

**MINE TECH INTERNATIONAL LIMITED**  
HALIFAX, CANADA



**43-101 RESOURCE UPDATE**  
*on the*  
**MOOSELAND GOLD PROPERTY**  
HALIFAX COUNTY, NOVA SCOTIA

44°56' N, 62° 46' W  
NTS 11D/15C

*prepared for*

NSGOLD CORPORATION

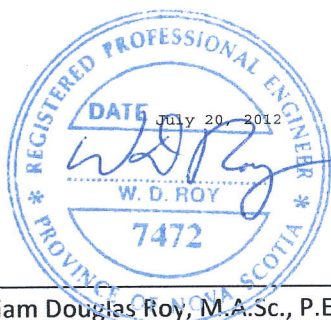


**Effective Date: July 20, 2012**

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## 1 Summary

On February 16, 2012, MineTech International Limited of Halifax, Nova Scotia (MineTech) was commissioned by NSGold Corporation of Bedford, Nova Scotia (NSGold) to complete an updated National Instrument 43-101 Form 1 (NI 43-101) compliant resource estimate on the West and East Zones of the Mooseland Property.

The Mooseland Property (the Property) is an advanced-stage exploration gold property in Halifax County, Nova Scotia, 110 highway kilometres northeast of the city of Halifax. The Mooseland Property is made up of seven Nova Scotia exploration licenses, numbers 05978, 08604, 08604A, 08708, 09232, 09233, and 09845. These exploration licenses, in turn, cover 105 mineral claims. Individual mineral claims are approximately 16 hectares in area, giving a total area of approximately 1,680 hectares. The land that makes up the Property is partly owned by the Nova Scotia provincial government and partly owned by private landholders.

NSGold acquired the central claim underlying the Property from Globex Mining Enterprises Inc. of Rouyn-Noranda, Quebec (Globex). Globex controls a 4% royalty on all metals produced from that claim. Exploration license 08604 and 08604A, located to the west of the central claim, was purchased in 2011 from Meguma Resource Enterprises Inc. and is subject to a 2% NSR, capped at a total of \$750,000.

The Property is underlain by metamorphosed Cambrian-Ordovician sediments which were folded into a series of upright north-easterly striking anticlines and synclines during the Taconian Orogeny at the end of the Ordovician. The rocks were deformed and intruded during the Acadian Orogeny at the end of the Devonian, and during the Late Carboniferous Hercynian Orogeny. To the south and west of the property, the metamorphosed sediments have been intruded by the granite – granodiorite Musquodoboit Pluton. The property rocks include the Goldenville Formation, composed of continental shelf turbidite type sediments, and the Halifax Formation, which is made up of deeper water sediments, now slates with some greywacke. The formations are subdivisions of the Meguma structural terrain. The Meguma terrane, in turn, is a tectonic subdivision of the northern Appalachian Mountains.

The Mooseland Property has a major, regional east-west trending anticlinal structure, with bedding that dips uniformly steeply north and south a short distance from a fairly compact hinge area. This anticlinal structure is the host of the gold-bearing saddle veins. A major, post-mineralization, northwest trending fault zone disrupts the anticlinal structure, dividing the property into the West Zone and East Zone.

The identified strike length is approximately one kilometre for the West Zone and over 300 metres for the East Zone. The West Zone is “open” at depth. A granite intrusive defines the western extent and a fault defines the eastern extent of the West Zone. This

## 2 - Introduction



left-hand fault offsets the deposit. On the eastern side of the fault, the East Zone continues eastward. The East Zone is open towards the east and at depth.

The West Zone is covered by relatively shallow overburden averaging 1.5 metres. The East Zone lies beneath a northwest trending drumlin 15 to 30 metres thick. Gold occurs as coarse free grains and irregular masses ranging from pin-point to match head in size. Gold grain distribution is irregular within the quartz veins. Vein gangue minerals consist of carbonate, calcite, chlorite and tourmaline.

The Mooseland Property was first discovered in 1858. Total historical production from 1863 to 1934 is 3,865 troy ounces of gold recovered from 9,058 short tons of crushed material.

The 1986-1989 Acadia Mineral Ventures Ltd. and Hecla Mining Co. exploration program included an IP Survey, 135 diamond drill holes totalling approximately 31,700 metres, and construction of a settling pond and shaft. The 2002-2004 Azure Resources Corporation exploration program from included 6 diamond drill holes totalling approximately 1,168 metres, a decline, and drifting along several veins. Other work includes a federal airborne VLF-EM survey from the 1980s and a single-line ground VLF-EM survey from 2002.

The NSGold exploration program is ongoing. In 2010, they completed 26 diamond drill holes totalling 6,507 metres, 13 in the West Zone (3,613 metres) and 13 in the East Zone (2,894 metres). In 2011, NSGold drilled 8 holes (2,606 metres) in the West Zone and 8 holes (2,404 metres) in the East Zone during 2011 for a total of 5,010 metres of NQ-sized core.

## Resource Estimate

Mineral resources were identified using a block cut-off grade of 2.6 g/tonne.

For the West Zone, non-diluted<sup>1</sup> Inferred Mineral Resources totalled 1.46 million tonnes with an average gold grade of 5.52 g/tonne for 259,000 ounces.

For the East Zone, non-diluted<sup>10</sup> Inferred Mineral Resources totalled 1.06 million tonnes with an average gold grade of 5.72 g/tonne for 195,000 ounces.

**For both zones, the total non-diluted<sup>10</sup> Inferred Mineral Resources was 2.52 million tonnes with an average gold grade of 5.6 g/tonne for 454,000 ounces.**

No Indicated or Measured mineral resources were identified, primarily because the drilling intercept spacing was not sufficient to establish grade continuity to the levels required by those categories. The mineralisation exhibits a strong nugget effect.

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<sup>1</sup> Planned dilution, to a minimum true width of 1.5 metres, was included. Non-planned dilution was not included.



No mineral reserves of either category were identified.

It is recommended that for future sampling programs, when a submitted standard or submitted blank is out of range, the geologist should re-run either (a) the entire batch of samples if the batch is small, or (b) a certain number of samples before and after the out-of-range sample.

Further surface and underground mineral exploration work is recommended. The work could be accomplished in two phases. Phase 1 would consist of surface diamond drilling to further delineate the strike and depth extents of the East and West Zones, and specific gravity test work to better determine the specific gravity of material at the site.

Contingent on the results from Phase 1, Phase 2 would include dewatering and continuing the existing underground decline, taking a bulk sample, drilling on surface and underground, carrying out metallurgical test work, updating the resources and carrying out a scoping study.

| <b>Phase 1</b>   |                     |
|--|---------------------|
| <b>Item</b>  | <b>Cost</b>         |
| Surface Diamond Drilling (3,000 - 4,000 metres)          | \$ 350,000          |
| Specific Gravity Test Work                               | \$ 5,000            |
| Contingency (20%)  | \$ 71,000           |
| <i>Phase 1 Total, Rounded</i>                            | <i>\$ 430,000</i>   |
| <b>Phase 2</b>   |                     |
| <b>Item</b>  | <b>Cost</b>         |
| Dewater, rehabilitate and continue existing decline      | \$ 1,500,000        |
| Permitting   | \$ 150,000          |
| Bulk Sampling  | \$ 500,000          |
| Metallurgical Work                                       | \$ 100,000          |
| Surface and Underground Diamond Drilling (10,000 metres) | \$ 1,000,000        |
| Resource and Reserve Estimation, Scoping Study           | \$ 100,000          |
| Contingency (20%)  | \$ 670,000          |
| <i>Phase 2 Total, Rounded</i>                            | <i>\$ 4,000,000</i> |

Phase 1 is expected to cost \$430,000 and Phase 2 is expected to cost an additional \$4.0 million.



## **2 Introduction**

### **2.1 Issuer for whom the Technical Report is Prepared**

This Technical Report was prepared for NSGold Corporation (NSX, TSX-V) of Bedford, Nova Scotia, Canada (“NSGold” or “the Issuer”).

### **2.2 Terms of Reference and Purpose of the Report**

On February 16, 2012, NSGold engaged MineTech International Limited of Halifax, Nova Scotia to complete an updated National Instrument 43-101 compliant mineral resource estimate for its Mooseland Property.

The purpose of the report is to update the existing (MineTech, 2011) mineral resource estimate, incorporating new drilling and sampling conducted by NSGold in 2011.

### **2.3 Sources of Information**

This report, and the previous MineTech technical reports on the Property (MineTech, 2010 and MineTech, 2011) are based on previously published reports, especially reports prepared by Acadia Mineral Ventures Ltd. (Acadia), Hecla Mining Co. (Hecla), and Azure Resources Corp. (Azure). Special mention goes to Michael Sanguinetti’s 2002 “Report on the Geology and Gold Potential of the Mooseland Property”, prepared for Azure, which brought together much of the work that had been done up to that point. A full list of the documents used can be found in the References section.

New exploration data, including drill hole data from 2010 and 2011, as well as a reinterpretation of existing geophysical data conducted in 2010 and a data from a LiDAR survey in 2011, was provided by NSGold. NSGold geologists also provided ongoing assistance in the geological interpretation of the deposit, and resolving errors in the drill hole dataset.

### **2.4 Extent of Field Involvement of the Qualified Person**

Mr Douglas Roy, M.A.Sc., P.Eng., the Principal Author of this report, is a Qualified Person under Section 1.1 of National Instrument 43-101. As an employee of MineTech, he supervised exploration work on-site in December 2010 during a 1-day site visit. Mr Roy was also consulted during hole-spotting for the 2010 drill program.

Previously, Mr Roy conducted a site visit in 2009 as part of MineTech’s 2010 Technical Report on the Property. From 2002 to 2004, Mr Roy visited the site several times as part





of MineTech's work with Azure, during which he worked on the surface and underground surveys.

Mr. Patrick Hannon, M.A.Sc., P.Eng., the author of section 7 of this report, is a Qualified Person under Section 1.1 of National Instrument 43-101. . From 2002 to 2004, Mr Hannon visited the site several times as part of MineTech's work with Azure, during which he worked on the surface and underground surveys.

## 2.5 Units of Measure

Unless otherwise stated, all units used in this report are metric. Unless otherwise stated, the legal currency used is the Canadian dollar.

### 2.5.1 Site Grid & Coordinate System Parameters

Site elevations use mean sea level plus 1,000 metres as the vertical datum. The site grids used in this report are metric, and are based on a local variant of the UTM system: Zone 4 of the Nova Scotia Modified Transverse Mercator System, using the NAD27 Geoid (NS MTM/NAD27). Separate site grids have been developed for the West and East Zones of the Property. Drill hole collars locations were recorded using site grid and/or NS MTM/NAD27 grid coordinates. All drill hole collar locations were later rotated onto the site grid.

The strike direction of the West Zone anticline was discovered in the 19<sup>th</sup> century, and early site grids appear on maps such as those by drawn under E.R. Faribault in 1898 and 1899. The modern site grid was established in advance of the drilling programs of the 1980s.

The West Zone baseline runs 070° from true north.

The strike direction of the East Zone anticline was discovered in the 1980s. The first modern East Zone grid used a baseline (BL1) that ran nearly parallel to the West Zone anticline, at 071°. Later, the true strike of the anticline in the area being drilled was determined to run at 024°. A second baseline (BL2) was established, running at 024°.

The BL2 baseline was re-established prior to the 2010 drilling program. GPS surveys of the re-established baseline showed it to run at 025° from true north, within one degree of the Hecla-era BL2.

Site grids used by Acadia, Hecla and Azure recorded positions in northing/southing and easting/westing, relative to the grid origin, which was defined as 0N, 0E. During



resource estimation, the grid origins were shifted to ensure that all coordinates had positive northing/easting values.

Finally, because BL2 was much closer to a north-south than an east-west line, the direction markings for the East Zone grid were changed; northings became eastings, and eastings became northings (see Table 2-2).

Table 2-1 - Baseline Conversion Table

| Grid               | Origin (E) | Origin (N) | Direction of Base Line |
|--------------------|------------|------------|------------------------|
| Original West Zone | 0+00       | 0+00       | 070°/250° (E/W)        |
| MineTech West Zone | 2000       | 6000       | 070°/250° (E/W)        |
| Original East Zone | 0+00       | 0+00       | 024°/204° (E/W)        |
| MineTech East Zone | 4400       | 8000       | 024°/204° (N/S)        |

Table 2-2 - Cross-Section Numbering Lookup Table

| Zone      | Current (MineTech) Name | Alternative (Hecla-era) Name |
|-----------|-------------------------|------------------------------|
| West Zone | 1900E                   | 1+00W                        |
| West Zone | 2000E                   | 0+00E                        |
| West Zone | 2050E                   | 0+50E                        |
| West Zone | 2100E                   | 1+00E                        |
| East Zone | 8000N                   | 0+00E                        |
| East Zone | 8200N                   | 2+00E                        |



### 3 Reliance on Other Experts

The information, conclusions and recommendations contained herein are based on a review of digital and hard copy data and information supplied to MineTech by NSGold, as well as various published geological and technical reports and discussions with individuals who are familiar with the Property and the area in general. MineTech has assumed that all of the information and technical documents reviewed and listed in the references section are accurate and complete in all material aspects. While MineTech has carefully reviewed all of this information, MineTech has not conducted an independent investigation to verify its accuracy and completeness.

Some relevant information on the Property presented in this Report is based on data derived from historic reports written by geologists and/or engineers, whose professional status may or may not be known in relation to the NI 43-101 definition of a Qualified Person. MineTech has made every attempt to accurately convey the content of those files, but cannot guarantee either the accuracy or validity of the work contained within those files. However, MineTech believes that these reports were written with the objective of presenting the results of the work performed without any promotional or misleading intent. In this sense, the information presented should be considered reliable, unless otherwise stated, and may be used without any prejudice by NSGold.

MineTech has relied on information provided by NSGold regarding land tenure, underlying agreements and technical information and data not in the public domain. While MineTech has not independently verified the legal status of the underlying agreements, all of the information appears to be of sound quality.

MineTech has not investigated any environmental or social issues that could conceivably affect the Property. Historical mineral resources figures contained in the Report, including any underlying assumptions, parameters and classifications, are not 43-101 compliant and are quoted “as is” from the source.

NSGold has warranted that full disclosure of all material information in its possession or control at the time of writing has been made to MineTech, and that it is complete, accurate, true and not misleading.

Only the target areas within the Property area and those visited by MineTech are discussed in any detail in this report. MineTech reserves the right to, but will not be obligated to revise this Report and conclusions if additional information becomes known to MineTech subsequent to the date of this Report.



NSGold reviewed draft copies of this Report for factual discrepancies. Any changes made because of these reviews did not include alterations to the conclusions made. Therefore, the statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading at the date of this Report.



## **4 Property Description and Location**

### **4.1 Area of Property**

The Property consists of 105 claims on 7 exploration licenses. Individual mineral claims are approximately 16 hectares in area, giving a total area of approximately 1,680 hectares.

Nova Scotia has a map-based claim staking system whereby claims are staked using a defined grid, based on the Canadian National Topographic System (NTS). Individual claims generally do not need to be surveyed until the actual mining stage is reached. Under this system, an NTS sub-unit (e.g. 11D/15C) is subdivided into 108 tracts, and each tract is subdivided into 16 claims. Tracts are numbered and claims are lettered, each increasing from east to west, then south to north.

### **4.2 Location of the Property**

The exploration licenses are located on NTS map sheets 11D/15C and 11D/15D. The centre of the Property is at approximately 44°56' N, 62°46' W.

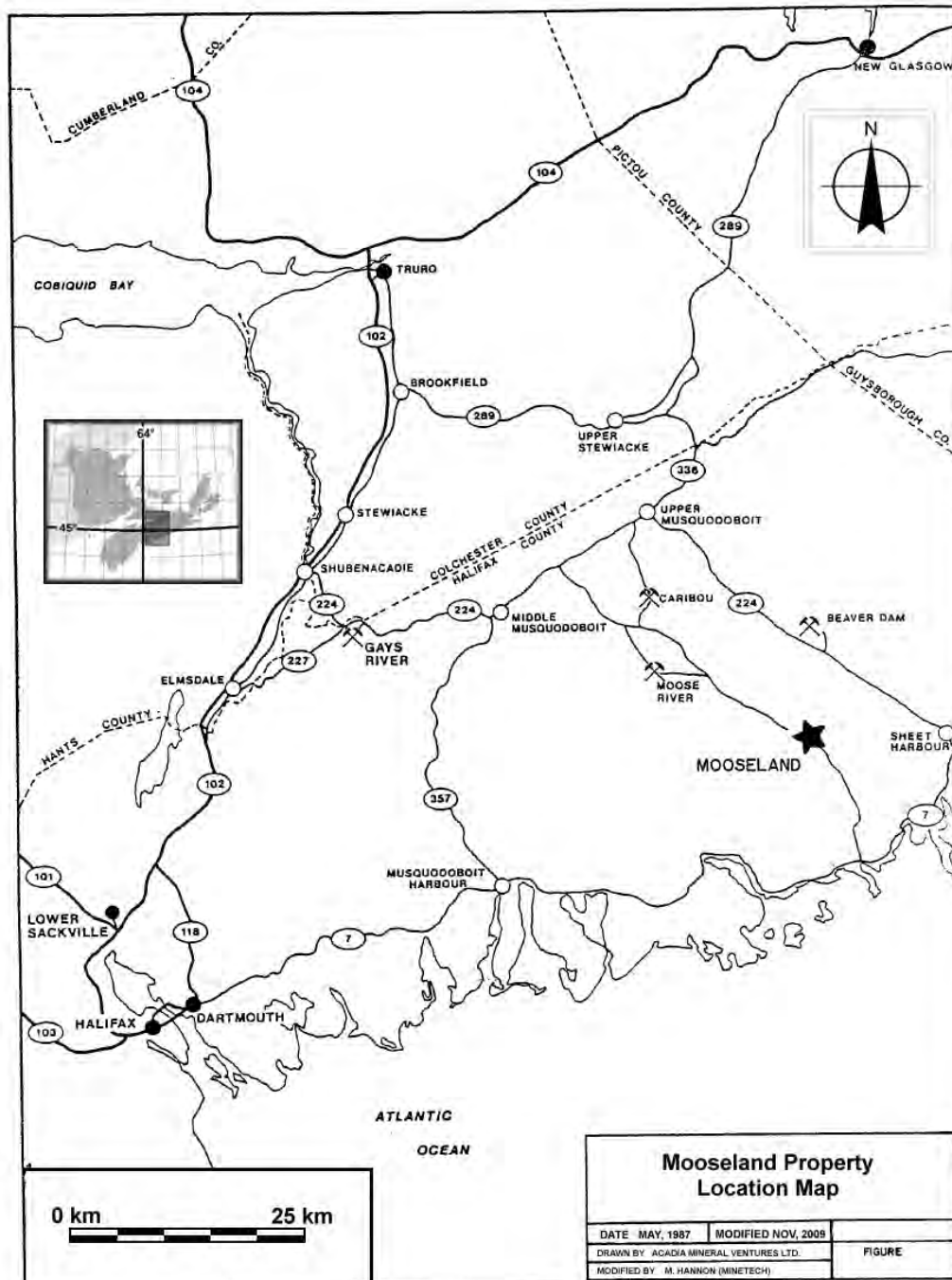


Figure 4-1 - Location Map



### 4.3 Mineral Rights

The Mooseland Property is made up of seven Nova Scotia exploration licenses, numbers 05978, 08604, 08604A, 08708, 09232, 09233, and 09845. These exploration licenses, in turn, cover 105 mineral claims (see Table 4-1).

Many of the claims underlying the exploration licenses were purchased from Globex Mining Enterprises of Rouyn-Noranda, Quebec (see section 4.5). Formal transfer of licence 08708 from Globex to NSGold in Nova Scotia Government records is in progress.

Exploration licenses in Nova Scotia “entitle the holder to conduct exploration upon the license area with the landowner’s permission, to remove minerals from it for test purposes (not for sale) and to apply for a mining lease within the boundaries of the license.”<sup>2</sup>

Table 4-1 - Mineral Exploration Licenses

| NTS    | License | Total #<br>of Claims | Current<br>Year | Anniversary<br>Date | Tract | Claim(s)            |
|--------|---------|----------------------|-----------------|---------------------|-------|---------------------|
| 11D15C | 08604   | 2                    | 4               | May-14              | 51    | JK                  |
| 11D15C | 08604A  | 7                    | 4               | May-14              | 71    | AB H                |
|        |         |                      |                 |                     | 72    | EFGH                |
| 11D15C | 05978   | 40                   | 28              | Apr-02              | 47    | Q                   |
|        |         |                      |                 |                     | 48    | NOP                 |
|        |         |                      |                 |                     | 49    | ABCD EFGH JKLM NOPQ |
|        |         |                      |                 |                     | 50    | ABCD EFGH JKLM NOPQ |
|        |         |                      |                 |                     | 72    | ABCD                |
| 11D15D | 09233   | 29                   | 2               | Aug-31              | 58    | EF JKLM NOPQ        |
|        |         |                      |                 |                     | 59    | EFGH JKLM OPQ       |
|        |         |                      |                 |                     | 60    | CD EFGH JK          |
| 11D15D | 09845   | 11                   | 2               | Jun-01              | 61    | AB D EFGH           |
|        |         |                      |                 |                     | 62    | EF LM               |
| 11D15D | 09232   | 13                   | 2               | Aug-31              | 61    | JKLM NOPQ           |
|        |         |                      |                 |                     | 62    | K NOPQ              |
| 11D15D | 08708   | 3                    | 3               | Oct-09              | 60    | L O                 |
|        |         |                      |                 |                     | 61    | C                   |

<sup>2</sup> Nova Scotia Department of Natural Resources, Information Circular ME 58, *A Guide to Mineral Exploration Legislation in Nova Scotia*, April 2008, paragraph 10



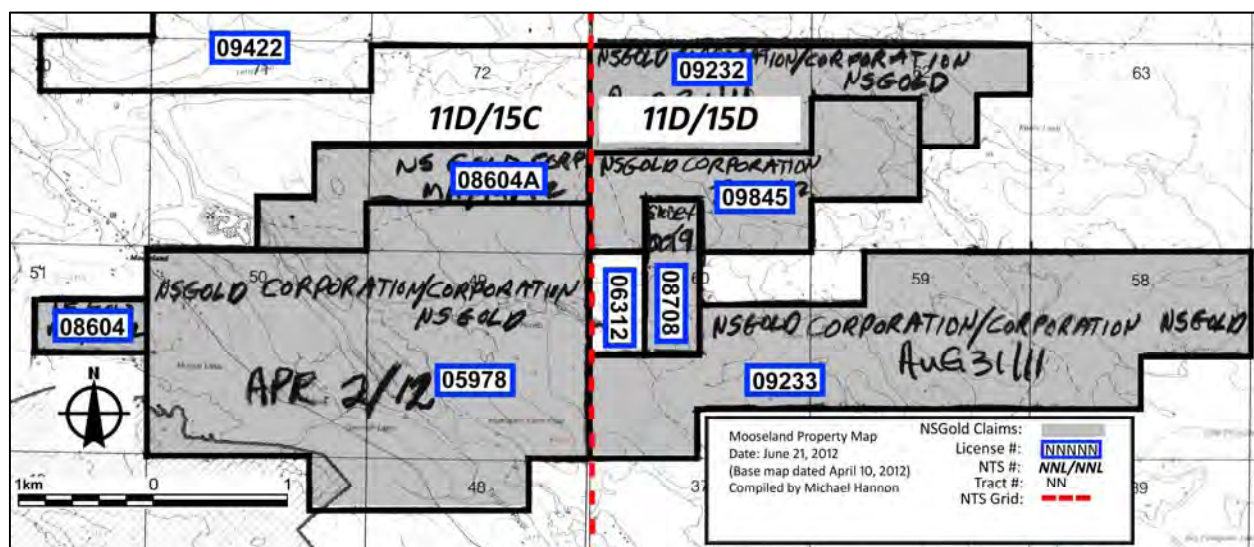


Figure 4-2 - Claim Map, as of July, 2012

#### 4.3.1 Obligations to Retain the Property

Mineral claims in Nova Scotia are subject to annual assessment requirements, while exploration licenses are subject to annual renewal fees.

Assessment requirements constitute a requirement to conduct work of a certain value on the claim and report the results. Work done in one claim can be transferred to other claims in the same license, and work can be carried over from year to year if there is a surplus. Assessment requirements are \$200 work/claim for the first 10 years, \$400 work/claim for years 11-15, and \$800 work/claim for each subsequent year. Additionally, there are annual license application fees, which increase with time (see Table 4-2 below).

Table 4-2 - Mineral Exploration: License Application Fees

| Year of Issue | Application Fee    | Assessment Expenditure |
|---------------|--------------------|------------------------|
| 1             | \$5.71 per claim   | \$200 per claim        |
| 2-10          | \$11.42 per claim  | \$200 per claim        |
| 11-15         | \$22.85 per claim  | \$400 per claim        |
| 16-25         | \$91.40 per claim  | \$800 per claim        |
| 26-26+        | \$182.85 per claim | \$800 per claim        |

## 4.4 Surface Rights and Legal Access

### 4- Property Description & Location





The land (surface rights) that makes up the Property is owned by individuals, companies and the crown. Most of the land covering license 05978, which hosts the West & East Zones, is publically owned ("Crown Land"), and is administered by the Nova Scotia Department of Natural Resources. The land in the northern parts of that license is privately owned (see Figure 4-3).

Most of the land that underlies the rest of the claims is owned by forestry companies. Some is owned by individuals or the government.

For both crown land and private land, exploration license holders must come to an agreement with the landholder in order to gain the right to access and work on the land.

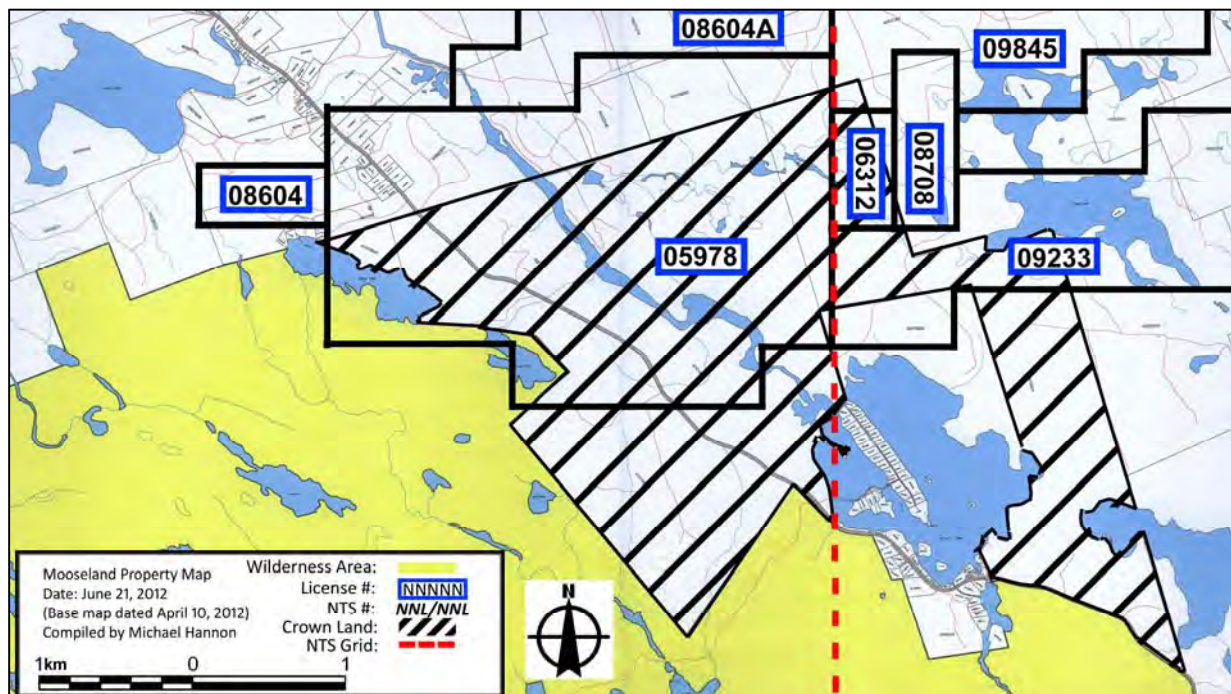


Figure 4-3 - Land Ownership in the Central Claim (Hatching: Crown Land; Yellow Shading: Wilderness Area)

## 4.5 Agreements & Encumbrances

There are currently two NSRs attached to the Mooseland Property.

A number of claims were obtained from Globex as part of the NSGold-Globex purchase agreement, signed on April 14<sup>th</sup>, 2010 with the final payment made by September 1<sup>st</sup>, 2011. Under the terms of the agreement,

- Globex will receive a 4% Gross Metal Royalty on the production of all metals from the claims sold to NSGold; and
- Globex will receive a 5% interest in the then share capital of NSGold upon commencement of production.



Exploration license 08604, purchased in 2011 from Meguma Resource Enterprises Inc., is subject to a 2% NSR, capped at a total of \$750,000.

## 4.6 Environmental Liabilities

### 4.6.1 Infrastructure

Surface structures, including the headframe, a garage/storage building (both built by Hecla), and a steel shed (being built by NSGold), would have to be removed should the property be abandoned.

### 4.6.2 Environmental Bonds

There are two environmental bonds currently held on the property, with a combined value of \$126,959.65 as of December 31<sup>st</sup>, 2010. The first, valued at \$69,618.05, is held by Pencari Mining Corporation (formerly Azure Resources Corp.). The second, valued at \$57,341.60, is held by Globex (pers. comm., NS DNR).

A third bond, valued at approximately \$5,000, is held by NSGold.

### 4.6.3 Tangier Grand Lake Wilderness Area

Six claims on the south-western side of exploration license 05978 are covered in part by the Tangier Grand Lake Wilderness Area, which is governed under the Nova Scotia Wilderness Area Protection Act (the NSWAPA). All affected claims sit outside the main East and West Zones. The NSWAPA prohibits mining (s. 17) except where existing mining rights were issued before February 9, 1993 (s. 25). Exploration license 05978 was first issued in the year 1986. The full text of the NSWAPA is included in the appendices.

Areas of the Property that are covered by the Tangier Grand Lake Wilderness Area generally drain into the Tangier Grand Lake Wilderness Area. The area of the West Zone adjacent to the Tangier Grand Lake Wilderness Area generally drains away from it, flowing eastward into the Tangier River.

Table 4-3 - Claims overlapping Tangier Grand Lake Wilderness Area

| License | NTS     | Tract | Claims |
|---------|---------|-------|--------|
| 05978   | 11D/15C | 50    | ABCDE  |
| 05978   | 11D/15C | 47    | Q      |



## 4.7 Permits

### 4.7.1 General

Permission from the Land Administration Division of the Nova Scotia Department of Natural Resources (NSDNR) must be received before work can begin on crown (public) land. Permission from private landholders must be received before work can begin on private land.

### 4.7.2 Drilling

Before exploration drilling can begin, NSDNR must be notified using a “Notification of Proposed Drilling Program” form. There is no fee.

### 4.7.3 Bulk Sampling

Approval from the Nova Scotia Department of Labour under the Underground Mining Regulations is required before underground exploration can begin. A Water Withdrawal Application approval from the provincial department of the environment (Nova Scotia Environment) is also required. Finally, a letter of authority from the Director of Mines of the NSDNR is also required.

### 4.7.4 Production

If the issuer wishes to proceed to full production, they may need to undergo an Environmental Assessment (EA). In the province of Nova Scotia, EAs are not always needed for small, underground mines. However, the provincial minister responsible for the Environment can, at their discretion, require an EA.

An EA is a comprehensive assessment of an undertaking involving input from many branches of government and the public; it can take more than one year to complete. Once given, approval from an EA does not expire.

Industrial approval from Nova Scotia Environment is required before mining operations begin. These approvals are usually valid for 10 years from the date issued, with the possibility of renewal.

Finally, a Mineral Lease from the NSDNR is needed before commercial mining or mineral processing can begin. The waiting period for an initial application is listed as 2 ½ months. Leases are valid for up to 20 years from the date they are issued and can be renewed for another 20 years.



#### **4.8 Other Significant Factors**

No other significant factors or risks that may affect access, title, or the right or ability to perform work on the Property are known at this time.



## **5 Accessibility, Climate, Local Resources, Infrastructure and Physiography**

### **5.1 Topography, Elevation and Vegetation**

The Property is in an area of moderate relief in undulating terrain with a minimum elevation of approximately 90 metres above sea level, and a maximum elevation of approximately 145 metres above sea level. Many of the elevation highs, especially on the east side of the Tangier River, are due to drumlins. A northwest-southeast trending drumlin lies along the east side of the river and covers the East Zone with 15 to 30 metres of glacial moraine.

Drainage is controlled by the principal northeast-southwest trending geological formations, and the crossing northwest-southeast striking fault zones which control the trend of the Tangier River across the claim group.

The region is covered with mixed coniferous and deciduous forest, mostly second growth, and is of small merchantable size. Some areas have been clear-cut (Gillick, 2010).

### **5.2 Means of Access to the Property**

The West Zone is adjacent to the Mooseland Road, a paved secondary highway that connects with Nova Scotia Trunk Highway 7 at Tangier. A network of access roads on the site connect to the shaft, portal, former camp site, and tailings pond.

The East Zone can be accessed via a logging bridge, about two kilometres northwest of the West Zone entrance along the Mooseland Road, and then by a series of unpaved seasonal logging roads and trails developed for logging and diamond drilling.

The far western part of the property appears to be accessible by a gravel road from Mooseland passing around the south part of Bear Lake, however, the condition of this road is unknown (Gillick, 2010).

### **5.3 Proximity to Population Centers**

Modern towns and cities exist within commuting distance. From to the Property, the village of Mooseland is approximately two kilometres to the northwest, the town of Tangier is approximately 20 highway-kilometres to the southeast, and the city of Halifax is 110 highway-kilometres west-south-west. Many small coastal towns are on Nova Scotia Trunk Highway 7, which passes through Tangier and terminates at Halifax.



## 5.4 Climate

The climate at Mooseland allows for exploration, mining and construction operations to continue throughout the year. The climate is temperate, the Property being only about 20 kilometres north of the Atlantic coast.

The closest weather station is in village of Middle Musquodoboit, approximately 30 kilometres northeast of the Property.

Mean annual total precipitation in Middle Musquodoboit is 1,180 mm. In July, the mean maximum daily temperature is 24.6°C; in February, the mean minimum daily temperature is -11.1°C. Summer design temperature for buildings and equipment is 27°C; winter design temperature is -18°C. Average monthly rainfall ranges from 60.4mm in February to 123.5mm in November; average monthly snowfall ranges from 41.2cm in February to nil between June and September. All climate data is from the Environment Canada “Canadian Daily Climate Data” database. See Figure 5-1 and Figure 5-2.

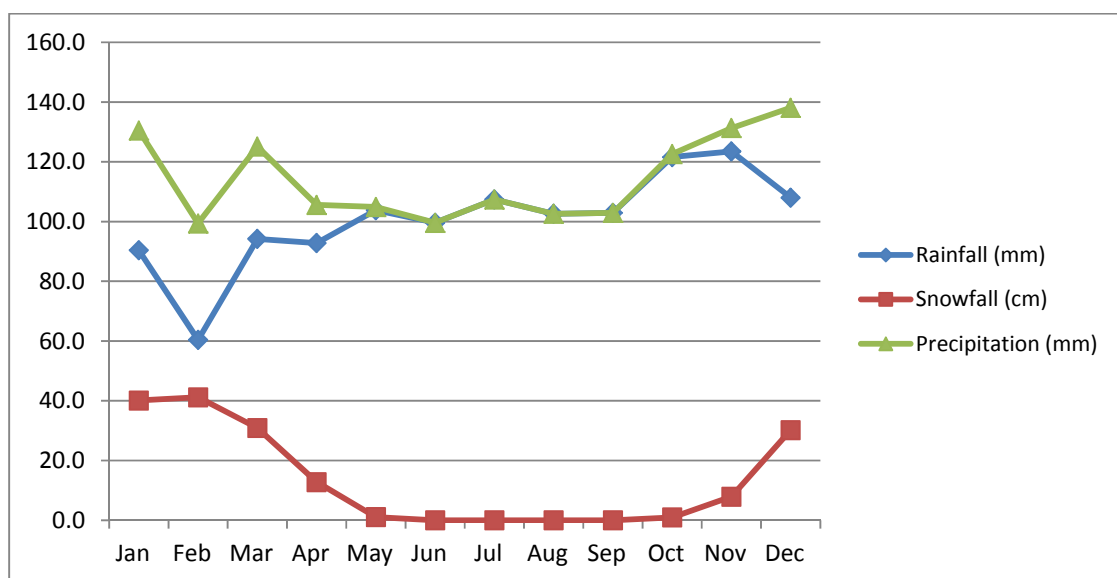


Figure 5-1 - Precipitation Averages, Middle Musquodoboit

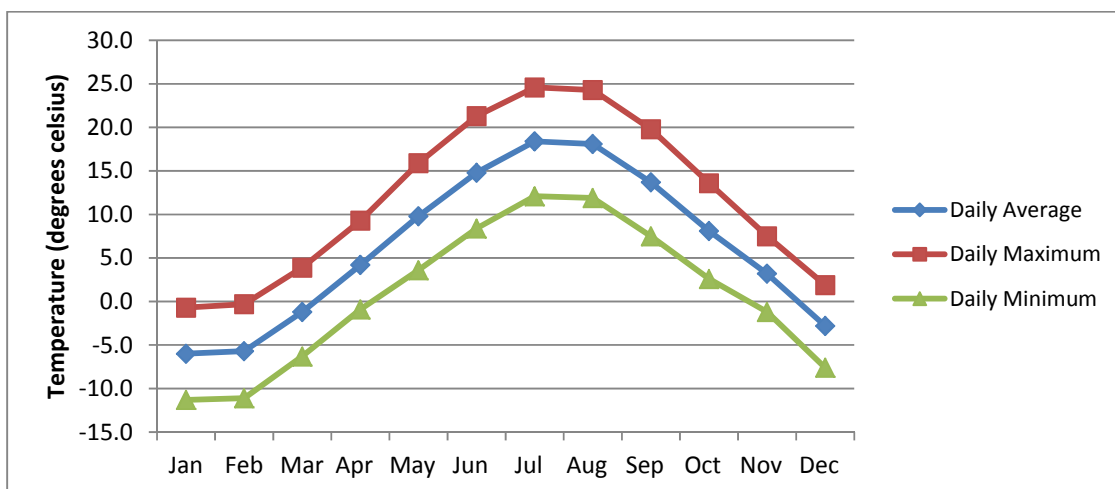


Figure 5-2 - Temperature Averages, Middle Musquodoboit

## 5.5 Surface Rights

As discussed in section 4.4, mineral rights to the Property are held by the Issuer. Surface rights are held by the Crown and by private landholders. The Issuer must obtain permission from the surface rights holders to access their land. Permits must be obtained from the government before exploration and/or development work can begin (see section 4.7).

## 5.6 Utilities

The Property is well located with respect to utilities. An electrical power line runs along the Mooseland Highway, although a generator or utility upgrade may be required to supply three-phase power for milling. Water is abundant and readily available. The nearby population centres of Mooseland, Tangier and Halifax are a supply of skilled & semi-skilled labour.

Modern sawmills are located within 50 kilometres of the Property, and can provide the necessary timber for mining purposes.

## 5.7 Processing, Waste and Tailings Sites

A settling pond exists on-site, and can be re-activated were production to begin. During past exploration, this settling pond was used to hold water gathered from surface and water pumped from underground.





Figure 5-3 - Mooseland Settling Pond, Looking Southwest

The nearby Dufferin Mine, which is currently not producing but is undergoing active exploration, has a small gravity/floatation mill that could process ore from the Property.

A new open-pit mine, with attached mill and tailings impoundment facility is planned at the nearby Moose River property (16 road-kilometres away).

Finally, a past-producing gold mine, mill and tailings impoundment facility is located nearby at Tangier, Nova Scotia.

## 5.8 Site Infrastructure

### 5.8.1 Surface Infrastructure

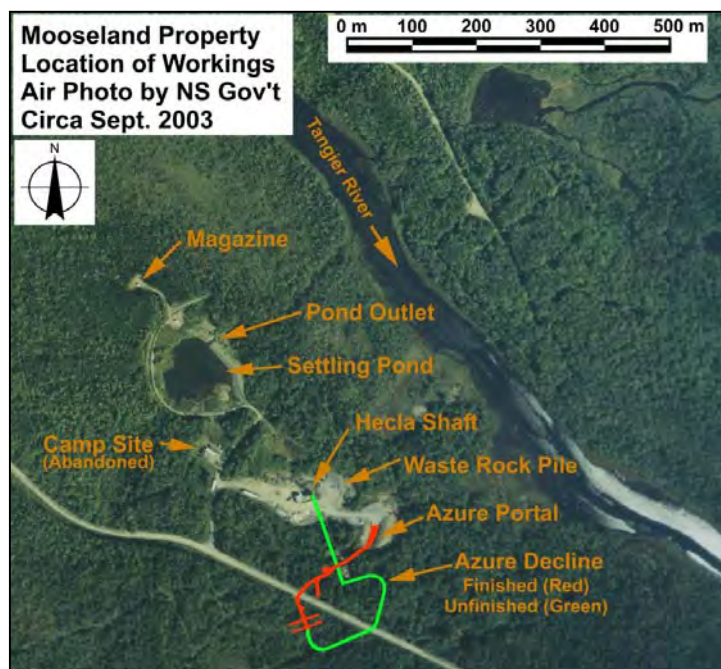


Figure 5-4 - Detail View of Workings on Site





Since modern exploration began in 1988, the site has been levelled and five structures have been built – four buildings and one retention pond.

Buildings on-site include a magazine, headframe, garage, and a core shed. NSGold used the garage to log and store the core. A steel shed is in the process of being built by NSGold; at the time of writing, it is open on two ends.

Approximately four hectares of land were cleared for the surface plant complex, the contractor camp, and the water retention dam. The site and the access road from the highway were graded and levelled in 1988 (Bye, December 1989).

A 12,000 cubic metre settling pond, located north of the surface plant site, was completed in November 1988. Over 10,000 cubic metres of glacial till was placed and compacted to form the retention dam structure (Bye, December 1989).

### 5.8.2 Underground Infrastructure

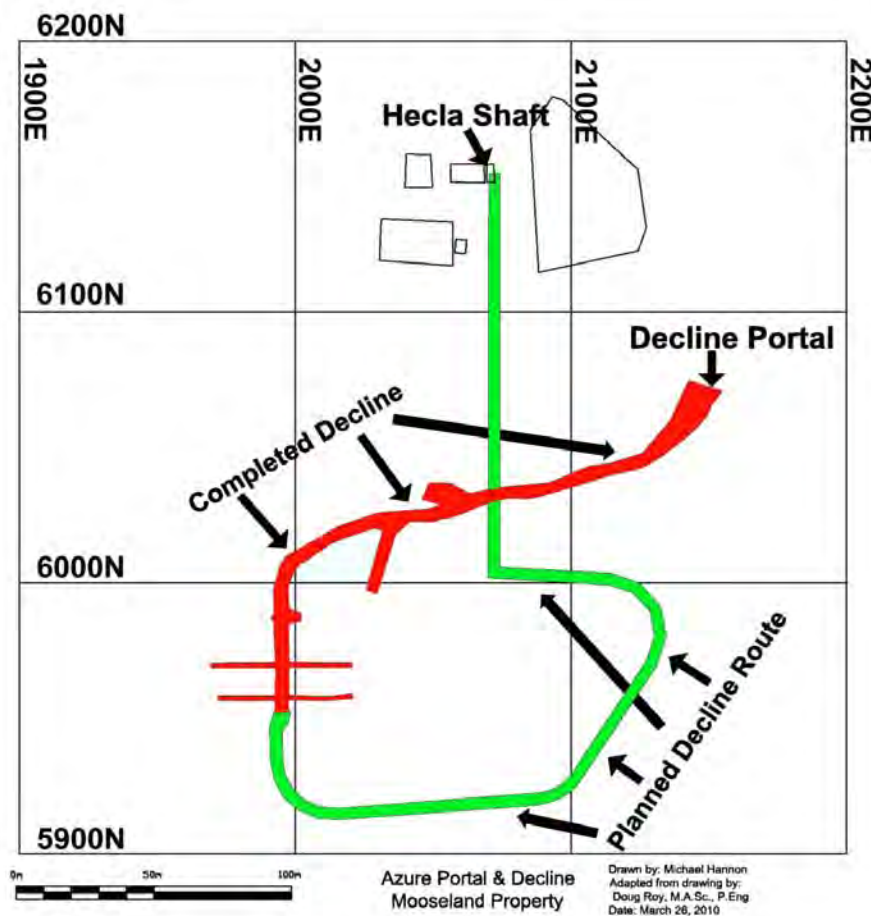


Figure 5-5 - Azure Portal & Decline



Underground infrastructure at the site consists of a shaft and a decline.

The shaft was sunk in 1988-1989 as part of Hecla's exploration project, and reached a total depth of 124.9 metres before work ceased.

The decline was made in 2003 as part of Azure's exploration project; it was intended to pass through the south limb of the West Zone and meet up with the Hecla shaft. It reached a length of 218 metres and depth of 46 metres before work ceased. In addition, a sump, remuck and two drifts were put in place.

See section 9.2 for more details on underground exploration at the Property.



## 6 History

### 6.1 Prior Ownership

Since 1985, four different companies - Tri-Explorations Ltd., Acadia, Globex, and NSGold - have held all or part of the claims that make up the central license (# 05978). During Globex's ownership, a fifth company, Azure Resources Inc. (now called Pencari Resources) held an option on the central license and conducted work on the property, but the license remained in the control of Globex. Three individuals (David Graham, Alex Thomson and Thomas Faulkner) have also held portions of that license.

The remaining licenses were originally staked by Globex (no. 08708, in 2009), Meguma Resource Enterprises Inc. (no. 08604), and NSGold (nos. 09232, 09233, and 09845, in 2010, 2010 and 2011, respectively). Parts of license 09845 were previously obtained from Globex as the former license 08565. A current list of the licenses & constituent claims that make up the property can be found in Table 4-1.

