Section 1.4 of NI 43-101;

11. I have read NI 43-101 and Form 43-101F1 and the Report has been prepared in compliance therewith;

DATED this 13th Day of February, 2009

{SIGNED AND SEALED}

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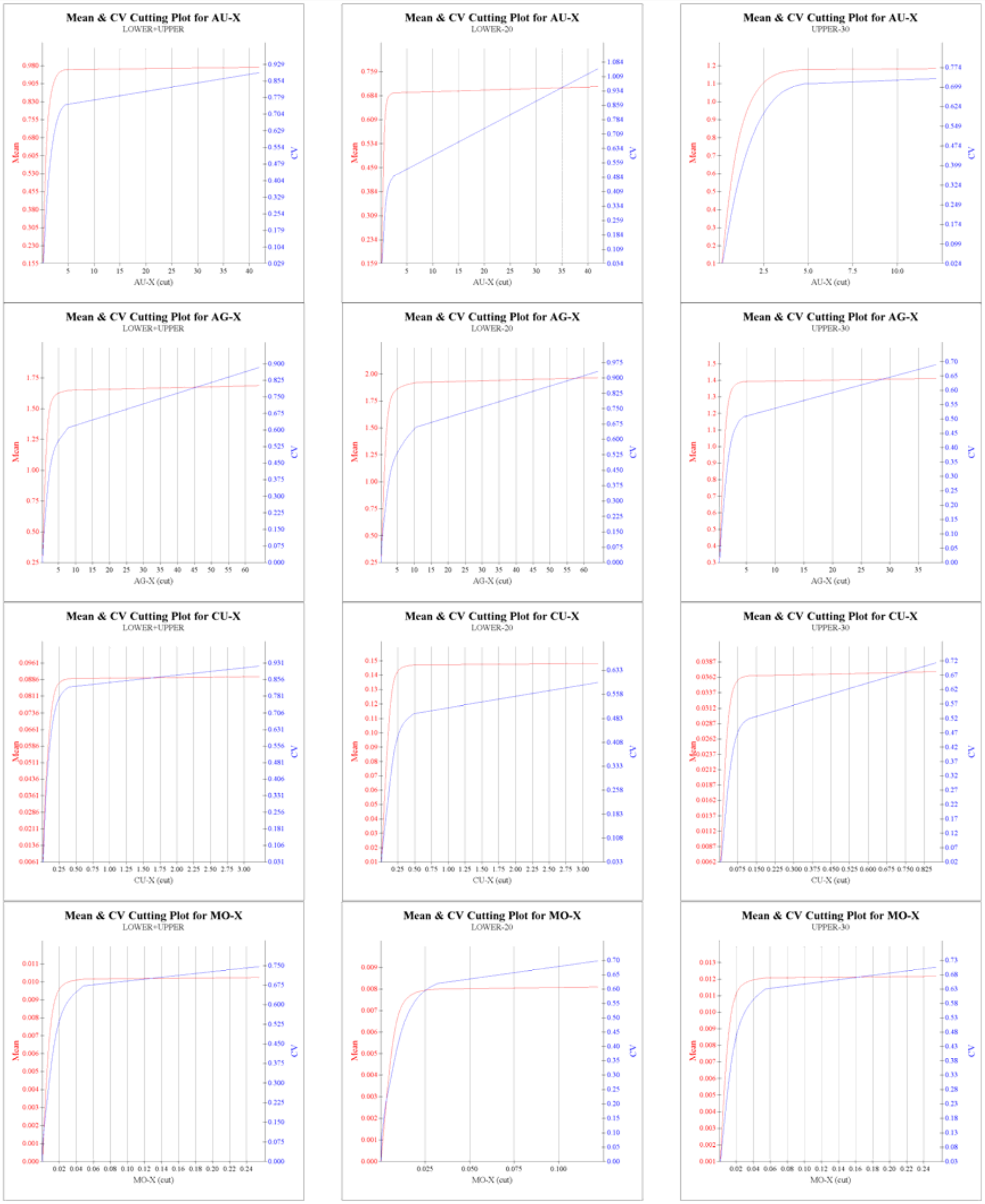
Fred H Brown CPG, PrSciNat

APPENDIX-I

Figure 1. Threshold cutting graphs.