**Table 6-1 - Exploration License History**

|             |  |
|-------------|--|
| <b>1985</b> | Tri-Explorations stakes three licenses (10685, 10788 and 11437)  |
| <b>1986</b> | D. Graham stakes exploration license 11826; A. Thomson stakes license 12017  |
| <b>1987</b> | Licenses 11826 & 12017 are transferred to Tri-Explorations. Tri-Explorations regroups licenses 10685, 10788, 11437, 11826 and 12017 into license 13184 |
| <b>1988</b> | Tri-Explorations transfers license 13184 to Acadia   |
| <b>1992</b> | License 13184 renewed as license 00443   |
| <b>1997</b> | License 00443 transferred to Globex  |
| <b>1999</b> | Globex issued new license, 03763   |
| <b>2000</b> | License 04355 issued to T. Faulkner  |
| <b>2002</b> | License 04355 transferred to Globex  |
| <b>2002</b> | Licenses 00443, 04355 and 03763 regrouped as license 05099   |
| <b>2005</b> | License 05099 re-named license 05978   |
| <b>2009</b> | Licenses 08565, 08566 and 08708 staked by Globex   |
| <b>2010</b> | NSGold issued two new licenses, numbers 09232 and 09233  |
| <b>2010</b> | Licenses 05978, 08565, 08566, and 08708 transferred from Globex to NSGold  |
| <b>2011</b> | License 08566 is reduced from 12 claims on 2 tracts to 4 claims on 1 tract   |
| <b>2011</b> | NSGold issued one new license, number 09845  |
| <b>2011</b> | License 08604 transferred from Meguma Resource Enterprises to NSGold   |
| <b>2012</b> | License 08604 is split into two licenses (08604 & 08604A), and from 53 to 14 total claims  |
| <b>2012</b> | License 09845 is reduced from 21 to 11 claims  |



See Appendix I for official confirmation of title for licenses 05978, 08566, 08565, 08708, 09232 and 09233.

## 6.2 Historical Exploration

### 6.2.1 Introduction

The first recorded discovery of gold bearing quartz in Nova Scotia was made at Mooseland in September, 1858 by Lieutenant C. L'Estrange while moose hunting on the Tangier River. Two years later, in May 1860, gold in a quartz boulder was found in the same area, initiating the first gold rush in Nova Scotia. The area was officially proclaimed the Mooseland Gold District by April, 1861. Old stamp mill tailings are widely scattered and overgrown (Zalnieriunas, 1997).

Since discovery of gold at Mooseland in 1858, the Property has been explored and exploited by numerous individuals and companies. Early workers recognized the unique nature of the saddle veins. Their work focused on trenching along the surface strike of the veins with shafts at regular intervals along each vein. The depths of trenches and shafts were limited by the water table.

In excess of 22 shafts and 100 trenches and pits were excavated in the West Zone before the 1980s; more than 14 shafts on the east side of the river were mapped by E.R. Faribault of the Geological Survey of Canada on his 1899 map of the Mooseland Gold District. The sites of three old crushers (stamp mills) are included on his map and two tailings piles from this work were observed during the property examination.

### 6.2.2 Summary

Table 6-2 - Summary of Historical Exploration

|                   |   |
|-------------------|---|
| <b>1860</b>       | Production began on the Furnace Lead using a stone grinding mill; the first stamp mill was erected during 1862.   |
| <b>circa 1866</b> | District opened up to road access; several shafts and stopes developed on the Furnace, Cummings and Specimen Leads.   |
| <b>1869</b>       | Discovery of the Irving Belt in 1869, followed by the discovery of Little North Lead in 1870. Small scale mining continued on these zones until the 1880s.                                    |
| <b>1884</b>       | Gold bearing boulders found on the west bank of the Tangier River. Discovery of the Bismarck Lead and formation of the <b>Mooseland Gold Mining Company</b> with minor production until 1895. |

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- 1896 - 1914** Minor sporadic work on the Cummings Lead.
- 1932 - 1933** 19.9 ton sample was metallurgically tested, and averaged 3.77 g/tonne (0.11 opt) Au.
- 1934** Prospecting and sampling by **Mining and Finance Corporation Ltd.**
- 1937 - 1938** Nine diamond drill holes drilled by **Compagnie Belgo-Canadien de Prospection Minière Limitée** testing hinge zones of the Irving and Cummings Leads. Best reported assays were:
- | g/tonne | Metres | Opt  | Feet |
|---------|--------|------|------|
| 38.06   | 0.61   | 1.11 | 2    |
| 15.09   | 1.22   | 0.44 | 4    |
| 16.80   | 0.61   | 0.49 | 2    |
| 19.54   | 0.61   | 0.57 | 2    |
| 17.83   | 0.91   | 0.52 | 3    |
- 1948** Self Potential survey completed for **Marshall Red Lake Mines Ltd.**
- 1963 - 1967** **W.B. Jackson** worked an old 18.3 metre (60 foot) shaft on Irving Belt and sank a shaft on the Anna Lead.
- 1974** Geological mapping was completed by **Stuart Avril**. The Property was acquired by **D.P. Rogers** and one drill hole was drilled to 67.7 metres (222 feet), encountering 4 specks of gold.
- 1978 - 1981** **Cuvier Mines Inc.** carried out surface sampling, trenching and diamond drilling (21 holes for 350 metres (1,150 feet)). The property was subsequently acquired by **Tri-Explorations Ltd.** who optioned it to **Acadia Mineral Ventures Ltd.** in 1986.
- 1985 - 1986** The **Geological Survey of Canada** carried out a VLF / Total Field Magnetic / Vertical Gradient of TF survey. The survey was carried out at a mean altitude of 150 metres on N-S lines spaced 300 metres apart, with a line distance of 16,233 km.
- 1986 - 1988** Acadia carried out a broad exploration program on the East and West Zones, including diamond drilling and an Induced Polarization (IP) survey. The drilling totalled approximately 31,700 metres in 135 holes. This drilling outlined the most promising West Zone targets, increased the understanding of the East Zone, and formed the basis of later



resource estimates. The IP survey covered 9.8 line kilometres. The Tangier River fault system was interpreted to correspond to a resistivity low, while the anticline was thought to correspond to a frequency effect anomaly.

**1988 - 1989**     **Hecla Mining Company of Canada, Ltd.**, carried out site preparation including clearing land, constructing surface buildings and a 12,000 cubic metre settling pond.

Later, Hecla began to sink a shaft in order to explore and bulk sample mineralized veins that had previously been identified by diamond drilling. Due to lack of available financing, the project was suspended before completion. The planned program of lateral development and bulk sampling was not carried out.

**1997**            The provincial government publishes an enhanced (2<sup>nd</sup> vertical derivative) aeromagnetic map of NTS area 11D/15C.

**2002**            In 2002, a single reconnaissance line of V.L.F. E.M. surveying was done for Globex, approximately 1 kilometre east of the East Zone. The survey outlined two cross-overs, probably related to slate horizons within the Meguma rock sequence. The survey was carried out by **Rainbow Resources Ltd.** on behalf of Globex (O'Sullivan, 2002).

**2003 - 2004**     Azure carried out an extensive program including diamond drilling and development of a portal and decline.

The drill program had six holes totalling 1,167.65 metres. The four West Zone holes succeeded in confirming previous intersections and demonstrating sufficient rock quality for the anticipated decline. The two East Zone holes confirmed previous intersections and improved understanding of the geological structure & stratigraphy of that Zone.

The decline was collared in the West Zone, with a plan to connect it with the Hecla shaft, and collect a 2,000-10,000 tonne bulk sample. Work on the decline ended before it was finished due to lack of financing. The bulk sample was limited to 2,000 tonnes. Time and money constraints led to its failure: it was taken out before the planned depth had been reached, and milled before an efficient circuit could be installed in the mill.

**2005**            In 2005, the Nova Scotia Department of Natural Resources published an Airborne Total Field VLF-EM (Line Component) map for the area

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surrounding the Mooseland Property.

- 2010** **NSGold Corporation** began working on the property, carrying out a 26-hole diamond drilling program. In the West Zone, 13 holes (3,613 metres) were drilled, and in the East Zone, 13 holes (2,894 metres) were drilled.
- 2011** **NSGold** conducts further drilling, comprising 8 holes (2,606 metres) in the West Zone and 8 holes (2,404 metres) in the East Zone during 2011 for a total of 5,010 metres of NQ-sized core.

### 6.3 Historical Resource Estimates

Two non-NI 43-101 compliant historical resource estimates were made for the Property in the late 1980s.

The background material for the historical resource estimates, such as cross sections and resource block diagrams, were not available.

#### 6.3.1 MPH

**The Qualified Person has not done sufficient work to classify the following historical estimate by MPH as current mineral resources or mineral reserves. NSGold is not treating the historical estimate by MPH as current mineral resources or mineral reserves as defined in sections 1.2 and 1.3 of NI 43-101.**

**The 1987 and 1989 resource estimates by Coates & Riddell are historical estimates and should not be relied upon.**

The MPH resource estimates are relevant because they use much of the same base data as the current resource estimate. However, they are not reliable, because they are not 43-101 compliant, and because background information – such as cross sections and resource block diagrams – was not available for review.

The MPH estimates did not use the resource/reserve categories set out in Sections 1.2 and 1.3 of NI 43-101. The categories of “reserves” used to define mineralized material at Mooseland by Coates and Riddell in their 1987 and 1989 historical estimates were standard and acceptable practice at the time.<sup>3</sup> However, the category of ‘possible

<sup>3</sup> The definitions, quoted from their report, were as follows (Coates and Riddell, 1987, pp.28-29 via Zalnieriunas, 1997):

“ “Proven Ore” or “Measured Ore” is that material for which tonnage is computed from dimensions revealed in outcrops or trenches or underground workings and/or drill holes and for



reserve' uses inferred resources to calculate a mineral reserve, a practice that is not permitted under current standards. There is no current designation of 'possible' reserves.

The Mooseland property has no current mineral reserves. No economic feasibility work was done to support establishing mineral reserves. Mineral resources that are not mineral reserves do not have demonstrated economic viability. For the reasons stated above, the "reserve" categories used by Coates & Riddell for their historical estimates cannot be compared to current resource categories.

MPH prepared a "reserve" estimate of the West Zone for Hecla in 1987 and updated it in 1989 (Coates and Riddell, 1987 and 1989). The 1987 estimate defined a "geological reserve" of 600,000 tonnes at 8.36 g/tonne of "possible and probable material" hosted in seven separate zones, along a strike length of 600 metres. The estimate was based on the results of 65 West Zone drill holes.

The MPH "probable reserve" calculation was made using longitudinal projections of individual ore zones, from data and cross sections provided by Acadia. High gold values were cut ('top cut') using a log probability plot. A total of 20 core samples returned values in excess of 1 oz/ton with five samples over 10 oz/ton. Cutting resulted in the five highest assays being reduced to values of 7 to 2 oz/T.

The "possible reserves" were based on following reasoning:

"Good potential for discovery of further mineralization exists in several areas within and immediately adjacent to the drilled area. Since all of the known mineralized zones are open either

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*which the grade is computed from the results of adequate sampling. The sites for inspection, sampling, and measurement are so spaced and the geological character so well defined that the size, shape, and mineral content are established. The computed tonnage and grade are judged to be accurate within limits which must be stated. It must be clearly stated whether the tonnage and grade of "Proven" or "Measured" Ore is in situ or extractable. Dilution factors, if used, should be clearly explained.*

*"Probable Ore" or "Indicated Ore" is that material for which tonnage and grade are computed partly from specific measurements, samples, or production data, and partly from projection for a reasonable distance on geologic evidence. The sites available for inspection, measurement, and sampling are too widely or otherwise inappropriately spaced to outline the material completely or to establish its grade throughout.*

*"Possible Ore" or "Inferred Ore" is that material for which quantitative estimates are based largely on broad knowledge of the geologic character of the deposit and for which there are few, if any, samples or measurements. The estimates are based on an assumed continuity or repetition for which there are reasonable geological indications; these indications may include comparison with deposits of similar type. Bodies that are completely concealed may be included if there is specific evidence of their presence..."*

## 6 - History





along strike or to depth or both it is not unreasonable to assume that further gold mineralization would be encountered with further drilling. An in situ possible reserve figure of 300,000 tonnes of material of similar grade to that of the probable reserve is assigned to the Main Mooseland area."

Parameters to calculate the "probable reserve" were:

- Cutoff grade of 3.4 g/tonne Au using a minimum width of 1.5m, high assays cut;
- Drill hole intersection assigned a 50 metre square zone of influence;
- Overlapping drill intersection squares reduced to weighted polygons;
- Core assays diluted at zero grade to a minimum mining width of 1.5 metres;
- Specific gravity of 2.7 tonnes per cubic metre; and
- Maximum depth of 400 metres

Results from the 1987 MPH estimate are summarized below:

**Table 6-3 - 1987 MPH Historical "Resource Estimate", not 43-101 Compliant**

| Zone(s)  | Maximum Tested Depth | Tonnes         | Grade (g/tonne) |
|--|----------------------|----------------|-----------------|
| Furnace  | 200                  | 28,115         | 3.27            |
| Little North                                     | 250                  | 68,889         | 4.86            |
| South Irving                                     | 250                  | 59,618         | 7.58            |
| South Bismark                                    | 250                  | 53,967         | 14.13           |
| Miscellaneous Core Zones                         | 400                  | 10,124         | 9.22            |
| North Bismark                                    | 250                  | 85,113         | 9.00            |
| North Cummings                                   | 200                  | 10,125         | 16.31           |
| <i>"Probable Reserves"</i>                       |                      | <i>315,991</i> | <i>8.36</i>     |
| <i>"Possible Reserves"</i>                       |                      | <i>300,000</i> | <i>8.36</i>     |
| <b>Grand Total Geological Reserves (rounded)</b> |                      | <b>600,000</b> | <b>8.36</b>     |

In 1989, Coates & Riddell updated their estimate to incorporate 20 new drill holes in the West Zone, for a total of 85 drill holes. 58 samples assaying from 5451.47 to 13.00 grams of gold per tonne were cut ('top-cut') to values ranging from 225.0 to 12.0 grams per tonne. This estimate only calculated "Probable" reserves. It found "total probable indicated reserves", to a depth of 400 metres, of 433,000 tonnes with an uncut grade of 18.00 g/tonne Au or a cut grade of 5.15 g/tonne Au. The reader should note the large difference between the "top-cut" and "non-top-cut" grades, which is a classic example of coarse gold environments.

The zones were diluted to a minimum mining width of 1.22 metres (4 feet). Mineralization was contained in eight zones.

The actual grade of the resource may be somewhere in between the uncut estimate of 17.7 g/tonne and the cut estimate of 5.1 g/tonne. Some method for treating the outliers is absolutely required. Coates's and Riddell's method, while more thoughtful than simply cutting outliers back to a single grade, may have been excessive. The best method for



evaluating and perhaps modifying their cutting procedure would be to compare their estimated grades with "actual" grades from larger samples or from mining.

**The 1987 and 1989 resource estimates by Coates & Riddel are historical estimates and should not be relied upon.**

### **6.3.2 Hecla**

**The Qualified Person has not done sufficient work to classify the following historical estimates by Hecla as current mineral resources or mineral reserves. NSGold is not treating the historical estimates by Hecla as current mineral resources or mineral reserves as defined in sections 1.2 and 1.3 of NI 43-101.**

**The 1988 Hecla resource estimates are historical estimates and should not be relied upon.**

The Hecla resource estimates are relevant because they use much of the same base data as the current resource estimate. However, they are not reliable, because they are not 43-101 compliant, because they are unpublished internal estimates, and because background information – such as cross sections and resource block diagrams – was not available for review.

The Hecla estimates did not use the resource/reserve categories set out in Sections 1.2 and 1.3 of NI 43-101. Because the criteria used by Hecla may have changed from one estimate to the next, and no detailed reports on the Hecla estimates are available, the ways in which Hecla's "resource"/"reserve" categories differ from the current categories outlined in Section 1.2 or Section 1.3 of NI 43-101 are not known. It is known that Hecla's "factored reserve" category used a method of reducing tonnage and/or grade of individual blocks (described below) that is not permitted under current standards.

The Mooseland property has no current mineral reserves. No economic feasibility work was done to support establishing mineral reserves. Mineral resources that are not mineral reserves do not have demonstrated economic viability. For the reasons stated above, the "reserve" categories used by Hecla for its historical estimates cannot be compared to current resource/reserve categories.

A number of unpublished internal "summary reserve estimates" by Hecla's staff exist. The reserve figures fluctuate, possibly due to changing criteria and the addition of drilling data. The reserve criteria are not stated, except in a statement which refers to the East Zone for January 1988. These reserve criteria are listed below and may apply in general to the other calculations. Only one summary estimate has been reviewed by the Author; the rest are known only through Zalnierunas' 1997 report.

## **6 - History**



It is important to note that what the Hecla staff refer to as a “factored reserve” is a hybrid reduced reserve in which staff reduced tonnage and/or grade by a percentage factor, based on unexpressed geological or data quality reasons, to reflect what they expected to find in actual underground stopes. The judgement was speculative, perhaps based on previous experience on similar deposits, but not based on historical mining experience from the Property.

The other notable change that Hecla took in comparison to the MPH estimates was the stated shrinking of reserve blocks from 25m radial zones of influence to 15m radial zones of influence, with rectangular blocks constructed to join intersections of apparent continuity.

The criteria used to calculate the January 1988 East Zone reserves are described in the 1997 Zalnieriunas report as follows:

- intersections corrected for true width and diluted to a minimum 1.5 metre (5ft mining) width;
- minimum cut-off grade used was 5.14 grams per tonne over 1.5 metres (0.15 opt over 5.0 feet);
- reserve blocks as squares or rectangles using a maximum projection of 15 metres (50 feet); adjacent drill intersections given strong consideration on determining peripheral block dimensions;
- specific gravity used was 2.67 (tonnage factor of 12 cubic feet per ton);
- multiple drill hole intercepts in a given ore block stated as a width-weighted average;
- all assays uncut; figures in feet, short tons and troy ounces of gold per short ton
- “ore reserves” represent geologic “Indicated-Inferred reserves”; and
- a probability factor is estimated for and applied to each reserve block. This factor was based on the estimator’s appraisal of the geologic factors and data quality applied to each block. The factored or probable tons and grade were thought to more accurately reflect the reserves for each given block (i.e. overall probability factor for the East Zone was 66.5% although applied factors ranged from 80% to 50% for individual ore blocks 1 to 19).

(Zalnieriunas, 1997, page 23)

The results of the Hecla “reserve” estimates are included below:



Table 6-4 - Historical Hecla "Reserve Estimate", Not 43-101 Compliant

| Date / Author         | Zone(s) | Drill Indicated Reserves<br>(Hecla's "calculated") | "Factored" Reserves<br>(Hecla's "probable") | Comments   |
|-----------------------|---------|--|---|--|
| 1988-01-05<br>by Kopp | East    | 269,000T @ 0.384opt Au                             | 179,000T @ 0.373 opt Au                     | East: 19 ore blocks; calculated to depth of 170 metres (560 ft) West: Depth not available  |
|                       | West    | 622,000T @ 0.428opt Au                             | 344,000T @ 0.428 opt Au                     |  |
|                       | Total   | 891,000T @ 0.413opt Au                             | 523,000T @ 0.41 opt Au                      |  |
| 1988-02-17<br>by Kopp | East    | 304,700T @ 0.633opt Au                             | 206,805T @ 0.565 opt Au                     | East: 27 ore blocks<br>West: 8 veins<br>Both zones unstated depths   |
|                       | West    | 360,600T @ 0.72 opt Au                             | 219,730T @ 0.67 opt Au                      |  |
|                       | Total   | 665,300T @ 0.68 opt Au                             | 426,535T @ 0.62 opt Au                      |  |
| 1988-02-18<br>by Kopp | East    | 327,350 @ 0.585opt Au                              | 206,518T @ 0.563 opt Au                     | East: 27 oreblocks. Depth: 185m (600 ft)   |
| 1988-04-28<br>by Kopp | West    | 312,720T @ 0.37 opt Au                             | 250,280T @ 0.37 opt Au                      | West: 8 veins, DDH ML-1 to ML-85; reserve to 950m elevation with L'Estrange belt to about 700m level; surface at 1100m, depth of 400m (1,300 ft) |

**The 1988 Hecla resource estimates are historical estimates and should not be relied upon.**

The Mooseland property has no current mineral reserves. No economic feasibility work was done to support establishing mineral reserves. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

## 6.4 Historical Production

Total recorded production for the district between 1863 and 1934 is 3,865 ounces of gold recovered from 9,058 tons of crushed material (J. Bates, 1982).



## 7 Geological Setting

### 7.1 Regional Geology

This description of the regional geology is derived from reports by R.V. Zalnieriunas (1997) and H.J. Coates and W.J. Riddell (1987):

The gold fields of Nova Scotia occur within the Meguma structural terrane. The Meguma is a tectonic subdivision of the northern Appalachians composed predominantly of Cambrian to Lower Devonian sediments and turbiditic metasediments. These were folded about northeasterly trending, sub-horizontal axes during the Early Devonian Acadian Orogeny when the terrane docked with the eastern side of the Avalon Platform. These sediments have been subdivided into two groups: the Cambro-Ordovician Meguma Group, which consists of the basal Goldenville Formation quartz wackes and overlying Halifax Formation slates; and the Silurian to Lower Devonian-aged infolded keels of clastic sediments and volcanics of the White Rock, Kentville, New Caan and Torbrook formations, which occur at the terrane's west and northeasterly limits.

The Meguma Group was intruded by granitoid plutons of Middle Devonian to Early Carboniferous age, consisting of granite, granodiorite, granodiorite porphyry, two-mica granite and lesser quantities of tonalite and trondhjemite. Intrusives range in size from a few square kilometres to that of composite batholiths. A Devonian granitoid body, the Musquodoboit Pluton, outcrops in the western part of the Mooseland Gold District. The intrusions deformed and metamorphosed the turbidite sequence during the Acadian Orogeny. The main feature of the deformational history of the Meguma Terrane is the formation of a series of major east-west trending upright symmetric to slightly reclined asymmetric folds. A penetrative slaty cleavage was developed in the argillaceous units during this episode as well as a pervasive pressure solution cleavage in the greywackes. This folding and cleavage has an important role in the development of the gold deposits. Regional metamorphism is of greenschist to upper amphibolite facies.



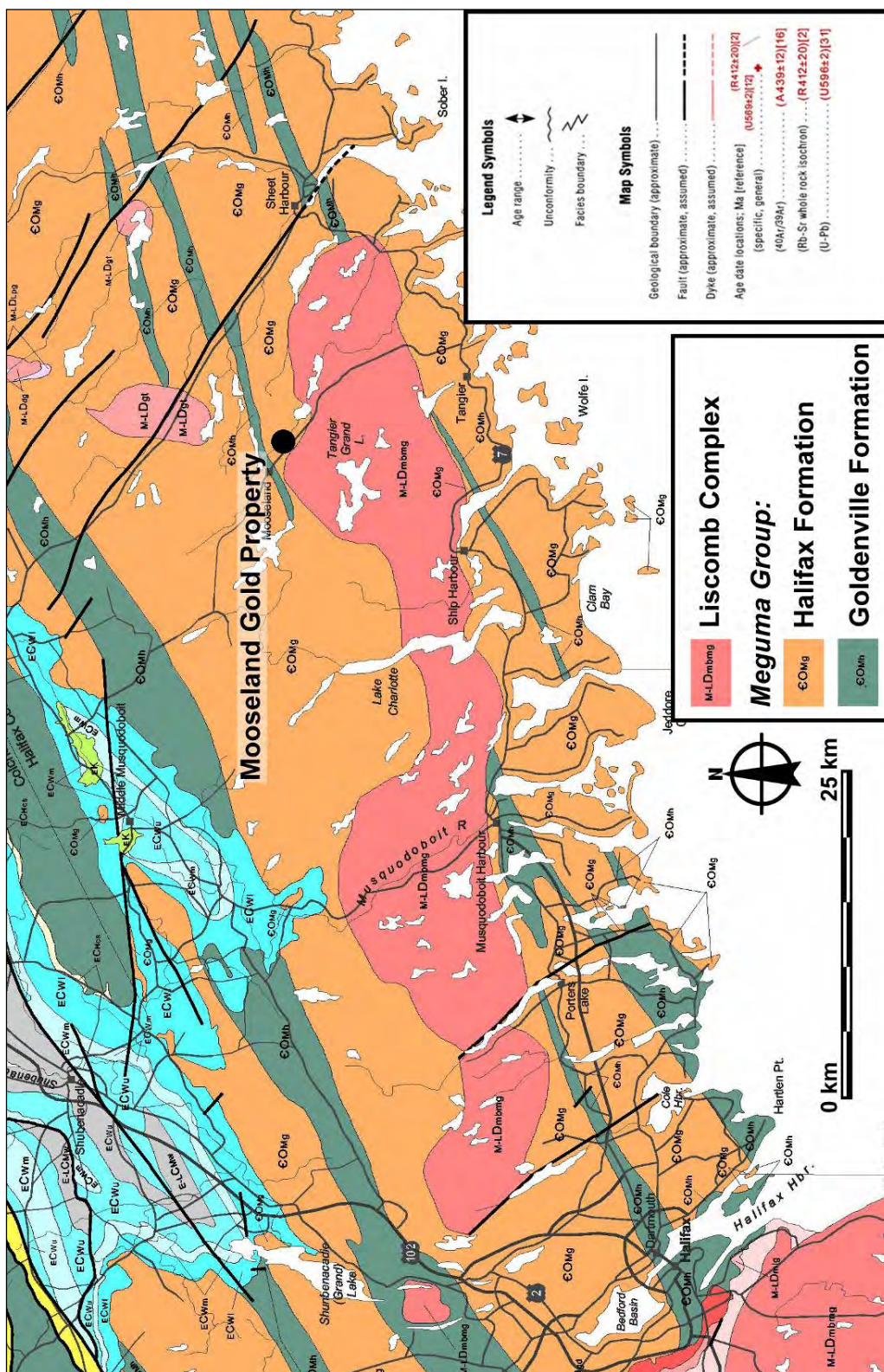


Figure 7-1 - Regional Geology Map, from the Geological Map of Nova Scotia (Map ME 2000-1)



Mineral occurrences within the Meguma occur as three styles as follows:

- a) concordant, syn-depositional or diagenetically related deposits such as the Eastville base metal occurrences associated with the Goldenville-Halifax Formation Transition Zone (GHT) and Clinton-type iron formations;
- b) hydrothermal, structurally controlled deposits such as the 370 Ma-aged auriferous concordant Goldenville Formation quartz veins; and
- c) mineralization associated with Acadian plutonism such as the East Kemptville or Millet Brook uranium deposits

## 7.2 Property Geology

There are two primary zones of mineralization on the Mooseland Property, the East and West Zones. The West Zone was the first to be discovered and is the source of most historical production. A fault block between the two zones hosts a portion of the Bismark lead; this fault block is the source of some historical production.

The following geological description of the property is based on reports by M. Sanguinetti (2002), R.V. Zalnieriunas (1997), Lionel Thorpe (1989), and information in files provided by Globex.

The property is underlain by both the Goldenville and Halifax formations of the Meguma Group. A mountain-building period 375-325 million years ago (the Acadian Orogeny) deformed the Meguma Group strata, creating a major east-west trending anticline<sup>4</sup>. Bedding dips steeply north and south a short distance from a fairly compact hinge area. The fold forms a narrow, elongated dome which varies in plunge from 10° E on the eastern part of the district near the Tangier River to 5°W near Moose Lake. A penetrative slaty cleavage, which may grade into a schistose fabric, as well as a pervasive pressure solution cleavage in the greywackes, was developed in the argillaceous units during deformation.

A major, post-ore, northwest trending fault zone follows the Tangier River, causing a combined displacement of several hundred meters. Several other faults of similar attitude, but with limited displacement, occur nearby, away from the main fault zone. Carbon-rich slates of the Halifax Formation underlie the northwest corner of the property and granites of the Musquodoboit Pluton underlie the southwest corner. A 'halo' of metamorphic rock, defined by staurolitic slate, borders the pluton.

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<sup>4</sup> The Mooseland-Geogan Anticline



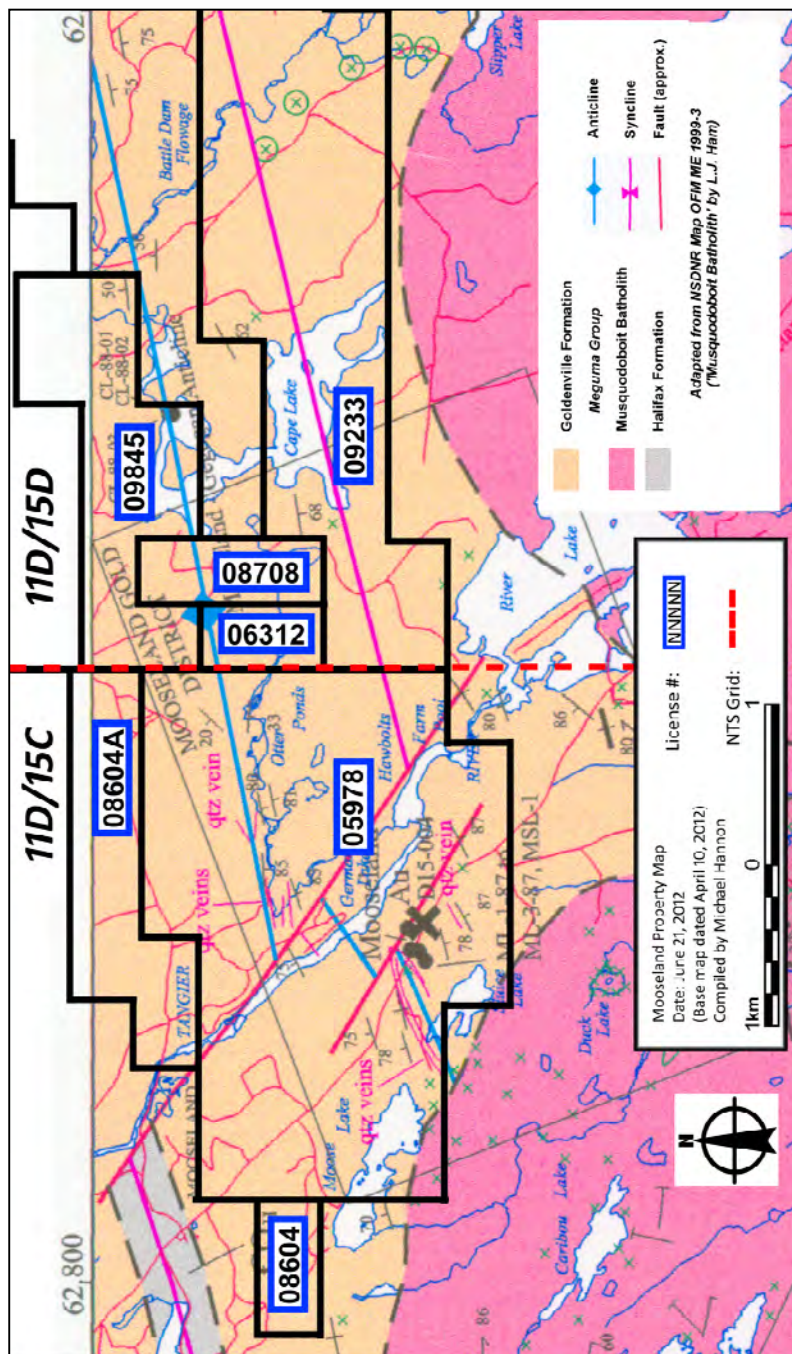


Figure 7-2 - Property Geology Map (adapted from OFM ME 1999-3)

The main area of the property is underlain by turbidites of the Goldenville Formation which consist of quartz-rich greywacke units with interbedded, thin argillaceous beds. The interbedded greywacke and argillite package which hosts the mineralization is greater than 200 metres in true thickness. Gold mineralization is developed in and adjacent to interbedded quartz veins which are preferentially developed in the argillite

## 7– Geological Setting





units. The gold-bearing veins are nearly conformable to bedding and often show a distinctive laminated or brecciated appearance due to wispy inclusions of dark chloritic argillite. The main structural control on the veins is the cleavage, which develops parallel or sub-parallel to bedding in argillaceous material during concentric folding. Many of the veins are saddle veins which are wrapped around the major anticline. Quartz veining seems to preferentially occur asymmetrically on a preferred anticlinal flank, commonly associated with a domal nose or secondary flanking structure (R.V. Zalnieriunas, 1997).

Since these veins are folded, they are interpreted as being emplaced during the period of tectonic activity which produced the main folding. Gold occurs in and adjacent to these quartz veins as free gold and within sulphides. Carbonate is often associated with the quartz as are arsenopyrite and minor amounts of pyrite, chalcopyrite and galena. The veins locally contain black tourmaline. The existence of fluid movement throughout the mineralized system is indicated by the presence of silicification, chloritization, sericitization and carbonate alteration. These features are widespread but non-penetrative (H.J. Coates and W.J. Riddell, 1987).

Similarities between the Mooseland mineralization and structure and the nearby Dufferin Mine have been observed and commented upon by geologists from Faribault and Malcolm in 1929 to current government personnel, such as R. Horne (Sanguinetti, 2002).

### 7.3 Mineralization

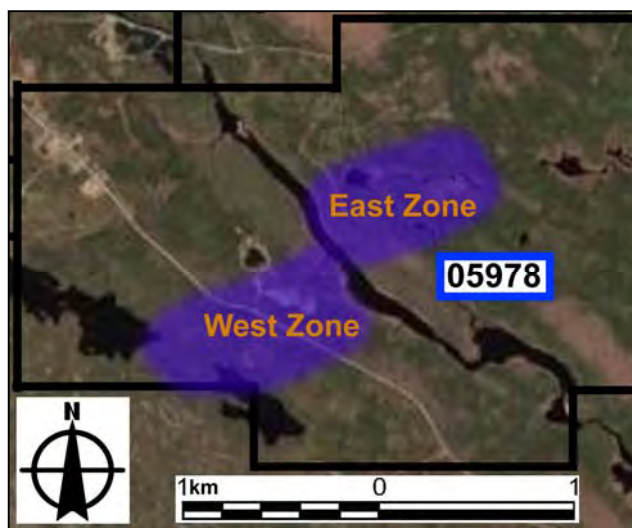


Figure 7-3 - General Location of the West and East Zones

All mineral resources, mine workings, waste rock deposits, and improvements are located in license 05978. They are near the centre of the license, and cover an area of



approximately one square kilometre. The major infrastructure, including shaft, portal, decline and settling pond are in an area about 300 metres by 500 metres on the right (west) side of the Tangier river (see Figure 5-4 and Figure 7-3).

A review of available geophysical data, commissioned by NSGold and described in section 9.1.4, revealed potential exploration targets to the east of the developed section of the Property.

Mineralization is hosted by an interbedded greywacke and argillite package that is greater than 200 metres in true thickness. (Covey, 2004, Part I, page 13)

Veins consist of 85% to 95% massive quartz, white to pale grey in colour and containing 5% to 10% wall rock inclusions and minor sulphides. The most common sulphide is euhedral, coarse-grained arsenopyrite. There are significant quantities of pyrrhotite and pyrite while minor amounts of sphalerite, galena and chalcopyrite occur and generally indicate a higher gold content. At the nearby Dufferin Mine the presence of galena is invariably indicative of gold mineralization. A few lenses of pyrrhotite-pyrite-chalcopyrite were observed within the sediments as elongated stringers parallel to bedding. (Zalnieriunas, 1997) Gold generally occurs within argillite and does not occur within greywacke.

The **West Zone** covers a strike length of approximately 1,000 metres in an east-west direction. The western end of the zone abuts the local granite intrusive. The eastern end of the zone is cut off by the northwest trending Tangier Fault. A short fault block segment several hundred feet north of the West Zone and containing the Bismark Lead was mined in the late 1890s. Overburden averages five feet in depth; the crest of the fold is well exposed in a trench immediately west of the highway that transects the property. At least eleven separate quartz veins have been defined on both limbs of the fold. Gold is interpreted to occur in small chutes that plunge at 10 to 30 degrees to the east. The individual veins average from three inches to three feet and occasionally are up to eight feet in width. (adapted from Zalnieriunas, 1997)

The **East Zone** has been explored over a strike length of approximately 240 metres and to a depth of approximately 300 metres. The area is covered by 15 to 30 metres of glacial drift, in the form of a drumlin.

Several drill holes had encountered economically significant gold values for 60 cm to 150 cm disseminated into wallrock adjacent to veining.

The East Zone anticline begins approximately 335 metres north-northeast of the West Zone, while the final fault displacement is about 500-600 metres north of its trend on the West Zone, based on IP geophysics data (Gillick, 2010, pg. 10). The two zones are separated by a wide zone of multiple northwesterly faults. The axis of the anticline

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strikes at a northeasterly heading. The fold appears to be tighter than at the West Zone and shows a greater degree of faulting and gouge. Developed quartz veins appear to be fewer in number, but wider and higher in grade. (Zalnieriunas, 1997)

A detailed re-examination of drill core from the East Zone by Thorpe (1989) suggested that it may be characterized by discontinuous gold mineralization. Mineralized intervals could not be correlated with any confidence due to the absence of persistent stratigraphic markers. He noted that this gold mineralization may occur in both bedding parallel and cross-cutting quartz veins (Sanguinetti, 2002).

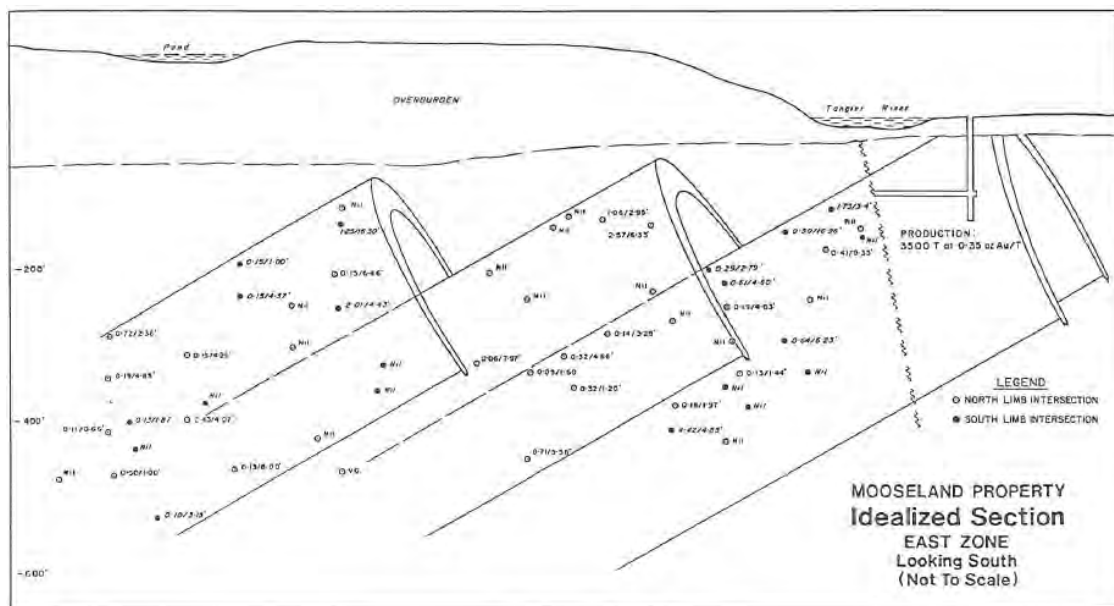


Figure 7-4 - East Zone Idealized Section ca. 1987-1988, showing the geometry of saddle vein deposits (after Acadia Mineral Ventures, Ltd.). Note the Bismark shaft on the right-hand side, separated from the rest of the East Zone by a fault.

Later drilling by Azure led to a better understanding of the stratigraphy. It reinforced conclusions by previous workers; i.e. the East Zone is more structurally complex than the West Zone, host rocks are generally greywacke stratigraphically above the Main contact, and veining is in general wider and is probably localized both by stratigraphy and brittle fracture in greywacke. The program also found that coarse arsenopyrite, blebs of pyrrhotite, and corona structures appear to be associated with gold-bearing veins and may be useful in delineating gold-bearing zones. Some samples which appeared barren, containing little to no arsenopyrite or which were broken were later found to have high gold content (Covey & Albert, 2004, vol. II).



## 8 Deposit Types

The more significant gold deposits in Meguma Terrane, such as the Mooseland Property, are hosted by quartz veins are saddle vein types (see Figure 7-4), and are located in the Goldenville Formation near the Goldenville-Halifax contact.

Within the Goldenville Formation, these quartz veins are better developed in slate horizons than in the more competent greywacke and quartzite strata. The spatial relationship of gold in the Meguma Terrane to major anticlinal structures or domal features along these structures was recognized and documented early on by workers such as Faribault. Many of the occurrences are associated with major cross structures and are less than 1 kilometre from granitic plutons. (R.V. Zalnieriunas, 1997)

The majority of former Nova Scotia gold producers worked individual leads or belts which were typically characterized by narrow mining widths and relatively erratic but sometimes very high grade. In many Meguma gold deposits ore shoots are small target areas in thin lead(s) which would be diluted to a 1 to 1.2 metre mining width (Thorpe, 1989). Larger deposits exhibit geological characteristics similar to smaller ones, but have additional structural or lithological features as a means of concentrating the gold. Such features may include shears, hinge zone thickenings, wider argillite beds or cross-faulting.

Like some other gold deposits in the Meguma, such as Dufferin Mine, Harrigan Cove and Taylor Head, the deposit at Mooseland is a typical saddle reef-type deposit. Saddle reef deposits are located in the crest of anticlinal folds and follow the bedding planes. The hinge zone of a saddle reef type deposit is usually a rounded arc-shape structure, with the limbs (leg reef veins) uniform and straight. Saddle reefs are usually found in vertical succession.

The Ribbon Model, developed for the saddle reef deposits in the Bendigo area of Australia, may be applicable to the Mooseland Property. This model has been applied to the nearby Forest Hill gold deposit. Referring to the Ribbon Model in a report about the Forest Hill deposit, Cullen (2004) wrote:

“This model was originally applied to the Bendigo goldfield in eastern Australia. Johansen (2001) described this model in detail and demonstrated that near horizontal gold grade shoots defined by past mining in the Bendigo area were characterized by ordered vertical stacking within respective vein systems. Multiple repetitions of grade shoots were documented within the 1500 meter vertical depth range to which past mining had been carried in this district. Grade shoots of economic interest were shown to be separated by intervening areas of barren or low grade vein material and thereby produced a ribbon-like pattern when viewed in vein longitudinal projections.” (Cullen, 2004)



Determining the location, size, shape, rake and grade of mineable ore shoots is a major difficulty in planning underground development on a narrow vein gold deposit in the Meguma. Since the gold is not distributed evenly within the quartz veins, it is nearly impossible to accurately define ore shoots by diamond drilling alone.

It is recommended that underground sampling be used to determine a true average grade for the Property.



## 9 Exploration

### 9.1 Geophysical Surveys

Four geophysical surveys have been carried out on the site since 1986. This includes three surveys carried out by third parties and previous owners/operators.

In 2010, the first three surveys were re-interpreted by Gillick et al. on behalf of the Issuer (see section 9.1.4).

#### 9.1.1 VLF-EM Survey, GSC, 1986

The Geological Survey of Canada carried out an airborne magnetic - VLF/EM survey between 1985 and 1986. (GSC Project No. 184). It had a mean altitude of 150 metres on N-S lines spaced 300 metres apart, with a line distance of 16,233 km.

The Government of Nova Scotia produced two regional maps with data from this survey – a 2<sup>nd</sup> Vertical Derivative Aeromagnetic map (Open File Map 87-011) and an Airborne Total Field VLF/EM map (Open File Map ME 2005-105).

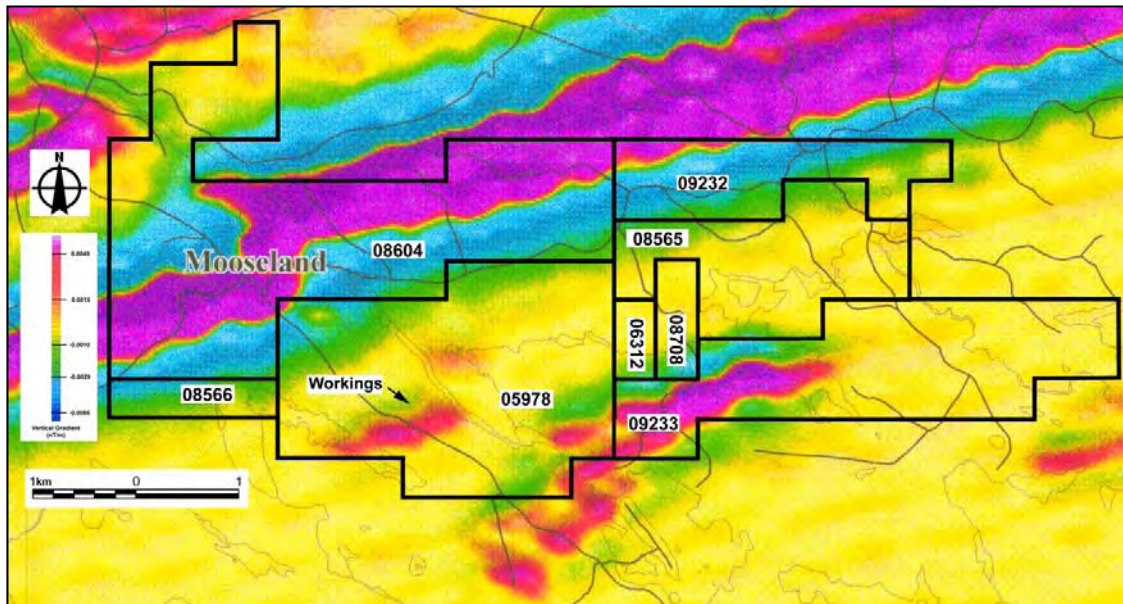


Figure 9-1 - Aeromagnetic Map, 2nd Vertical Derivative, NSDNR, 1997



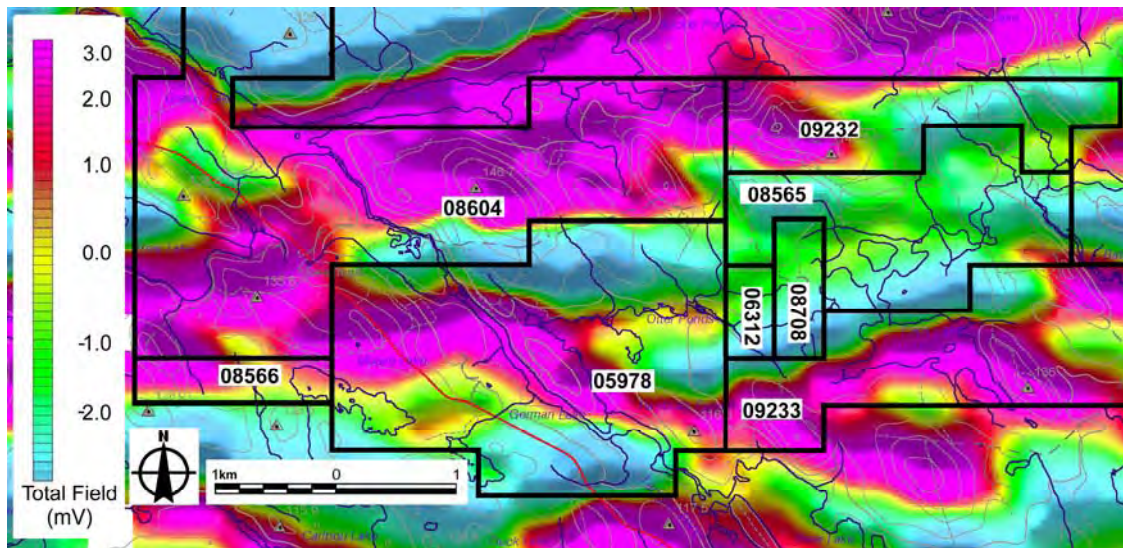


Figure 9-2 - Airborne Total Field VLF-EM Map, NSDNR, 2005

#### **9.1.2 I.P. Survey, Acadia, 1987**

A 9.8 line kilometre IP survey was completed by Acadia in 1987. A baseline was established to follow the approximate course of the Mooseland anticline as mapped by Faribault. Cross lines were put in at 100-metre intervals and stations established at 50-metre intervals on the lines. Lines were generally run 600 metres north and 1,000 metres south. Difficulties with property owners necessitated shortening the north side of lines 4E to 8E inclusive so they only run to 4+50 metres north.

#### **9.1.3 VLF EM Survey, Globex, 2002**

A single reconnaissance line of V.L.F. E.M. was surveyed in 2002 by Rainbow Resources Ltd. on behalf of Globex. The survey was run approximately 1 kilometre east of the East Zone.

#### **9.1.4 Compilation and Review of Ground Geophysics, NSGold, 2010**

In 2010, NSGold commissioned Robert E. Gillick (of Robert E. Gillick & Associates Ltd.), who was subcontracted through D.R. Duncan & Associates Ltd., to produce a compilation, review and reinterpretation of historical geophysical surveys carried out in the Mooseland mining district.

The review incorporated four datasets – the three datasets mentioned above, as well as a nearby IP survey (the Cape Lake MEX survey).





The data quality was considered to be good. The average positional error of the various survey grids ranged from 20-30 metres for the Acadia & Globex grids, to 40-60 metres for the MEX grids.

Drawings produced include pseudosections of apparent frequency effect (FE) and apparent resistivity, 2D sectional and plan inversions of IP/resistivity data, and plan maps of apparent FE and apparent resistivity.

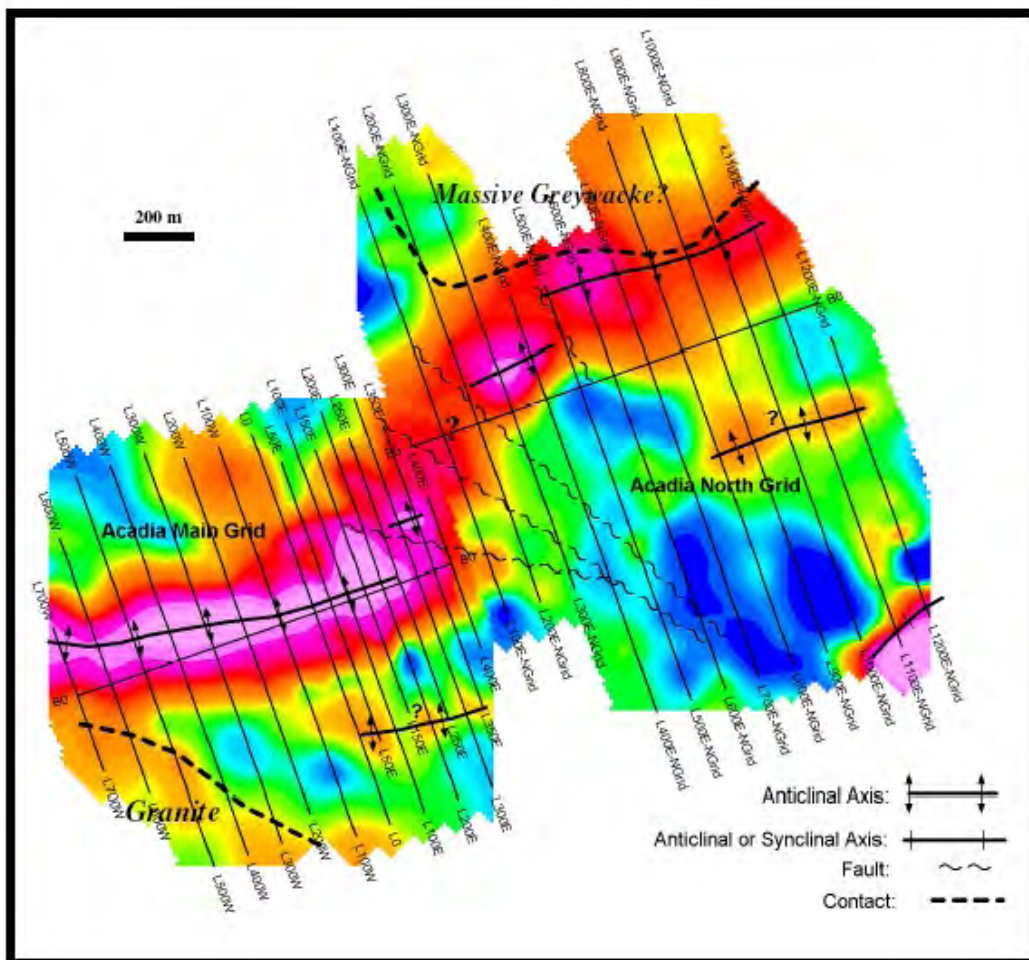


Figure 9-3 - Inverted 2D FE Plan - Acadia Grids - for depths of 32 metres (Gillick, 2010).

Using data from the Acadia IP survey, the axis of the anticline was observed as a frequency effect anomaly across both zones. The MEX grids were too far south to cover the extrapolated position of the Mooseland anticline, although the northern ends on the MEX Northeast Extension grid encountered frequency effect (FE) responses that may be the flanks of the anomaly associated with the anticline (see Figure 9-6).

## 9 - Exploration



The Gillick report states that

It appears that there has been no rotation of strike direction of the anticlinal axis by the faulting although more IP surveying is warranted in this zone to confirm this. In particular, along lines 100E and 200E of the Acadia North grid, the FE anomaly is poorly-defined and broad making it impossible to identify strike direction in this area. (Gillick, 2010, pg. 10)

However, diamond drilling in the area has indicated that the axis of the East Zone anticline in that area is rotated (see section 2.5.1).

To the east of this area of ambiguous geophysics data, Gillick's interpretation shows the axis of the anticline returning to the strike direction found in the West Zone, with a final displacement of 600-650 metres north.

Some large areas of high resistivity correlated with wide greywacke sections and/or silicified zones. Major faults at the eastern and western extremities of the West Zone as well as the granite contact at the west end of the grid were also identified.

Gillick finds two anomalies to the south of the anticline. The first is a weak frequency effect anomaly about 450 metres south of and parallel to the West Zone anticlinal axis on the Acadia Main grid. It appears again on the Acadia North and MEX grids, for a total apparent strike length of 3 kilometres.

Gillick described the second anomaly as "a strongly conductive and chargeable trend which first appears in the southeast corner of the Acadia North grid, and then extends across the south part of the MEX NE Extension grid and into the southwest part of the MEX Regional grid. The feature is interpreted as either an anticlinal or synclinal fold, possibly sheared, containing sulfide mineralization."

Based on the federal airborne magnetometer data, Zalnieriunas has written that "[the survey] seems to indicate that the [Mooseland anticline] is a subsidiary fold structure located on the northern flank of a larger structure" (Zalnieriunas, 1997).

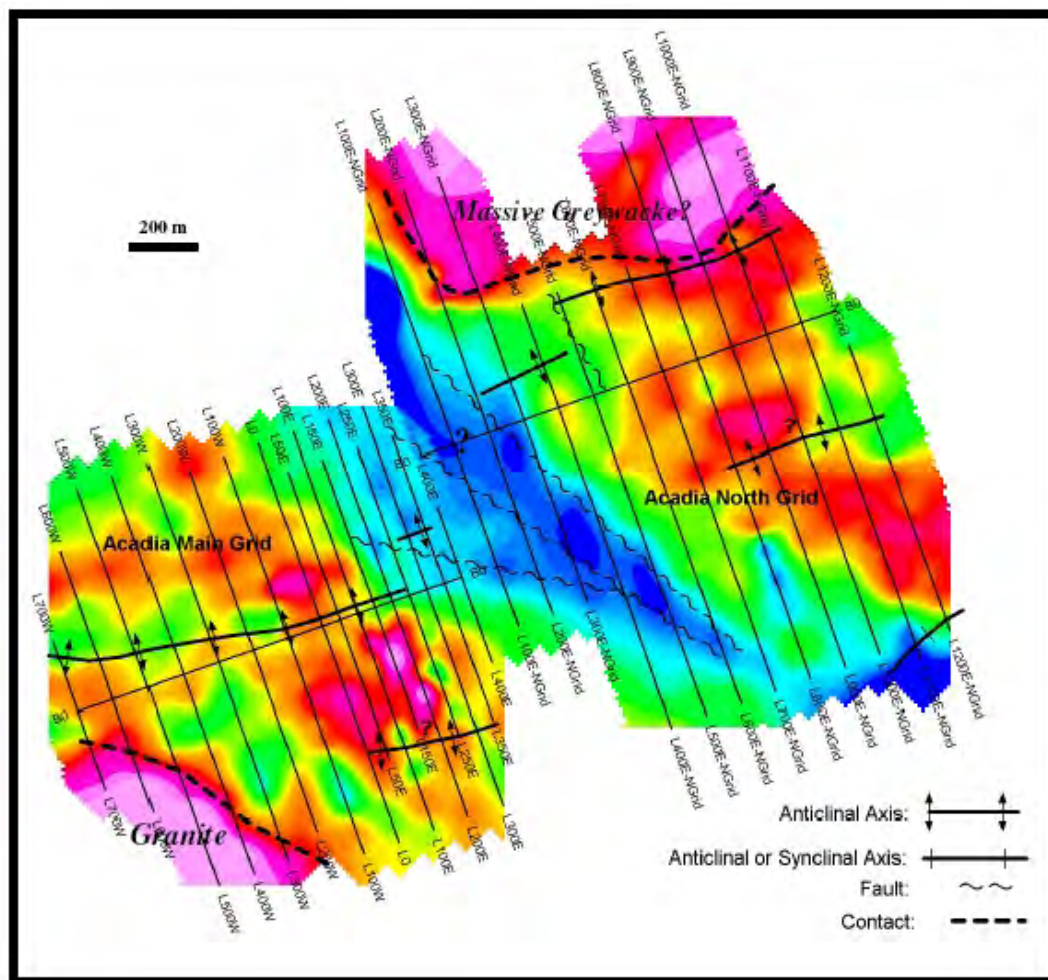


Figure 9-4 - Inverted 2D Resistivity Plan - Acadia Grids - for depth of 32 metres (Gillick, 2010).

A broad resistivity low was thought to correspond to the Tangier River Fault system. This zone was found to have an apparent width of 400 metres and to extend across the entire property.



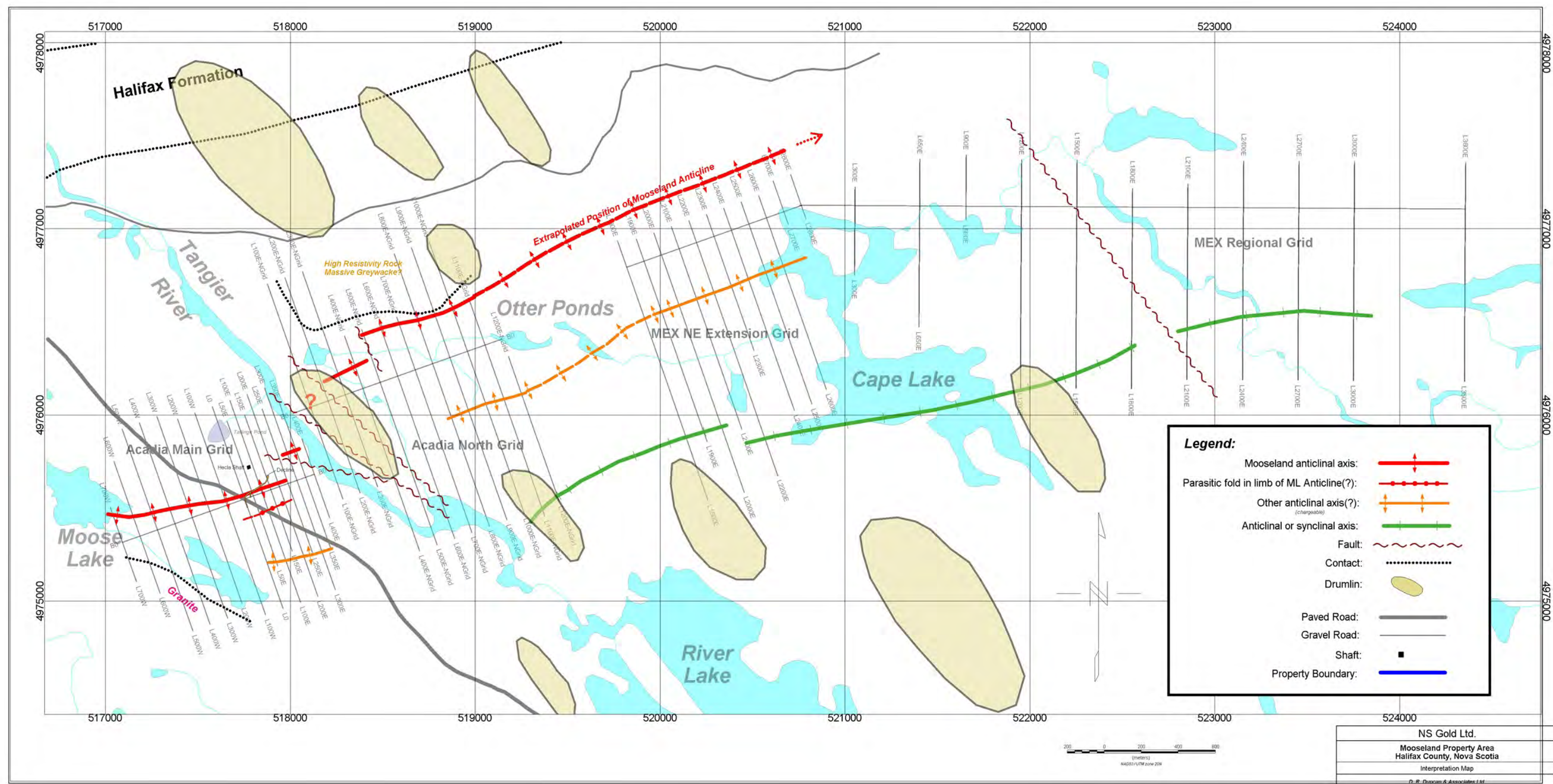


Figure 9-5 - Geophysical Data Reinterpretation (Gillick, 2010)



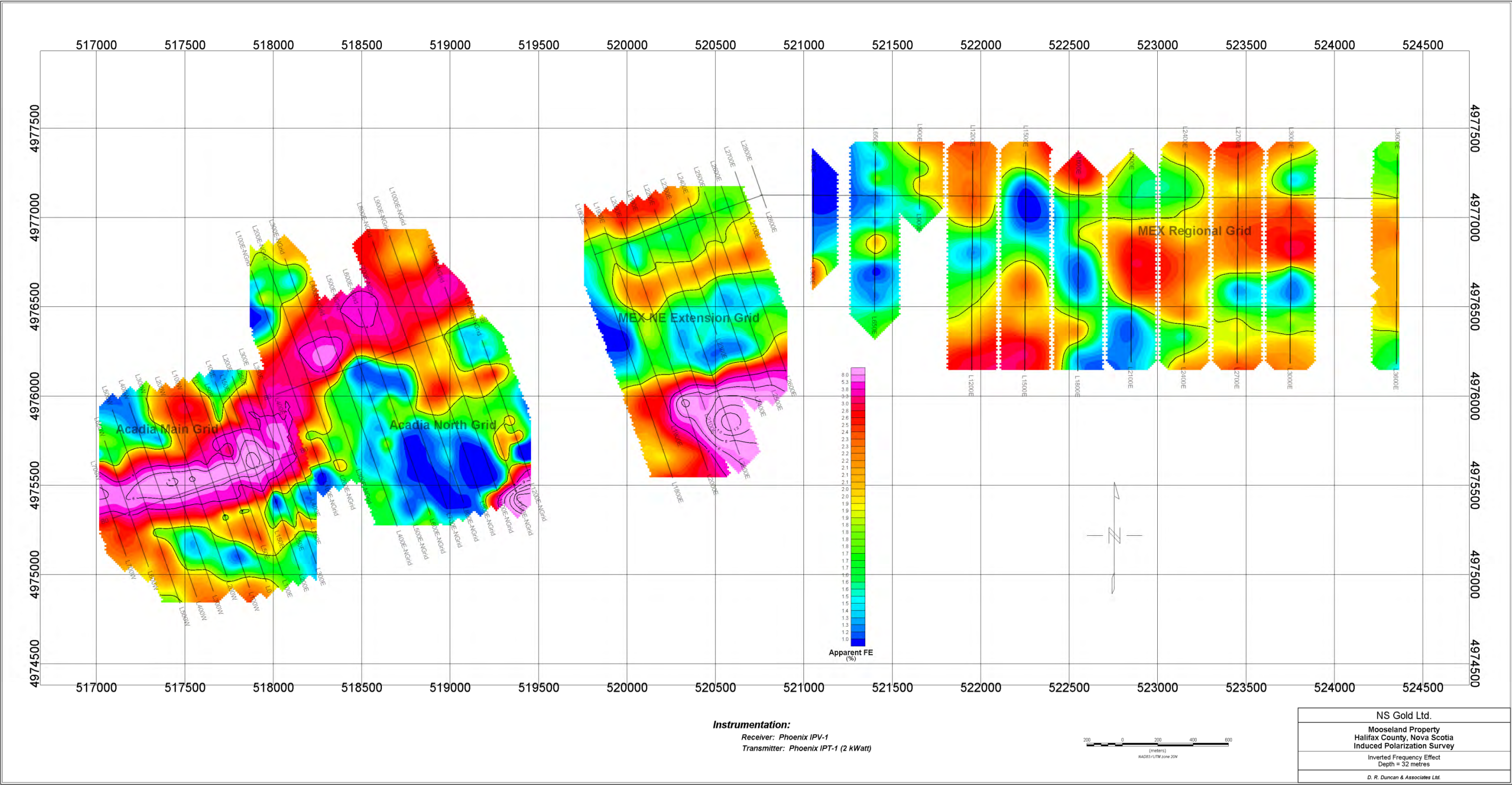


Figure 9-6 - 2D Inverted FE Plan (32m) (Gillick, 2010)



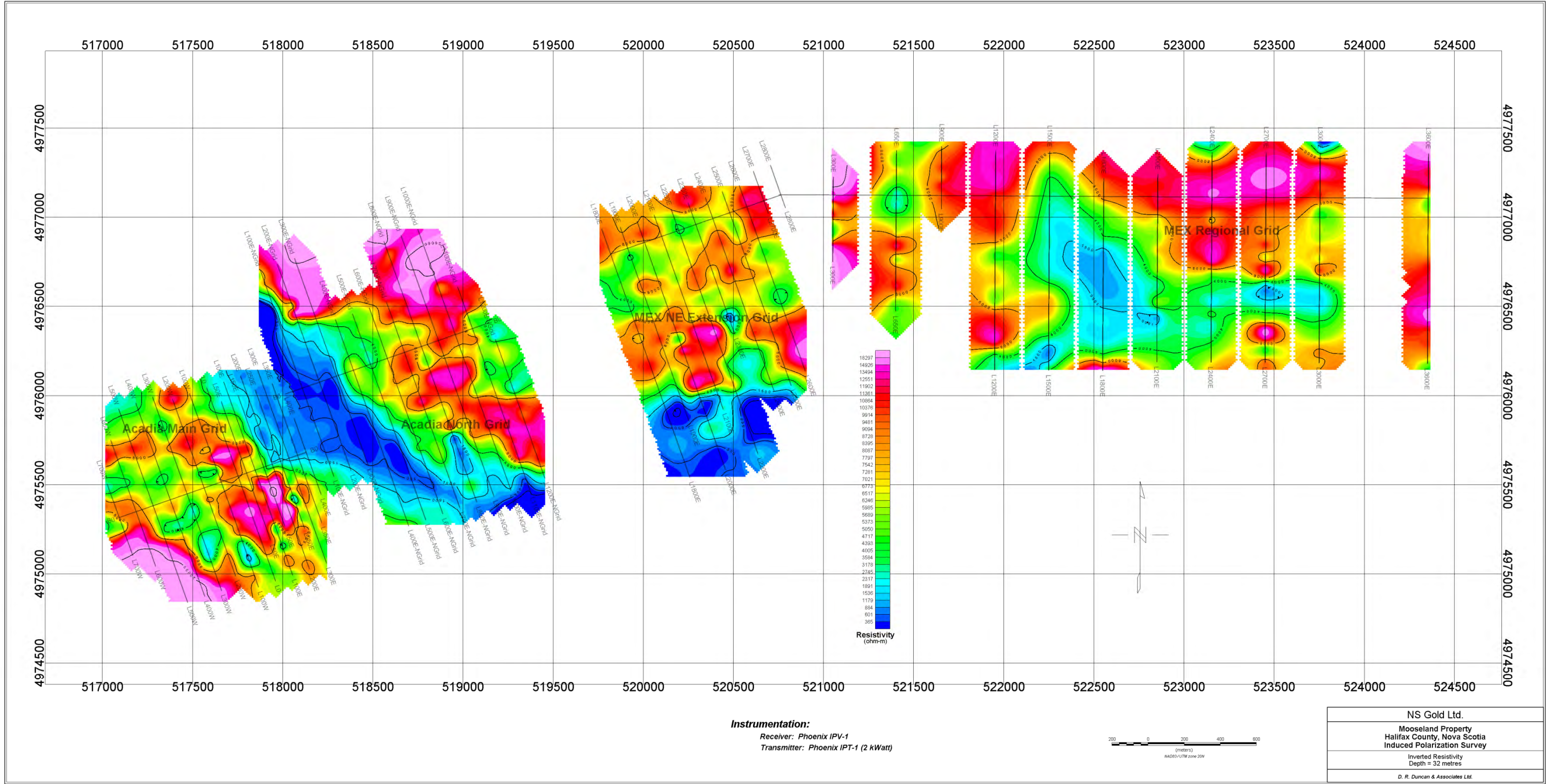


Figure 9-7 - 2D Inverted Resistivity Plan (32m) (Gillick, 2010)



### **9.1.5 LiDAR Survey, NSGold 2011**

NSGold contracted Leading Edge Geomatics (LEG) of Fredericton, New Brunswick to conduct an airborne LiDAR (Light Detection and Ranging) survey over all of its Nova Scotia claims, including the Mooseland Property claims. The survey was flown on August 8<sup>th</sup>, 2011, producing a 'hillshade' photographic quality map of the area. The survey was flown at sufficient density to produce one data point per square metre.

In the LiDAR map, the West Zone of the deposit is visible as a narrow, fairly faint linear feature trending approximately 70 degrees. In the vicinity of the East Zone, structural definition is obscured by a thick drumlin. The structure was interpreted to go further east, into an area that NSGold has since staked.

LiDAR is an optical remote sensing technique that can 'see' through foliage and provides very high resolution surface elevation map. Structural features not easily detected from the ground or by other remote sensing techniques are more apparent in this type of survey.

## **9.2 Underground Exploration**

### **9.2.1 Shaft Sinking, Hecla, 1988-1989**

In May 1988, Hecla, in partnership with Acadia and Biron Bay Resources Ltd. (Biron Bay), began to sink a shaft in the West Zone to explore and bulk sample mineralized veins that had previously been identified by diamond drilling.

Due to lack of available financing, the project was suspended in May 1989 while shaft sinking was in progress. The planned program of lateral development and bulk sampling was not carried out (Bye, December 1989).

Patrick Harrison and Company Ltd. of Ontario performed the surface plant construction, shaft sinking, and underground drifting work.

The shaft collar was excavated and lined with concrete to a depth of 7.3 metres in September 1988. An 18.3 metre high steel headframe was erected over the shaft collar in November 1988 and is still on site.

Shaft sinking began in January 1989 and continued until May 1989, for a total depth of 124.9 metres. A small shaft station was excavated at a depth of 48.8 metres and a full-sized station was cut at a depth of 97.5 metres. A pocket and finger raise was excavated below the second station; the finger raise was intentionally not broken through to the station floor to facilitate future diamond drilling from the station.

## **9 - Exploration**





The shaft was sunk within a massive greywacke bed; no argillite was encountered. Numerous north-south trending angular quartz veins and a few east-west angulars were present. On seven occasions during sinking, grouting was required to stop water inflow from open fissures to stop minor water inflows of up to 4.7 litres per second.

### **9.2.2 Decline, Azure, 2003-2004**

Azure constructed a portal and decline between 2003 and 2004. While the initial plan was to drive the decline to a depth of more 100 metres and have it link up with the Hecla shaft, the company was forced to stop work early due to financial constraints.

The decline was collared on August 19, 2003, on the north limb of the anticline in the West Zone at grid elevation of 1099 metres (99 metres above mean sea level). The decline was 218 meters in length and at grid elevation 1053 metres when it was stopped on December 18, 2003. In addition to the decline, a large sump was established at distance 100 metres and grid elevation of 1076 metres. At about 120 m along the decline, at grid elevation 1072m, a 3.5 x 3 m remuck was driven 29 metres to the south. This was to facilitate the more efficient mucking of the decline. Sill drifts were driven on both the Cummings and the Little North veins. A few slashes and drift rounds were taken on the Irving Belt.

Azure intersected five West Zone veins and took a 2,000-tonne bulk sample from sill drifts on the Little North and Cummings veins. See section 13.1 for more information.



## 10 Drilling

### 10.1 Acadia, 1986-1988

Acadia completed 135 diamond drill holes totalling approximately 33,000 metres between 1986 and 1988. Of this total, 85 holes totalling approximately 22,000 metres were drilled on the West Zone and 50 holes totalling approximately 11,000 metres were drilled on the East Zone.

Drill hole collar data can be found in Appendix VII.

Drill collar locations and elevations were surveyed. Downhole surveys used acid dip tests and Tropari instruments. Assay results indicated a typical scatter of values associated with free particulate gold.

The first baseline that was established in the east zone was laid down on the assumption that the east zone anticline had the same strike as the well-known West Zone anticline, running approximately 69°/249°. After a number of holes had been drilled and examined, it was determined that the true direction of strike in the east zone was approximately 24°/204°. This led to the establishment of a second baseline, known as BL-2.

The drilling program was carried out under contract by Maritime Diamond Drilling of Hilden, N.S. and Longyear Drilling of Moncton, N.B. under the field supervision of Acadia personnel. Drill hole locations and elevations were determined using standard land surveying techniques by Ritchie F. MacInnis Surveying Ltd. of New Glasgow, Nova Scotia (Covey, 2004). The core was logged, photographed, sampled and stored at Mooseland.<sup>5</sup>

A stratigraphic study (Thorpe, 1989) was initiated in 1988 to refine the existing geological interpretation of the deposit. Some 13,001 metres of West Zone core from 38 holes and 8,615 metres of East Zone core from 38 holes were re-logged in detail. Geology sections, level plans and longitudinal sections were prepared for the West and East Zones. A preliminary correlation of stratigraphy and projected zoning of sub-parallel mineralized trends was proposed. This was based on a zoning theory developed by Dr. D. R. Derry for the mine at Goldenville, Nova Scotia. Confirmation would require examining the vein underground to determine the character of each gold mineralized lead (or 'belt'). Thorpe concluded by finding that the most promising targets for

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<sup>5</sup> The core was left with Mr. Berry Prest of the town of Mooseland after Hecla left the property. It is currently sitting on the property of Mr. Prest, an entrepreneur located in Mooseland, though it is in poor condition, being both exposed to the elements and disorganized. The photos of the core were held by Mr. Prest until Azure arrived, in 2003. Their current location is not known.



underground exploration in the Property are located on the West Zone on the south limb of the Mooseland Anticline from Sections 0+00 to 2+00E, above the 200 metre level.

Drilling on the East Zone was characterized by intense quartz veining, faulting and an absence of stratigraphic markers. However, numerous significant gold intersections were encountered. Thorpe suggested the East Zone may be characterized by discontinuous gold mineralization.

## 10.2 Azure, 2003

Six HQ-sized diamond drill holes totalling approximately 1,168 metres were completed between April 29<sup>th</sup> and June 10<sup>th</sup>, 2003. Four holes (827.5 metres) were drilled in the West Zone and two holes (340.15 metres) were drilled in the East Zone.

Drill hole collar data can be found in Appendix VII.

Downhole surveys were conducted with a Pajari instrument.

The purpose of the West Zone drilling was to confirm previous drill intersections and evaluate rock quality in the area of the proposed decline. The East Zone holes were drilled to confirm previous exploration intersections and provide additional information regarding the geological structure and stratigraphy of that zone.

The West Zone had 35 drill intercepts over 1.0 g/tonne Au with seven occurrences of visible gold. All but one of the samples that ran more than 1 gram were located in quartz veins, though typically only quartz veins were sampled.

The East Zone had more faulting and gouge associated with the quartz veins which are often wider and higher in grade. Assay results were very encouraging with values to 205.33 g/tonne at a depth of 84.2 metres over 40cm, and 83.34 g/tonne at a depth of 64.15 metres over 45cm. Some high-grade intersections occurred in barren rock. Many of the quartz veins were found to be contorted and crenulated with carbonate throughout the veins rather than just on the vein margins. The quartz was fractured and brecciated.

Rock Quality Designation (RQD) was done on three drill holes in the vicinity of the proposed decline to determine the stability of the ground. A majority of the drill core gave high values indicating the rock was very stable. Values varied by rock type with higher values in the greywacke and lower values in the well-cleaved argillite units.

The final report on the Azure drilling program recommended a modest 1,000-2,000 metre surface drill program in the East Zone, targeted between existing drill sections, to



allow more detailed stratigraphic and structural studies and to assess the continuity of previously intersected auriferous veins. The program also recommended 2 or 3 drill holes under the Tangier River, for geological information and engineering studies in the area of the then-proposed decline.

## 10.3 NSGold, 2010

### 10.3.1 Overview

NSGold drilled 13 holes (3,613 metres) in the West Zone and 13 holes in the East Zone (2,894 metres) during 2010 for a total of 6,507 metres of NQ-sized<sup>6</sup> drill core.

Drill collar spacing was variable, from approximately 25 metres to 50 metres. Drilling covered 225 metres of strike length in the West Zone and 175 metres of strike length in the East Zone.

Two of the West Zone holes were twins of holes from the Acadia drill program – NSG 12-10 twinned ML87-05, and NSG 13-10 twinned ML87-08.

The purpose of the drilling was to confirm and enhance the resources defined by the earlier Acadia, Hecla and Azure programs in preparation for this Resource Estimate, aid in determining the structure of the East Zone and provide a basis for decisions regarding follow on exploration and development work on the property.

Drill hole collar data can be found in Appendix VII.

### 10.3.2 Procedures

The drilling program was carried out under contract by Landdrill International Inc. of Moncton, New Brunswick, Canada, under the field supervision of NSGold personnel.

The East Zone baseline (BL2) was re-established in prior to drilling. GPS survey of the re-established baseline showed it to run at 025° from true north, one degree off the 24° direction of the Hecla-era BL2 (see section 2.5.1).

Drill hole collar locations and elevations were determined by standard (i.e.: non-differential) GPS.

Downhole surveys were taken with a Flexit system, using magnetic readings. Pyrrhotite was sometimes present, which may have affected azimuth readings.

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<sup>6</sup> NQ Size has hole (outside) diameter of 75.7mm, and a core (inside) diameter of 47.6mm



The core was logged, photographed, sampled and stored at Mooseland. Logging was done by NSGold staff and contractors (primarily Glen Covey, an independent geologist, and Perry MacKinnon, of NSGold).

### **10.3.3 Results**

Drilling conducted in 2010 by NSGold confirms the results of previous programs. Mineralization encountered during the program matched the results from earlier programs, with anomalous gold values, including visible gold, being discovered throughout. East Zone drilling data was used to help determine the structure of anticline.

## **10.4 NSGold, 2011**

### **10.4.1 Overview**

NSGold drilled 8 holes (2,606 metres) in the West Zone and 8 holes (2,404 metres) in the East Zone during 2011 for a total of 5,010 metres of NQ-sized core.

Drill collar spacing was variable, but was generally 25 to 50 metres. In the West Zone, holes were drilled in three groups: one group of three, with 50 metre spacing; one hole by itself, separated by 175 metres and 325 metres from the other groups, and a final group of four, with 50 metre spacing (including two holes that shared the same collar). In the East Zone, spacing was between 25 and 50 metres. Drilling covered 700 metres of strike length in the West Zone and 275 metres of strike length in the East Zone.

Targets for this drill program were chosen based on one of two goals; fill in of under-explored areas in the West and East zones, and completion of holes planned for the 2010 program that were not completed due to adverse weather conditions at the time.

The objective of the 2011 drill program was to add to the inferred gold resource announced in the previous Technical Report (MineTech, 2011), as well as completing several drill holes in promising areas of the structure which had only seen limited work in the past.

Drill hole collar data can be found in Appendix VII.

### **10.4.2 Procedures**

The drilling program was carried out under contract by Landdrill International Inc. of Moncton, New Brunswick, Canada, under the field supervision of NSGold personnel.



Procedures used were the same as those used for the 2010 drill program (see section 10.3.2), with the exception that drill hole collar elevations were determined by extrapolation from known elevations of adjacent collars. These extrapolation elevations were later corrected using data gathered during the LiDAR survey (see section 9.1.5).

#### **10.4.3 Results**

In both zones, mineralization encountered during the program matched the results from earlier programs, with anomalous gold values, including visible gold, being discovered throughout. Some holes, such as NSG-34-11, did not encounter substantial mineralization; this was attributed to the 'nuggety' character of the deposit. East Zone drilling data was used to help further determine the structure of anticline.

The data gathered during this drill program succeeded in adding to the inferred resource for the Property (see section 14 for more details).

### **10.5 Factors Materially Impacting Results**

The representativeness of individual samples from the Mooseland Property is affected by the 'nugget effect', in which metal is concentrated into a small number of the samples. This makes it difficult to find an accurate grade for the deposit. The problem can be mitigated statistically using top-cuts, but an accurate grade for the deposit can only be found with a bulk sample.

### **10.6 Sample Length-True Width Relationship**

#### **10.6.1 West Zone**

For calculating true width values, an average formation dip of 80° was used. North of the anticlinal axis, the average dip was 80° north. South of the axis, the average dip was 80° south. See Table 10-1 for a summary of West Zone intercepts from the 2011 drill program.



**Table 10-1 - Notable Samples, West Zone, 2011 Drilling**

| Hole      | From (m) | To (m) | Au (g/tonne) | Length (m) | Horizontal Length (m) |
|-----------|----------|--------|--------------|------------|-----------------------|
| NSG-36-11 | 161.80   | 163.40 | 2.87         | 1.60       | 1.17                  |
| NSG-36-11 | 204.80   | 206.80 | 11.46        | 2.00       | 1.47                  |
| NSG-36-11 | 232.60   | 233.60 | 14.91        | 1.00       | 0.74                  |
| NSG-36-11 | 336.80   | 338.70 | 6.86         | 1.90       | 1.44                  |
| NSG-37-11 | 215.80   | 217.70 | 2.71         | 1.90       | 1.48                  |
| NSG-38-11 | 65.70    | 67.20  | 4.76         | 1.50       | 1.11                  |
| NSG-38-11 | 79.00    | 80.50  | 2.92         | 1.50       | 1.12                  |
| NSG-38-11 | 98.30    | 100.70 | 4.65         | 2.40       | 1.85                  |
| NSG-40-11 | 62.80    | 64.30  | 3.71         | 1.50       | 0.71                  |
| NSG-41-11 | 253.40   | 255.00 | 4.16         | 1.60       | 1.43                  |

### 10.6.2 East Zone

The formation dip could not be generalised for the East Zone. On average, the formation dip varied between 60° and vertical. Table 10-2 shows the East Zone's drilling intercepts, including the intercepts' horizontal widths. For the most part, these values are very close to the true width values.

**Table 10-2 - Notable Samples, East Zone, 2011 Drilling**

| Hole      | From (m) | To (m) | Au (g/tonne) | Length (m) | Horizontal Length (m) |
|-----------|----------|--------|--------------|------------|-----------------------|
| NSG-33-11 | 417.50   | 418.00 | 16.2         | 0.50       | 0.43                  |
| NSG-33-11 | 437.60   | 438.60 | 26.7         | 1.00       | 0.86                  |
| NSG-30-11 | 144.00   | 145.30 | 14.7         | 1.30       | 0.75                  |
| NSG-28-11 | 35.50    | 37.40  | 26.7         | 1.90       | 1.38                  |
| NSG-28-11 | 156.50   | 158.00 | 3.3          | 1.50       | 1.21                  |
| NSG-27-11 | 59.90    | 64.70  | 6.3          | 4.80       | 3.15                  |
| NSG-27-11 | 119.50   | 121.90 | 4.3          | 2.40       | 1.62                  |
| NSG-27-11 | 152.00   | 153.50 | 13.3         | 1.50       | 1.05                  |
| NSG-25-11 | 198.50   | 200.10 | 16.5         | 1.60       | 1.23                  |
| NSG-25-11 | 233.70   | 237.00 | 3.5          | 3.00       | 2.32                  |





## 11 Sample Preparation, Analysis & Security

### 11.1 Acadia, 1986-1988

#### 11.1.1 On-Site Procedures

Handling of the drill core from the 1987 and 1988 drilling program consisted of logging the core, measuring quartz veins and veinlets and then submitting each piece of vein core material in its entirety for gold assay.

Acadia's standard practice was to only sample areas of quartz veining or stringering, and these generally only over short lengths (approximately 30cm). Wing or wall rock samples were not taken as a matter of course. Since quartz veining is so ubiquitous at Mooseland, with quartz found in thicknesses of hairs, threads, to metre sized veins, the effect was to create long areas of sampling chopped up by short sections of unsampled core. Core was not split, but rather submitted as 'whole core' to the assay labs. (Zalnieriunas, 1997)

The remaining diamond drill core was left in the possession of a local entrepreneur and logging contractor, Mr. Berry Prest, at Mooseland. It currently sits on his property, although it is exposed to the elements and in poor condition. At the time of writing, NSGold is in the process of transferring some of the Acadia drill core into new boxes. Approximately four holes have been transferred. Core which has been transferred to new boxes is being kept on the Property.



Figure 11-1 - Abandoned Acadia/Hecla Core, 2011  
(Photo Courtesy P. MacKinnon, NSGold Corp.)



Figure 11-2 - Rehabilitation of Acadia/Hecla Core, 2011  
(Photo Courtesy P. MacKinnon, NSGold Corp.)



### **11.1.2 Laboratory Procedures**

Whole core samples were sent to Bondar-Clegg and Co. Ltd. in Ottawa, Ontario for assay.

Two analytical procedures were utilized on the samples submitted for assay; routine and screen-for-metallics ('metallics sieve') analysis. Routine analysis consisted of a sample, split down to 10 grams, analysed using fire assay with atomic absorption finish. In metallic sieve analysis, the sample was split using a 150 mesh sieve, and the fractions were weighed. Then, the whole +150 fraction and 29.2 grams of the -150 fraction were assayed, and a weighted average was calculated.

All samples containing visible gold were immediately designated for metallics assay while all remaining samples yielding assay result of 1,000 ppb or greater were redone by the metallics assay method (Covey, May 5, 1988, pg. 19). See Appendix III for the assayer's note.

### **11.1.3 Quality Control Procedures**

Check assays were used extensively during the Acadia drill program.

Because of the presence of high erratic gold values caused by the "nuggety" nature of this saddle vein style of mineralization, Acadia required samples to be checked by three outside umpire laboratories (Chemlab of Saint John, Bourlamaque Assay Laboratories Limited of Val d'Or, and X-Ray laboratories of Don Mills).

Quality control procedures used within the assay laboratories are not known, although it is likely that they were acceptable according to the standards of the day.

### **11.1.4 Adequacy of Procedures**

The Author does not have sufficient information to give a definitive opinion on the adequacy of sample preparation, security and analytical procedures used during the 1986-1988 Acadia drill campaign.

However, based on the information available, it appears that the program followed generally accepted procedure for its day.

## **11.2 Azure, 2003**

### **11.2.1 On-Site Procedures**

The following is taken from Azure's 2004 report on their diamond drilling program (Covey & Albert, 2004, Vol. II):



Geologist Glen Covey logged the core from the 6 diamond drill holes. As core was logged, samples were demarcated and taken once the hole was completely logged. There were a total of 640 samples taken from the six diamond drill holes. Samples with visible gold, or from a promising vein, were identified to be assayed by screened metallica. All others were tested by straight fire assay. All samples were analysed for 30 elements by ICP method.

Mineralized vein intervals and adjoining 30 to 60 cm of wall rock were sawn, one-half of the cut cores were taken for sampling and the remaining half kept as reference. Each sample was placed in a plastic bag with a numbered sample tag from Eastern Analytics Ltd. Thirty individual samples were placed in rice bags with a list of those sample numbers placed on the inside and outside of the rice bag. Bags were closed with heavy aluminium wire and a lead security seal to prevent tampering.

Logging of arsenopyrite content was conducted to define any link between the arsenic sulphide content and gold. The arsenopyrite content was logged by measuring out every 50cm of core and describing the arsenopyrite present. The percentage of arsenopyrite, crystal size and shape, twinning, corona structures, descriptions of other minerals present was noted, and then representative grains were measured for their dimensions. The arsenopyrite logs were integrated in a spreadsheet with gold assay results.

Core from the Azure program remains on the Mooseland Property. NSGold is in the process of moving it into new core boxes (90% completed at the time of writing). Some of the core boxes have been put into a steel shed (mentioned in section 5.8.1).



Figure 11-3 - Azure Core Boxes Found On Site (Nov. 20, 2009)



Figure 11-4 - Azure Core in Rehabilitated Boxes (Dec. 7, 2010)

### **11.2.2 Laboratory Procedures**

Samples were assayed at Eastern Analytics Limited. A total of 640 samples were taken from the six diamond drill holes; of these, 138 were assayed by standard fire assay. All samples were analysed by the ICP method.

## **11 – Sample Preparation, Analysis & Security**



### 11.2.3 Quality Control Procedures

Based on available information, it appears that no check or blank samples were included with the regular samples sent to the assay laboratory. Furthermore, no umpire laboratory was used.

For current diamond drill programs, it is recommended that check and blank samples be included with any samples sent to a lab.

The exact methods used by Azure and the laboratory are not known but it is assumed they met the quality assurance/quality control standards of the time.

### 11.2.4 Adequacy of Procedures

Sample preparation procedures were generally adequate. One aspect that is not recommended for future work is the use of a core saw rather than a core splitter. In 'nuggety' gold deposits, a core saw can lead to contamination - malleable gold from one sample can stick to the saw and transfer to a subsequent sample.

Sample security procedures, as described, are adequate.

The analytical methods chosen are adequate; however, because the assayer's data sheet (which describes the procedures used in detail) is not available, it is not possible to give a definitive opinion on the adequacy of analytical procedures.

## 11.3 NSGold, 2010

Table 11-1 - Summary of NSGold 2010 Samples

| Zone        | Number of Samples | Average Length |
|-------------|-------------------|----------------|
| West        | 1,865             | 0.70 metres    |
| East        | 1,849             | 0.68 metres    |
| <i>Both</i> | <i>3,714</i>      |                |

A total of 3,714 samples, ranging from 0.5 to 1.5 metres in length, were taken from the 2010 NSGold drilling program (see section 10.3). The primary assay lab for the 2010 drill program was Laboratoire Expert of Rouyn-Noranda, Quebec. Umpire samples were sent to ALS Chemex of Val D'Or, Quebec. The laboratories are independent of the Issuer.

ALS Chemex of Val D'Or has received accreditation to ISO/IEC 17025:2005 from the Standards Council of Canada (SCC) for Fire Assay Au by Atomic Absorption (AA) and Au by gravimetric finish. Certifications for Laboratoire Expert were not known at the time of writing.



Core from the 2010 program is currently being stored in core boxes, on site, in the garage and in the steel shed mentioned in section 5.8.1.

### **11.3.1 On-Site Procedures**

Samples were usually 50 centimetres in length. Sample segments were marked with grease pencil by the logging geologist, with lines marking the start and end of the sample segment as well as numerical from-to values.

Samples were geologically controlled; geologists started and ended samples within quartz veins.

Core was then given to the assistant. The assistant photographed the un-split core box, and then cut the samples out with a core saw and split the section to be sampled with a hydraulic core splitter. Half of the core was put into a strong plastic bag, along with a sample tag. The other half was kept in a core box on site. If one side of the core had a spec of VG, that side was put into the bag to be sampled.



The splitter and the table it rests on were brushed off between splits, and the buckets were thumped against the table to remove residue. Core boxes were labelled with metal tags, showing hole number and interval.

Most samples were sent for AA and Gravimetric tests. Promising samples, and those that had been sampled & ran over 500 ppb, were re-assayed using Screen for Metallica.

**Figure 11-5 - The Core Splitter**

During a site visit, the Author observed NSGold staff treat each bag by rolling the top up, and then taping the top with strong tape. Sample bags were then packed into strong cardboard boxes. Once filled, the cardboard boxes were sealed with packing tape and kept in the core hut.

### **11.3.2 Sample Delivery & Security**

After drilling, most core was kept in the locked core hut, although some unprocessed core was kept outdoors in a gated and locked yard. After samples were prepared, they were put into heavy plastic sample bags, the sample bags were sealed with packing tape, packed into delivery boxes, and the delivery boxes were sealed. Boxes were taken by the chief geologist (P. MacKinnon) to a Canada Post office on a regular basis (approximately every three days), from which they were sent to the assay lab. On three occasions, large sets of boxes were shipped to Canada Post via Day and Ross. In all





cases, samples were kept in possession of NSGold Staff until delivery (either via Canada Post or via Day and Ross).

### **11.3.3 Laboratory Procedures**

The main assay lab for the 2010 drill program was Laboratoire Expert of Rouyn-Noranda, Quebec. The assayer used fire assay with atomic absorption finish, fire assay with gravimetric finish, and screen-for-metallics.

Samples are dried, reduce to -1/4 inch with a jaw crusher, then reduced to 90% -10 mesh with a rolls crusher. The sample is then riffled using a Jones type splitter to approximately 300 grams. The 300 gram portion is pulverized to 90% -200 mesh.

Both fire assay methods use samples weighing 29.166 grams. Samples checked using atomic absorption that assay over 1,000 ppb (1 ppm) were checked gravimetrically. Gravimetric analysis has no upper limit, but all values over 3.00 g/tonne (ppm) were verified before reporting. Screen-for-metallics involved crushing & pulverizing the sample, then splitting it using a 100 mesh screen. The -100 mesh portion was mixed and assayed in duplicate by fire assay gravimetric finish as well as all of the +100 mesh portion. All individual assays as well as the final calculated value were reported.