Snowfield
January 2009

SUPERVISOR

Figure 2. Composite histograms.

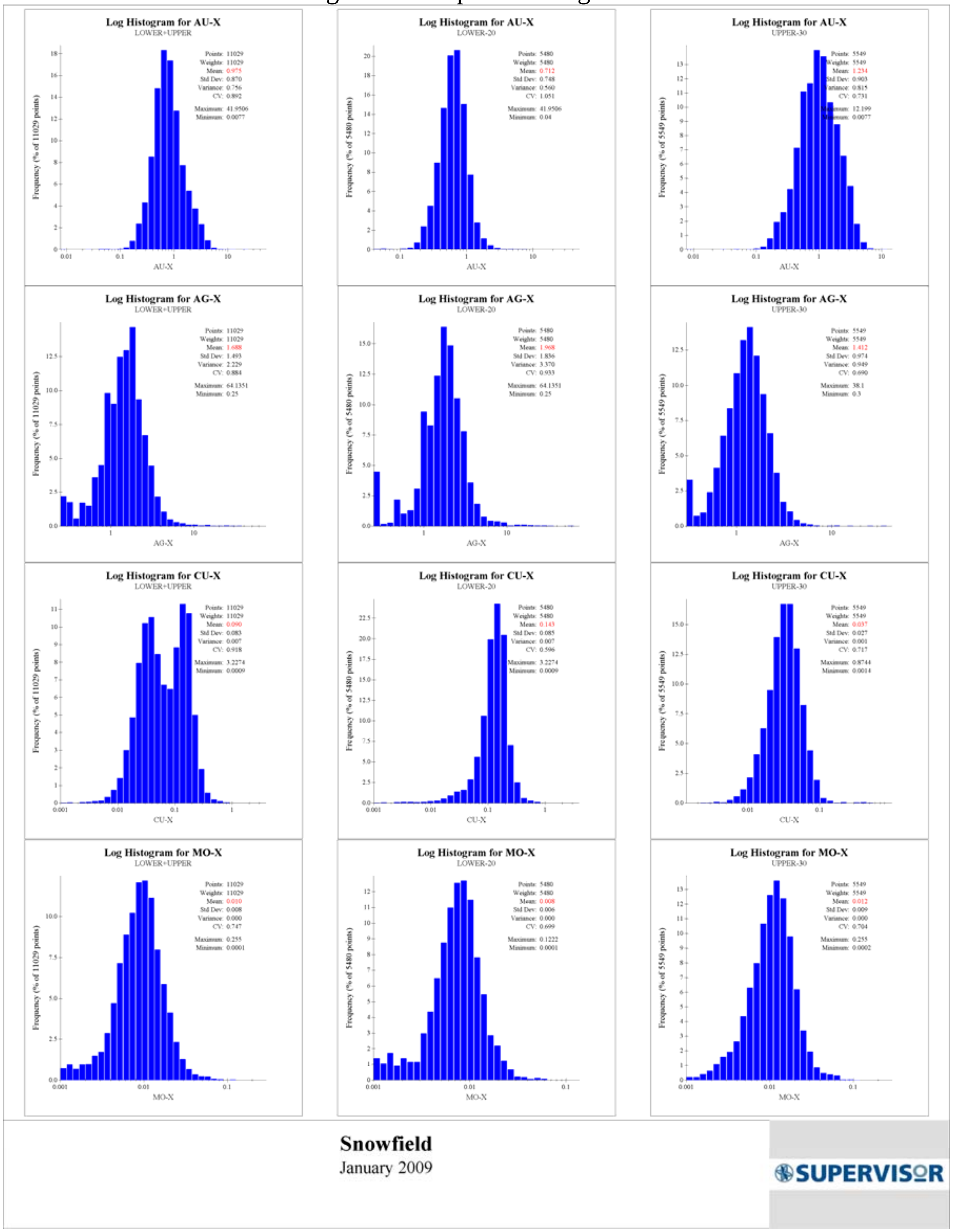


Figure 3. Composite log-probability graphs.