See Appendix III for the detailed assayer's note.

### **11.3.4 Quality Control Procedures**

Blanks and standards were inserted at regular intervals into the body of samples. Every 25<sup>th</sup> sample sent to the lab was a standard, and approximately every 11<sup>th</sup> sample sent to the lab was a blank.

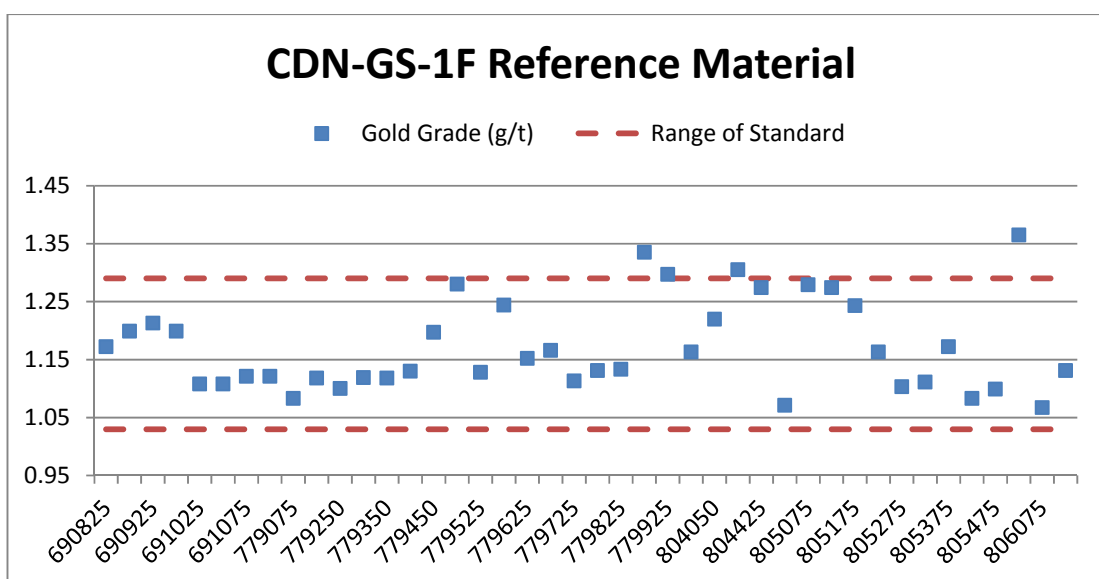
| <b>Zone</b> | <b>Blanks</b> |      | <b>Standards</b> |      | <b>Regular Samples</b> |       | <b>Total</b> |
|-------------|---------------|------|------------------|------|------------------------|-------|--------------|
| West Zone   | 166           | 7.8% | 84               | 4.0% | 1,865                  | 88.2% | 2,115        |
| East Zone   | 167           | 8.0% | 73               | 3.5% | 1,849                  | 88.5% | 2,089        |
| <i>Both</i> | 333           | 7.9% | 157              | 3.7% | 3,714                  | 88.3% | 4,204        |

Assay checking on pulp and coarse rejects was carried out on approximately 10% of samples.

Results from 26 umpire samples showed acceptable consistency; umpire samples differed by -0.062 to +0.132 g/t from the reference samples. The nugget effect was notable, with some samples giving a 'nil' result in one lab and a gold-positive result in the other lab.

### Table 11-2 - QA/QC Standards Results (2010)

|          |                     | Results from NSG Drill Program |                |             |               |
|----------|---------------------|--------------------------------|----------------|-------------|---------------|
| Standard | Expected Result     | Minimum Result                 | Maximum Result | Mean Result | Number Tested |
| 1        | 1.16 ± 0.13 g/tonne | 1.07                           | 1.37           | 1.17        | 42            |
| 2        | 2.16 ± 0.24 g/tonne | 1.99                           | 2.37           | 2.15        | 115           |



**Figure 11-6 – Assay Standard – 2010 - CDN-GS-1F**



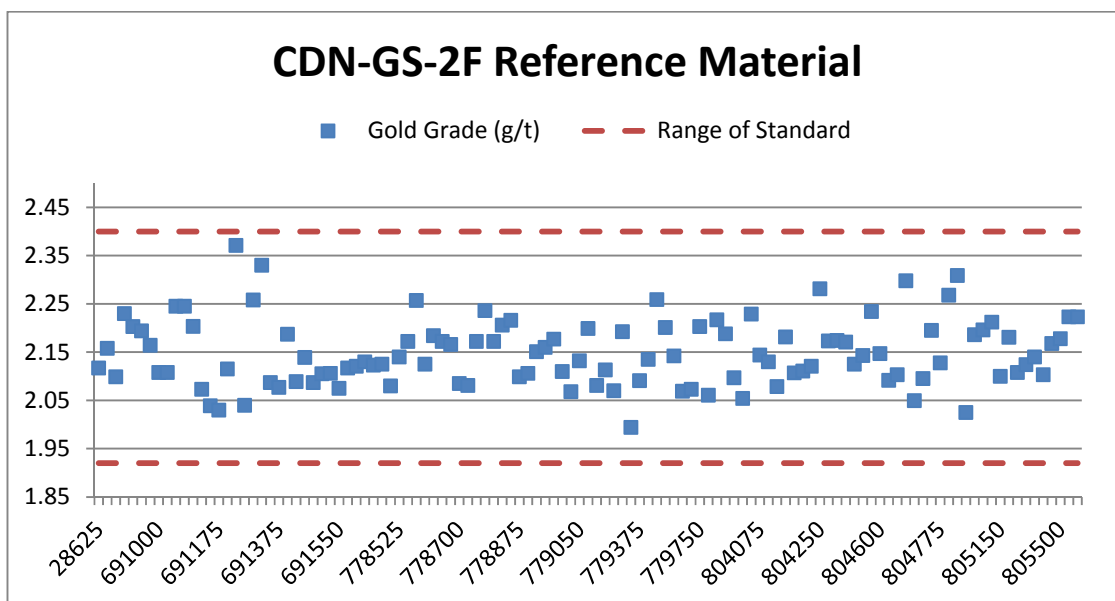


Figure 11-7 - Assay Standard – 2010 - CDN-GS-2F

#### 11.3.4.2 Blanks

Most blanks used were broken-up concrete building blocks. Broken-up quartz rock that was thought to be barren was used as a blank 17 times (sample numbers 778588 to 778778, in holes NSG-7-10 and NSG-8-10). When the first lab results showed this material to be gold-positive, the program returned to using broken-up concrete blocks.

#### 11.3.5 Adequacy of Procedures

The procedures used during the 2010 sampling program are considered by the Qualified Person to be adequate for the purposes of this report.

### 11.4 NSGold, 2011

#### 11.4.1 Overview

Table 11-3 - Summary of NSGold 2010 Samples

| Zone | Number of Samples | Average Length |
|------|-------------------|----------------|
| West | 1401              | 0.636 metres   |
| East | 1792              | 0.658 metres   |
| Both | 3,193             | 0.648 metres   |



A total of 3,193 samples, ranging from 0.3 to 2.0 metres in length, were taken from the 2011 NSGold drilling program (see section 10.4).

The only assay lab used for the 2011 drill program was Activation Laboratories of Ancaster, Ontario. The laboratory is independent of the Issuer. It is certified to ISO standard 17025:2005 by the Standards Council of Canada for mineral analysis, including analysis of Gold and/or Silver by Fire Assay with AA or Gravimetric finish.

Core from the 2011 program is currently being stored in core boxes, on site, in the garage and in the steel shed mentioned in section 5.8.1.

#### **11.4.2 On-Site Procedures**

On-site procedures for the 2011 drill program mirrored those used in the 2010 drill program. Some samples were sent via Canada Post, while most were sent via Day & Ross.

#### **11.4.3 Laboratory Procedures**

Activation Labs uses fire assay with atomic absorption, gravimetric and screen-for-metallics finishes.

Most samples were analysed using the atomic absorption finish. Samples that tested above 3 grams per tonne were analysed using the gravimetric finish. Samples that tested above 500 grams per tonne were analysed using the screen-for-metallics method. Samples with visible gold were only analysed using the screen-for-metallics method.

Samples are prepared by being crushed to a nominal minus 10 mesh (1.7 mm), mechanically split (riffle) to obtain a representative sample and then pulverized to at least 95% minus 150 mesh (106 microns).

In the screen-for-metallics procedure, a representative 500 g split is sieved at 100 mesh with fire assays performed on the entire +100 mesh and 2 splits on the -100 mesh fraction. The total amount of sample and the +100 mesh and -100 mesh fraction is weighed for assay reconciliation. Measured amounts of cleaner sand is used between samples and saved as gold may plate out on the mill.

#### **11.4.4 Quality Control Procedures**

Blanks and standards were inserted at regular intervals into the body of samples. Blanks were inserted after every 14 samples, and standards were inserted after every 24 samples.



#### 11.4.4.1 Standards

Standards were supplied by CND Resource Laboratories of Langley, BC, Canada. The standards were observed by the Author to be grey in colour and consisting of a powder with grain sizes similar to sand. There were four Standards used, at  $1.16 \pm 0.13$  g/tonne (CDN-GS-1F),  $1.47 \pm 0.15$  g/tonne (CDN-GS-1P5D),  $2.26 \pm 0.19$  g/tonne (CDN-GS-2G), and  $2.36 \pm 0.20$  g/tonne (CDN-GS-2J) (see figures

Of the 138 standards submitted, 9 could not be traced back to the reference sample used because the sample code was not marked on the tag.

Eight standards were more than 0.5 g/t outside of the expected range. Overall, however, assayed results for the standards matched well with expected results. Samples of mineralized rock surrounding these out-of-range standards were not re-tested (see section 11.4.5).

Table 11-4 - QA/QC Standards Results

| Standard    | Expected Result     | Results from NSG Drill Program |                |             | Number Tested |
|-------------|---------------------|--------------------------------|----------------|-------------|---------------|
|             |                     | Minimum Result                 | Maximum Result | Mean Result |               |
| CDN-GS-1F   | $1.16 \pm 0.13$ g/t | 1.04                           | 2.4            | 1.27        | 29            |
| CDN-GS-1P5D | $1.47 \pm 0.15$ g/t | 1.29                           | 1.82           | 1.51        | 34            |
| CDN-GS-2G   | $2.26 \pm 0.19$ g/t | 1.83                           | 2.62           | 2.35        | 30            |
| CDN-GS-2J   | $2.36 \pm 0.20$ g/t | 0.24                           | 2.79           | 2.33        | 34            |

Assayed values of the Standards were within expected parameters, although some tests of each standard fell outside the expected range.



### CDN-GS-1F Reference Material (2011 Program)

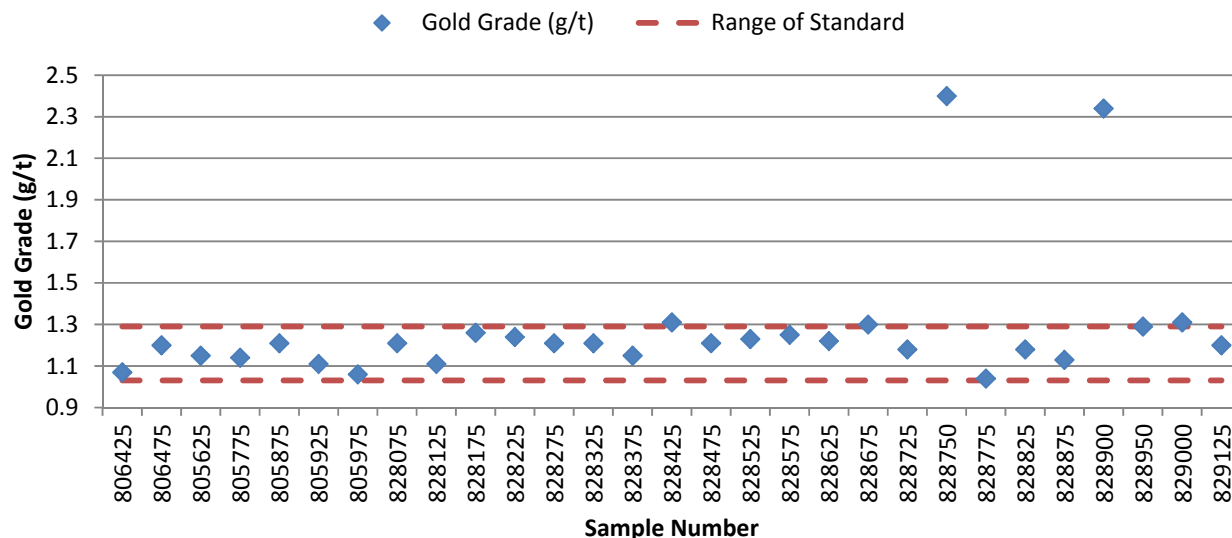


Figure 11-8 - Assay Standard - 2011 - CDN-GS-1F

### CDN-GS-2G Reference Material (2011 Program)

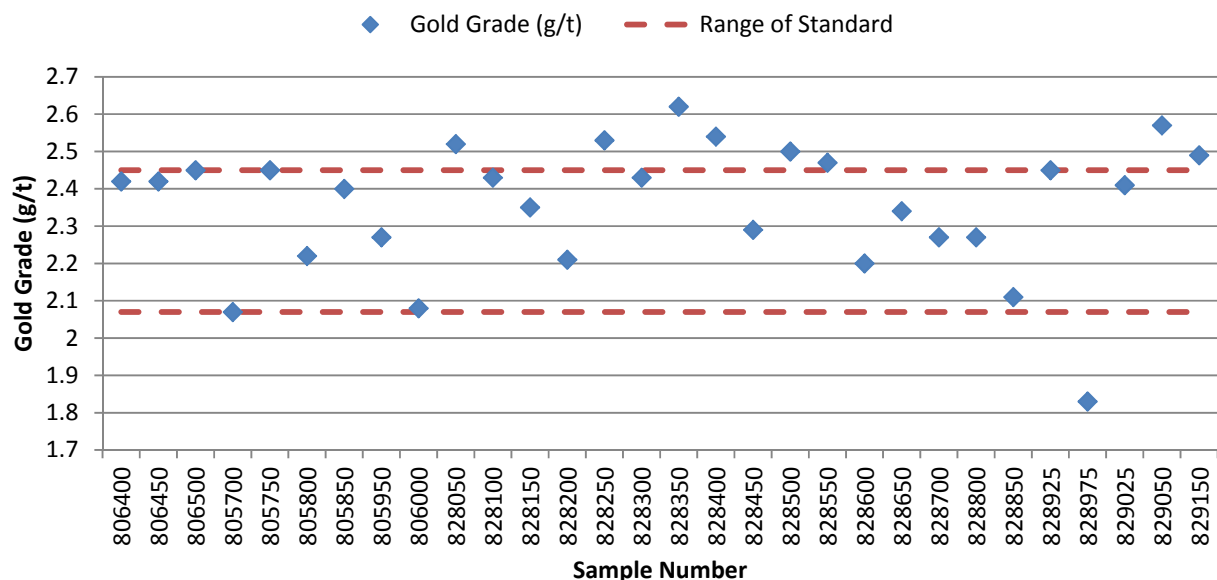


Figure 11-9 - Assay Standard - 2011 - CDN-GS-2G

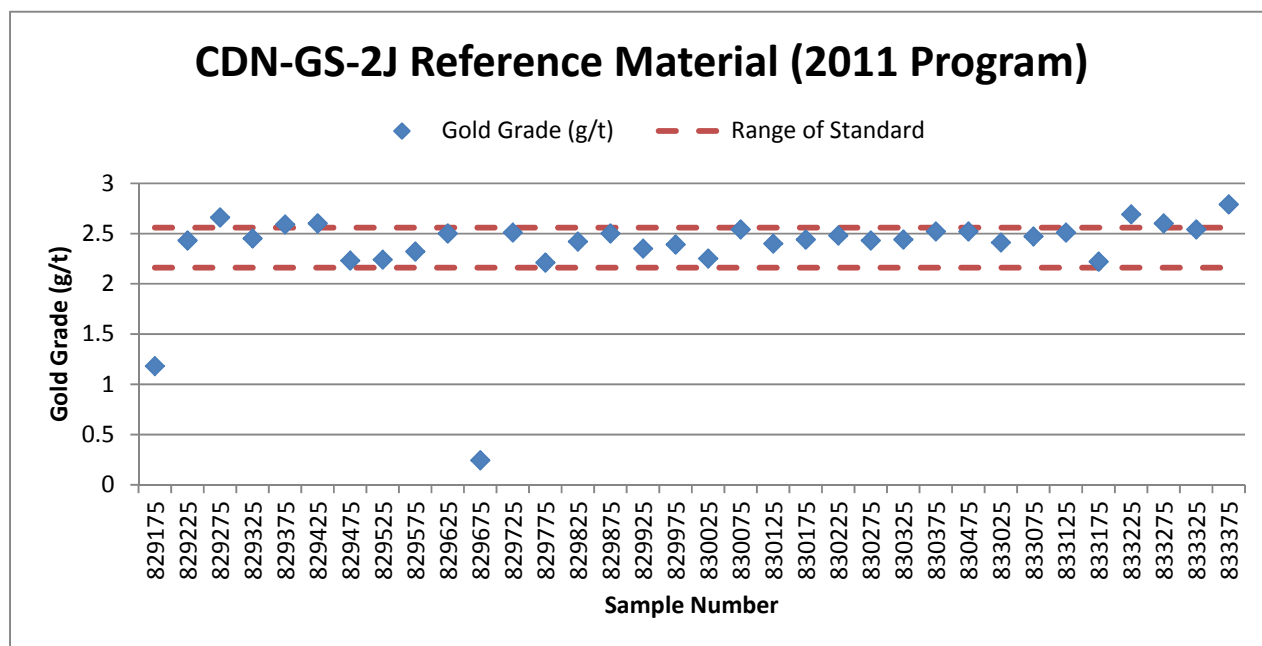


Figure 11-10 - Assay Standard - 2011 - CDN-GS-2J

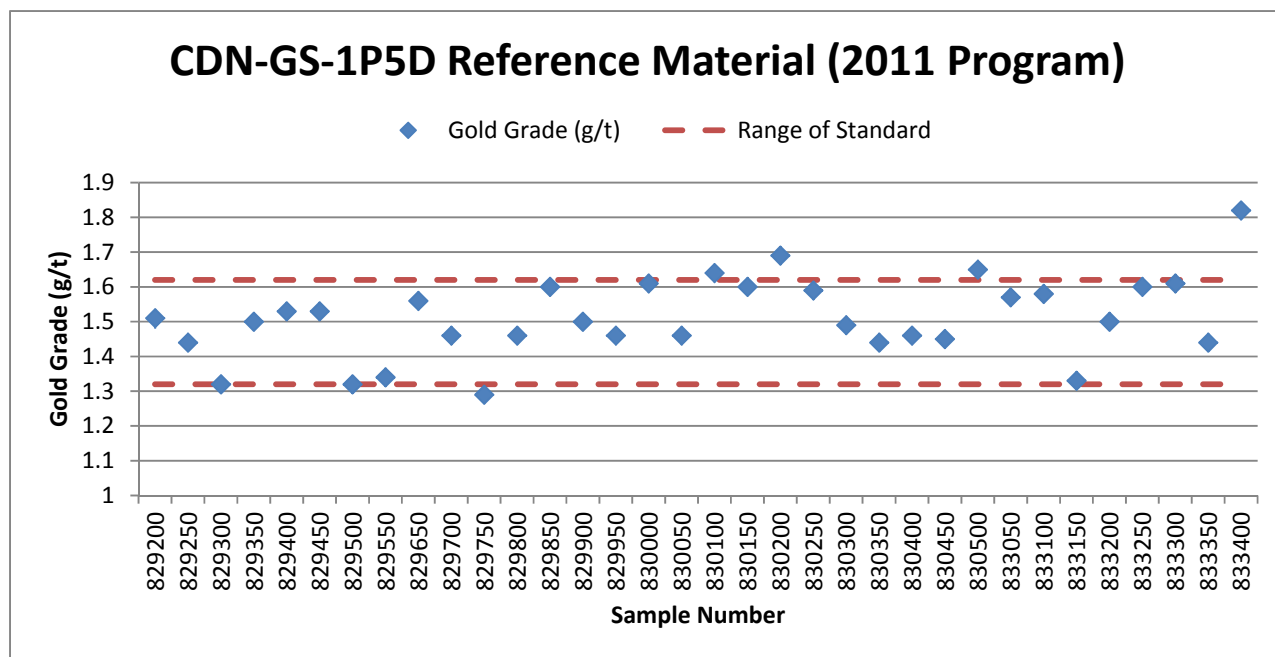


Figure 11-11 - Assay Standard - 2011 - CDN-GS-1P5D

#### 11.4.4.2 Blanks



Of the 212 blanks sent to the laboratory, 196 returned below-detection-limit ('nil') values. The remaining 16 samples were reported as gold-positive; of these, 13 were reported as holding 0.015 grams/tonne of gold or less. The highest-assayed blank returned a value of 0.179 grams/tonne.

#### **11.4.5 Adequacy of Procedures**

The procedures used during the 2011 sampling program are considered by the author (Mr Roy) to be adequate for the purposes of this report. However, the author recommends that for future sampling programs, when a submitted standard or submitted blank is out of range, the geologist should re-run either (a) the entire batch of samples if the batch is small, or (b) a certain number of samples before and after the out-of-range sample.





## 12 Data Verification

### 12.1 Check Samples

#### 12.1.1 Chip & Grab Samples, Sanguinetti, 2002

During the course of a field examination of the Property in preparation for a technical report, Michael H. Sanguinetti of Sanguinetti Engineering (Vancouver, BC) collected 10 chip and grab samples across quartz veins in place, as float of quartz and wall rock from old spoil piles and from the stamp mill tailings pile near the Tangier River. These samples were collected for assay and analysis on behalf of Azure Resources as part of an internal technical report on the Property for Azure Resources. His sampling confirmed the presence of anomalous gold values on the Property.

#### 12.1.2 MineTech Visit, 2009

The property was visited by the author on November 20, 2009. Core boxes from the Azure drilling program were found on-site, exposed to the elements and in poor repair.

Four mineralized samples of drill core from hole ML-03-86 were taken from core boxes to independently confirm the presence of mineralization on the Property. Samples were selected from segments that Azure had previously split and assayed. Segments sampled by Azure contained split core with a mineralized segment as well as wall rock on either side. The remaining half of the mineralized segment was taken, leaving the wall rock in the box. The samples were handled by the Author until they arrived at the assay lab. The results are included in the tables below, with 2003 results taken on an individual basis from copies of the 2003 assay certificates. The 2009 assay certificate, with check assay results, is included in the MineTech 2010 Technical report.

Table 12-1 - 2003 versus 2009 Assays

| Sample | Hole    | From   | To     | 2003 Result<br>(g/tonne) | 2009 Result<br>(g/tonne) |
|--------|---------|--------|--------|--------------------------|--------------------------|
| 17512  | ML03-86 | 41.70  | 42.00  | 0.12                     | 51.84                    |
| 17518  | ML03-86 | 84.55  | 84.75  | 2.88                     | 0.477                    |
| 17546  | ML03-86 | 164.25 | 164.60 | 0.59                     | 0.316                    |
| 17578  | ML03-86 | 193.15 | 193.50 | 0.01                     | 0.055                    |

Given the coarse nature of the gold mineralisation and the small size of the samples that were examined, verification sample assays were not expected to closely agree with the original sample assays. It was more important to see 'gold positive' assays where 'gold



positive' assays were seen previously. For each of the four verification assays that were taken, the objectives of the verification sampling exercise were met.

It is worth noting that no visible gold was observed in Sample 17512 that assayed 52 g/tonne.

### 12.1.3 MineTech Visit, 2010

The Author visited the site again on December 7, 2010 in order to review the drilling and sampling procedures being used by NSGold staff and to take new verification samples.

The Author took the remaining half of four samples that had already been split and sampled by NSGold. Each section, chosen by MineTech had been sent for Screen-for-Metallics testing by NSGold, and had returned anomalous gold (i.e.: gold-positive) values.

The Author sent all four samples to the Minerals Engineering Centre at Dalhousie University for testing using Screen-for-Metallics. All samples tested by MineTech were gold-positive.

| Sample | Hole     | From  | To    | NSG Grade<br>(g/tonne) | MineTech Grade<br>(g/tonne) |
|--------|----------|-------|-------|------------------------|-----------------------------|
| 691694 | NSG05-10 | 200.4 | 200.9 | 7.90                   | 0.309                       |
| 778547 | NSG06-10 | 209.5 | 210.0 | 6.74                   | 2.425                       |
| 778696 | NSG07-10 | 196.0 | 197.0 | 10.42                  | 3.817                       |
| 778767 | NSG08-10 | 159.7 | 160.3 | 4.71                   | 5.777                       |

Through verification sampling and past production records, the author believes that the quantity and quality of diamond drill sampling on the property, both historically and by NSGold, adequately represents the mineralisation for the purpose of mineral resource estimation.

## 12.2 Drillhole Database – Quality Assurance / Quality Control

The drill hole database used in the resource estimate was checked and corrected by MineTech staff. The following data sources were used to bring together the current database:

- An existing DDH database (the 'legacy database')
- NS DNR file AR ME 1988-234 (1986-1987 drill program: scanned copies logsheets)

## 12 – Data Verification



- NS DNR file *AR ME 1990-030* (1986-1987 drill program: scanned copies of logsheets; scans of assay certificates)
- NS DNR file *AR ME 2004-035* (2003 drill program: scanned copies of logsheets; scans of assay certificates)
- Unpublished, MS Excel-format spreadsheets of DDH geometry & assay data, incl. assay certificates (2010 & 2011 drill program; data from P. MacKinnon)

### **12.2.1 Collar Data**

All collar records were checked against corresponding logsheets. Collar points for the two historical drill programs were also visually compared, in software, against contemporary plan maps that had been prepared by the exploration companies (Hecla and Azure). A small number of discrepancies were found and were fixed on a case-by-case basis.

### **12.2.2 Downhole Survey Data**

All downhole survey records were checked against corresponding logsheets. A small number of holes showed changes in azimuth / dip that were not possible; these holes were corrected on a case-by-case basis. Drill hole traces for the two historical drill programs were then visually compared, in software, against cross-sections that had been prepared by Glen Covey for a 2004 report by Azure (Nova Scotia DNR report no. 2004-035), for each available cross-section.

### **12.2.3 Sample Data**

The drilling database used for the current resource estimate contained data from all three major drill programs (1986-1988, 2003, 2010 and 2011). Database records were checked against paper records, including drill hole logsheets and assay lab certificates, where available.

#### **12.2.3.1 Hecla/Acadia and Azure Samples**

Sample data in the supplied digital database was incomplete - especially for the 1986-1988 Acadia/Hecla program. As part of the Quality Assurance/Quality Control check, missing and new data was entered and all of the data was checked against printed drill logs and assay certificates.

Data missing from the legacy database included all samples for holes ML07-04, ML87-09, ML87-31 and ML03-86. A total of 31 other holes in the legacy database had partial



records. It was noted that missing samples generally had low gold values. It is possible that the legacy database only included those samples that were used in resource estimation or were above a certain threshold.

Sample results for hole ML03-86 were not available in the drill logs and were not entered into the revised database.

Missing samples were added using a scanned copy (in PDF format) of the drill logs and OCR software to recognize the text / numbers.

After the missing data had been entered, the sample database was checked for a number of expected patterns; if problems were found, samples were checked individually against the values reported in the logsheets. Patterns checked included:

- Numeric fields containing letters
- Duplicate sample numbers
- Out-of-sequence sample numbers
- 'From'-'To' fields agree with 'Length' field
- Gold assay values outside of the detection range of the test

Finally, the top 100 samples (by Au value) were manually checked against available assay certificates. Two errors were found and fixed.

#### ***12.2.3.2 NSGold Samples***

Sample data from the 2010 and 2011 programs was provided by NSGold in the form of Microsoft Excel spreadsheets (the NSGold Sample Database). The spreadsheets included the results of each individual test and, in some cases, an average value for a sample. Each individual sample carried anywhere from one to eight test results. These test results were combined into a single weighted value.

NSGold also provided assay certificates, in the form of dozens of Microsoft Excel spreadsheets. The certificates were combined, using a computer script, into a single spreadsheet. The results from the assay certificates were also combined into a single weighted value.

The procedure for arriving at weighted values was as follows. First, each reported test value was converted to grams per tonne and multiplied by the sample mass that went into the test, giving a value in (grams \* grams)/tonne for each test performed. Then, all (grams \* grams)/tonne values were added up, and that summed value was divided by



the total mass of material assayed, giving a single value in grams per tonne. The formula used was:

$$\left( \sum_{x=1}^i m_x * v_x \right) / \sum_{x=1}^i m_x$$

Given

$m_x$  = mass of sample x, in grams

$v_x$  = assayed value of sample x, in grams per tonne

i = total number of samples

Finally, the values in the NSGold Sample Database were compared against the values in the assay certificates using formulas in Microsoft Excel. No significant discrepancies were discovered.



## 13 Mineral Processing and Metallurgical Testing

### 13.1 Bulk Sample, Azure, 2003-2004

Azure intersected five West Zone veins and took a 2,000-tonne bulk sample from sill drifts on the Little North and Cummings veins. The bulk sample was shipped to the nearby Dufferin Mines mill, which Azure controlled and operated at the time.

No published reports on the bulk sample processing are available, but interviews with people involved indicate that recovery was poor. Three principal reasons were given for this. First, time constraints forced Azure to take the bulk sample early, before the decline had reached the planned target area. Second, the material had little coarse gold and was unsuited to the gravity circuit used to process it.<sup>7</sup> Third, gravity methods have a poor history in Nova Scotian gold deposits, with maximum gold recovery values in the 60-70% range.

### 13.2 Bench-Scale Testing, 2004

Preliminary, limited bench-scale metallurgical testing was carried out in 2004 by Ed Thornton, P.Eng., an associate metallurgical engineer with MineTech. Gravity/flotation and cyanide leaching methods were tested. The highest recovery achieved was 89% over a total of six tests. Samples were ground for forty minutes in a rod mill. Flotation samples were conditioned with MIBC and R-208 prior to 15 minutes of flotation. Although the testing was done on a bench scale, the materials used can be considered representative of the type of mineralization at the Property.

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<sup>7</sup> Personal communications with Glen Covey (Geologist, Azure), Steve Furlotte (fmr. mgr., Dufferin Mill) and Ed Thornton (Metallurgist).





## 14 Mineral Resource Estimate

### 14.1 Introduction

During April and May, 2012, MineTech International Limited ("MineTech") carried out a resource estimate for NSGold Corporation's ("NSGold's") Mooseland deposit. The resource estimate includes holes up to Hole NSG-41-11 (i.e.: the 41<sup>st</sup> hole drilled by NSGold).

This resource estimate was prepared by Doug Roy, M.A.Sc., P.Eng., Mining Engineer with MineTech. Micromine software (Version 2011) was used to facilitate the resource estimating process.

The resource estimate was prepared in accordance with CIM Standards on Mineral Resources and Reserves<sup>8</sup> where:

- A *Measured Mineral Resource*, as defined by the CIM Standing Committee 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 drill holes that are spaced closely enough to confirm both geological and grade continuity."
- An *Indicated Mineral Resource* as defined by the CIM Standing Committee 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 drill holes that are spaced closely enough for geological and grade continuity to be reasonable assumed." And,
- An *Inferred Mineral Resource* as defined by the CIM Standing Committee 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

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<sup>8</sup> CIM Standards in Mineral Resources and Reserves, Definitions and Guidelines, adopted December 11, 2005.



appropriate techniques from locations such as outcrops, trenches, pits, working and drill holes.”

A *Mineral Reserve* is “the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study.” This Study must include adequate information on mining, processing, metallurgical, economic and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A Mineral Reserve includes diluting materials and allowances for losses that may occur when the material is mined.

- A *Probable Mineral Reserve* is “the economically mineable part of an Indicated, and in some circumstances a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified.”
- A *Proven Mineral Reserve* is “the economically mineable part of a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors.”

Classification, or assigning a level of confidence to Mineral Resources, has been undertaken in strict adherence to the CIM Standards on Mineral Resources and Reserves.

Only mineral resources were identified in this report. No economic work that would enable the identification of mineral reserves was carried out. In other words, no mineral reserves were identified.

## 14.2 Supplied Data

### 14.2.1 West Zone

For Hole ML88-85, the downhole surveys at depths 262.13 and 286.51 metres was disregarded because of suspect azimuth values.

A hard-copy plan map that Hecla prepared during the late 1980s was examined. Collar coordinates were compared with those from the written, hard-copy drilling logs. It was found that northings (distance from the baseline) generally compared very well (i.e.: within acceptable limits) but the differences in easting values (baseline direction) were often significant, often with differences of 5-10 metres and sometimes 10-15 metres.



The author felt that differences in the northing values would have a greater effect on geological interpretation. With that in mind, there were two historical collars that required modification: Holes 87-69 and 87-82:

| Hole    | Logs Easting | Logs Northing | Hecla Easting | Hecla Northing | ΔEasting | ΔNorthing |
|---------|--------------|---------------|---------------|----------------|----------|-----------|
| ML87-69 | 2300         | 6340          | 2153.2        | 6168.9         | 146.8    | 171.1     |
| ML88-82 | 2100         | 6248          | 1911.5        | 6247.8         | 188.5    | 0.2       |

*Grid coordinates in metres.*

West Zone holes that NSGold drilled in 2011 appeared on the following cross-sections:

| Name  | Alternate Name |
|-------|----------------|
| 1700E | 3+00W          |
| 1750E | 2+50W          |
| 1800E | 2+00W          |
| 1975E | 0+25W          |
| 2300E | 3+00E          |
| 2400E | 4+00E          |

### 14.2.2 East Zone

For the East Zone, the azimuth for Hole EML-32 did not match Hecla's plan maps of drilling (circa 1989). The azimuth was changed to 90° (site grid) to agree with Hecla's plan map.

East Zone holes that NSGold drilled in 2011 appeared on the following East Zone cross-sections:

| Name  | Alternate Name |
|-------|----------------|
| 8100N | 1+00E          |
| 8125N | 1+25E          |
| 8150N | 1+50E          |
| 8185N | 1+85E          |
| 8215N | 2+15E          |
| 8250N | 2+50E          |
| 8275N | 2+75E          |
| 8300N | 3+00E          |
| 8325N | 3+25E          |
| 8350N | 3+50E          |

## 14.3 Site Grid

Site elevations use mean sea level plus 1,000 metres as a datum.

### 14.3.1 West Zone

The site grid that exists on the property has been in use since the 1800s.



### **14.3.2 East Zone**

The East Zone grid baseline has changed several times over the past few decades, mainly because earlier geological work was based solely on diamond drilling. The direction of the anticlinal axis was not initially apparent.

The East Zone baseline that was used for the current mineral resource estimate was based on Hecla's BL2 or Baseline 2. For convenience in modelling, BL2's origin was shifted to 4400 m East, 8000 m North, then rotated 24° counter-clockwise such that the baseline was oriented North-South.

### **14.3.3 Magnetic Declination**

Downhole survey azimuth values were recorded relative to magnetic north. During Fall 2011, magnetic declination at the Mooseland site (approximate Latitude: 44° 56' North, Longitude: 62° 46' West) was 18.4° West.

For the East Zone, 42.3° was subtracted from the magnetic values to obtain the grid-relative values. For the West Zone, 18.3° was added.

## **14.4 Mineralised Zone Interpretation**

Mineralised zone interpretation was carried out using a combination of cut-off grade and the author's judgement. A cut-off grade of approximately 1 g/tonne was generally used. However, in many cases, if the intercept grade was less than the cut-off but "gold positive," and occurred in a location where the author felt that a vein or mineralised zone ought to occur based on the geology of adjacent cross-sections, that intercept was included.

Zones were extended down-dip by a maximum of 25 metres beyond the last intercept.

Glen Covey, an independent geologist who was working for NSGold during their 2010 drilling program, provided interpreted cross-sections for most of the West and East Zones. Mr Covey's interpretations were generally followed. In other words, the location of the anticlinal axis, and the interpreted the strike and dip of the zones were adopted for the current interpretation.

For consistency, the author retained the names of previously named veins. Many veins were also outlined that previously had not been named. For the West Zone, newly named veins were given names from the phonetic alphabet in the order in which they were identified (i.e.: in a more-or-less random order). No East Zone veins were previously named. To avoid confusing the veins with the West Zone veins, East Zone



veins were given names of cities. Refer to Table 14-2 for a stratigraphic column of the veins that were identified.

A minimum horizontal width of 1.5 metres was used. Where it was necessary to expand an intercept to the minimum width, the author expanded it to include sampled intervals. Where there were no samples to incorporate (i.e.: where the sampled interval was less than 1.5 metres wide, the grade of “planned dilution material” was zero (grams per tonne).

The author closely examined each individual intercept to ensure that the interpretation was as accurate as possible and reflected the interpreted geology as closely as possible.

The zone interpretations were further adjusted on longitudinal sections. A long section showing zone intercepts was produced for each of the 60 zones that were outlined in the West Zone. There were 43 such longitudinal sections for the East Zone. The longitudinal sections were reviewed and, where geological continuity was apparent, defined by an intercept spacing of approximately 25 metres, one or more polygons were drawn, enclosing the intercepts, to outline the mineralised zone.



Table 14-1: Cross-section definitions.

### West Zone

| Number | Section | Name  | Alternate Name | 2011 Holes on Section | Towards (The Viewer) | Away (From the Viewer) | Width |
|--------|---------|-------|----------------|-----------------------|----------------------|------------------------|-------|
| 1      | 1400    | 1400E | 6+00W          |                       | 50                   | 50                     | 100   |
| 2      | 1500    | 1500E | 5+00W          |                       | 50                   | 50                     | 100   |
| 3      | 1600    | 1600E | 4+00W          |                       | 50                   | 25                     | 75    |
| 4      | 1650    | 1650E | 3+50W          |                       | 25                   | 25                     | 50    |
| 5      | 1700    | 1700E | 3+00W          | Yes                   | 25                   | 25                     | 50    |
| 6      | 1750    | 1750E | 2+50W          | Yes                   | 25                   | 25                     | 50    |
| 7      | 1800    | 1800E | 2+00W          | Yes                   | 25                   | 25                     | 50    |
| 8      | 1850    | 1850E | 1+50W          |                       | 25                   | 25                     | 50    |
| 9      | 1900    | 1900E | 1+00W          |                       | 25                   | 25                     | 50    |
| 10     | 1950    | 1950E | 0+50W          |                       | 25                   | 12.5                   | 37.5  |
| 11     | 1975    | 1975E | 0+25W          | Yes                   | 12.5                 | 12.5                   | 25    |
| 12     | 2000    | 2000E | 0+00           |                       | 12.5                 | 12.5                   | 25    |
| 13     | 2025    | 2025E | 0+25E          |                       | 12.5                 | 12.5                   | 25    |
| 14     | 2050    | 2050E | 0+50E          |                       | 12.5                 | 12.5                   | 25    |
| 15     | 2075    | 2075E | 0+75E          |                       | 12.5                 | 12.5                   | 25    |
| 16     | 2100    | 2100E | 1+00E          |                       | 12.5                 | 12.5                   | 25    |
| 17     | 2125    | 2125E | 1+25E          |                       | 12.5                 | 12.5                   | 25    |
| 18     | 2150    | 2150E | 1+50E          |                       | 12.5                 | 12.5                   | 25    |
| 19     | 2175    | 2175E | 1+75E          |                       | 12.5                 | 12.5                   | 25    |
| 20     | 2200    | 2200E | 2+00E          |                       | 12.5                 | 25                     | 37.5  |
| 21     | 2250    | 2250E | 2+50E          |                       | 25                   | 25                     | 50    |
| 22     | 2300    | 2300E | 3+00E          | Yes                   | 25                   | 50                     | 75    |
| 23     | 2400    | 2400E | 4+00E          | Yes                   | 50                   | 50                     | 100   |

### East Zone

| Number | Section | Name  | Alternate Name | Towards (The Viewer) | Away (From the Viewer) | Width | 2011 Drilling on this Section? |
|--------|---------|-------|----------------|----------------------|------------------------|-------|--------------------------------|
| 1      | 8000    | 8000N | 0+00E          | 50                   | 25                     | 75    |                                |
| 2      | 8050    | 8050N | 0+50E          | 25                   | 25                     | 50    |                                |
| 3      | 8100    | 8100N | 1+00E          | 25                   | 12.5                   | 37.5  | Yes                            |
| 4      | 8125    | 8125N | 1+25E          | 12.5                 | 12.5                   | 25    | Yes                            |
| 5      | 8150    | 8150N | 1+50E          | 12.5                 | 17.5                   | 30    | Yes                            |
| 6      | 8185    | 8185N | 1+85E          | 17.5                 | 15                     | 32.5  | Yes                            |
| 7      | 8215    | 8215N | 2+15E          | 15                   | 17.5                   | 32.5  | Yes                            |
| 8      | 8250    | 8250N | 2+50E          | 17.5                 | 12.5                   | 30    | Yes                            |
| 9      | 8275    | 8275N | 2+75E          | 12.5                 | 12.5                   | 25    | Yes                            |
| 10     | 8300    | 8300N | 3+00E          | 12.5                 | 12.5                   | 25    | Yes                            |
| 11     | 8325    | 8325N | 3+25E          | 12.5                 | 12.5                   | 25    | Yes                            |
| 12     | 8350    | 8350N | 3+50E          | 12.5                 | 25                     | 37.5  | Yes                            |
| 13     | 8400    | 8400N | 4+00E          | 25                   | 25                     | 50    |                                |
| 14     | 8450    | 8450N | 4+50E          | 25                   | 50                     | 75    |                                |



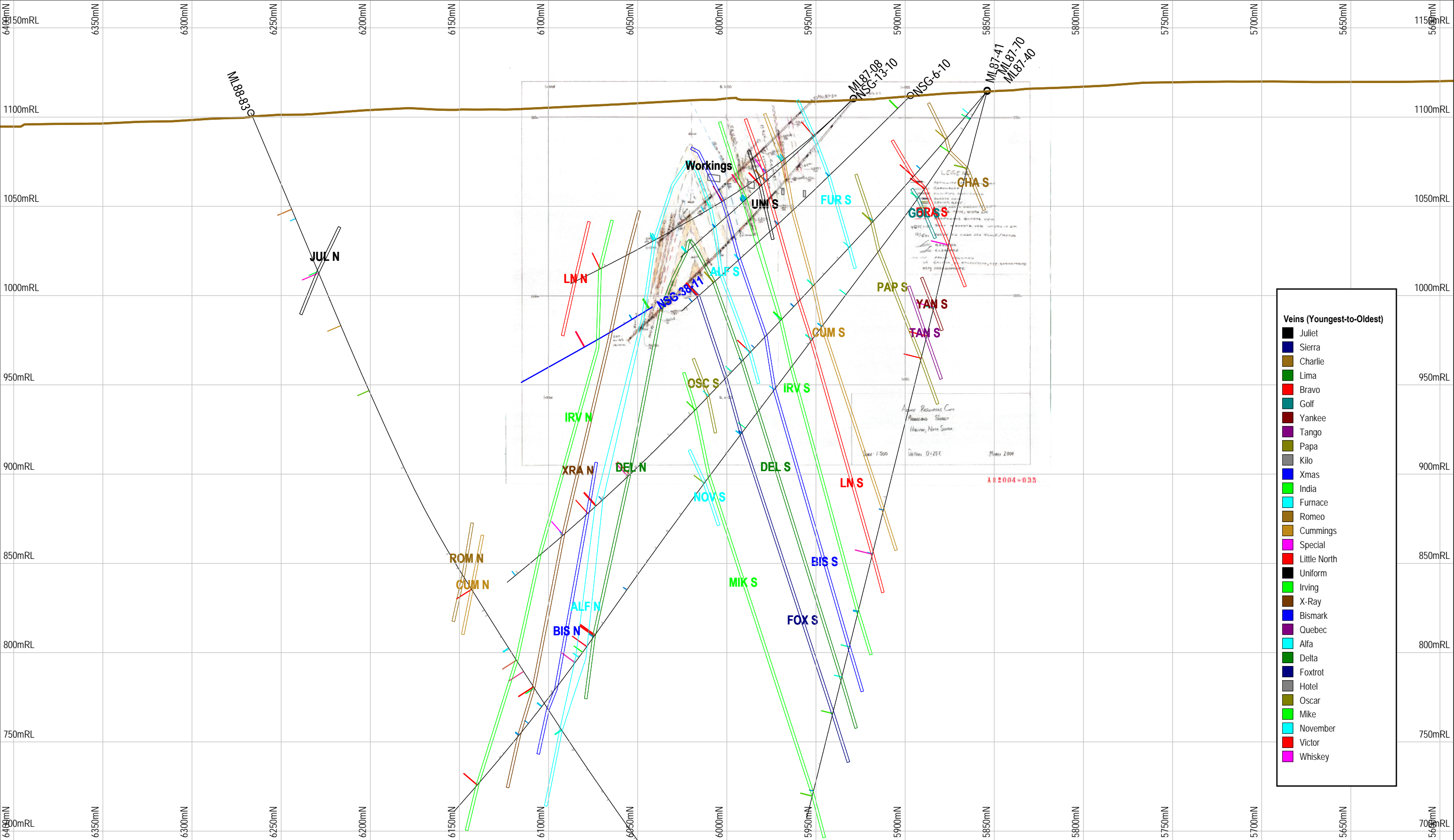
Table 14-2: Stratigraphic column.

| <b>West Zone</b>  |              | <b>East Zone</b>  |            |
|---|--------------|---|------------|
|    | Juliet       |    | Takoradi   |
|    | Sierra       |    | Kumasi     |
|    | Charlie      |    | Lisbon     |
|    | Lima         |    | Lagos      |
|    | Bravo        |    | Accra      |
|    | Golf         |    | Madrid     |
|    | Yankee       |    | Victoria   |
|    | Tango        |    | Rio        |
|    | Papa         |    | Vancouver  |
|    | Kilo         |    | Bangkok    |
|    | Xmas         |    | London     |
|    | India        |    | Tokyo      |
|    | Furnace      |    | Moscow     |
|    | Romeo        |    | Belfast    |
|    | Cummings     |    | Montreal   |
|    | Special      |    | Berlin     |
|    | Little North |    | Halifax    |
|    | Uniform      |    | Bedford    |
|   | Irving       |   | Bathurst   |
|  | X-Ray        |  | Dawson     |
|  | Bismark      |  | Whitehorse |
|  | Quebec       |  | Vegas      |
|  | Alfa         |  | Winnipeg   |
|  | Delta        |  | Toronto    |
|  | Foxtrot      |  | Hanoi      |
|  | Echo         |  | Dublin     |
|  | Hotel        |  | Shanghai   |
|  | Oscar        |   |            |
|  | Mike         |   |            |
|  | November     |   |            |
|  | Victor       |   |            |
|  | Whiskey      |   |            |