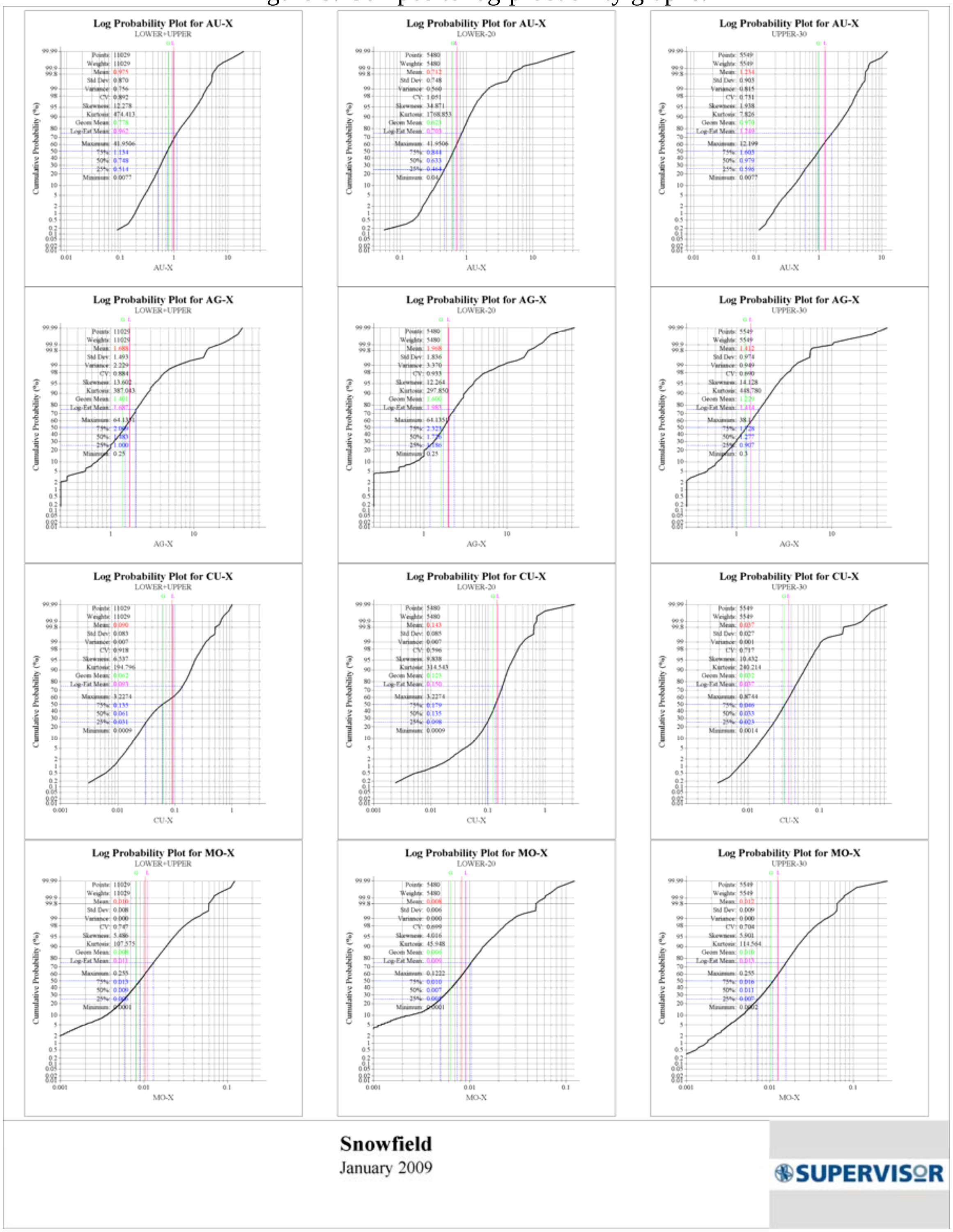


Figure 4. Experimental semi-variograms.