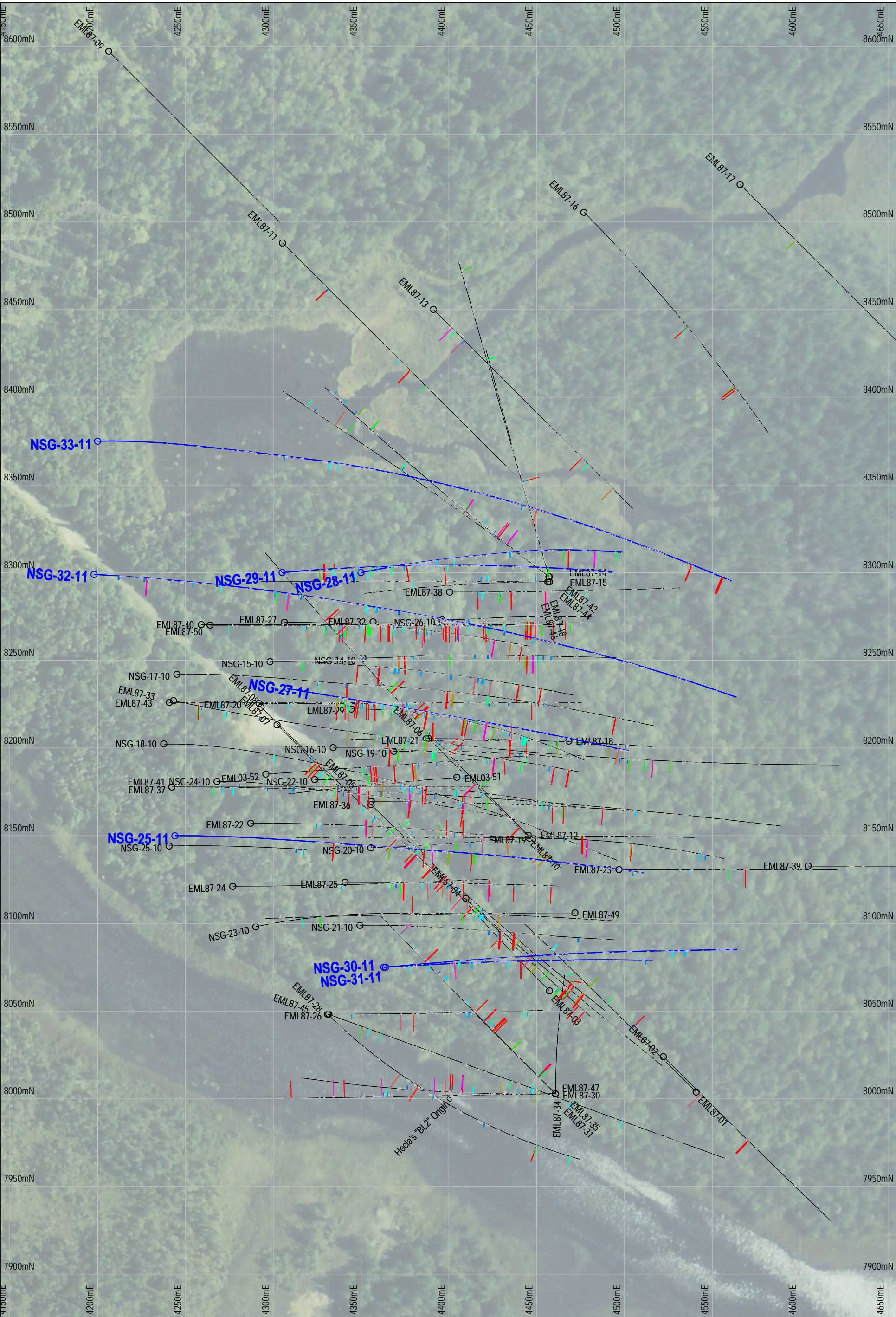






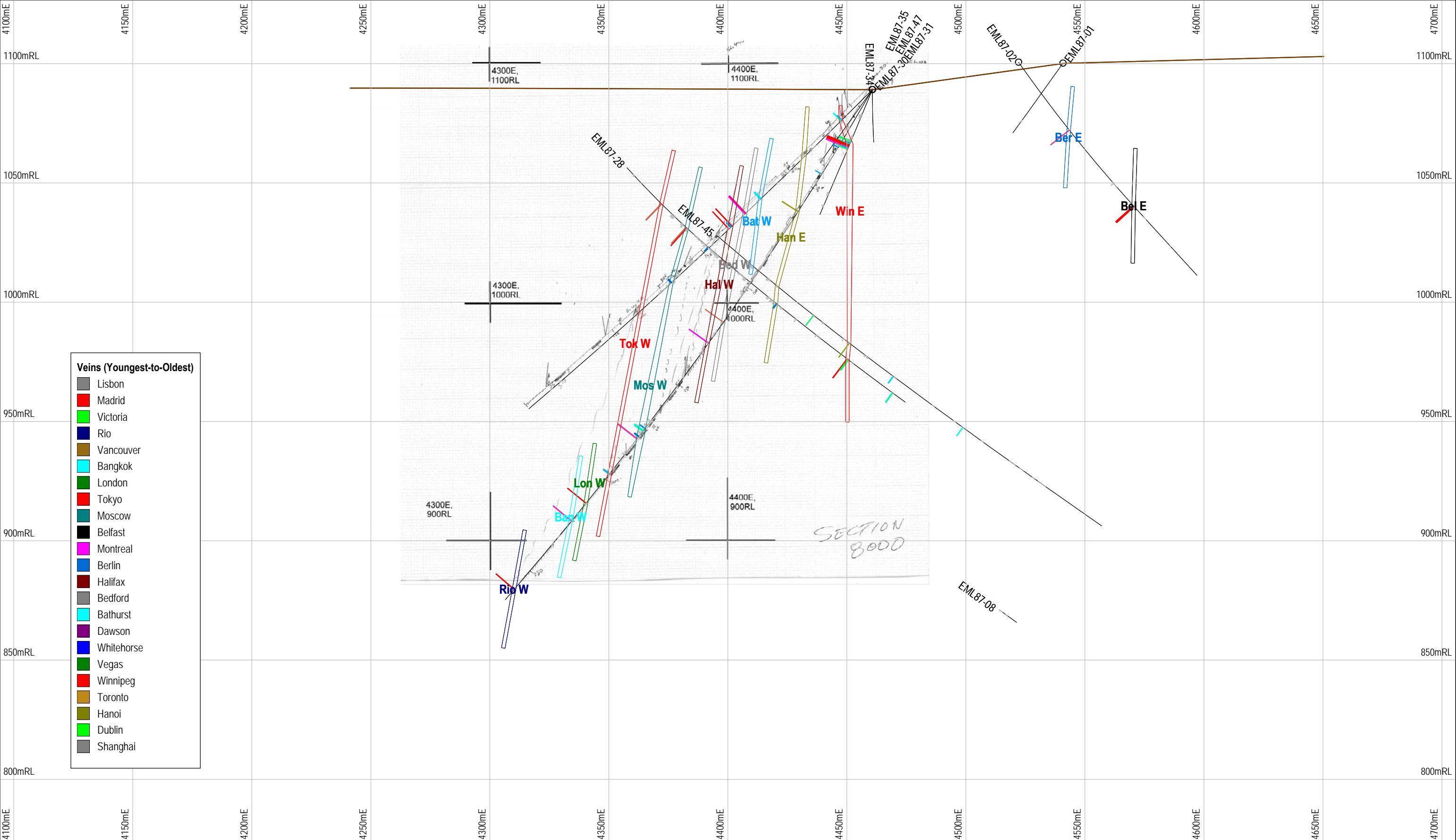






|  |                   |                          |                                       |  |  |   |   |
|--|-------------------|--------------------------|---------------------------------------|--|--|---|---|
|  | Scale<br>1 : 2000 | Plot Date<br>24-Apr-2012 | Drawn by:<br>Doug Roy, M.A.Sc., P.Eng | <b>Gold Grade (g/tonne)</b><br>0.5 to 2<br>2 to 3<br>3 to 4<br>4 to 6<br>6 to 8<br>≥ 8 | BL-2 (Hecla's, from a drawing dated 1989) origin shifted to 4400 E, 8000 E, then rotated 24 deg CCW.<br><br>Air photo position is not exact and should not be used for navigation. | <b>Mooseland East Zone<br/>Plan View of Drilling<br/>2012</b> | <br>HALIFAX, CANADA<br>1161 HOLDS ST. SUITE 211, B3P 2A3<br>(902) 429-4049<br>WWW.MINETECHINT.COM |
|  |                   |                          |                                       |  |  |   |   |
|  |                   | Version 1                |                                       |  |  |   |   |





- Veins (Youngest-to-Oldest)**
- Lisbon
  - Madrid
  - Victoria
  - Rio
  - Vancouver
  - Bangkok
  - London
  - Tokyo
  - Moscow
  - Belfast
  - Montreal
  - Berlin
  - Halifax
  - Bedford
  - Bathurst
  - Dawson
  - Whitehorse
  - Vegas
  - Winnipeg
  - Toronto
  - Hanoi
  - Dublin
  - Shanghai



Scale  
1 : 1500

Plot Date  
18-Jun-2012

Cross-Section  
Facing North

Grade Composites: [X] g/t / [Y] m

Drawn by Doug Roy, M.A.Sc., P.Eng

Version 1.1

Gold Grade (g/tonne)

- 0.5 to 2
- 2 to 3
- 3 to 4
- 4 to 6
- 6 to 8
- >= 8

BL-2 (Hecla's Baseline from 1989) origin shifted  
to 4400 E, 8000 E, then rotated 24 deg CCW.

Background interpretation by Glen Covey, NSGold.

**Mooseland East Zone  
Cross-Section 8000N  
Facing North**

**MINETECH INTERNATIONAL LIMITED**  
HALIFAX, CANADA  
1161 HOLLIS ST, SUITE 211, B3P 2A3  
(902) 429-4049  
WWW.MINETECHINT.COM





## 14.5 Statistics

### 14.5.1 West Zone

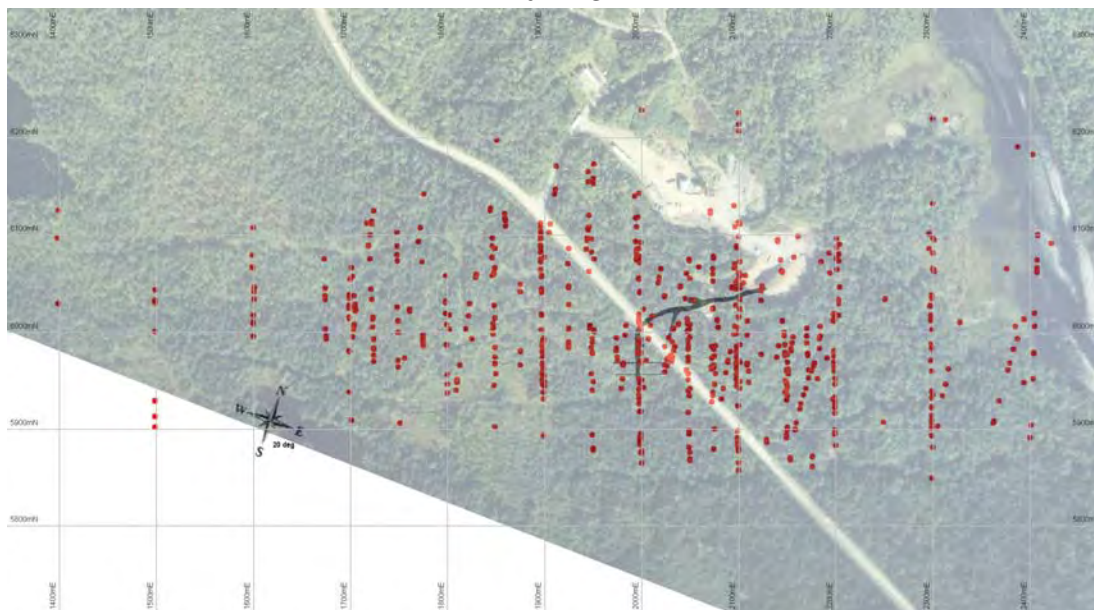
Statistics of the raw (irregular length) assays within the interpreted mineralised zones were examined. Of the 3112 samples, the average grade was 3 g/tonne. Some of the intercepts were wide as the 1.5 metre minimum width; however, many were not. The author would expect that the regularised (even sample length), diluted, average grade (diluted to the 1.5 metre minimum width) of all samples within the interpreted mineralised zones would be less than 3 g/tonne.

Of the 2916 regularised (over 0.5 metres) samples within the mineralised zones, the mean grade was 2.6 g/tonne (refer to Figure 14-10). As with the irregular length sample statistics (previous paragraph), some of the intercepts were as wide, or wider than the 1.5 metre minimum width; however, many were not.

Sample intercepts were widened to a 1.5 metre minimum horizontal width. In many cases, intercepts were diluted with waste rock at zero grade. This process is known as “planned dilution.” Afterward, the average diluted grade was calculated by dividing the total gold accumulation [sum of all gold accumulation (grade × true width) values] by the total true width (sum of true width values).



Plan View:



Facing Grid North:

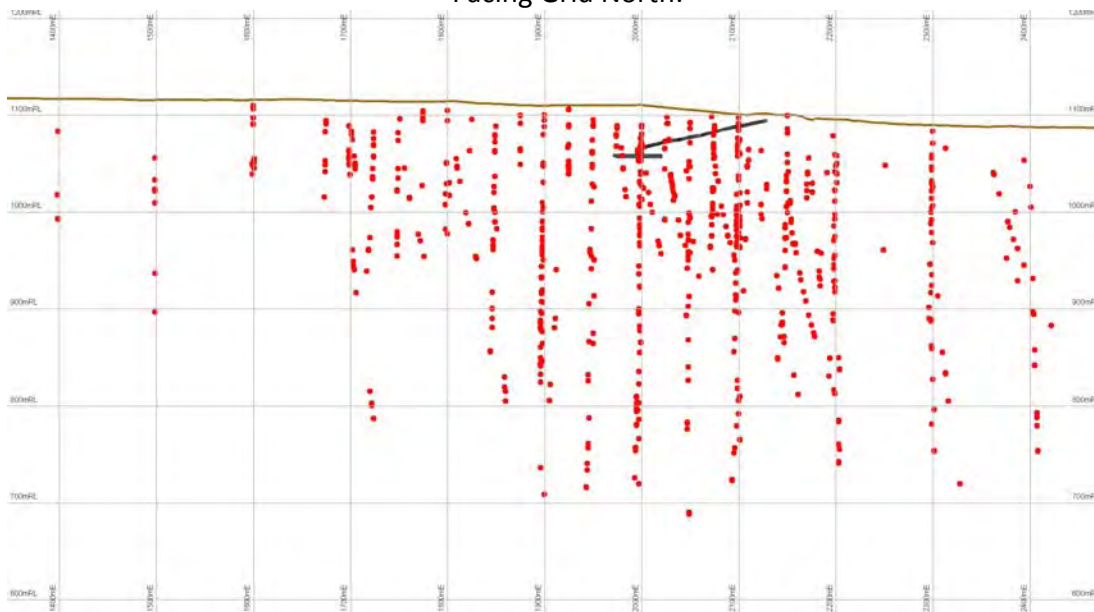


Figure 14-5: Samples greater than 1 g/tonne within the mineralised zones - West Zone.



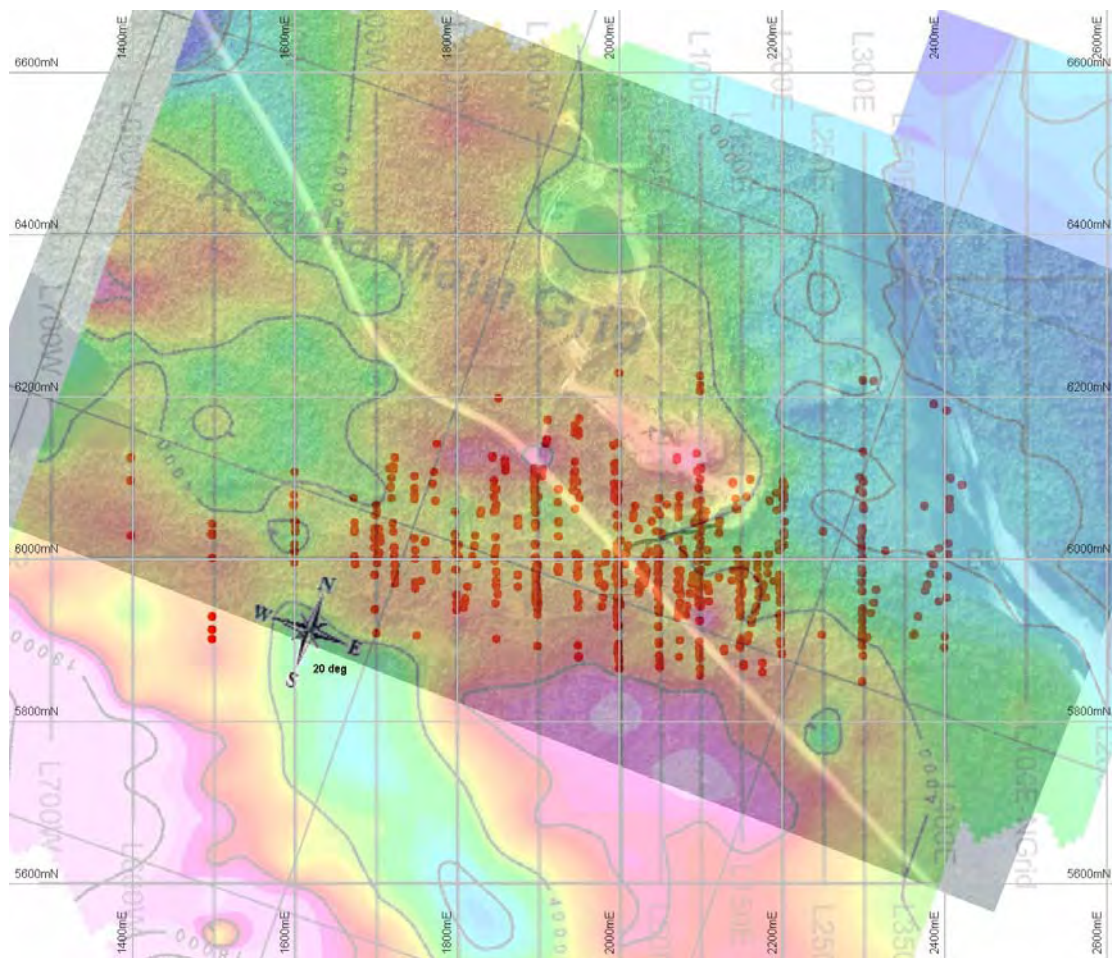


Figure 14-6: Plan view of the West Zone showing samples greater than 1 g/tonne and IP resistivity.

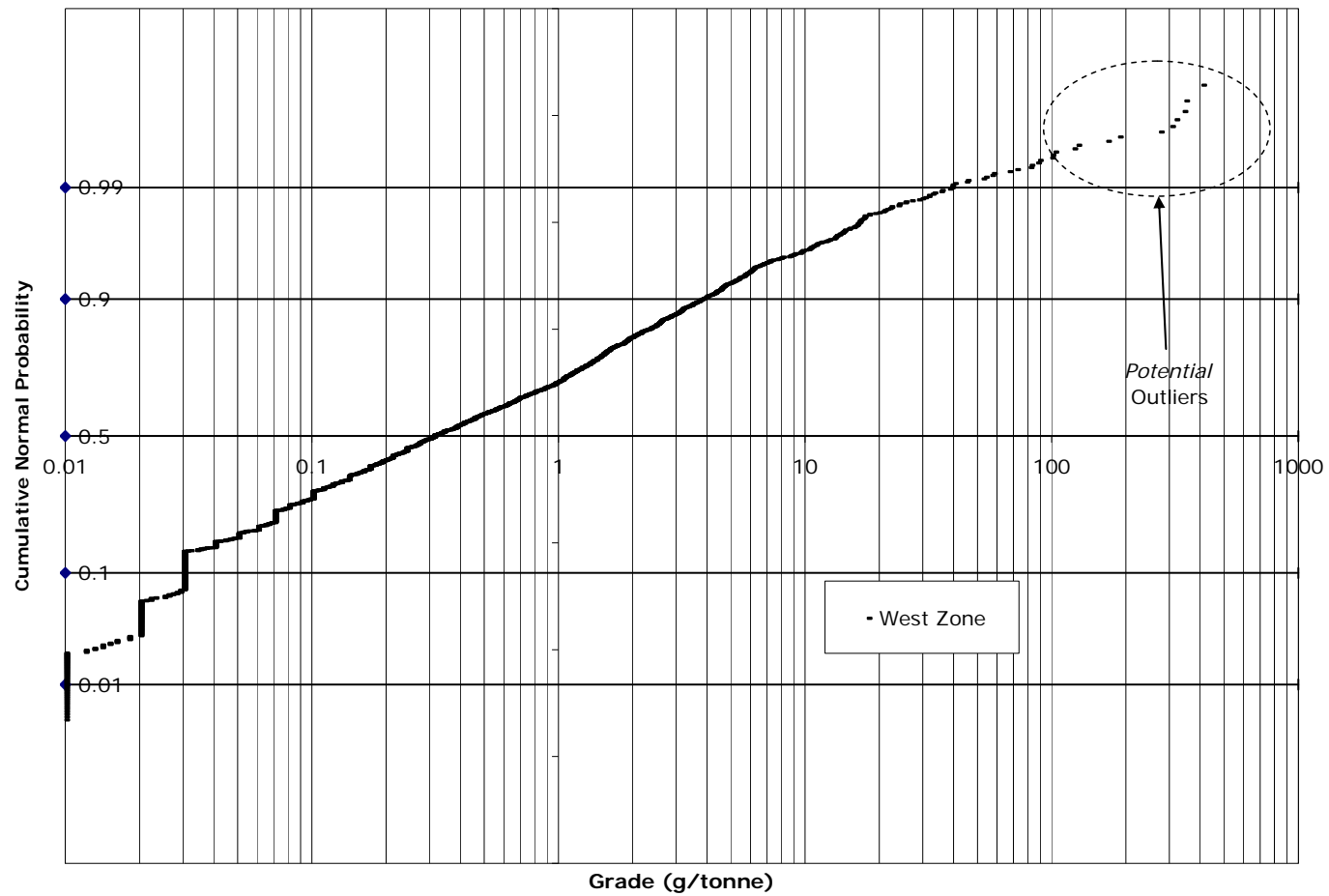


Figure 14-7: Cumulative normal probability plot of all West Zone samples within the mineralised zones.

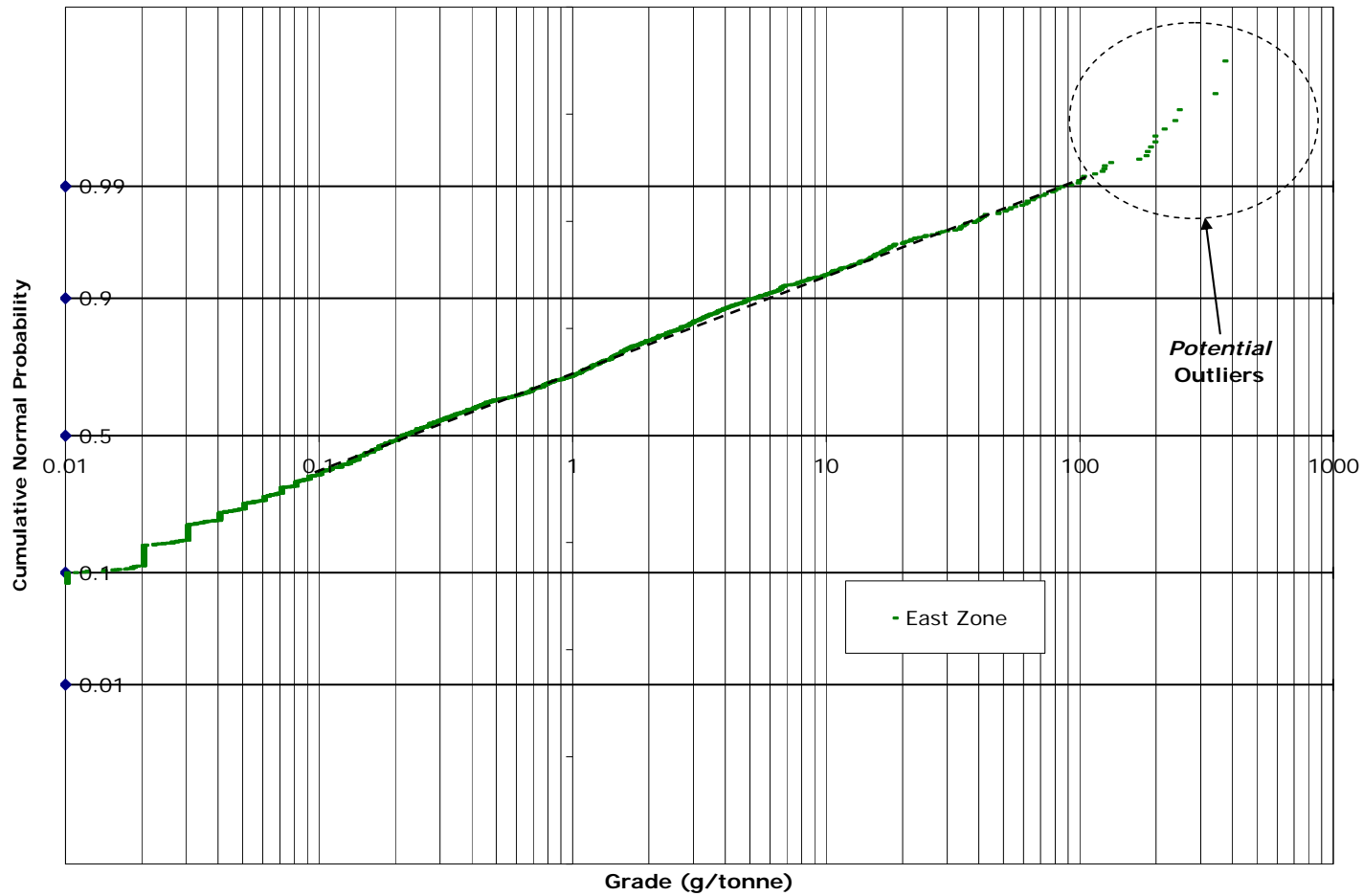


Figure 14-8: Cumulative normal probability plot of all East Zone samples within the mineralised zones.



### 14.5.2 East Zone

Of the 1955 regularised (over 0.5 metres) samples within the mineralised zones, the mean grade was 4.3 g/tonne - higher than the West Zone's mean grade of 2.6 g/tonne (refer to Figure 14-12). Some of the intercepts were as wide, or wider than the 1.5 metre minimum width; however, many were not.

### 14.6 Top-Cut Grade

A top-cut value is normally chosen to prevent the overestimation of block grades by a small number of very high assays or *outliers*. Mooseland mineralisation, typical of the majority of Nova Scotian lode gold deposits, exhibits "coarse gold" or "nuggety" behaviour. In this type of deposit, close samples may vary wildly in grade.

Examination of the cumulative normal probability plot for the West Zone (refer to Figure 14-7) revealed a fairly continuous linear trend up to approximately 100 g/tonne. Above that grade, the linear trend became discontinuous. Above approximately 200 g/tonne, the samples started deviating from the linear trend.

The spatial distribution of the higher grade samples was examined (refer to Figure 14-5). No pattern could be resolved; the samples seemed to be fairly evenly distributed throughout the deposit. In other words, the higher grade samples could not be spatially or geologically isolated.

One method for treating outliers is to project the samples back to the linear trend line, thereby reducing the sample's grade to fit the lognormal distribution. However, to do so in this case would mean increasing the samples' grades. This was thought to be imprudent.

For the East Zone, the samples followed a fairly linear trend until approximately 100 g/tonne. Like the West Zone, above that value they trended above the trend line. Meaning, if the samples were projected to the linear trend, the grades would *increase*. As with the West Zone, this was thought to be imprudent.

Top-cutting was carried out using the following procedure.

The +100 g/tonne assays were top-cut or "capped" to 100 g/tonne. The capped samples were composited over the vein intercept, with a minimum horizontal width of 1.5 metres. For intercepts that were narrower than the 1.5 metre minimum horizontal mining width, they were diluted (at zero grade) to 1.5 metres.

The author considers this top-cut methodology to be appropriate.



Table 14-3: Top-cut grades.

| <b>West Zone</b> |        |        |        |        |              |              |            |       |
|------------------|--------|--------|--------|--------|--------------|--------------|------------|-------|
| Hole             | Sample | From   | To     | Length | Au (g/t)     | Au (g/t)     | Top-Cut    | Zone  |
| ML86-01          | 40618  | 153.60 | 153.70 | 0.10   | 5451.470     |              | 100.000    | XRA S |
| ML87-27          | 51552  | 129.10 | 129.30 | 0.20   | 868.160      |              | 100.000    | HOT S |
| ML87-49          | 66378  | 14.81  | 15.18  | 0.37   | 539.700      |              | 100.000    | OSC N |
| ML87-05          | 43800  | 61.41  | 61.51  | 0.10   | 410.330      |              | 100.000    | ROM S |
| ML87-52          | 76603  | 464.60 | 465.03 | 0.43   | 354.720      |              | 100.000    | HOT N |
| ML87-35          | 64364  | 112.86 | 113.26 | 0.40   | 343.340      |              | 100.000    | PAP S |
| NSG-10-10        | 779453 | 363.50 | 364.00 | 0.50   | 342.730      |              | 100.000    | NOV N |
| ML88-78          | 8483   | 315.30 | 316.00 | 0.70   | 317.800      |              | 100.000    | NOV S |
| ML87-70          | 4247   | 377.03 | 377.30 | 0.27   | 242.880      |              | 100.000    | DEL N |
| ML87-05          | 6510   | 255.35 | 255.77 | 0.42   | 228.520      |              | 100.000    | FUR N |
| ML87-70          | 4246   | 376.73 | 377.03 | 0.30   | 226.250      |              | 100.000    | DEL N |
| ML87-40          | 64897  | 293.88 | 294.13 | 0.25   | 176.950      |              | 100.000    | DEL N |
| ML87-35          | 64511  | 399.97 | 400.13 | 0.16   | 128.130      |              | 100.000    | HOT N |
| NSG-3-10         | 691539 | 152.40 | 152.90 | 0.50   | 122.490      |              | 100.000    | FOX N |
| ML87-02          | 40762  | 166.61 | 166.91 | 0.30   | 118.290      |              | 100.000    | LN S  |
| ML87-19          | 46152  | 81.46  | 81.61  | 0.15   | 117.600      |              | 100.000    | BIS S |
| ML87-72          | 6927   | 180.04 | 180.31 | 0.27   | 113.970      |              | 100.000    | IRV S |
| ML87-27          | 51610  | 200.90 | 201.20 | 0.30   | 113.490      |              | 100.000    | DEL N |
| ML87-39          | 65789  | 148.74 | 149.04 | 0.30   | 106.660      |              | 100.000    | LN S  |
| ML87-66          | 82111  | 305.30 | 305.99 | 0.69   | 102.520      |              | 100.000    | IRV N |
| <b>East Zone</b> |        |        |        |        |              |              |            |       |
| Hole             | From   | To     | Length | Sample | Au (g/tonne) | Au (g/tonne) | Top-Cut    | Zone  |
| EML87-35         | 26.65  | 27.04  | 0.39   | 1959   | 479.410000   |              | 100.000000 | Win E |
| EML87-20         | 71.59  | 71.81  | 0.22   | 92061  | 411.150000   |              | 100.000000 | Rio W |
| EML87-04         | 128.13 | 128.38 | 0.25   | 81914  | 374.540000   |              | 100.000000 | Mos E |
| EML87-37         | 215.40 | 216.00 | 0.60   | 2780   | 368.720000   |              | 100.000000 | Win E |
| EML87-05         | 51.30  | 51.80  | 0.50   | 82155  | 336.590000   |              | 100.000000 | Tok W |
| EML87-04         | 41.20  | 41.40  | 0.20   | 81846  | 324.640000   |              | 100.000000 | Han W |
| EML87-31         | 70.64  | 70.85  | 0.21   | 1393   | 314.310000   |              | 100.000000 | Han E |
| NSG-21-10        | 104.00 | 105.10 | 1.10   | 805069 | 243.730000   |              | 100.000000 | Han E |
| EML87-41         | 222.82 | 223.07 | 0.25   | 3241   | 234.000000   |              | 100.000000 | Bed W |
| EML87-41         | 223.07 | 223.40 | 0.33   | 3242   | 234.000000   |              | 100.000000 | Bed W |
| EML87-05         | 212.20 | 212.40 | 0.20   | 82320  | 229.030000   |              | 100.000000 | Mon E |
| EML87-30         | 74.10  | 74.39  | 0.29   | 93250  | 206.490000   |              | 100.000000 | Bed W |
| EML03-52         | 84.20  | 84.60  | 0.40   | 17486  | 205.330000   |              | 100.000000 | Ban W |
| EML87-25         | 83.10  | 83.25  | 0.15   | 92616  | 196.310000   |              | 100.000000 | Mon W |
| NSG-14-10        | 32.60  | 33.20  | 0.60   | 779881 | 195.100000   |              | 100.000000 | Ban W |
| NSG-15-10        | 68.90  | 69.40  | 0.50   | 804010 | 180.230000   |              | 100.000000 | Rio W |
| EML87-40         | 139.51 | 140.10 | 0.59   | 2972   | 175.200000   |              | 100.000000 | Lon W |
| EML87-40         | 194.40 | 194.70 | 0.30   | 3070   | 139.560000   |              | 100.000000 | Han W |
| EML87-41         | 200.00 | 200.30 | 0.30   | 3220   | 134.230000   |              | 100.000000 | Mos W |
| EML87-28         | 181.77 | 182.16 | 0.39   | 1370   | 130.510000   |              | 100.000000 | Win E |
| NSG-15-10        | 186.80 | 187.30 | 0.50   | 804167 | 112.800000   |              | 100.000000 | Bel E |
| EML87-08         | 65.10  | 65.40  | 0.30   | 90191  | 106.800000   |              | 100.000000 | Vic W |
| NSG-28-11        | 36.00  | 36.50  | 0.50   | 805953 | 100.840000   |              | 100.000000 | Van W |

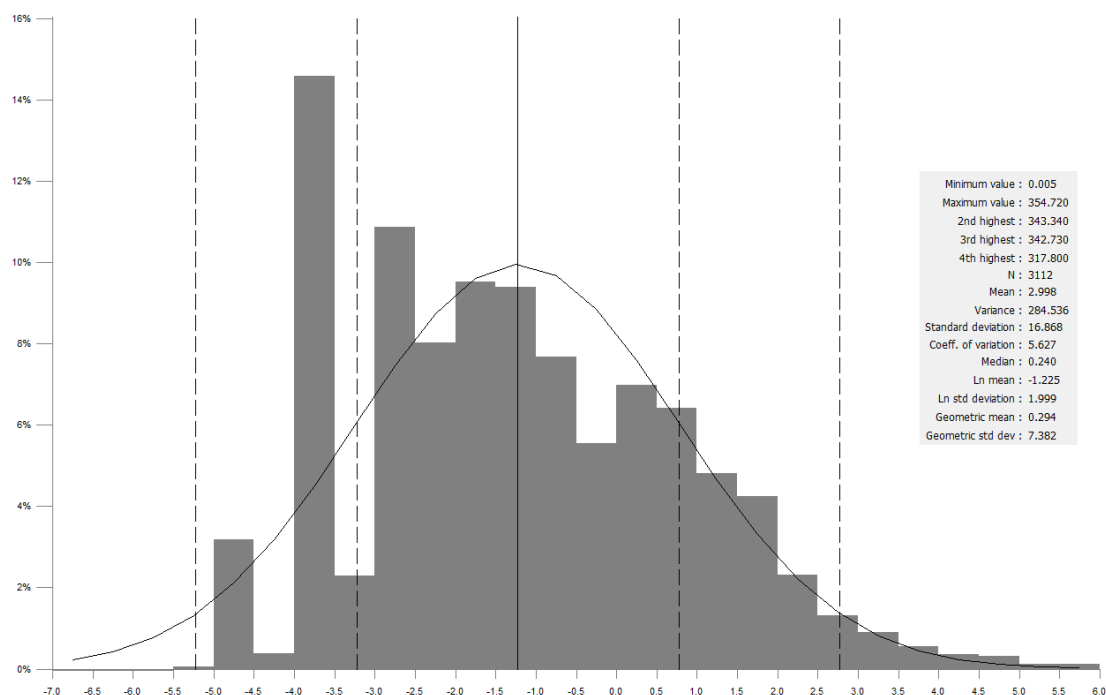


Figure 14-9: Histogram of Non-Regularised (i.e.: irregular length) assays within West Zone interpreted veins (log scale).

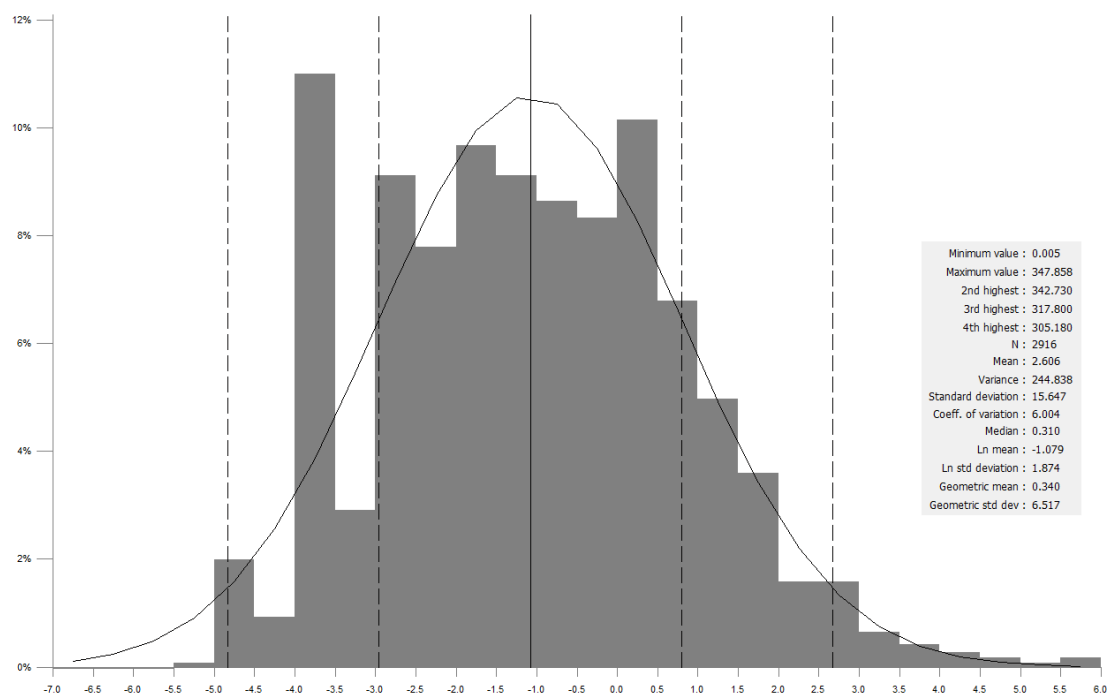


Figure 14-10: Histogram of 0.5 m regularised samples within interpreted veins (West Zone).



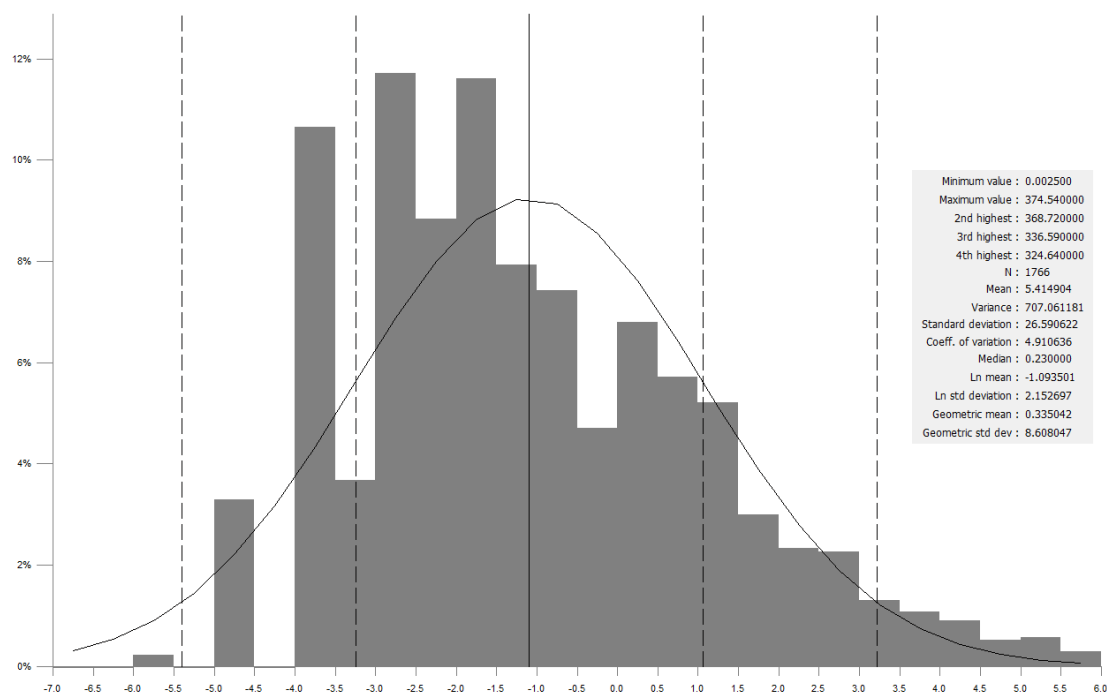


Figure 14-11: Histogram of non-Regularised (i.e.: irregular length) assays within East Zone interpreted veins (log scale).

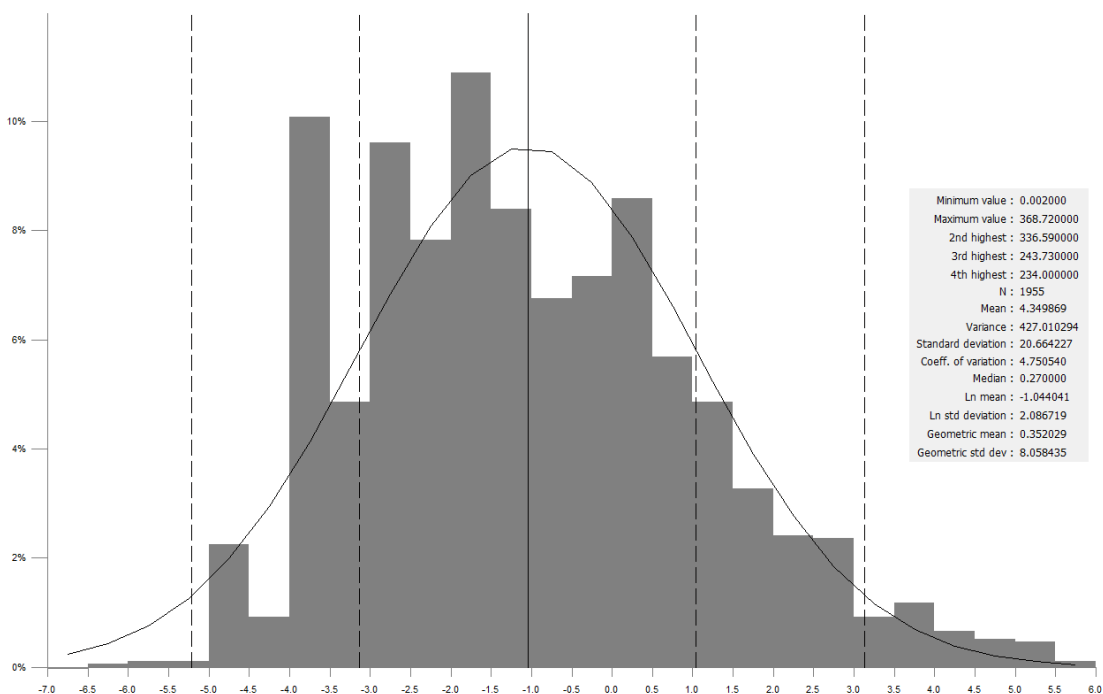


Figure 14-12: Histogram of 0.5 m regularised samples within interpreted veins (East Zone).



## 14.7 Specific Gravity

There is no record of any specific gravity (“SG”) measurements having been made. A value of 2.65 was chosen as representative of the rock types under consideration. The author recommends that SG work be carried out.

## 14.8 Block Modelling

### 14.8.1 Preliminary Work

Preliminary two-dimensional block model files were created for grade estimation – one for each zone that was outlined. Grade estimation was carried out in four “runs” using 25, 50, 100 and 200 metre search radii. For grade estimation, the diluted (to 1.5 metres true width) grade, with a top-cut grade of 20 g/tonne, was used. Inverse-distance weighting was employed, using varying distance “powers.”

Sets of longitudinal cross-sections for each “run” were printed and examined. Preliminary work indicated that use of a low distance “power” coupled with a relatively longer search radius was effective at addressing the coarse-gold nature of the mineralisation (also known as the “nugget effect”). A lower power smoothes the extreme highs and lows that, because of the nugget effect, are not realistic.

To further illustrate, consider a high grade intercept (say, 20 g/tonne) ten metres from a lower grade, but “gold-positive” intercept (say, 1 g/tonne). In “nuggety” mineralisation, it is likely that, because of small sample size relative to block size, the high grade intercept happened to intersect a nugget while the lower grade intercept did not. If a high power of say, two, were used in conjunction with inverse distance weighting to estimate the block grades and the block centroids were near the intercepts, the resulting grade of the block near the 20 g/tonne intercept would be very high – close to 20 g/tonne – and the block grade near the 1 g/tonne intercept would be very low – close to 1 g/tonne.

Such a result is possible but not likely. It is more likely that the grades of each block are somewhere in between. Using a lower-value inverse-distance power is effective at smoothing the nuggety grades while preserving the total metal content. This results in much more realistic block grades on a “local” scale and, in the author’s opinion, a more realistic global estimate of tonnes, grade and metal content (ounces).



### 14.8.2 Final Work

Two-dimensional block models were created, one for each vein. Two sets of models were created – one set for grade estimates and one for true width.

Refer to Table 14-4 for block model parameters. From the individual models, a single model was compiled that held all of the blocks from all of the veins.

The blocks were constrained by the interpreted vein outlines (refer to Section 14.4). The block size was 10x10 metres.

Table 14-4: Block model parameters.

| <b>West Zone</b> |                           |                          |                     |                   |                     |
|------------------|---------------------------|--------------------------|---------------------|-------------------|---------------------|
| Direction        | Model Origin<br>(Grid, m) | Model Limit<br>(Grid, m) | Model Extent<br>(m) | Block Size<br>(m) | Number of<br>Blocks |
| East             | 1,300                     | 2,500                    | 1,200               | 10                | 121                 |
| Elevation (RL)   | 600                       | 1200                     | 600                 | 10                | 61                  |

| <b>East Zone</b> |                           |                          |                     |                   |                     |
|------------------|---------------------------|--------------------------|---------------------|-------------------|---------------------|
| Direction        | Model Origin<br>(Grid, m) | Model Limit<br>(Grid, m) | Model Extent<br>(m) | Block Size<br>(m) | Number of<br>Blocks |
| North            | 7,800                     | 8,800                    | 1,000               | 10                | 101                 |
| Elevation (RL)   | 600                       | 1,200                    | 600                 | 10                | 61                  |

## 14.9 Cut-off Grades

### 14.9.1 Zone Interpretation

The chosen cut-off grade for mineralised zone interpretation was approximately 1 g/tonne of gold. This value was chosen through iteration as the cut-off that, in the author's opinion, provided the closest approximation of the continuity of that mineralisation. As discussed in Section 14.4, if the intercept grade was less than the cut-off but "gold positive," and occurred in a location where the author felt that a vein or mineralised zone ought to occur based on the geology of adjacent cross-sections, that intercept was included.

### 14.9.2 Mineral Resources

The chosen "block cut-off"<sup>9</sup> grade (non-diluted - i.e.: without non-planned dilution) for defining mineral resources was 2.6 g/tonne. Considering a typical mining recovery of 95%, a typical overall processing recovery of 95%, a typical smelter return of 98% and a gold price of \$US 1400 per ounce, rock with that grade would have a revenue of \$US 100-105 per tonne. That was considered to be a reasonable block cut-off grade for

<sup>9</sup> The grade at which it is possible to mine and process and exposed block (i.e.: development not included).



relatively higher cost underground, narrow vein mining and conventional processing – the most likely methods that would be applied to this deposit.

## 14.10 Grade Estimation

The sample density provided by diamond drilling was insufficient for geostatistical grade estimation.

Inverse distance weighting, using a power of 1 was considered to be a reasonable method for estimating block grades (refer to Section 14.8). For estimating horizontal width values, a power of 2 was used to best honour the sample data. Refer to Table 14-5 for grade and true thickness estimation parameters.

A maximum sample search radius of 200 metres was used - a large value, but the author felt it to be appropriate for several reasons:

- The vein geometries were constrained as described in Section 14.4.
- Only the closest three samples in four sectors were considered. Farther samples were ignored.
- In some cases of established geological continuity but where intercept spacing was long, the large search radius was necessary to avoid a large number of block grades being estimated using only one intercept.

Separate estimates were carried out and separate files were created for each zone for both grade and true thickness. Refer to Table 14-6 for a description of the model fields.

Estimated horizontal thickness values were merged into the final grade model for each vein. A separate model file was created for each vein. For the West Zone, the final model files were named "2D IDW Au Run 3, XXXX.dat", where XXXX represented the vein name. For the East Zone, the corresponding files were named "EZ 2D IDW Au Run 3, XXXX.dat".

Table 14-5: Grade estimation parameters.

| Parameter | Grade | Horizontal |
|-----------|-------|------------|
|-----------|-------|------------|



|  |  |  |  | <b>Thickness</b>             |                        |
|--|--|--|--|------------------------------|------------------------|
| Intercept Field Used                   |  |  |  | Au (g/tonne) Top-Cut Diluted | "Diluted Horiz Length" |
| Inverse Distance Power                 |  |  |  | 1                            | 2                      |
| Maximum Sample Search Ellipse Diameter |  |  |  | 200 m                        | 200 m                  |
| Blocks Constrained?                    |  |  |  | Outline Constrained          | Outline Constrained    |
| Min. Number of Holes                   |  |  |  | 1                            | 1                      |
| Ellipse Search Sectors                 |  |  |  | 4                            | 4                      |
| Max. Number of Samples Per Sector      |  |  |  | 3                            | 2                      |





Table 14-6: Block model fields.

| <b><u>West Zone</u></b>      |   |
|------------------------------|---|
| <b>Field</b>                 | <b>Description</b>                                  |
| Easting                      | Easting, block centroid.                            |
| _Easting                     | Block size, east direction.                         |
| Northing                     | Northing, block centroid.                           |
| _Northing                    | Block size, north direction.                        |
| Elevation                    | Elevation, block centroid.                          |
| _Elevation                   | Block size, elevation direction.                    |
| Au (g/t) Top-Cut Diluted     | Estimated gold grade (g/tonne).                     |
| Run                          | Run.  |
| Zone                         | Zone (vein).  |
| Diluted Horiz Length         | Estimated horizontal thickness (1.5 m min.).        |
| Points                       | Number of intercepts used to estimate grade.        |
| STD_DEV                      | Standard deviation of the grade estimate.           |
| BLOCKINDX                    | Unique block index.                                 |
| Number of Holes              | Number of intercepts used to estimate grade.        |
| Average Distance             | Average distance of samples used to estimate grade. |
| <b><u>East Zone</u></b>      |   |
| <b>Field</b>                 | <b>Description</b>                                  |
| East                         | Easting, block centroid.                            |
| _East                        | Block size, east direction.                         |
| North                        | Northing, block centroid.                           |
| _North                       | Block size, north direction.                        |
| RL                           | Elevation, block centroid.                          |
| _RL                          | Block size, elevation direction.                    |
| Au (g/tonne) Top-Cut Diluted | Estimated gold grade (g/tonne).                     |
| Run                          | Run.  |
| Zone                         | Zone (vein).  |
| Diluted Horiz Length         | Estimated horizontal thickness (1.5 m min.).        |
| Points                       | Number of intercepts used to estimate grade.        |
| STD_DEV                      | Standard deviation of the grade estimate.           |
| BLOCKINDX                    | Unique block index.                                 |
| Number of Holes              | Number of intercepts used to estimate grade.        |
| Average Distance             | Average distance of samples used to estimate grade. |

## 14.11 Resource Classification Parameters

Resource classification parameters were chosen based on the author's judgement. The degree of confidence in the reported resources was classified based on the validity and robustness of input data and the proximity of resource blocks to sample locations. Resources were reported, as required by NI 43-101, according to the CIM Standards on Minerals Resources and Reserves.

### 14 – Mineral Resource Estimate



Inferred resources were outlined graphically, on cross-sections and longitudinal sections using the process that was described in Section 14.4.

No Indicated or Measured mineral resources were identified. While a sample intercept spacing of approximately 25 metres was adequate for defining the geometry and geological continuity of the veins, the current intercept spacing was inadequate for determining grade continuity above the Inferred level of mineral resources.

Poor collar survey control for historical (i.e.: pre-2010/2011) drilling, coupled with a lack of SG work are additional reasons why Indicated or Measured resources were not identified.

### **14.12 Dip Correction**

Zones were outlined on the vertical plane and the horizontal thickness of each block was estimated. Using those two values together, no dip correction was required.

### **14.13 Factors Materially Impacting the Estimate**

There are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially impact the mineral resource estimate.

### **14.14 Results**

Mineral resources were identified using a block cut-off grade of 2.6 g/tonne.

For the West Zone, non-diluted<sup>10</sup> Inferred Mineral Resources totalled 1.46 million tonnes with an average gold grade of 5.52 g/tonne for 259,000 ounces.

For the East Zone, non-diluted<sup>10</sup> Inferred Mineral Resources totalled 1.06 million tonnes with an average gold grade of 5.72 g/tonne for 195,000 ounces.

For both zones, the total non-diluted<sup>10</sup> Inferred Mineral Resources was 2.52 million tonnes with an average gold grade of 5.6 g/tonne for 454,000 ounces.

Resources were tabulated by zone in Table 14-9.

---

<sup>10</sup> Planned dilution, to a minimum true width of 1.5 metres, was included. Non-planned dilution was not included.



Table 14-7: Summary of mineral resources.

| Summary of Resources, Non-Diluted, 2.6 g/tonne Block Cut-off Grade |                          |                  |                         |                |
|--|--------------------------|------------------|-------------------------|----------------|
| Zone   | Volume (m <sup>3</sup> ) | Tonnes           | Average Grade (g/tonne) | Ounces         |
| West Zone  | 551,000                  | 1,460,000        | 5.52                    | 259,000        |
| East Zone  | 400,000                  | 1,060,000        | 5.72                    | 195,000        |
| <b>Total</b>   | <b>951,000</b>           | <b>2,520,000</b> | <b>5.60</b>             | <b>454,000</b> |

\* Planned dilution, to 1.5 m minimum width, was included. Non-planned dilution was not included.

Table 14-8: Resource estimation results.

| West Zone               |                          |                  |                         |                | East Zone               |                          |                  |                         |                |
|-------------------------|--------------------------|------------------|-------------------------|----------------|-------------------------|--------------------------|------------------|-------------------------|----------------|
| Cut-off Grade (g/tonne) | Volume (m <sup>3</sup> ) | Tonnes           | Average Grade (g/tonne) | Ounces         | Cut-off Grade (g/tonne) | Volume (m <sup>3</sup> ) | Tonnes           | Average Grade (g/tonne) | Ounces         |
| 10.0                    | 55,200                   | 146,200          | 14.04                   | 66,000         | 10.0                    | 33,700                   | 89,200           | 12.69                   | 36,400         |
| 8.0                     | 91,800                   | 243,200          | 11.99                   | 93,800         | 8.0                     | 73,800                   | 195,500          | 10.59                   | 66,600         |
| 6.0                     | 159,000                  | 422,000          | 9.80                    | 133,000        | 6.0                     | 148,000                  | 393,000          | 8.78                    | 111,000        |
| 5.0                     | 209,000                  | 553,000          | 8.77                    | 156,000        | 5.0                     | 196,000                  | 519,000          | 7.97                    | 133,000        |
| 4.0                     | 299,000                  | 791,000          | 7.47                    | 190,000        | 4.0                     | 257,000                  | 681,000          | 7.12                    | 156,000        |
| 3.0                     | 464,000                  | 1,228,000        | 6.05                    | 239,000        | 3.0                     | 350,000                  | 926,000          | 6.15                    | 183,000        |
| <b>2.6</b>              | <b>551,000</b>           | <b>1,460,000</b> | <b>5.52</b>             | <b>259,000</b> | <b>2.6</b>              | <b>400,000</b>           | <b>1,060,000</b> | <b>5.72</b>             | <b>195,000</b> |
| 2 **                    | 759,000                  | 2,011,000        | 4.64                    | 300,000        | 2 **                    | 545,000                  | 1,443,000        | 4.81                    | 223,000        |
| 1 **                    | 1,627,000                | 4,311,000        | 2.90                    | 402,000        | 1 **                    | 879,000                  | 2,329,000        | 3.53                    | 264,000        |
| 0 **                    | 3,790,000                | 10,045,000       | 1.58                    | 511,000        | 0 **                    | 1,464,000                | 3,879,000        | 2.35                    | 293,000        |

\* Planned dilution, to 1.5 m minimum width, was included. Non-planned dilution was not included.

\*\* Mineralisation below the chosen 2.6 g/tonne block cut-off is not considered to be a "Mineral Resource" and is shown here for information purposes only.

#### Notes on Mineral Resource Estimate:

1. Cut-off grade for mineralised zone interpretation was 1 g/tonne.
2. Block cut-off grade for defining Mineral Resources was 2.6 g/tonne.
3. Based on lognormal probability analysis, the top-cut grade was 100 g/tonne.
4. Gold price was \$US 1400 per troy ounce.
5. Zones extended up to 25 metres from the last intercept, both along strike and down-dip.
6. Minimum width was 1.5 metres.
7. Planned dilution, based on a minimum mining width of 1.5 metres, was included. Non-planned dilution was not included.
8. No mineral reserves were identified. Mineral resources that are not mineral reserves do not have demonstrated economic viability.
9. Resource estimate prepared by Doug Roy, M.A.Sc., P.Eng., MineTech International Limited.
10. A specific gravity (bulk density) value of 2.65 was applied to all blocks - a typical value for the lithology.
11. Inverse distance weighting was used for estimating block grades, with "powers" of one and two for gold grades and vein thickness values, respectively.



Table 14-9: Non-diluted mineral resources by zone.

| <b>West Zone Resources, Non-Diluted*, 2.6 g/tonne Block Cut-off Grade</b> |                               |                  |                                |                |
|---|-------------------------------|------------------|--------------------------------|----------------|
| <b>Zone</b>   | <b>Volume (m<sup>3</sup>)</b> | <b>Tonnes</b>    | <b>Average Grade (g/tonne)</b> | <b>Ounces</b>  |
| IRV N   | 61,700                        | 163,000          | 8.21                           | 43,000         |
| DEL N   | 63,800                        | 169,000          | 6.83                           | 37,100         |
| FOX N   | 35,700                        | 94,600           | 8.31                           | 25,300         |
| OSC N   | 27,500                        | 72,900           | 8.15                           | 19,100         |
| XMA S   | 43,500                        | 115,000          | 4.60                           | 17,000         |
| NOV S   | 34,100                        | 90,200           | 5.64                           | 16,400         |
| LN S  | 39,600                        | 105,000          | 4.15                           | 14,000         |
| NOV N   | 39,900                        | 106,000          | 3.94                           | 13,400         |
| LN N  | 45,300                        | 120,000          | 3.27                           | 12,600         |
| FUR N   | 17,700                        | 46,800           | 6.59                           | 9,920          |
| HOT N   | 20,800                        | 55,100           | 5.55                           | 9,830          |
| BIS S   | 26,400                        | 70,000           | 3.85                           | 8,670          |
| IRV S   | 24,700                        | 65,400           | 3.88                           | 8,160          |
| HOT S   | 14,200                        | 37,600           | 3.81                           | 4,610          |
| DEL S   | 9,100                         | 24,100           | 4.75                           | 3,680          |
| CUM N   | 8,400                         | 22,300           | 4.95                           | 3,550          |
| PAP S   | 6,150                         | 16,300           | 5.48                           | 2,870          |
| MIK S   | 9,930                         | 26,300           | 3.35                           | 2,830          |
| ROM S   | 7,350                         | 19,500           | 4.42                           | 2,770          |
| ALF S   | 4,650                         | 12,300           | 3.82                           | 1,510          |
| BRA N   | 3,750                         | 9,940            | 3.48                           | 1,110          |
| KIL S   | 2,850                         | 7,550            | 3.05                           | 740            |
| XRA S   | 1,800                         | 4,780            | 3.66                           | 563            |
| UNI S   | 900                           | 2,390            | 3.01                           | 231            |
| BIS N   | 900                           | 2,390            | 2.79                           | 214            |
| OSC S   | 337                           | 892              | 2.67                           | 77             |
| <b>Total (Rounded)</b>  | <b>551,000</b>                | <b>1,460,000</b> | <b>5.52</b>                    | <b>259,000</b> |

Outlined Mineralised Zones Without Any +2.6 g/tonne Blocks:

|       |       |       |       |       |
|-------|-------|-------|-------|-------|
| ALF N | FOX S | KIL N | SIE N | VIC N |
| BRA S | FUR S | LIM S | SIE S | VIC S |
| CHA N | GOL N | MIK N | SPE N | WHI S |
| CHA S | GOL S | PAP N | SPE S | XMA N |
| CUM S | IND N | QUE N | STR S | XRA N |
| ECH N | IND S | QUE S | TAN N | YAN S |
| ECH S | JUL N | ROM N | TAN S |       |

\* Planned dilution, to 1.5 m minimim width, was included. Non-planned dilution was not included.



**East Zone Resources, Non-Diluted\*, 2.6 g/tonne Block Cut-off Grade**

| Zone                   | Volume (m <sup>3</sup> ) | Tonnes           | Average Grade (g/tonne) | Ounces         |
|------------------------|--------------------------|------------------|-------------------------|----------------|
| Mon E                  | 47,700                   | 127,000          | 6.62                    | 27,000         |
| Win E                  | 35,600                   | 94,200           | 6.12                    | 18,500         |
| Han W                  | 30,500                   | 80,800           | 4.59                    | 11,900         |
| Ban W                  | 20,100                   | 53,200           | 6.65                    | 11,400         |
| Tor E                  | 24,300                   | 64,300           | 5.08                    | 10,500         |
| Rio W                  | 18,100                   | 48,000           | 6.80                    | 10,500         |
| Mos W                  | 23,200                   | 61,500           | 5.03                    | 9,950          |
| Tok W                  | 26,200                   | 69,400           | 4.25                    | 9,480          |
| Bed W                  | 15,600                   | 41,300           | 6.97                    | 9,260          |
| Han E                  | 16,600                   | 43,900           | 6.12                    | 8,640          |
| Lon W                  | 18,700                   | 49,600           | 5.31                    | 8,470          |
| Bel E                  | 11,700                   | 31,100           | 7.96                    | 7,960          |
| Mos E                  | 9,300                    | 24,600           | 7.45                    | 5,890          |
| Tor W                  | 13,200                   | 35,000           | 4.80                    | 5,400          |
| Win W                  | 7,950                    | 21,100           | 7.79                    | 5,290          |
| Hal W                  | 12,200                   | 32,300           | 4.90                    | 5,090          |
| Lis E                  | 3,750                    | 9,940            | 15.32                   | 4,900          |
| Van W                  | 7,130                    | 18,900           | 6.26                    | 3,800          |
| Bat W                  | 7,060                    | 18,700           | 6.01                    | 3,610          |
| Vic W                  | 11,700                   | 31,000           | 3.31                    | 3,300          |
| Vic E                  | 3,750                    | 9,940            | 9.05                    | 2,890          |
| Mad E                  | 7,050                    | 18,700           | 3.93                    | 2,360          |
| Dub E                  | 4,950                    | 13,100           | 5.12                    | 2,160          |
| Mon W                  | 7,520                    | 19,900           | 3.07                    | 1,960          |
| LON E                  | 4,210                    | 11,200           | 5.02                    | 1,810          |
| Hal E                  | 3,920                    | 10,400           | 3.35                    | 1,120          |
| Whi E                  | 1,950                    | 5,180            | 3.74                    | 623            |
| Acc W                  | 2,350                    | 6,230            | 2.73                    | 547            |
| Bat E                  | 2,260                    | 5,990            | 2.70                    | 520            |
| Tok E                  | 1,350                    | 3,590            | 3.06                    | 353            |
| <b>Total (Rounded)</b> | <b>400,000</b>           | <b>1,060,000</b> | <b>5.72</b>             | <b>195,000</b> |

Outlined Mineralised Zones Without Any +2.6 g/tonne Blocks:

|       |       |       |
|-------|-------|-------|
| Ban E | Daw E | Tak W |
| Bed E | Kum W | Van E |
| Bel W | Lag W | Veg E |
| Ber E | Lis W |       |
| Ber W | Mad W |       |

\* Planned dilution, to 1.5 m minimim width, was included. Non-planned dilution was not included.





Notes on Mineral Resource Estimate:

1. Cut-off grade for mineralised zone interpretation was 1 g/tonne.
2. Block cut-off grade for defining Mineral Resources was 2.6 g/tonne.
3. Based on lognormal probability analysis, the top-cut grade was 100 g/tonne.
4. Gold price was \$US 1400 per troy ounce.
5. Zones extended up to 25 metres from the last intercept, both along strike and down-dip.
6. Minimum width was 1.5 metres.
7. Planned dilution, based on a minimum mining width of 1.5 metres, was included. Non-planned dilution was not included.
8. No mineral reserves were identified. Mineral resources that are not mineral reserves do not have demonstrated economic viability.
9. Resource estimate prepared by Doug Roy, M.A.Sc., P.Eng., MineTech International Limited.
10. A specific gravity (bulk density) value of 2.65 was applied to all blocks - a typical value for the lithology.
11. Inverse distance weighting was used for estimating block grades, with "powers" of one and two for gold grades and vein thickness values, respectively.

## 14.15 Comparison With Previous Resource Estimates

The current mineral resource estimate was compared with the previous, NI-43-101-compliant estimate that was carried in 2010 (Roy, 2010).

The current mineral resource estimate used a 2.6 g/tonne block cut-off (refer to Section 14.9.2) whilst the previous resource estimate (Roy, 2010) used a 3.0 g/tonne block cut-off.

For the purpose of comparison, both estimates were compared at a 3 g/tonne block cut-off.

Generally the grade of above-block-cut-off blocks has increased and the tonnes have decreased, resulting in a net increase in metal content (ounces). The differences were caused partly by (a) additional drilling that NSGold carried out in 2011 and (b) a minor change in block grade estimation methods (refer to Table 14-10).

The author (Mr Roy) believes that the robustness and repeatability of the current resource estimation methodology has improved the accuracy and precision of the estimate and that the changes in the mineral resource estimate are valid.



### **Comparison Using a 3 g/tonne Block Cut-off**

| Zone              | Cut-off<br>Grade<br>(g/tonne) | Tonnes Above<br>Cut-off | Average<br>Diluted<br>Grade<br>(g/tonne) | Ounces  |
|-------------------|-------------------------------|-------------------------|--|---------|
| West Zone 2010    | 3.0                           | 1,400,000               | 4.60                                     | 210,000 |
| West Zone Current | 3.0                           | 1,228,000               | 6.05                                     | 239,000 |
| Difference        |                               | -172,000                | +1.45                                    | +29,000 |
| East Zone 2010    | 3.0                           | 1,100,000               | 5.10                                     | 180,000 |
| East Zone Current | 3.0                           | 926,000                 | 6.15                                     | 183,000 |
| Difference        |                               | -174,000                | +1.05                                    | +3,000  |
| Total 2010        | 3.0                           | 2,500,000               | 4.85                                     | 390,000 |
| Total Current     | 3.0                           | 2,154,000               | 6.09                                     | 422,000 |
| Total Difference  |                               | -346,000                | +1.24                                    | +32,000 |

Table 14-10: Differences in methodology between the previous and current mineral resource estimates.

| Item                   | Current Estimate (2012)  | Previous Estimate (2010)                                 | Reasoning Behind Change   |
|------------------------|--|--|---|
| Top-Cut Grade:         |  |  |   |
| Value                  | 100 g/tonne based on observation of outliers on the lognormal probability distribution curves. | 20 g/tonne based on deviation from cumulative histogram. | More standard-practice and more repeatable.   |
| Application            | Raw samples, prior to compositing intercept grades.  | After compositing intercept grades.                      | More standard-practice.   |
| Grade Estimation:      |  |  |   |
| Inverse Distance Power | 1  | 0.25   | Less smoothing than previously to decrease the effects of using a higher top-cut grade. |
| Block Cut-off Grade    | 2.6 g/tonne  | 3.0 g/tonne  | Gold price increased from \$US 1200 (2010 Estimate) per ounce to \$1400.                |



## 14.16 Resource Estimate Validation

Longitudinal sections showing the sample intercept grades and the estimated block grades were examined. Visually/graphically, the author (Mr Roy) felt that the block grades accurately represented the sample intercept grades.

The average grade of the current mineral resource, estimated using inverse distance weighting was compared against the declustered average intercept grade. The declustered average was calculated using nearest neighbour grade estimation. This was carried out because the average block grade should be reasonably close to the declustered sample average.

In both zones, the global average grade (zero g/tonne block cut-off) compared very well with the declustered average intercept grade, indicating that on a global scale, the block model fairly represents the intercept grades (sample grades).

| Zone      | Global Average Grade (Zero g/tonne Block Cut-off) |  |
|-----------|---|--|
|           | Current Estimate, Inverse Distance                | Declustered Average, Nearest Neighbour |
| West Zone | 1.58  | 1.58                                   |
| East Zone | 2.35  | 2.40                                   |



## 15 Adjacent Properties

Several areas around the Property have been staked, though there is no current or past production from those sites. A number of past-producing gold districts are in the area. The Moose River, Beaver Dam and Caribou mines are all within a 20 km radius.

Verification of information about adjacent properties was beyond the scope of this report and was not carried out by the Qualified Person. The adjacent properties mentioned above are not necessarily indicative of the mineralization on the Property that is the subject of this report.



## 16 Other Relevant Data and Information

No other information is needed to make this report understandable and not misleading.





## 17 Interpretation and Conclusions

Through diamond drilling, sixty-one mineralised veins have been identified in the West Zone of the Mooseland gold deposit. Forty mineralised veins were identified in the East Zone. The nested, stratiform veins are steeply dipping over a relatively tightly-folded anticline, the axis of which is oriented approximately east-west with a shallow westward plunge. The veins are narrow – most are tens of centimetres wide while some parts of some veins are up to several metres wide – especially near the fold’s apex or “saddle.”

The identified strike length is approximately one kilometre for the West Zone and over 300 metres for the East Zone. The West Zone is “open” at depth. A granite intrusive defines the western extent of the West Zone, and a fault defines the eastern extents of the West Zone. This left-hand fault offsets the deposit. On the eastern side of the fault, the “East Zone” continues eastward. The East Zone is open towards the east and at depth.

Mineral resources were identified using a block cut-off grade of 2.6 g/tonne.

For the West Zone, non-diluted<sup>11</sup> Inferred Mineral Resources totalled 1.46 million tonnes with an average gold grade of 5.52 g/tonne for 259,000 ounces.

For the East Zone, non-diluted<sup>10</sup> Inferred Mineral Resources totalled 1.06 million tonnes with an average gold grade of 5.72 g/tonne for 195,000 ounces.

For both zones, the total non-diluted<sup>10</sup> Inferred Mineral Resources was 2.52 million tonnes with an average gold grade of 5.6 g/tonne for 454,000 ounces.

No Indicated or Measured mineral resources were identified, primarily because the drilling intercept spacing was not sufficient to establish grade continuity to the levels required by those categories. The mineralisation exhibits a strong nugget effect.

No mineral reserves of either category were identified.

The Mooseland gold deposit is a property of merit that warrants further mineral exploration.

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<sup>11</sup> Planned dilution, to a minimum true width of 1.5 metres, was included. Non-planned dilution was not included.



## 18 Recommendations

It is recommended that for future sampling programs, when a submitted standard or submitted blank is out of range, the geologist should re-run either (a) the entire batch of samples if the batch is small, or (b) a certain number of samples before and after the out-of-range sample.

Further surface and underground mineral exploration work is recommended. The work could be accomplished in two phases. Phase 1 would consist of surface diamond drilling to further delineate the strike and depth extents of the East and West Zones, and specific gravity test work to better determine the specific gravity of material at the site.

Contingent on the results from Phase 1, Phase 2 would include dewatering and continuing the existing underground decline, taking a bulk sample, drilling on surface and underground, carrying out metallurgical test work, updating the resources and carrying out a scoping study.

Phase 1 is expected to cost \$430,000 and Phase 2 is expected to cost an additional \$4.0 million.

| <b>Phase 1</b>   |                     |
|--|---------------------|
| <b>Item</b>  | <b>Cost</b>         |
| Surface Diamond Drilling (3,000 - 4,000 metres)          | \$ 350,000          |
| Specific Gravity Test Work                               | \$ 5,000            |
| Contingency (20%)  | \$ 71,000           |
| <i>Phase 1 Total, Rounded</i>                            | <i>\$ 430,000</i>   |
| <b>Phase 2</b>   |                     |
| <b>Item</b>  | <b>Cost</b>         |
| Dewater, rehabilitate and continue existing decline      | \$ 1,500,000        |
| Permitting   | \$ 150,000          |
| Bulk Sampling  | \$ 500,000          |
| Metallurgical Work                                       | \$ 100,000          |
| Surface and Underground Diamond Drilling (10,000 metres) | \$ 1,000,000        |
| Resource and Reserve Estimation, Scoping Study           | \$ 100,000          |
| Contingency (20%)  | \$ 670,000          |
| <i>Phase 2 Total, Rounded</i>                            | <i>\$ 4,000,000</i> |



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Annual Report, 2008

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## **Appendix I**

### **Confirmation of Title**





04/20/2012 15:16

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NSDNR MIN REGIST

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PO Box 698  
Halifax, Nova Scotia  
B3J 2T9

902 424-7735 F  
www.gov.ns.ca

75300-28/12

April 20, 2012

Mr. Michael Hannon  
MineTech International  
Ltd., 1161 Hollis St., Suite  
211 Halifax NS. B3H 2P6

Dear Mr. Hannon:

RE: Mooseland Licences. - Confirmation of Title

Please accept this letter as confirmation that Registry records as at April 20, 2012 indicate that NSGold Corporation/Corporation NSGold, is the holder of exploration licence nos. 08604, 05978, 09233, 09845, and 09232. Globex Mining Enterprises Inc. Is the holder of exploration licence no. 08708 Specifically,

| Licence No. | Claims   | Tract                      | Map    | Anniversary Date   | Comments   |
|-------------|--|----------------------------|--------|--------------------|--|
| 08604       | JKLMNO PQ<br>ABCD EFGH JKLM NO<br>ABCD EFGH JKLM<br>EFGH JKLM NOPQ<br>ABC FGHJ | 51<br>70<br>71<br>72<br>75 | 11D15C | May 14,<br>2012    | Renewed for a 3 <sup>rd</sup> year commencing MAY 14, 2011.                                |
| 05978       | Q<br>NOP<br>ABCD EFGH JKLM NOPQ<br>ABCD EFGH JKLM NOPQ<br>ABCD                 | 47<br>48<br>49<br>50<br>72 | 11D15C | April 2,<br>2013   | Under renewal application no. 19511 for a 28 <sup>th</sup> year commencing APRIL 2, 2012.  |
| 09233       | EF JKLM NOPQ<br>EFGH JKLM OPQ<br>CD EFGH JK                                    | 58<br>59<br>60             | 11D15D | August 31,<br>2012 | Under renewal application no. 18631 for a 2 <sup>nd</sup> year commencing AUGUST 31, 2011. |
| 09845       | N<br>PQ<br>ABD EFGH<br>ABCD EFGH JLM   | 59<br>60<br>61<br>62       | 11D15D | June 1, 2012       | 1 <sup>st</sup> year commencing June 1, 2011.  |
| 09232       | JKLM NOPQ<br>K NOPQ  | 61<br>62                   | 11D15D | August 31,<br>2012 | Under renewal application no. 18632 for a 2 <sup>nd</sup> year commencing AUGUST 31, 2011. |



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NSDNR MIN REGIST

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**NOVA SCOTIA**  
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|       |         |          |        |                    |  |
|-------|---------|----------|--------|--------------------|--|
| 08708 | LO<br>C | 60<br>61 | 11D15D | October 9,<br>2012 | Under renewal application no. 18757 for a 3 <sup>rd</sup> year<br>renewal commencing October 9, 2011 |
|-------|---------|----------|--------|--------------------|--|

Sincerely,

John Donahue



## **Appendix II**

### **Check Assay Certificate**



Minerals Engineering Centre

Dalhousie University  
1360 Barrington Street  
G.H. Murray Bldg. Rm. G101  
Halifax, Nova Scotia  
B3J 1Z1

minerals.engineering.dal.ca  
Tel: 902.494.3955  
Fax: 902.494.3506  
Email: mec@dal.ca

30-Apr-11

MineTech International Ltd  
1161 Hollis Street, Suite 211  
Halifax, NS  
B3H 3P6  
Attention: D. Roy

Re: Results of analysis on submitted samples.  
Screen metallics assay using 100mesh screen.  
Au analysis using 30g fire assay, lead collection, AAS finish.

| Sample                       | Au (mg/kg)   | Wt. (g) |
|------------------------------|--------------|---------|
| MT-01 +100mesh               | 1.845        | 18.49   |
| MT-01 -100mesh               | 0.310        | 760     |
| MT-01 -100mesh               | 0.233        |         |
| <b>MT-01 Calculated Head</b> | <b>0.309</b> |         |
| MT-02 +100mesh               | 20.362       | 6.58    |
| MT-02 -100mesh               | 2.299        | 594     |
| MT-02 -100mesh               | 2.154        |         |
| <b>MT-02 Calculated Head</b> | <b>2.425</b> |         |
| MT-03 +100mesh               | 225.321      | 13.23   |
| MT-03 -100mesh               | 0.797        | 1059    |
| MT-03 -100mesh               | 1.303        |         |
| <b>MT-03 Calculated Head</b> | <b>3.817</b> |         |
| MT-04 +100mesh               | 3.638        | 15.42   |
| MT-04 -100mesh               | 5.938        | 642     |
| MT-04 -100mesh               | 5.718        |         |
| <b>MT-04 Calculated Head</b> | <b>5.777</b> |         |

| Certified<br>Reference<br>Samples: | Au (mg/kg) | Recommended<br>Value |
|------------------------------------|------------|----------------------|
| OXC72                              | 0.200      | 0.205±0.003          |

Daniel Chevalier, MASc  
Manager, Minerals Engineering Centre

Digitally signed by  
Daniel Chevalier  
Date: 2011.05.02  
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## **Appendix III**

### **Assayer Methods and Specifications**



## Appendix III – Assay Methods and Datasheets

This appendix contains detailed descriptions of procedures used by assayers, as described by the assayers.

### Program: Acadia, 1986-1988

#### Assayer: Bondar-Clegg and Company Ltd., Ottawa, ON

The procedure for assaying samples with coarse free (metallic) gold used by Bondar-Clegg is from P.Haulena, Chief Chemist, Bondar-Clegg and Company Ltd. and is quoted by Coates and Riddell in their 1989 report as follows:

##### Analytical Procedures

###### A. Routine Sample Analysis

200-300 grams of crushed sample material were pulverized using ring pulverizer to pass 150 mesh. 10 gram portion was used for standard geochemical fire-assay preconcentration and atomic absorption measurement of gold concentration.

###### B. Metallics Sieve Analysis

###### 1. Samples greater than 1000 ppb Au

The entire sample reject was pulverized and screened through 150 mesh sieve to separate coarse material from the fines, the entire + 150 fraction was assayed plus 1 AT (29.2 grams) of the –150 fraction, weighted average was calculated.

###### 2. Samples greater than 400 ppb and less than 1000 ppb Au

200-400 grams of crushed reject were pulverized and screened through 150 mesh sieve to separate the coarse material from the fines, the entire + 150 fraction was assayed plus 1 AT (29.2 grams) of the –150 fraction, weighed average was calculated.

###### 3. Samples surrounding samples greater than 1000 ppb Au

One to three samples depending on the interval trend surrounding the anomaly were prepared and assayed as in (2) above.

###### 4. Samples labelled Visible Gold

No geochemical screening was done, the samples were processed directly as (1) above.

### Program: NSGold, 2010

#### Assayer: Laboratoire Expert, Royun-Noranda, Quebec

The following method was used by Laboratoire Expert:





#### RECEIVING SAMPLES:

Upon receipt, samples are placed in numerical order and compared with the client packing list to verify receipt of all samples. If the client does not provide a packing list with the shipment, one will be prepared by the person unpacking the samples. If the samples received do not correspond to the client list, the client will be notified.

#### SAMPLE PREPARATION

Samples are dried if necessary and then reduced to -1/4 inch with a jaw crusher. The jaw crusher is cleaned with compressed air between samples and barren material between sample batches. The sample is then reduced to 90% -10 mesh with a rolls crusher. The rolls crusher is cleaned between samples with a wire brush and compressed air and barren material between sample batches. The first sample of each sample batch is screened at 10 mesh to determine that 90% passes 10 mesh. Should 90% not pass, the rolls crusher is adjusted and another test is done. Screen test results are recorded in the log book provided for this purpose. The sample is then riffled using a Jones type riffle to approximately 300gm. Excess material is stored for the client as a crusher reject. The 300gm portion is pulverized to 90% -200 mesh in a ring and puck type pulverizer, the pulverizer is cleaned between samples with compressed air and silica sand between batches. The first sample of each batch is screened at 200 mesh to determine that 90% passes 200 mesh. Should 90% not pass, the pulverizing time is increased and another test is done. Screen test results are recorded in the log book provided for this purpose.

#### GOLD FIRE ASSAY GEOCHEM

A 29.166gm sample is weighed into a crucible that has been previously charged with approximately 130gm of flux. The sample is then mixed and 1mg of silver nitrate is added. The sample is then fused at 1800 F for approximately 45 minutes. The sample is then poured in a conical mold and allowed to cool, after cooling, the slag is broken off and the lead button weighing 25-30gm is recovered. This lead button is then cupelled at 1600 F until all the lead is oxidized. After cooling, the dore bead is placed in a 12 X 75 mm test tube. 0.2ml of 1:1 nitric acid is added and allowed to react in a water bath for 30 minutes, 0.3ml of concentrated hydrochloric acid is then added and allowed to react in the water bath for 30 minutes. The sample is then removed from the water bath and 4.5 ml of distilled water is added, the sample is thoroughly mixed allowed to settle and the gold is determined by atomic absorption.

Each furnace batch comprises 28 samples that include a reagent blank and gold standard. Crucibles are not reused until we have obtained the result of the sample that was previously in each crucible. Crucibles that have had gold values of 200 PPB are discarded. The lower detection limit is 5 PPB and samples assaying over 1000 PPB are checked gravimetrically."

#### GOLD FIRE ASSAY GRAVIMETRIC

A 29.166gm sample is weighed into a crucible that has been previously charged with approximately 130gm of flux. The sample is then mixed and 2mg of silver nitrate is added. The sample is then fused at 1800 F for approximately 45 minutes. The sample is then poured in a conical mold and allowed to cool, after cooling, the slag is broken off and the lead button weighing 25-30gm is

### **Appendix III – Assay Methods & Specifications**



recovered. This lead button is then cupelled at 1600 F until all the lead is oxidized. After cooling, the dore bead is flattened with a hammer and placed in a porcelain parting cup. The cup is filled with 1:7 nitric acid and heated to dissolve the silver. When the reaction appears to be finished, a drop of concentrated nitric acid is added and the sample is observed to ensure there is no further action. The gold bead is then washed several times with hot distilled water, dried, annealed, cooled and weighed.

Each furnace batch comprises 28 samples that include a reagent blank and gold standard. Crucibles are not reused until we have obtained the result of the sample that was previously in each crucible. Crucibles that have had gold values of 3.00 g/t are discarded. The lower detection limit is 0.03 g/t and there is no upper limit. All values over 3.00 g/t are verified before reporting.”

#### SCREEN-FOR-METALLICS:

“The total sample is dried if necessary, crushed and pulverized then screened using a 100 mesh screen. The -100 mesh portion is mixed and assayed in duplicate by fire assay gravimetric finish as well as all of the +100 mesh portion. All individual assays are reported as well as the final calculated value.”

Included below are the specifications of the two standard Reference Materials used by NSGold during the 2010 program:



## CDN Resource Laboratories Ltd.

#2, 20148 – 102<sup>nd</sup> Avenue, Langley, B.C., Canada, V1M 4B4, 604-882-8422, Fax: 604-882-8466 (www.cdnlabs.com)

### GOLD ORE REFERENCE MATERIAL CDN-GS-1F

Recommended value and the "Between Laboratory" two standard deviations

Gold concentration:  $1.16 \pm 0.13$  g/t

PREPARED BY: CDN Resource Laboratories Ltd.

CERTIFIED BY: Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia

INDEPENDENT GEOCHEMIST: Dr. Barry Smee, Ph.D., P. Geo.

DATE OF CERTIFICATION: April 8, 2010

#### ORIGIN OF REFERENCE MATERIAL:

Standard CDN-GS-1F was prepared using ore supplied by Teuton Resources from their Clone gold property in B.C., Canada. Mineralization is localized within highly silicified semi-massive to massive specular hematite. The gold occurs as fine disseminations and is associated with the oxide mineralization. The major lithology is observed to be light grey to green andesitic pyroclastics intercalated with fine grained to aphanitic andesite. Clasts are subangular to angular, matrix supported, and range in size from 1-3cm. Quartz-calcite stockwork pervades the unit in moderate abundance. 6 kg of this ore was blended with 800 kg of a blank granitic ore.

#### METHOD OF PREPARATION:

Reject ore material was dried, crushed, pulverized and then passed through a 270 mesh screen. The +270 material was discarded. The -270 material was mixed for 5 days in a double-cone blender. Splits were taken and sent to 14 commercial laboratories for round robin assaying. Round robin results are displayed below:

|            | Lab 1  | Lab 2  | Lab 3  | Lab 4  | Lab 5  | Lab 6  | Lab 7  | Lab 8  | Lab 9  | Lab 10 | Lab 11 | Lab 12 | Lab 13 | Lab 14 |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SAMPLE     | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t |
| GS-1F-1    | 1.16   | 1.18   | 1.17   | 1.19   | 1.12   | 1.08   | 1.20   | 1.22   | 1.08   | 1.16   | 1.02   | 1.26   | 1.21   | 1.25   |
| GS-1F-2    | 1.11   | 1.23   | 1.06   | 1.21   | 1.14   | 1.11   | 1.18   | 1.11   | 0.96   | 1.15   | 1.09   | 1.21   | 1.22   | 1.17   |
| GS-1F-3    | 1.11   | 1.20   | 1.10   | 1.24   | 1.05   | 1.18   | 1.22   | 1.15   | 1.06   | 1.08   | 1.03   | 1.17   | 1.12   | 1.28   |
| GS-1F-4    | 1.14   | 1.13   | 1.17   | 1.28   | 1.09   | 1.23   | 1.11   | 1.18   | 1.00   | 1.17   | 1.16   | 1.16   | 1.09   | 1.25   |
| GS-1F-5    | 1.15   | 1.23   | 1.11   | 1.24   | 1.08   | 1.17   | 1.06   | 1.27   | 0.91   | 1.06   | 1.01   | 1.28   | 1.13   | 1.22   |
| GS-1F-6    | 1.18   | 1.23   | 1.14   | 1.29   | 1.08   | 1.14   | 1.11   | 1.25   | 1.03   | 1.11   | 1.10   | 1.19   | 1.17   | 1.28   |
| GS-1F-7    | 1.11   | 1.27   | 1.07   | 1.24   | 1.16   | 1.19   | 1.11   | 1.30   | 1.14   | 1.09   | 1.14   | 1.25   | 1.18   | 1.22   |
| GS-1F-8    | 1.13   | 1.21   | 1.17   | 1.19   | 1.16   | 1.07   | 1.05   | 1.13   | 1.03   | 1.11   | 1.13   | 1.12   | 1.14   | 1.28   |
| GS-1F-9    | 1.17   | 1.24   | 1.16   | 1.23   | 1.05   | 1.20   | 1.16   | 1.18   | 0.93   | 1.10   | 1.08   | 1.32   | 1.22   | 1.19   |
| GS-1F-10   | 1.25   | 1.08   | 1.17   | 1.25   | 1.05   | 1.08   | 1.06   | 1.26   | 1.00   | 1.13   | 1.02   | 1.31   | 1.16   | 1.26   |
| Mean       | 1.15   | 1.20   | 1.13   | 1.24   | 1.10   | 1.15   | 1.13   | 1.20   | 1.01   | 1.12   | 1.08   | 1.23   | 1.16   | 1.24   |
| Std. Dev'n | 0.0434 | 0.0580 | 0.0437 | 0.0334 | 0.0459 | 0.0572 | 0.0611 | 0.0642 | 0.0700 | 0.0360 | 0.0553 | 0.0659 | 0.0445 | 0.0389 |
| %RSD       | 3.77   | 4.67   | 3.86   | 2.70   | 4.18   | 5.00   | 5.43   | 5.34   | 6.90   | 3.22   | 5.13   | 5.38   | 3.82   | 3.13   |

Assay Procedure: all assays were fire assay, ICP finish on 30g samples.

#### APPROXIMATE CHEMICAL COMPOSITION:

|                                | Percent |                   | Percent |
|--------------------------------|---------|-------------------|---------|
| SiO <sub>2</sub>               | 64.2    | Na <sub>2</sub> O | 2.6     |
| Al <sub>2</sub> O <sub>3</sub> | 13.1    | MgO               | 1.7     |
| Fe <sub>2</sub> O <sub>3</sub> | 6.3     | K <sub>2</sub> O  | 2.3     |
| CaO                            | 6.2     | TiO <sub>2</sub>  | 0.3     |
| MnO                            | 0.1     | LOI               | 2.0     |
| S                              | 0.6     | C                 | 0.2     |

Figure 1 - Standard CDN-GS-1F Datasheet



## CDN Resource Laboratories Ltd.

#2, 20148 - 102nd Avenue, Langley, B.C., Canada, V1M 4B4, Ph: 604-882-8422 Fax: 604-882-8466 (www.cdnlabs.com)

### REFERENCE MATERIAL: CDN-GS-2F

Recommended value and the "Between Laboratory" two standard deviations

Gold concentration:  $2.16 \pm 0.24$  g/t

**PREPARED BY:** CDN Resource Laboratories Ltd.

**CERTIFIED BY:** Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia

**INDEPENDENT GEOCHEMIST:** Dr. Barry Smee, Ph.D., P. Geo.

**DATE OF CERTIFICATION:** November 30, 2009

### ORIGIN OF REFERENCE MATERIAL:

Standard CDN-GS-2F was prepared using ore supplied by Williams Operating Corporation from their Williams Mine in Ontario, Canada. 62 kg of ore was blended with 738 kg of a blank, granitic material.

### METHOD OF PREPARATION:

Reject ore material was dried, crushed, pulverized and then passed through a 270 mesh screen. The +270 material was discarded. The -270 material was mixed for 5 days in a double-cone blender. Splits were taken and sent to 15 commercial laboratories for round robin assaying. Round robin results are displayed below:

|              | Lab 1  | Lab 2  | Lab 3  | Lab 4  | Lab 5  | Lab 6  | Lab 7  | Lab 8  | Lab 9  | Lab 10 | Lab 11 | Lab 12 | Lab 13 | Lab 14 | Lab 15 |
|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SAMPLE       | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t | Au g/t |
| CDN-GS-2F-1  | 2.10   | 2.14   | 2.13   | 2.04   | 2.34   | 2.22   | 2.11   | 2.01   | 2.23   | 2.21   | 2.23   | 2.18   | 2.16   | 2.08   | 2.38   |
| CDN-GS-2F-2  | 2.22   | 2.29   | 2.38   | 2.02   | 2.40   | 2.40   | 2.18   | 2.16   | 2.37   | 2.21   | 2.16   | 2.07   | 2.31   | 2.01   | 2.42   |
| CDN-GS-2F-3  | 1.97   | 2.11   | 2.26   | 2.08   | 2.48   | 2.36   | 2.26   | 2.11   | 2.19   | 2.40   | 2.32   | 2.07   | 2.13   | 2.09   | 2.50   |
| CDN-GS-2F-4  | 2.21   | 2.22   | 2.08   | 1.95   | 2.45   | 2.19   | 2.33   | 2.15   | 2.16   | 1.99   | 2.32   | 2.10   | 2.17   | 1.94   | 2.26   |
| CDN-GS-2F-5  | 2.32   | 2.22   | 2.37   | 1.95   | 2.39   | 2.95   | 2.09   | 2.38   | 2.19   | 2.22   | 2.19   | 2.20   | 2.16   | 1.94   | 2.09   |
| CDN-GS-2F-6  | 2.13   | 2.16   | 2.25   | 2.17   | 2.16   | 2.17   | 2.05   | 2.32   | 2.26   | 2.01   | 2.16   | 2.04   | 2.13   | 2.06   | 2.04   |
| CDN-GS-2F-7  | 1.90   | 2.11   | 2.05   | 2.03   | 2.41   | 2.35   | 2.05   | 2.30   | 2.26   | 2.10   | 2.35   | 1.93   | 2.22   | 2.07   | 2.22   |
| CDN-GS-2F-8  | 2.09   | 2.14   | 2.04   | 2.09   | 2.36   | 2.03   | 2.10   | 2.18   | 2.16   | 2.28   | 2.21   | 1.92   | 2.24   | 2.00   | 2.04   |
| CDN-GS-2F-9  | 1.93   | 2.23   | 2.02   | 1.95   | 2.09   | 2.15   | 2.01   | 2.33   | 2.30   | 2.07   | 2.05   | 2.04   | 2.15   | 2.06   | 2.30   |
| CDN-GS-2F-10 | 2.04   | 2.28   | 2.15   | 2.12   | 2.49   | 2.27   | 2.06   | 2.49   | 2.26   | 2.08   | 2.29   | 2.03   | 2.17   | 2.06   | 2.08   |
| Mean         | 2.09   | 2.19   | 2.17   | 2.04   | 2.36   | 2.25   | 2.12   | 2.24   | 2.24   | 2.16   | 2.23   | 2.06   | 2.18   | 2.03   | 2.23   |
| Std. Dev'n   | 0.1352 | 0.0668 | 0.1343 | 0.0739 | 0.1323 | 0.1175 | 0.1022 | 0.1455 | 0.0663 | 0.1281 | 0.0933 | 0.0907 | 0.0566 | 0.0564 | 0.1654 |
| %RSD         | 6.47   | 3.05   | 6.18   | 3.63   | 5.61   | 5.23   | 4.81   | 6.49   | 2.96   | 5.99   | 4.19   | 4.40   | 2.59   | 2.78   | 7.41   |

*Assay Procedure:* all assays were fire assay, ICP or AA finish on 30g samples.