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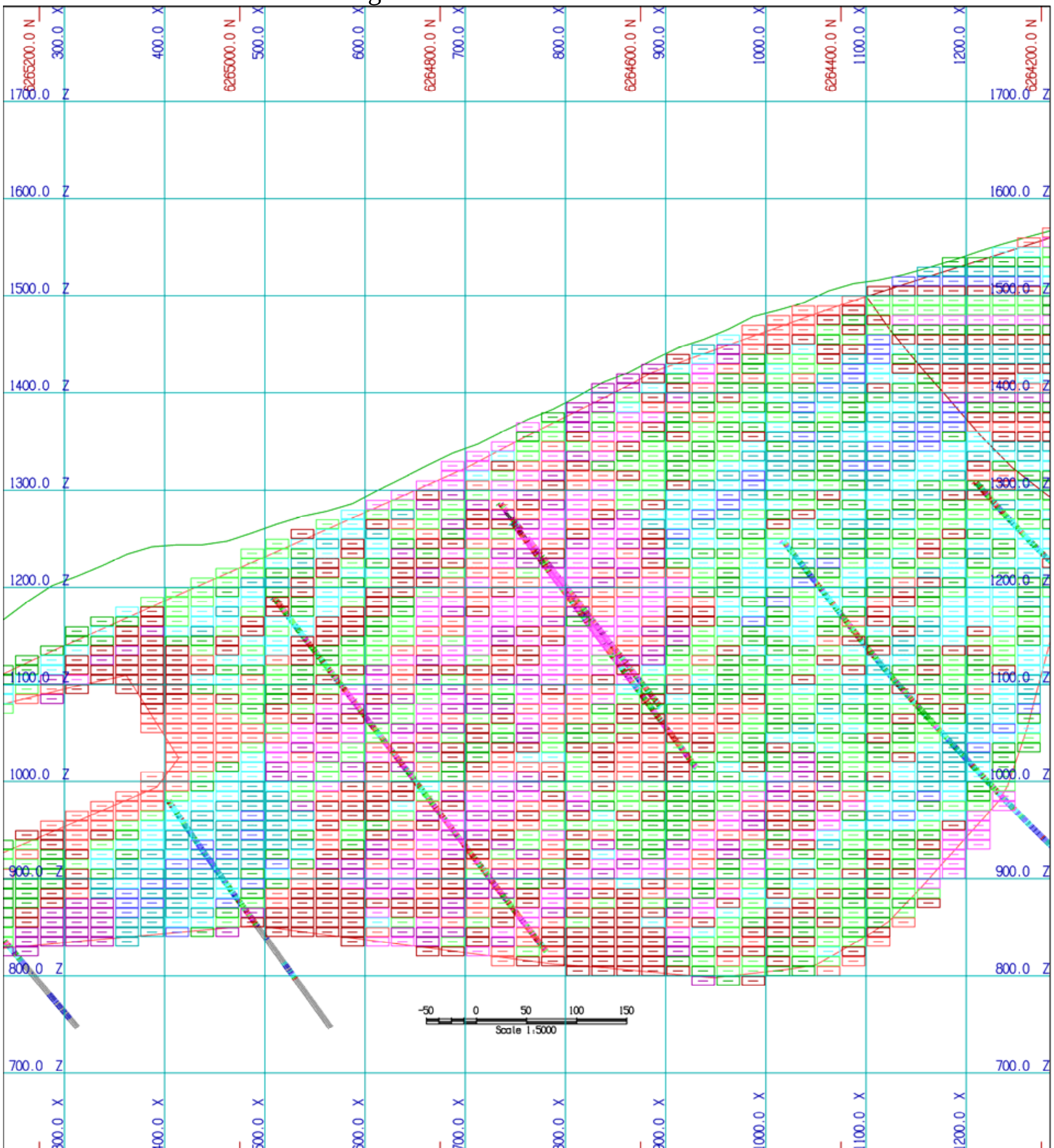
Figure 5. Au validation cross-section.



Au Validation Cross-section
Silver Standard Resources Inc.
Snowfield
Scale 1:5000
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Au assays g/t

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