*Data from Lab 5 was excluded for failing the t test.*

### APPROXIMATE CHEMICAL COMPOSITION:

|                                | Percent |                   | Percent |
|--------------------------------|---------|-------------------|---------|
| SiO <sub>2</sub>               | 65.8    | Na <sub>2</sub> O | 3.1     |
| Al <sub>2</sub> O <sub>3</sub> | 13.7    | MgO               | 1.9     |
| Fe <sub>2</sub> O <sub>3</sub> | 7.2     | K <sub>2</sub> O  | 1.6     |
| CaO                            | 2.9     | TiO <sub>2</sub>  | 0.3     |
| MnO                            | 0.1     | LOI               | 1.7     |
| S                              | 0.1     | C                 | 0.4     |

Figure 2 - Standard CDN-GS-2F Datasheet





## Program: NSGold, 2011

Assayer: Activation Laboratories, Ancaster, Ontario

### Sample Preparation

<http://www.actlabs.com/page.aspx?menu=72&app=239&cat1=603&tp=2&lk=no>

To obtain meaningful analytical results, it is imperative that sample collection and preparation be done properly. ACTLABS can advise on sampling protocol for your field program if requested. Once the samples arrive in the laboratory, ACTLABS will ensure that they are prepared properly. As a routine practice with rock and core, the entire sample is crushed to a nominal minus 10 mesh (1.7 mm), mechanically split (riffle) to obtain a representative sample and then pulverized to at least 95% minus 150 mesh (106 microns).

As a routine practice, we will automatically use cleaner sand between each sample at no cost to the customer. Quality of crushing and pulverization is routinely checked as part of our quality assurance program. Randomization of samples in larger orders (>100) provides an excellent means to monitor data for systematic errors. The data is resorted after analysis according to sample number. If you prefer randomization, please request **Code Random**

Samples submitted in an unorganized fashion will be subject to a sorting surcharge and may substantially slow turnaround time. Providing an accurate detailed sample list by e-mail will also aid in improving turnaround time and for Quality Control purposes. Additional charges may apply for poorly organized batches. **Code CP2** - Sample list not provided for orders over 25 samples; **Code CP3** - Sorting chaotic shipments

See page 7 of the [pricelist](#) for preparation and additional fees

#### Rock, Core, and Drill Cuttings

|                  |   |
|------------------|---|
| RX1              | Crush (<5kg) up to 75% passing 2mm, split (250g) and pulverize (hardened steel) to 95% passing 105u |
| Rx1 - Terminator | Crush (<5kg) up to 90% passing 2mm, split (250g) and pulverize (hardened steel) to 95% passing 105u |
| RX1+500          | 500 grams pulverized  |
| RX1+800          | 800 grams pulverized  |
| RX1+1.3          | 1.3 kg pulverized   |
| RX2              | Crush (<5kg), split and pulverize with mild steel (100g) (best for low contamination)               |
| RX3              | Oversize charge per kilogram for crushing   |
| RX4              | Pulverization only (mild steel) (coarse pulp or crushed rock) (<800g)                               |
| RX5              | Pulverize Ceramic (100g)  |
| RX6              | Hand Pulverize Small samples (agate mortar & pestle)  |

#### Appendix III – Assay Methods & Specifications



|      |   |
|------|---|
| RX7  | Crush and Split (<5Kg)  |
| RX8  | Sample Prep only surcharge, no analyses   |
| RX9  | Compositing (per composite) dry weight  |
| RX10 | Dry Drill Cuttings in plastic bags  |
| RX11 | Checking Quality of pulps or rejects prepared by other labs and issuing reports |

Note: Larger sample sizes than listed above can be pulverized at additional costs

### Pulverization Contaminants Added

| Mill Type                   | Contaminant Added   |
|-----------------------------|---|
| Mild Steel<br>(best choice) | Fe (up to 0.2%)   |
| Hardened Steel              | Fe (up to 0.2%), Cr (up to 200ppm), trace Ni, Si, Mn, and C |
| Ceramic                     | Al (up to 0.2%), Ba, Trace REE                              |
| Tungsten Carbide            | W (up to 0.1%), Co, C, Ta, Nb, Ti                           |
| Agate                       | Si (up to 0.3%), Al, Na, Fe, K, Ca, Mg, Pb                  |

Note: amount added depends on hardness of material and particle size required





## 1A2 - (1A2-50) Au Fire Assay – AA

<http://www.actlabs.com/page.aspx?page=473&app=226&cat1=549&tp=12&lk=no&menu=64>

### Fire Assay Fusion

A sample size of 5 to 50 grams can be used but the routine 30 g size is applied for rock pulps, soils or sediments (exploration samples). The sample is mixed with fire assay fluxes (borax, soda ash, silica, litharge) and with Ag added as a collector and the mixture is placed in a fire clay crucible, the mixture is preheated at 850°C, intermediate 950°C and finish 1060°C, the entire fusion process should last 60 minutes. The crucibles are then removed from the assay furnace and the molten slag (lighter material) is carefully poured from the crucible into a mould, leaving a lead button at the base of the mould. The lead button is then placed in a preheated cupel which absorbs the lead when cupelled at 950°C to recover the Ag (doré bead) + Au.

### AA Finish

The entire Ag dore bead is dissolved in aqua regia and the gold content is determined by AA (Atomic Absorption). AA is an instrumental method of determining element concentration by introducing an element in its atomic form, to a light beam of appropriate wavelength causing the atom to absorb light – atomic absorption. The reduction in the intensity of the light beam directly correlates with the concentration of the elemental atomic species.

Hoffman, E.L. , Clark, J.R. and Yeager, J.R. 1998. Gold analysis - Fire Assaying and alternative methods. Exploration and Mining Geology, Volume 7, pp. 155-160.

### Code 1A2 (Fire Assay-AA) Detection Limits (ppb)

| Element | Detection Limit | Upper Limit |
|---------|-----------------|-------------|
| Au      | 5               | 3,000       |

Note: If value exceeds upper limit, reanalysis by Fire Assay-Gravimetric (Code 1A3) is recommended.



### 1A3 - (1A3-30 or 50) - Au Fire Assay – Gravimetric

<http://www.actlabs.com/page.aspx?page=475&app=226&cat1=549&tp=12&lk=no&menu=64>

#### Fire Assay

A sample size of 10 to 50 grams can be used but the routine 30 g size is applied for rock pulps, soils or sediments (exploration samples). The sample is mixed with fire assay fluxes (borax, soda ash, silica, litharge) and with Ag added as a collector and the mixture is placed in a fire clay crucible, the mixture is preheated at 850°C, intermediate 950 °C and finish 1060 °C, the entire fusion process should last 60 minutes. The crucibles are then removed from the assay furnace and the molten slag (lighter material) is carefully poured from the crucible into a mould, leaving a lead button at the base of the mould. The lead button is then placed in a preheated cupel which absorbs the lead when cupelled at 950°C to recover the Ag (doré bead) + Au.

Au is separated from the Ag in the doré bead by parting with nitric acid. The resulting gold flake is annealed using a torch. The gold flake remaining is weighed gravimetrically on a microbalance.

Hoffman, E.L. , Clark, J.R. and Yeager, J.R. 1998. Gold analysis - Fire Assaying and alternative methods. Exploration and Mining Geology, Volume 7, p.155-160.

#### Code 1A3 (Fire Assay-Gravimetric) Detection Limits (g/tonne)

| Element | Detection Limit | Upper Limit |
|---------|-----------------|-------------|
| Au      | 0.03            | 10,000      |



## 1A4 - (1A4-1000) - Au Fire Assay - Metallic Screen

<http://www.actlabs.com/page.aspx?page=478&app=226&cat1=549&tp=12&lk=no&menu=64>

### Metallic Screen

A representative 500 g split (1,000 g for Code 1A4-1000) is sieved at 100 mesh (149 micron) with fire assays performed on the entire +100 mesh and 2 splits on the -100 mesh fraction. The total amount of sample and the +100 mesh and -100 mesh fraction is weighed for assay reconciliation. Measured amounts of cleaner sand is used between samples and saved as gold may plate out on the mill. Alternative sieving mesh sizes are available but the user is warned that the finer the grind the more likelihood of gold loss by plating out on the mill.

### Fire Assay

The whole +100 mesh sub-sample from the metallic screen is mixed with fire assay fluxes (borax, soda ash, silica, litharge) and with Ag added as a collector and the mixture is placed in a fire clay crucible, the mixture is preheated at 850°C, intermediate 950°C and finish 1060°C, the entire fusion process should last 60 minutes. The crucibles are then removed from the assay furnace and the molten slag (lighter material) is carefully poured from the crucible into a mould, leaving a lead button at the base of the mould. The lead button is then placed in a preheated cupel which absorbs the lead when cupelled at 950°C to recover the Ag (doré bead) + Au. Au is separated from the Ag in the doré bead by parting with nitric acid. The gold (roasting) flake remaining is weighed gravimetrically on a microbalance. Two splits on the -100 mesh fraction is weighted and analyzed by fire assay with a gravimetric finish. A final assay is calculated based on the weight of each separated fraction and your values.

Hoffman, E.L. , Clark, J.R. and Yeager, J.R. 1998. Gold analysis-Fire Assaying and alternative methods. Exploration and Mining Geology, Volume 7, pp. 155-160.

**Code 1A4 (Fire Assay-Metallic Screen) Detection Limits (g/tonne)**

| Element | Detection Limit |
|---------|-----------------|
| Au      | 0.03            |



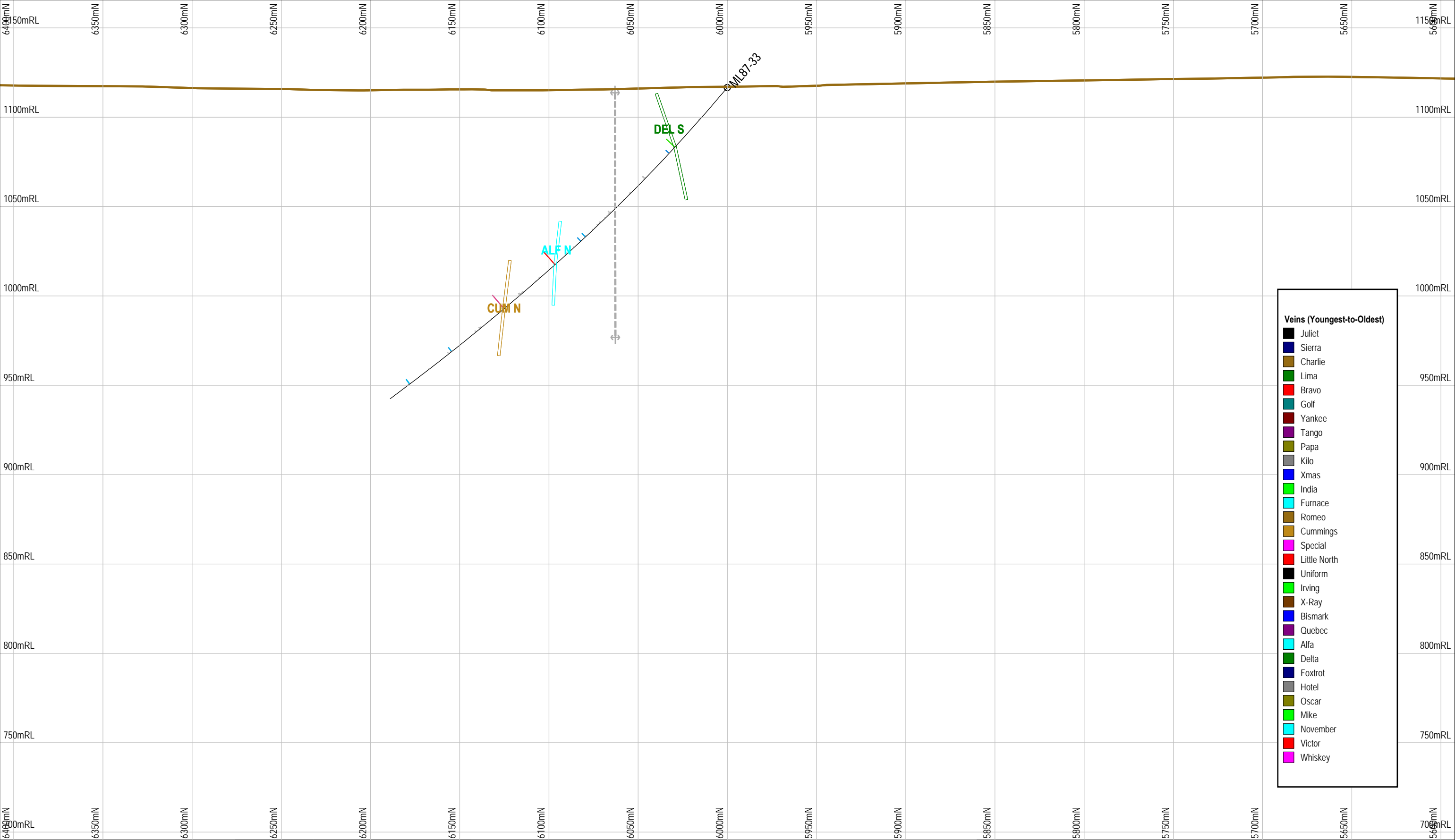
## **Appendix IV**

### **Cross-Sections – West Zone**

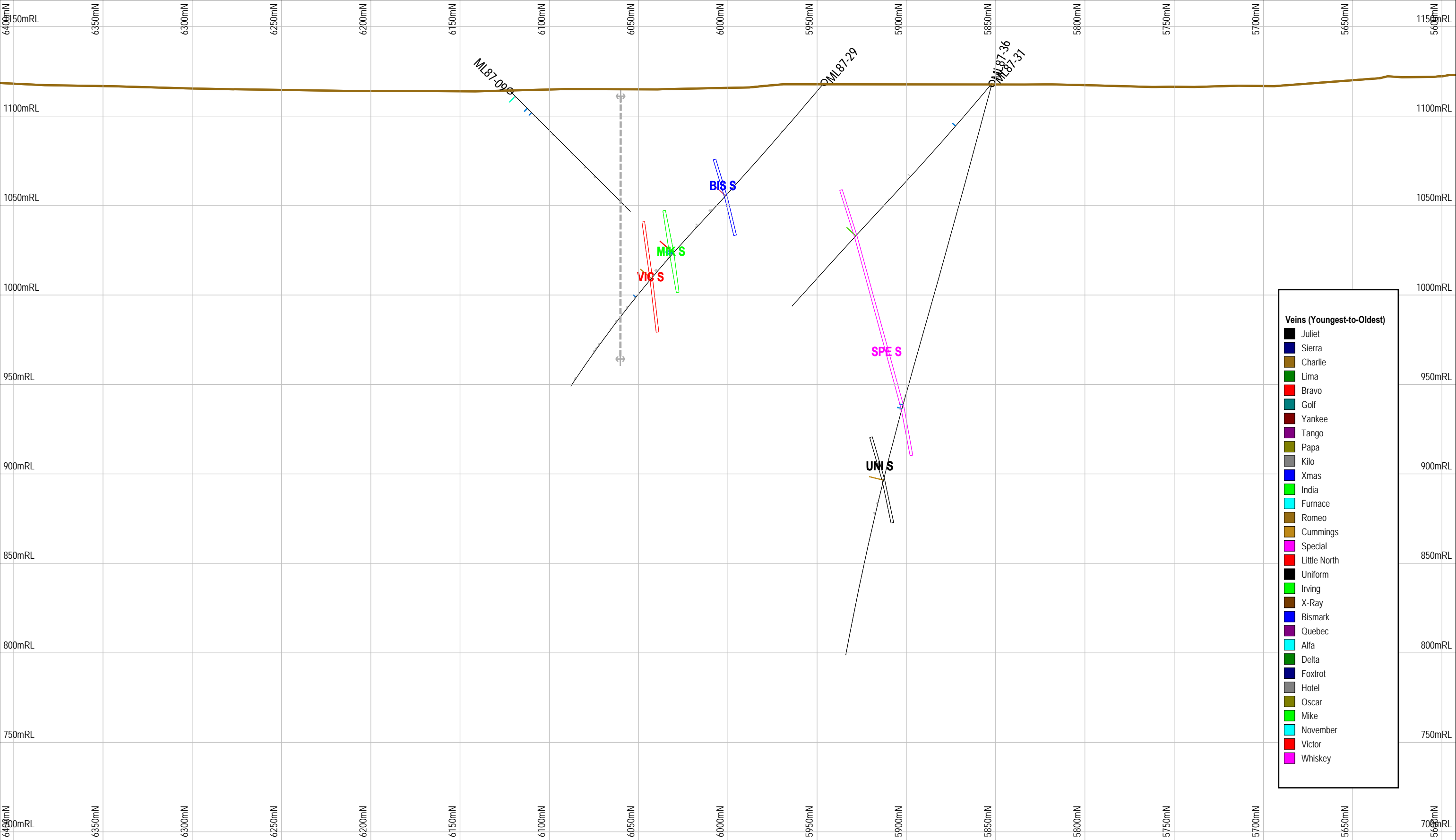


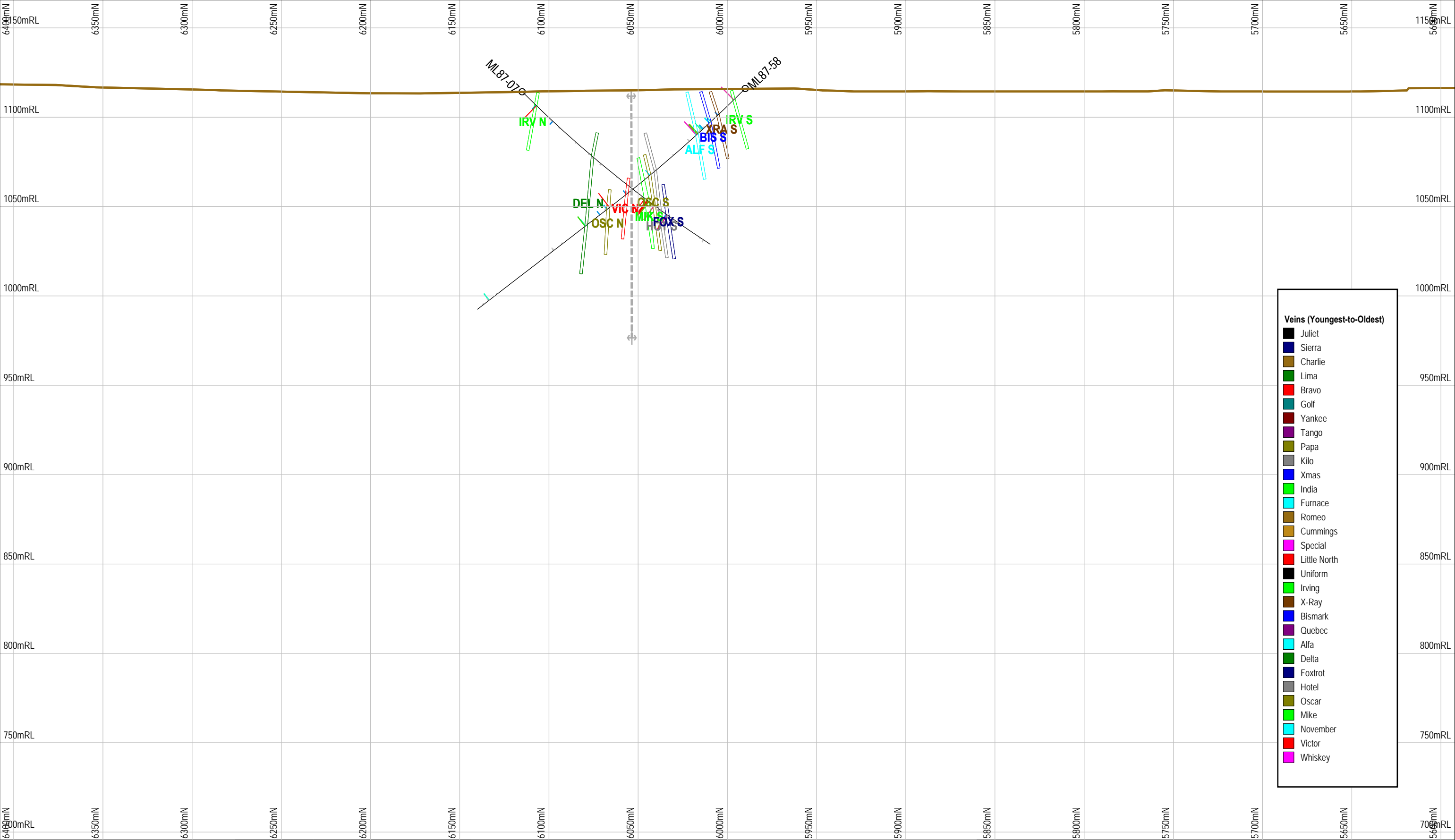












Veins (Youngest-to-Oldest)

Juliet

Sierra

Charlie

Lima

Bravo

Golf

Yankee

Tango

Papa

Kilo

Xmas

India

Furnace

Romeo

Cummings

Special

Little North

Uniform

Irving

X-Ray

Bismark

Quebec

Alfa

Delta

Foxtrot

Hotel

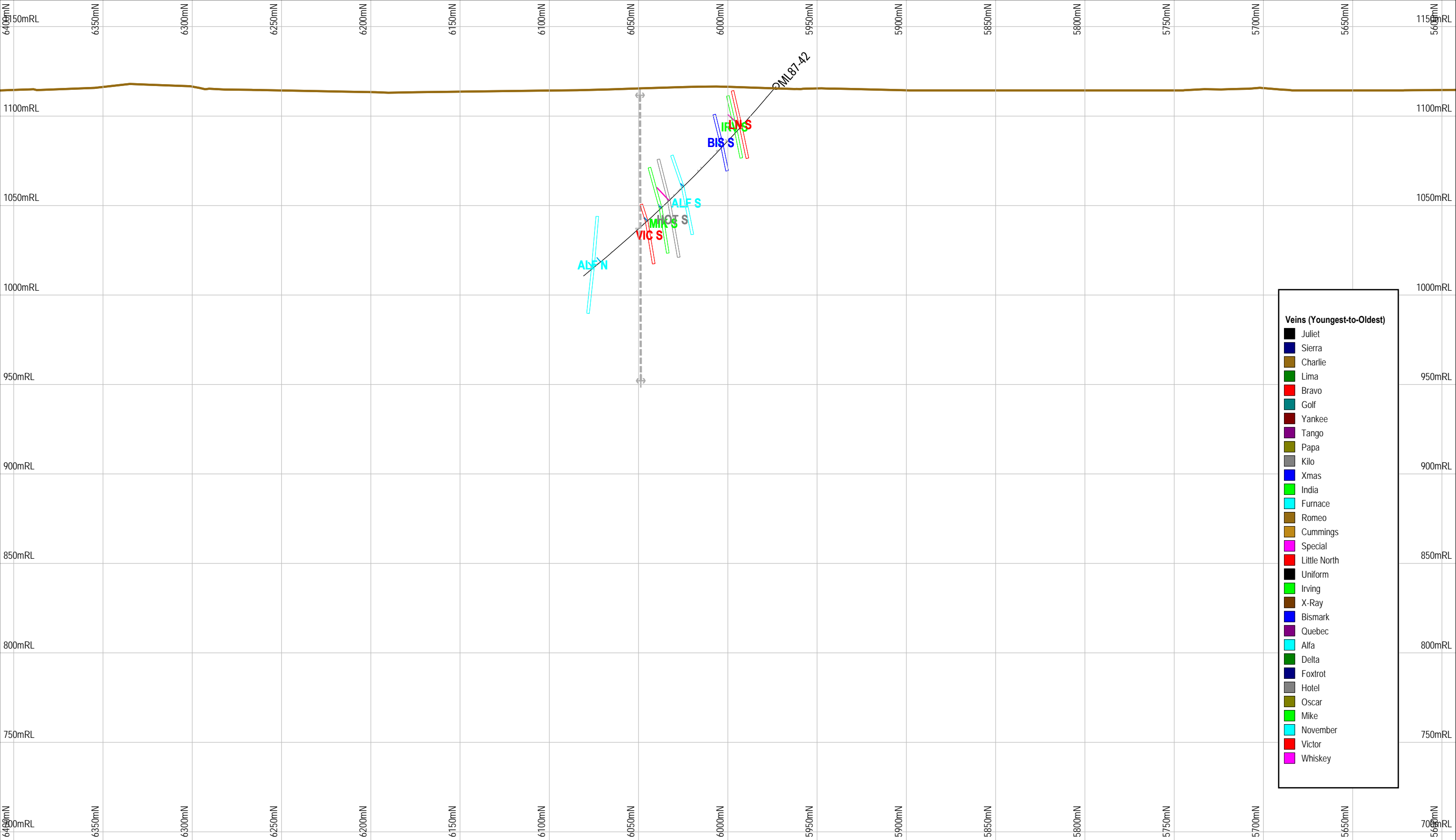
Oscar

Mike

November

Victor

Whiskey



- Veins (Youngest-to-Oldest)
- Juliet

Sierra

Charlie

Lima

Bravo

Golf

Yankee

Tango

Papa

Kilo

Xmas

India

Furnace

Romeo

Cummings

Special

Little North

Uniform

Irving

X-Ray

Bismark

Quebec

Alfa

Delta

Foxtrot

Hotel

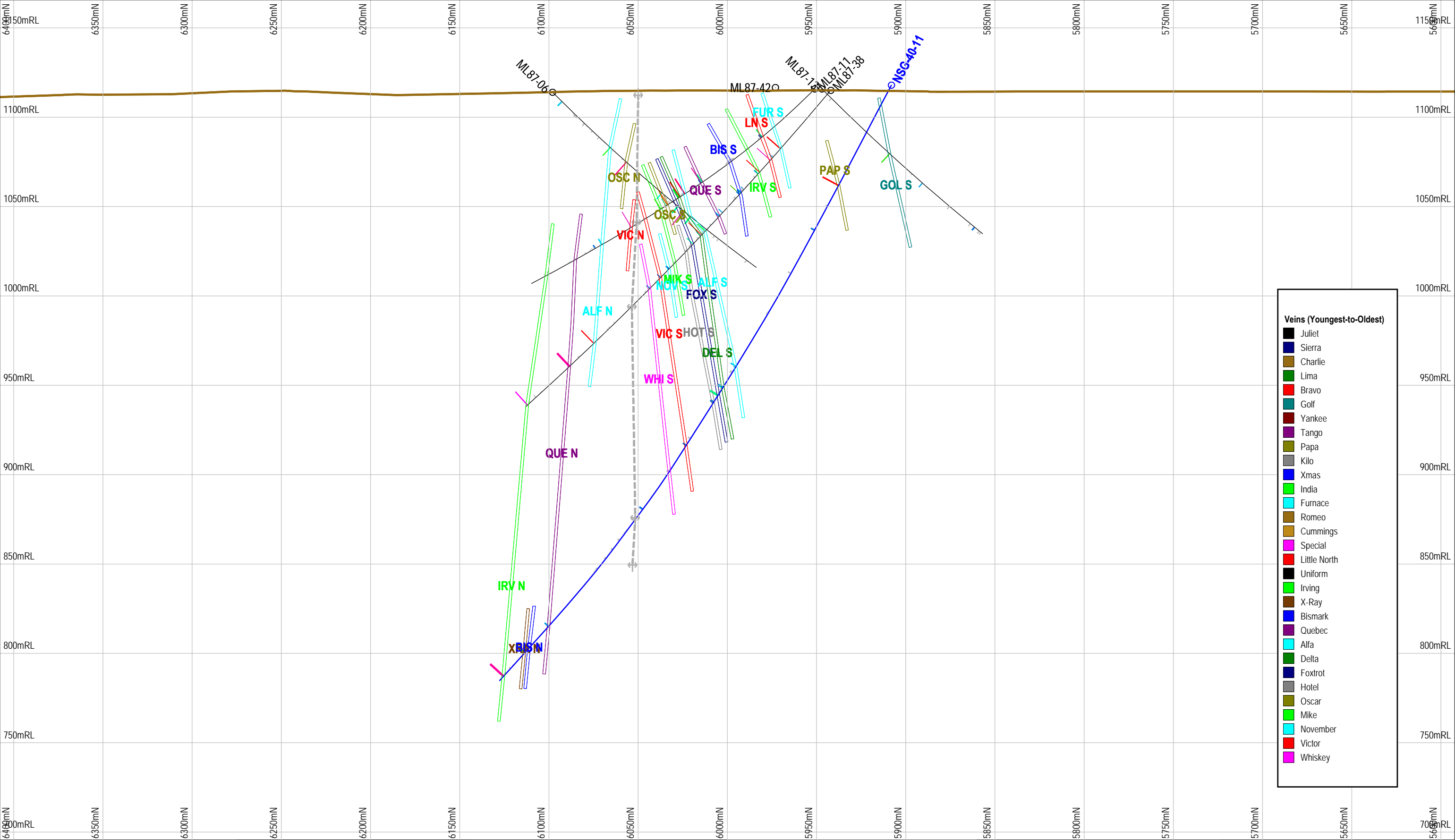
Oscar

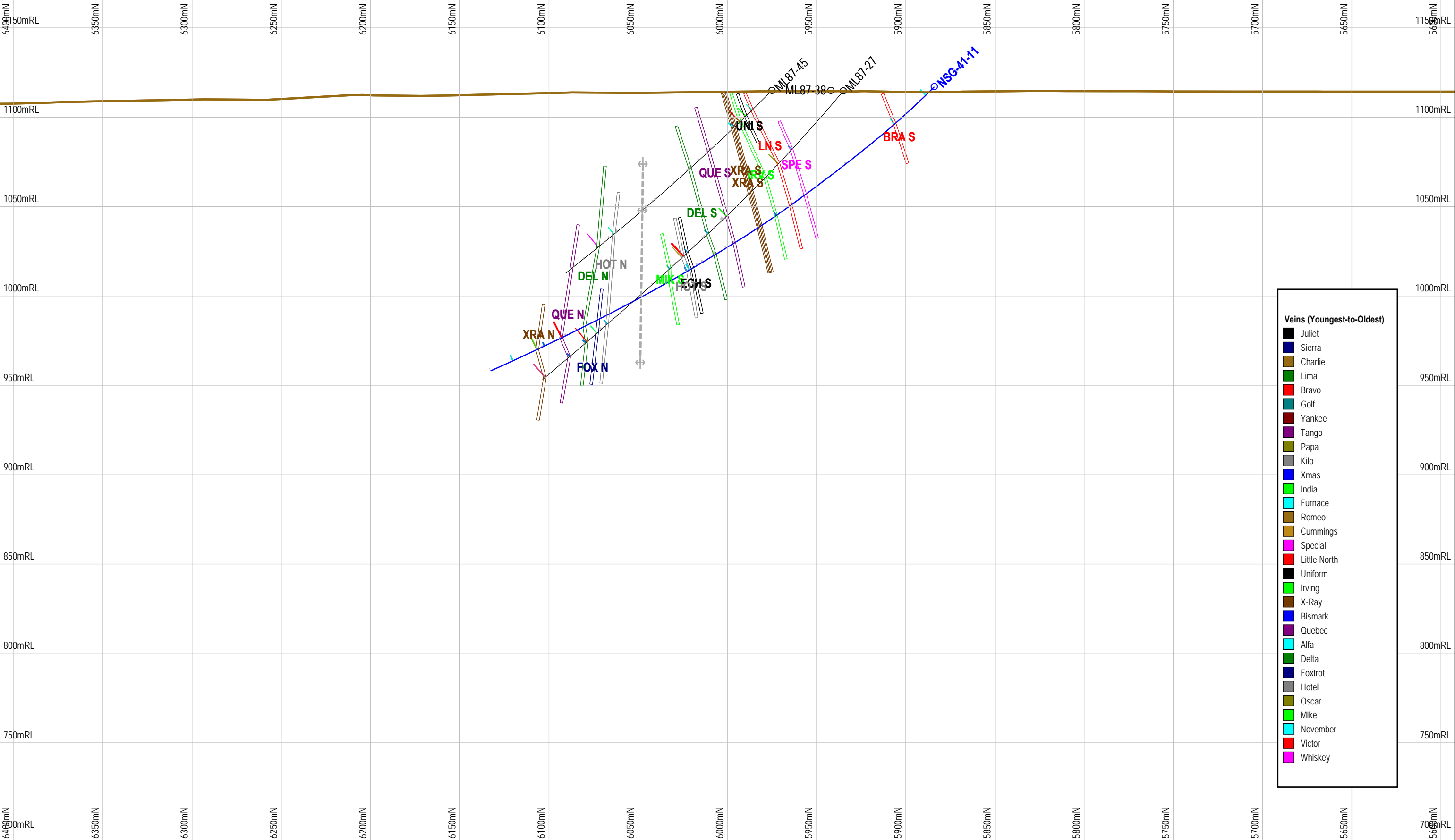
Mike

November

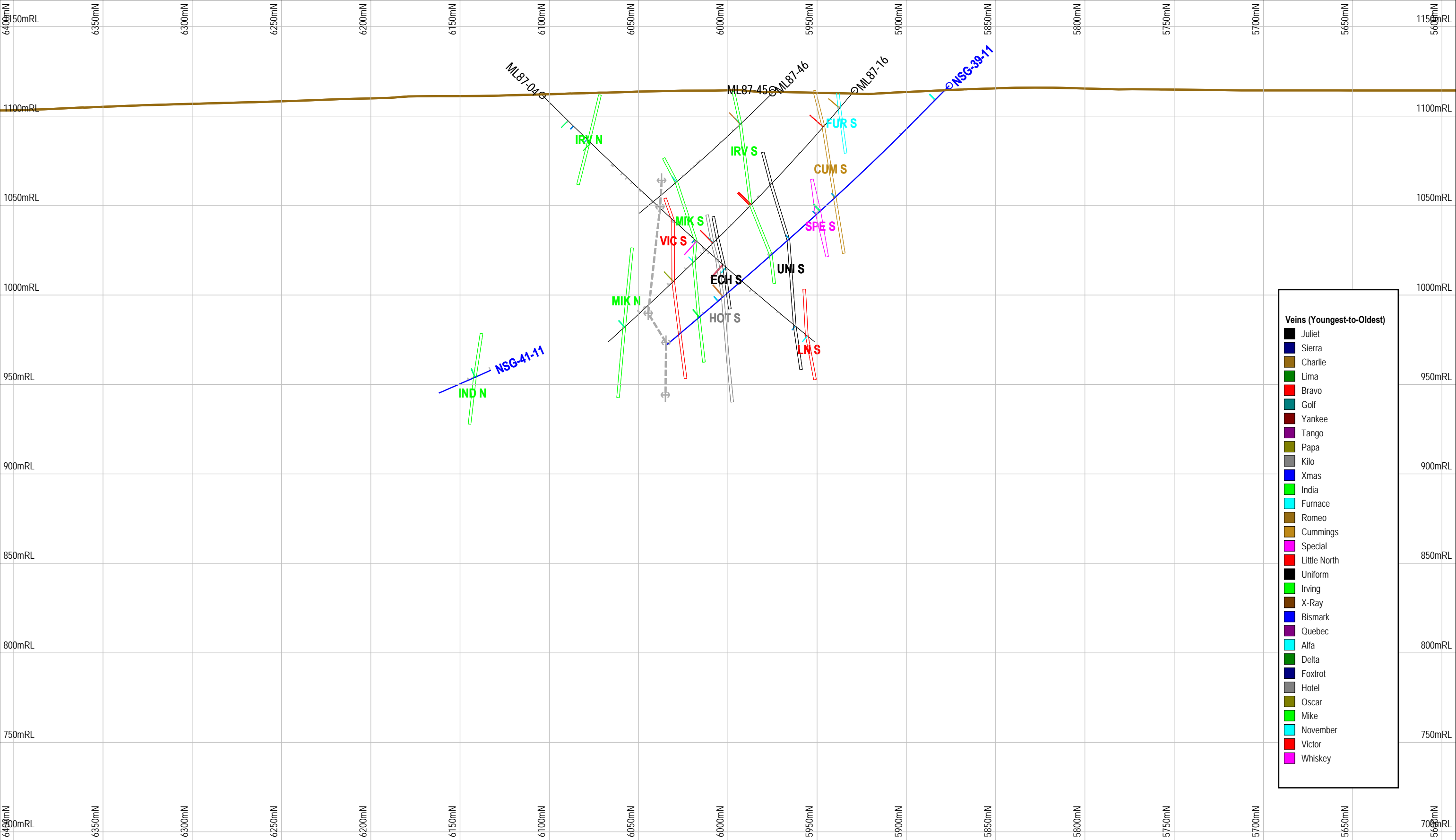
Victor

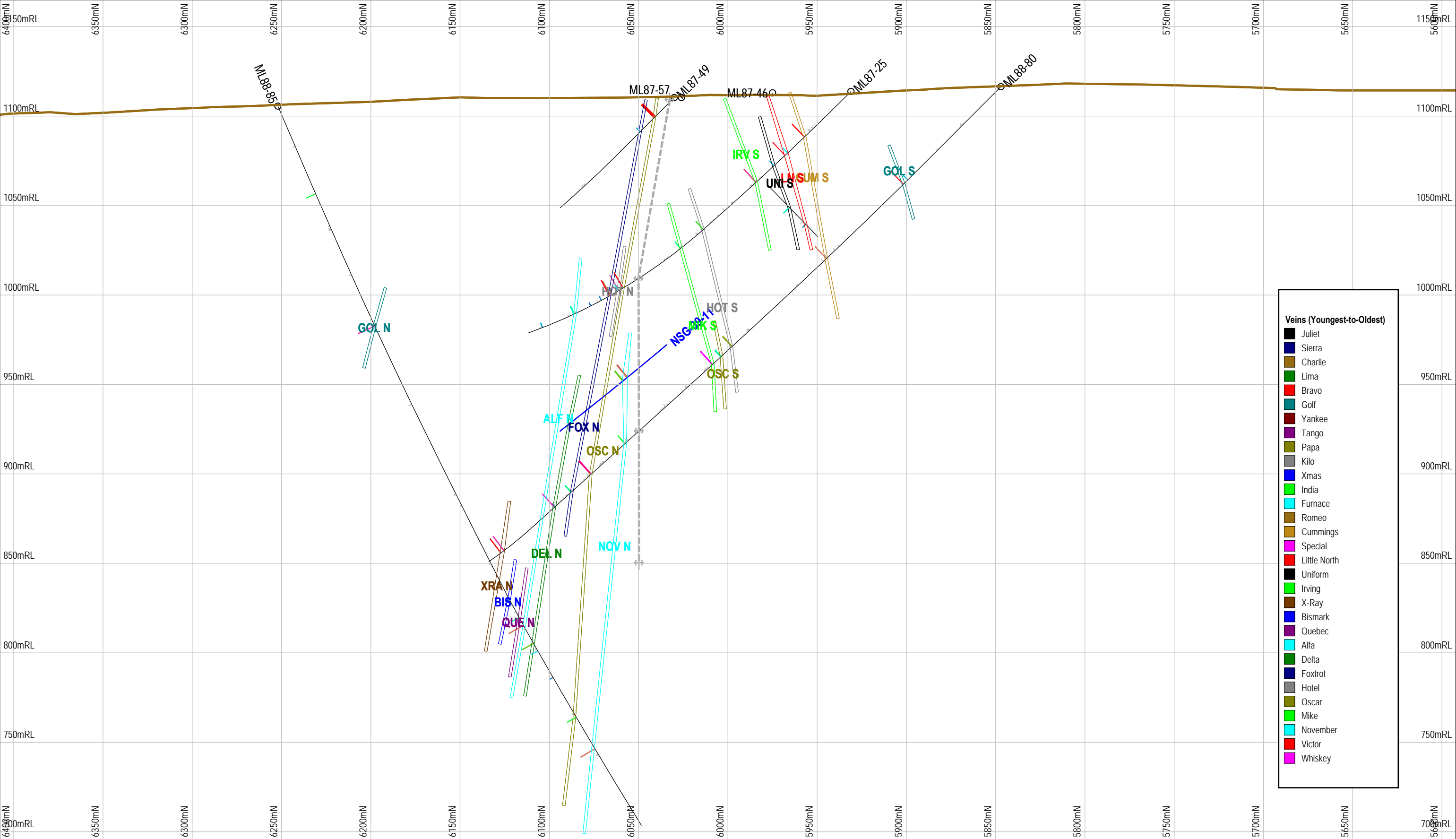
Whiskey

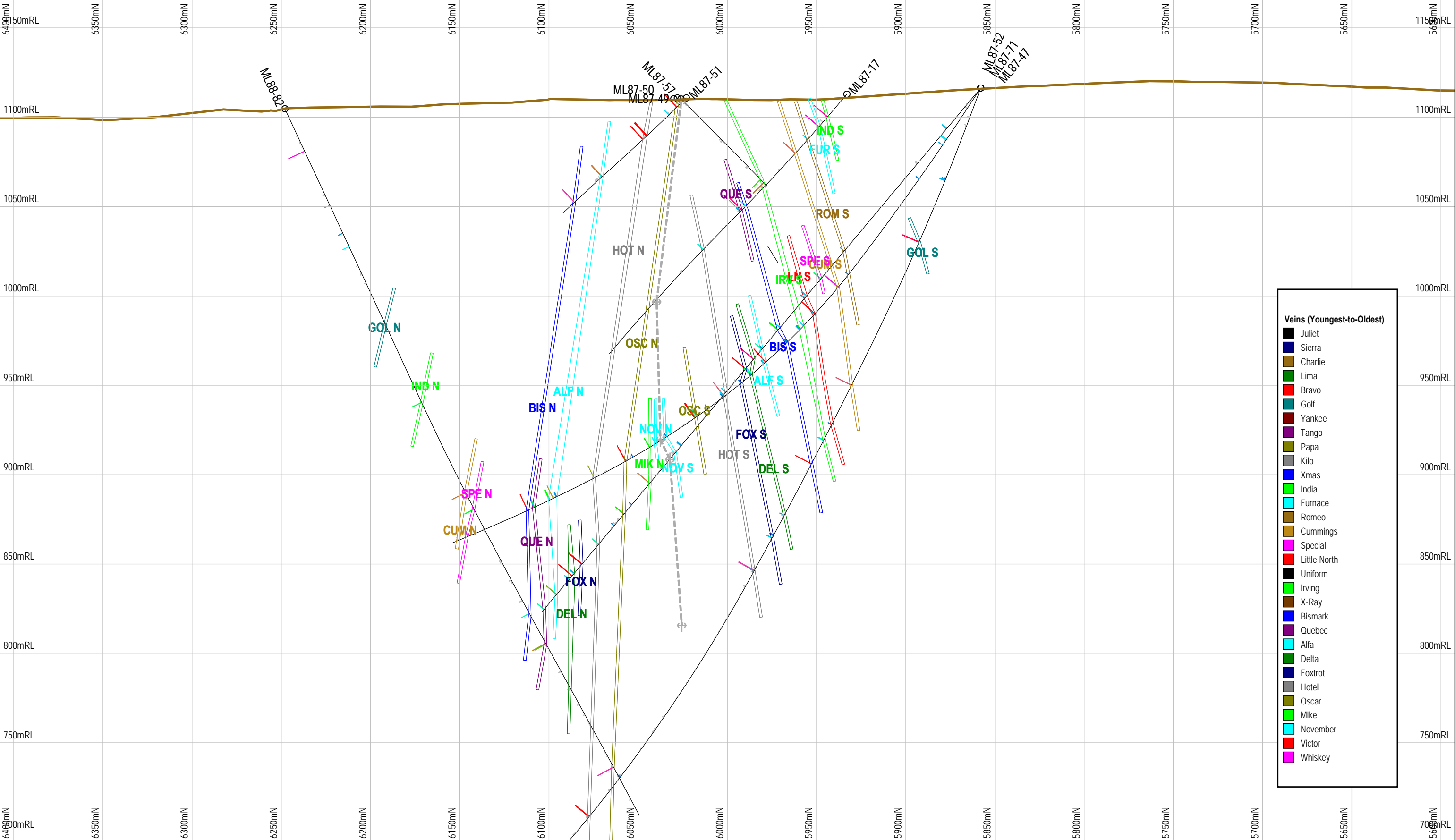


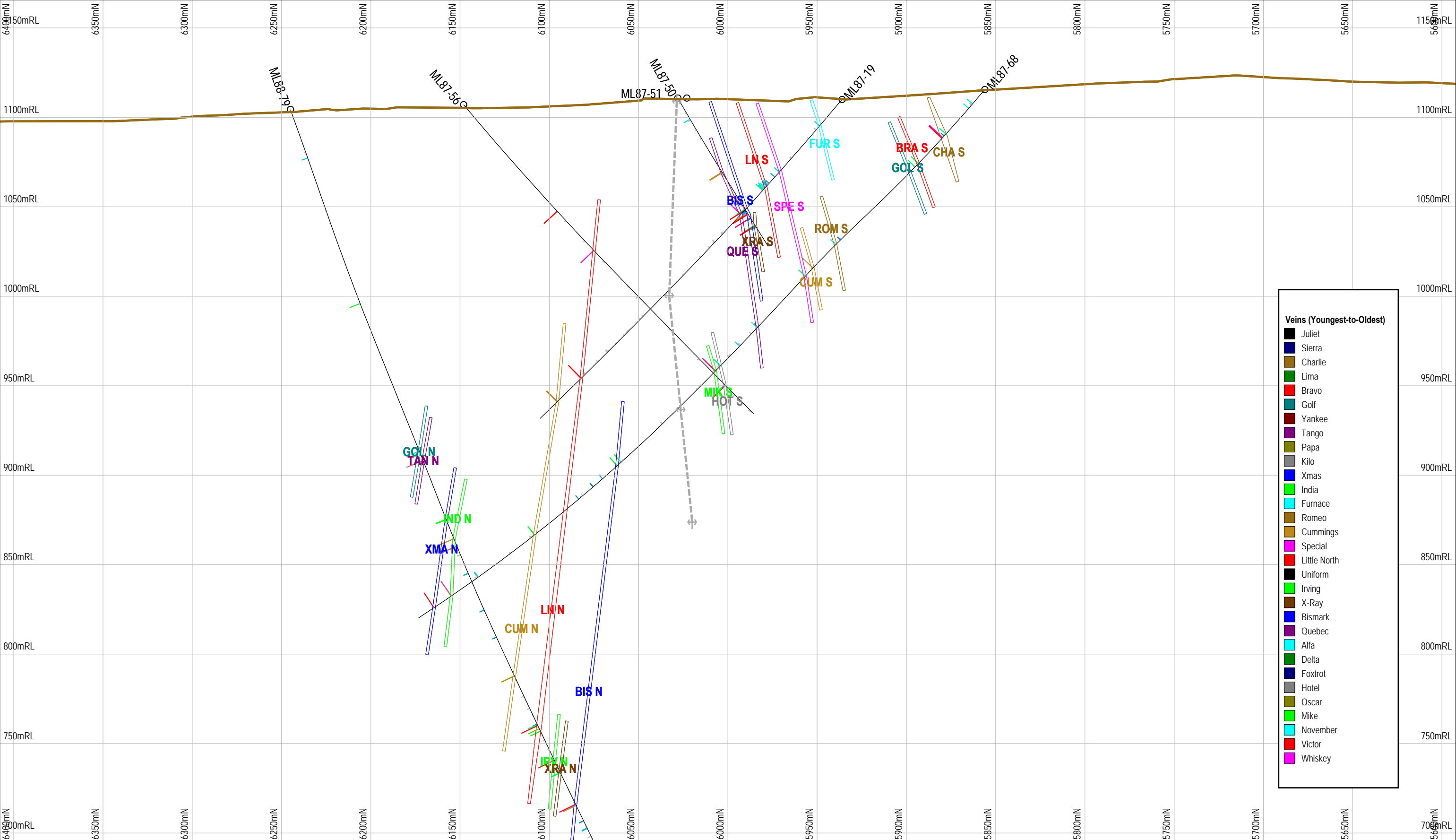


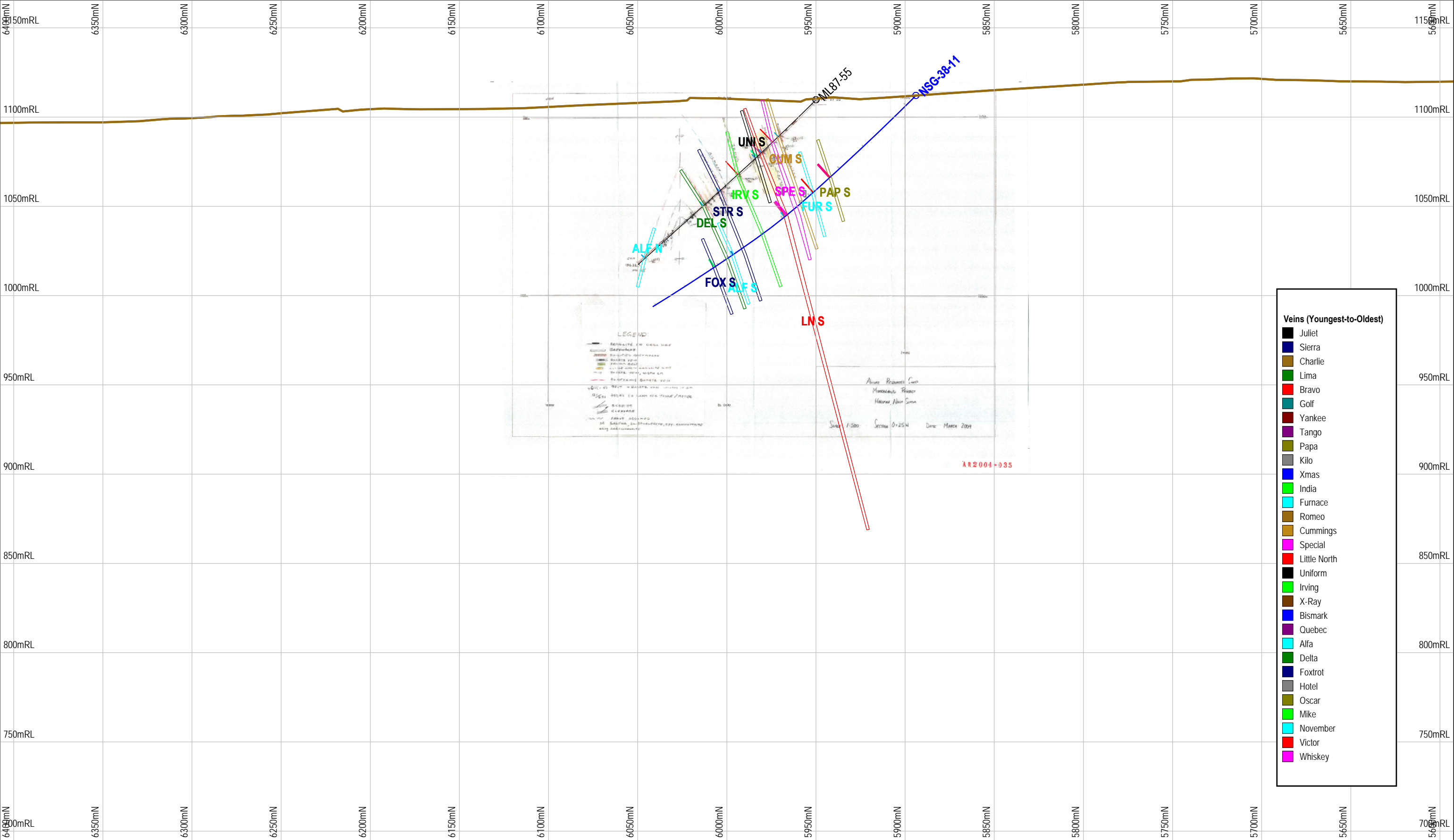






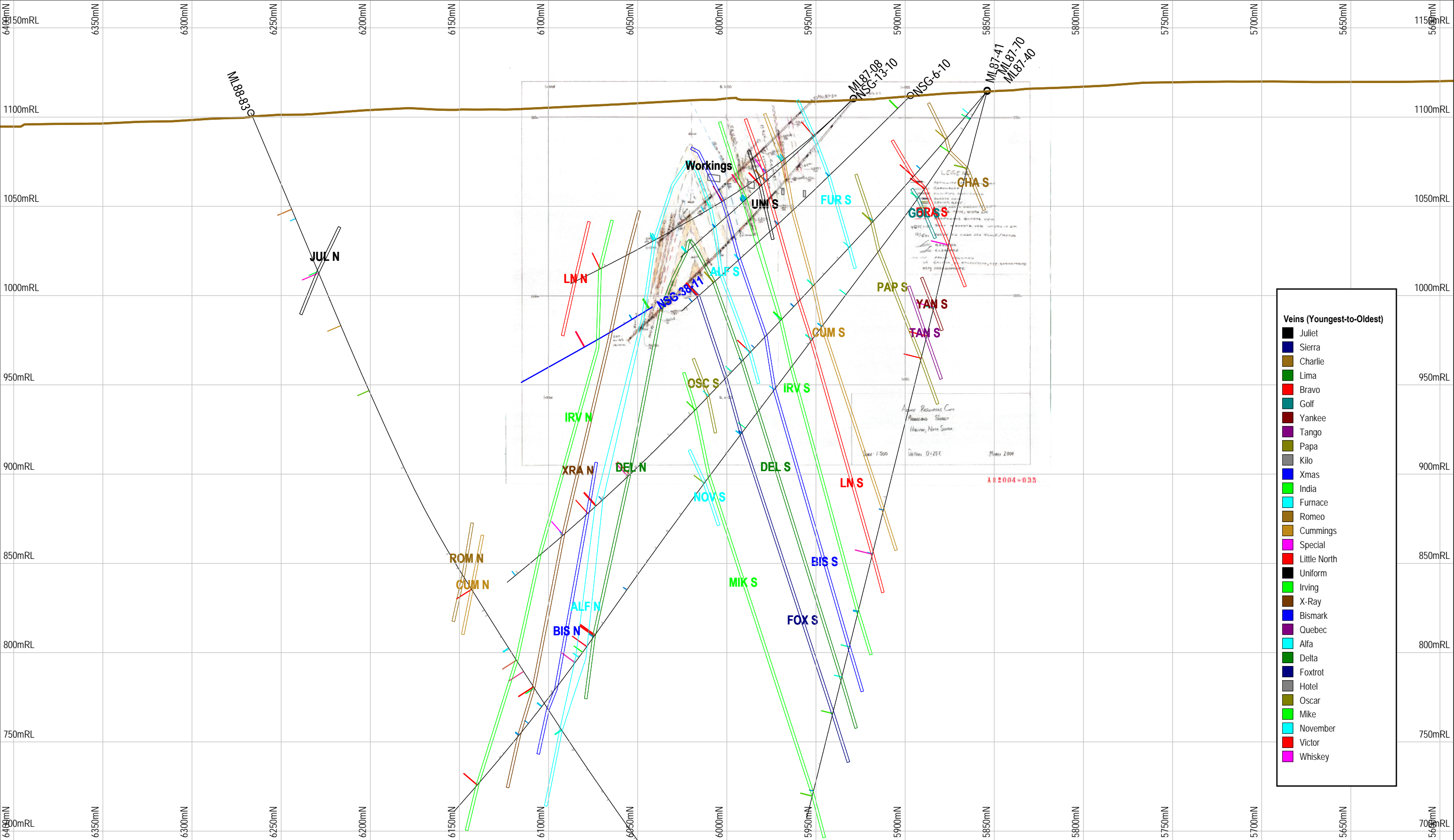




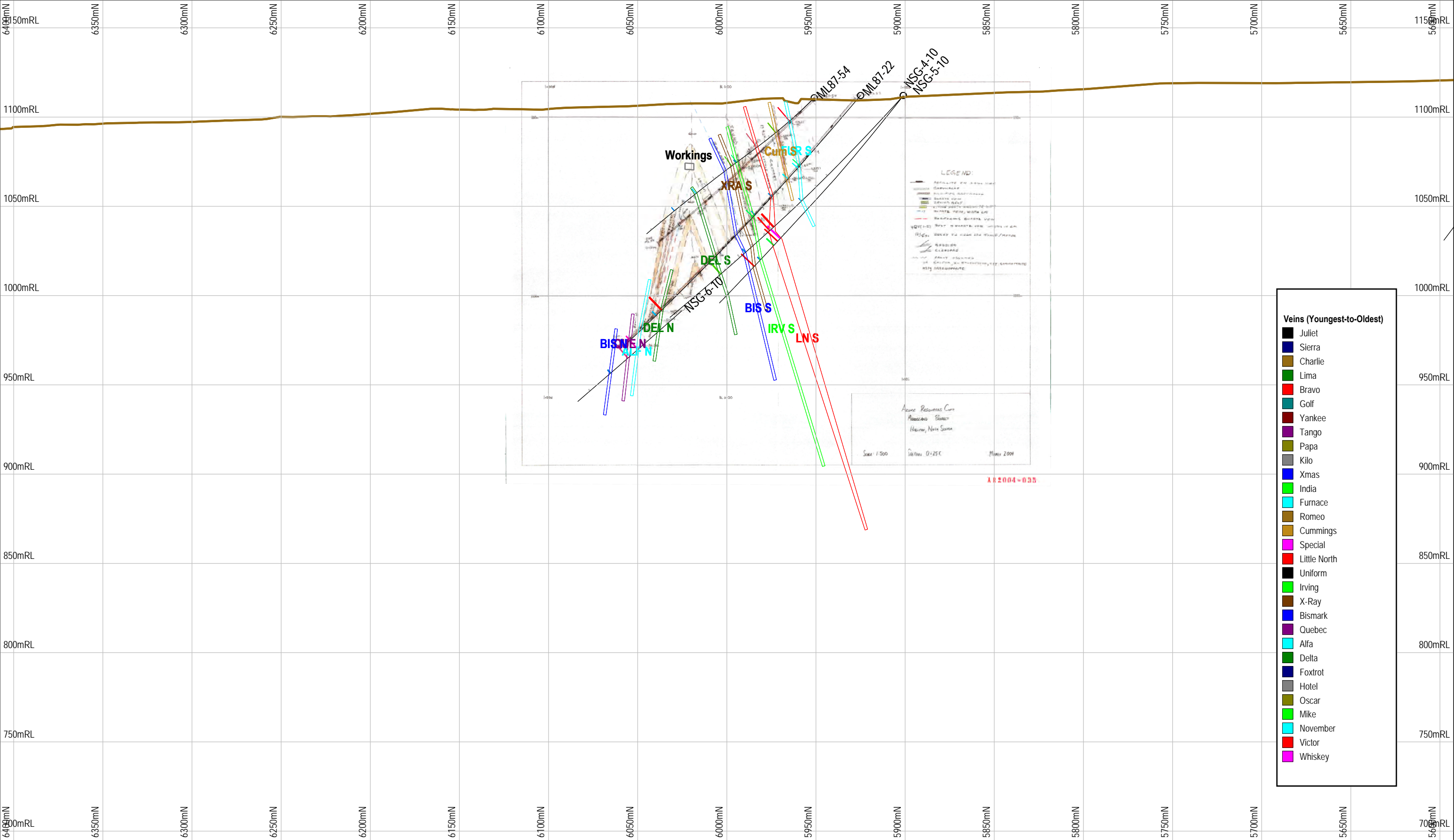


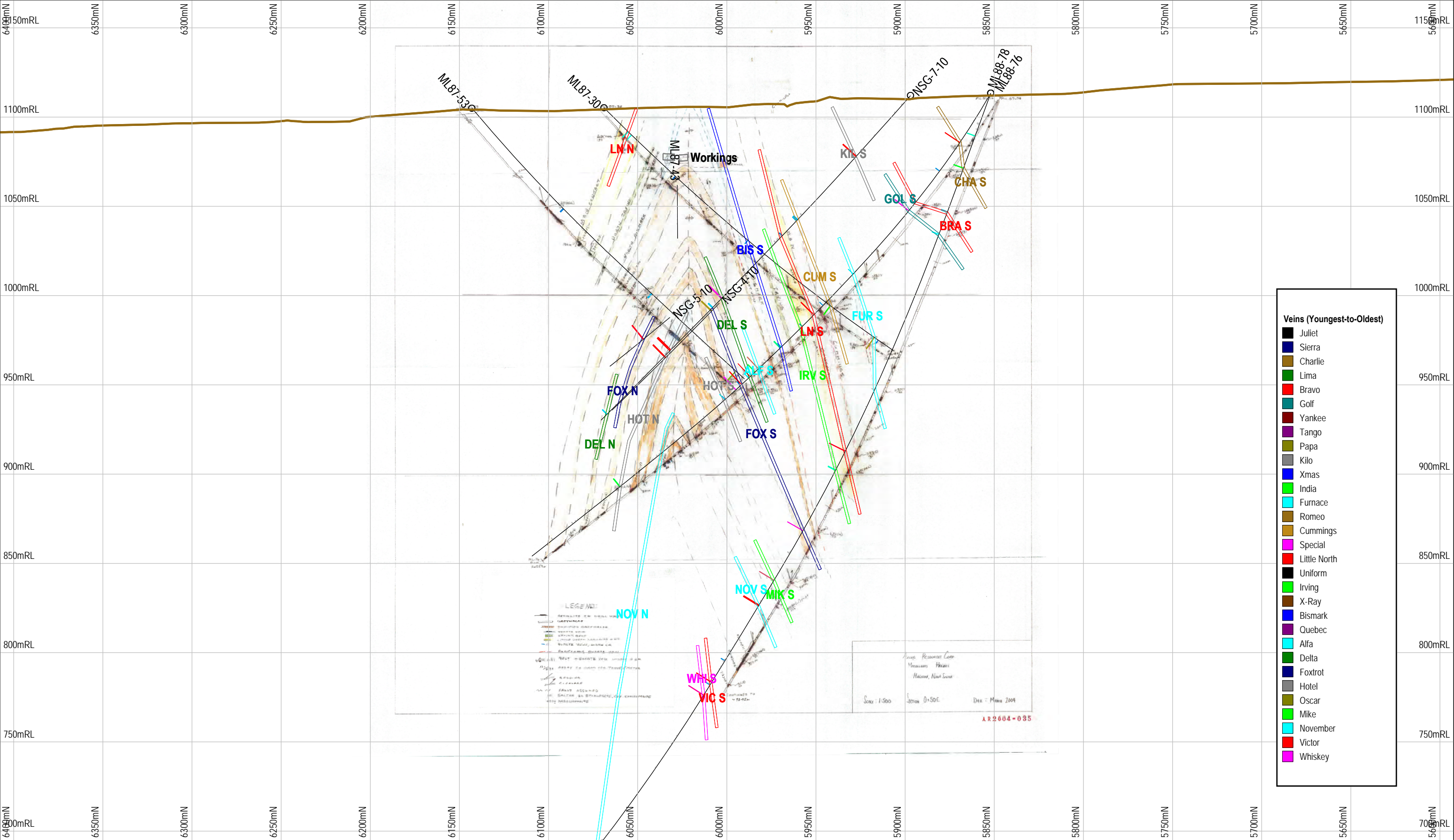
- Veins (Youngest-to-Oldest)**
- Juliet
  - Sierra
  - Charlie
  - Lima
  - Bravo
  - Golf
  - Yankee
  - Tango
  - Papa
  - Kilo
  - Xmas
  - India
  - Furnace
  - Romeo
  - Cummings
  - Special
  - Little North
  - Uniform
  - Irving
  - X-Ray
  - Bismark
  - Quebec
  - Alfa
  - Delta
  - Foxtrot
  - Hotel
  - Oscar
  - Mike
  - November
  - Victor
  - Whiskey



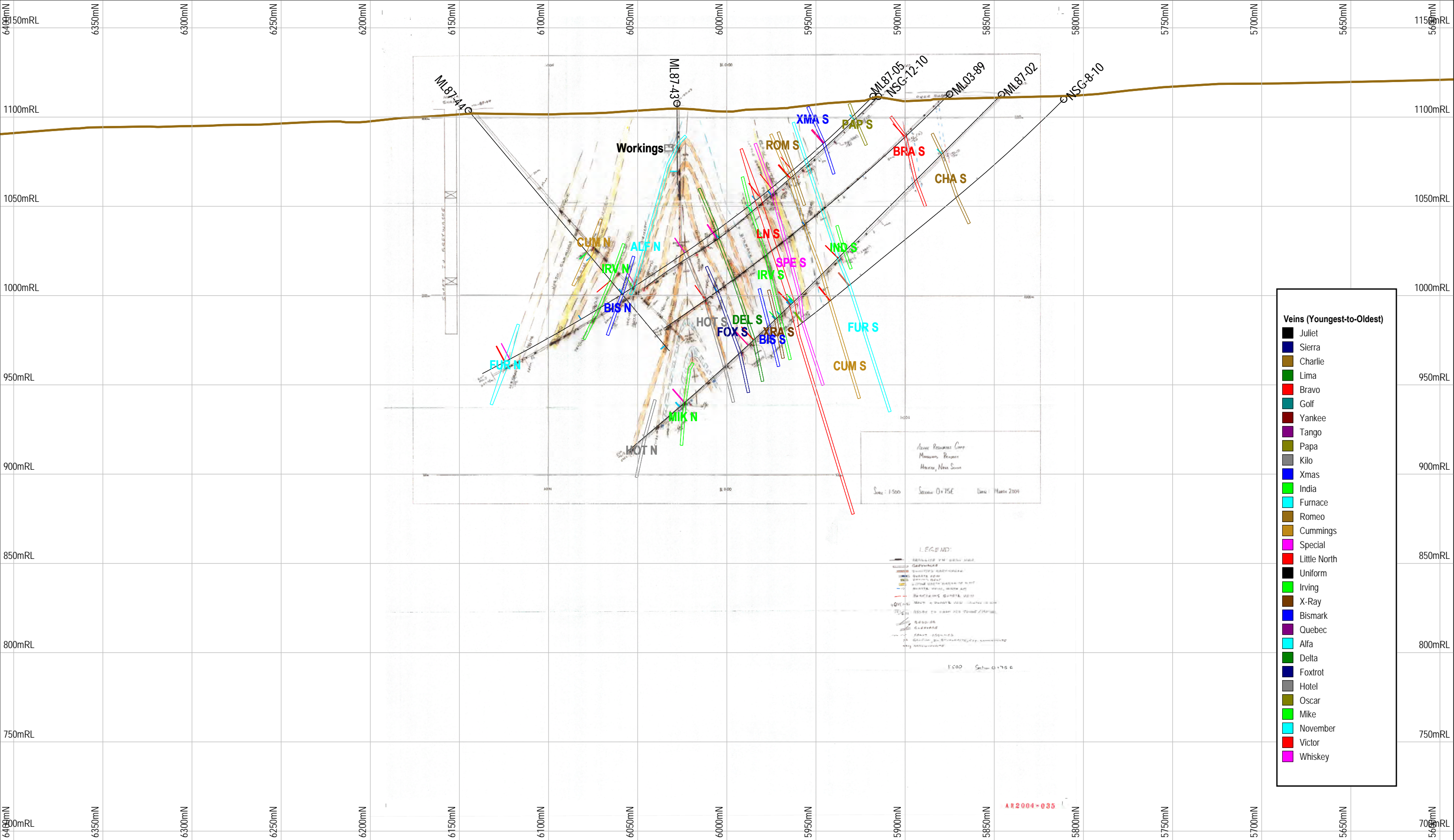


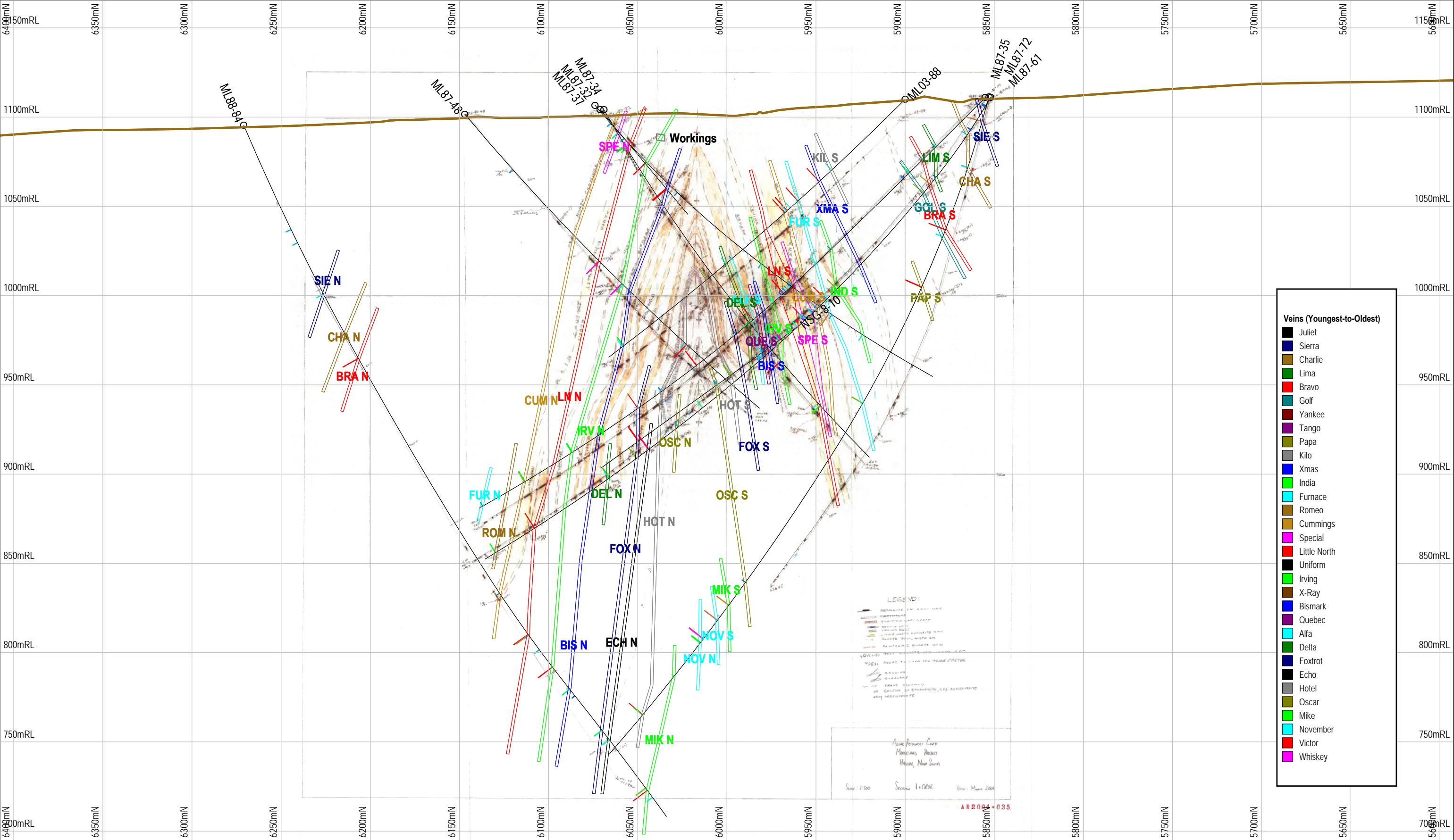




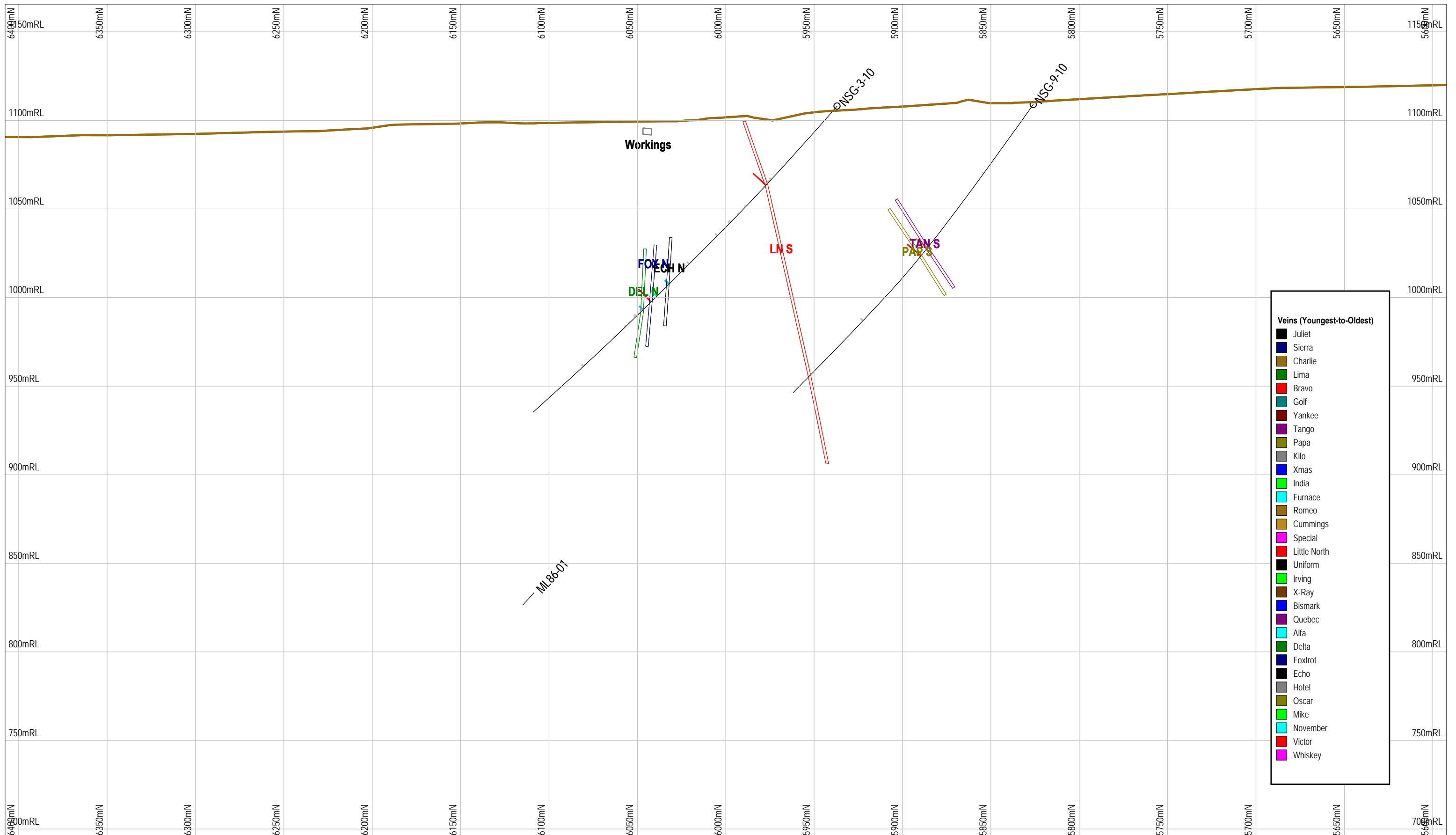










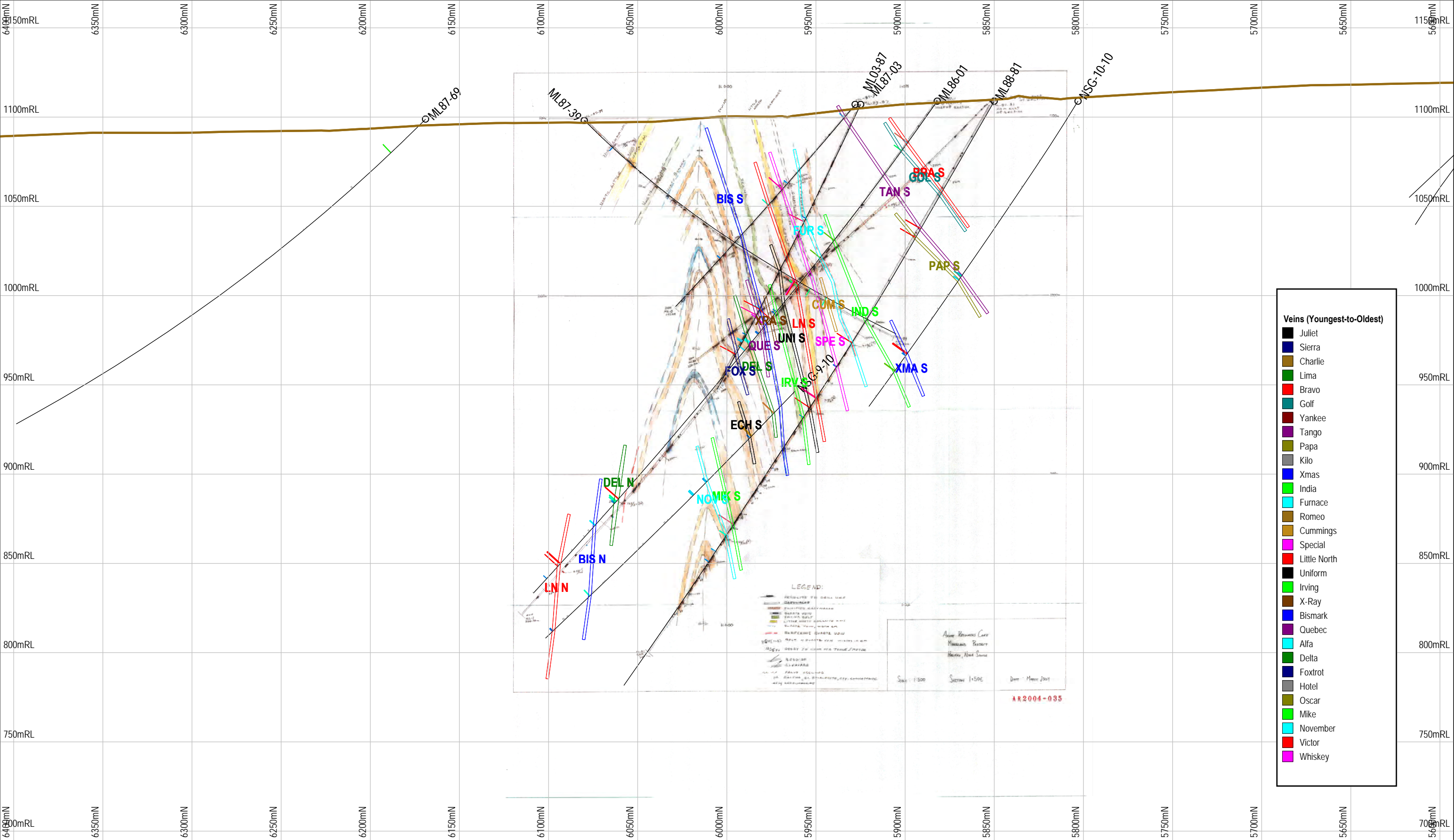


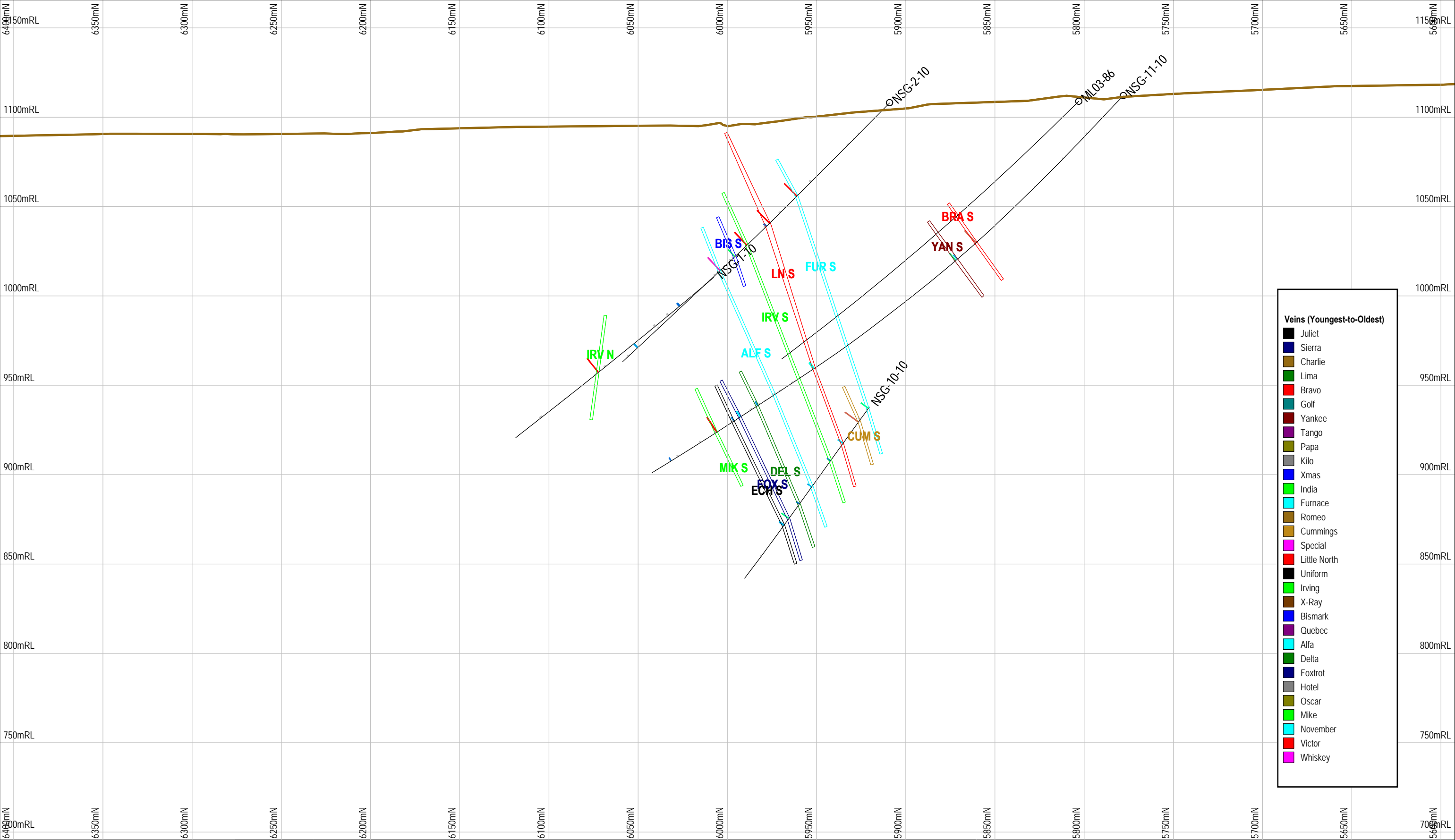




|   |   |                              |               |                                   |  |   |  |  |
|---|---|------------------------------|---------------|-----------------------------------|--|---|--|--|
|  | Scale<br>1 : 2000   | Plot Date<br>19-Jun-2012     | Cross-Section | Grade Composites: [X] g/t / [Y] m | <b>Gold Grade (g/tonne)</b><br> | Note: Interpreted section 2100E<br>shown in background for reference. | <b>Mooseland West Zone<br/>Cross-Section 2125E<br/>Facing East</b> | <br><b>MINETECH INTERNATIONAL LIMITED</b><br>HALIFAX, CANADA<br>1161 HOLLIS ST, SUITE 211, B3P 2A3<br>(902) 429-4049<br>WWW.MINETECHINT.COM |
|   |   | NB: Northing Offset by +6000 |               | Drawn by Doug Roy, M.A.Sc., P.Eng |  |   |  |  |
|   | 50  50m |                              |               | Version 1.1                       |  |   |  |  |

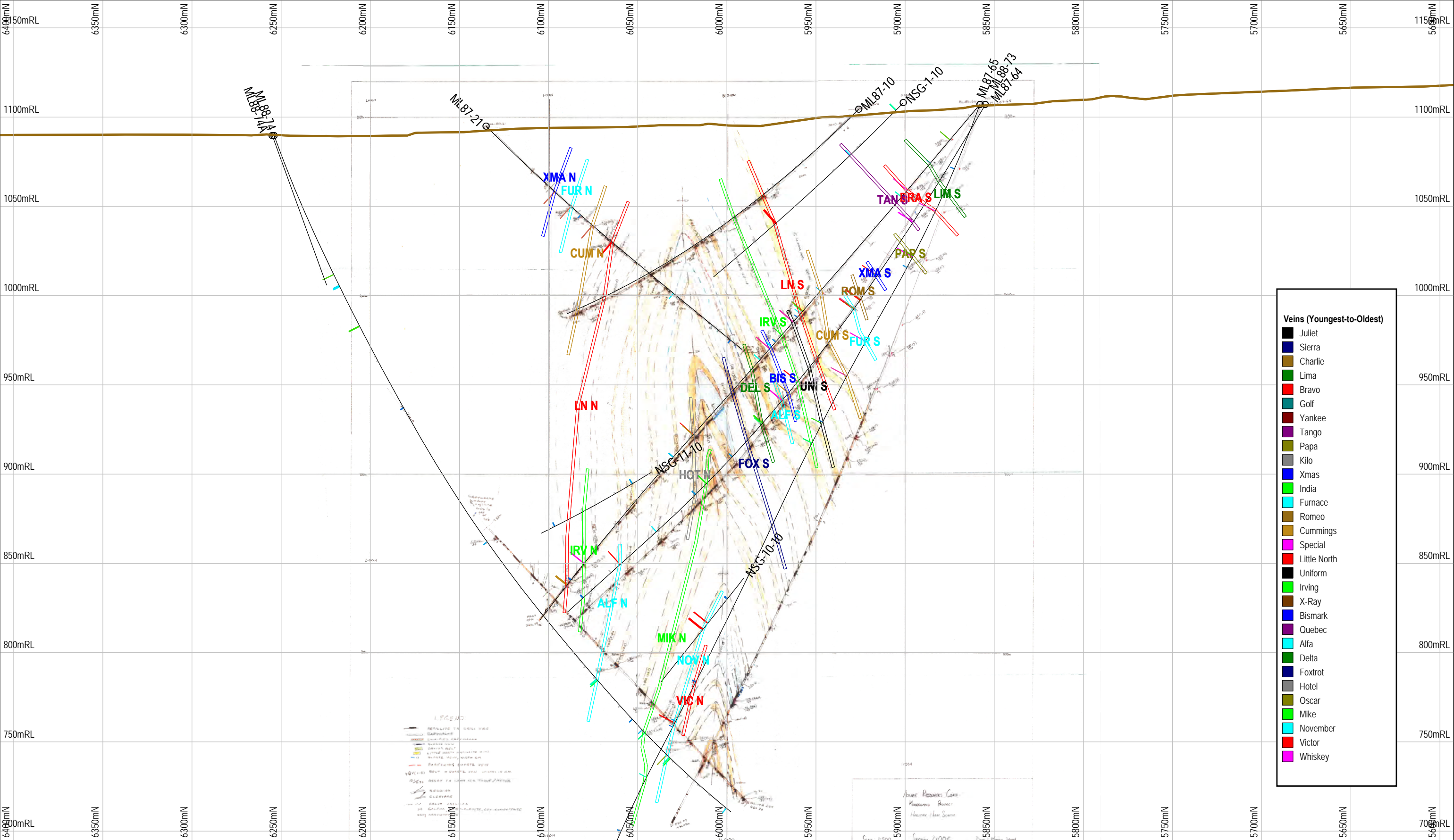






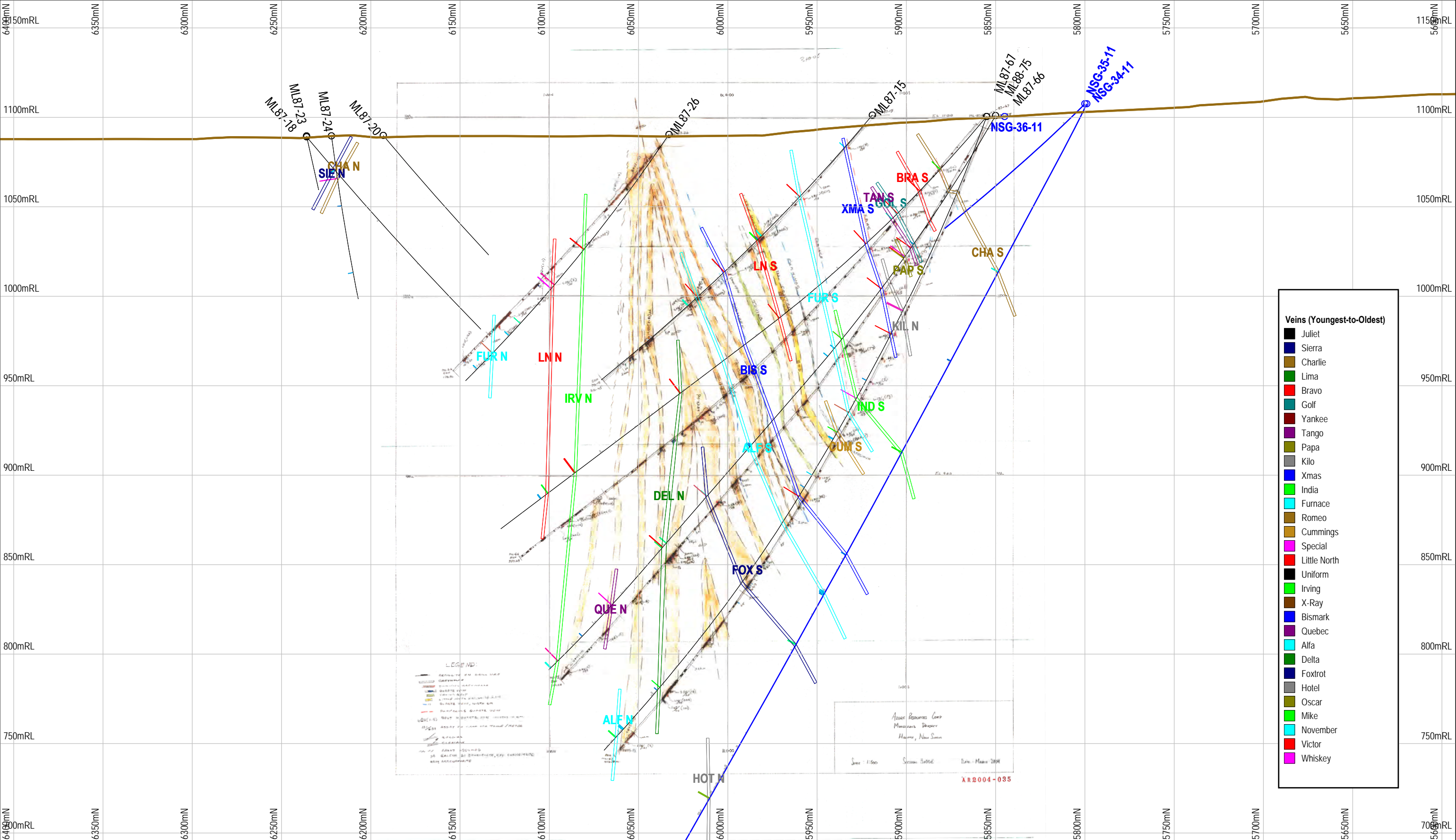
|  |                   |                              |                      |                                   |                             |   |  |   |  |
|--|-------------------|------------------------------|----------------------|-----------------------------------|-----------------------------|---|--|---|--|
|  | Scale<br>1 : 2000 | Plot Date<br>19-Jun-2012     | <b>Cross-Section</b> | Grade Composites: [X] g/t / [Y] m | <b>Gold Grade (g/tonne)</b> | Note: interpreted section 2150E<br>shown in background. | <b>Mooseland West Zone<br/>Cross-Section 2175E<br/>Facing East</b> | <b>MINETECH INTERNATIONAL LIMITED</b><br>HALIFAX, CANADA<br>1161 HOLLIS ST, SUITE 211, B3P 2A3<br>(902) 429-4049<br>WWW.MINETECHINT.COM |  |
|  |                   | NB: Northing Offset by +6000 |                      | Drawn by Doug Roy, M.A.Sc., P.Eng |                             |   |  |   |  |
|  |                   | Version 1.1                  |                      |                                   |                             |   |  |   |  |

|          |        |
|----------|--------|
| 0.5 to 2 | 4 to 6 |
| 2 to 3   | 6 to 8 |
| 3 to 4   | >= 8   |

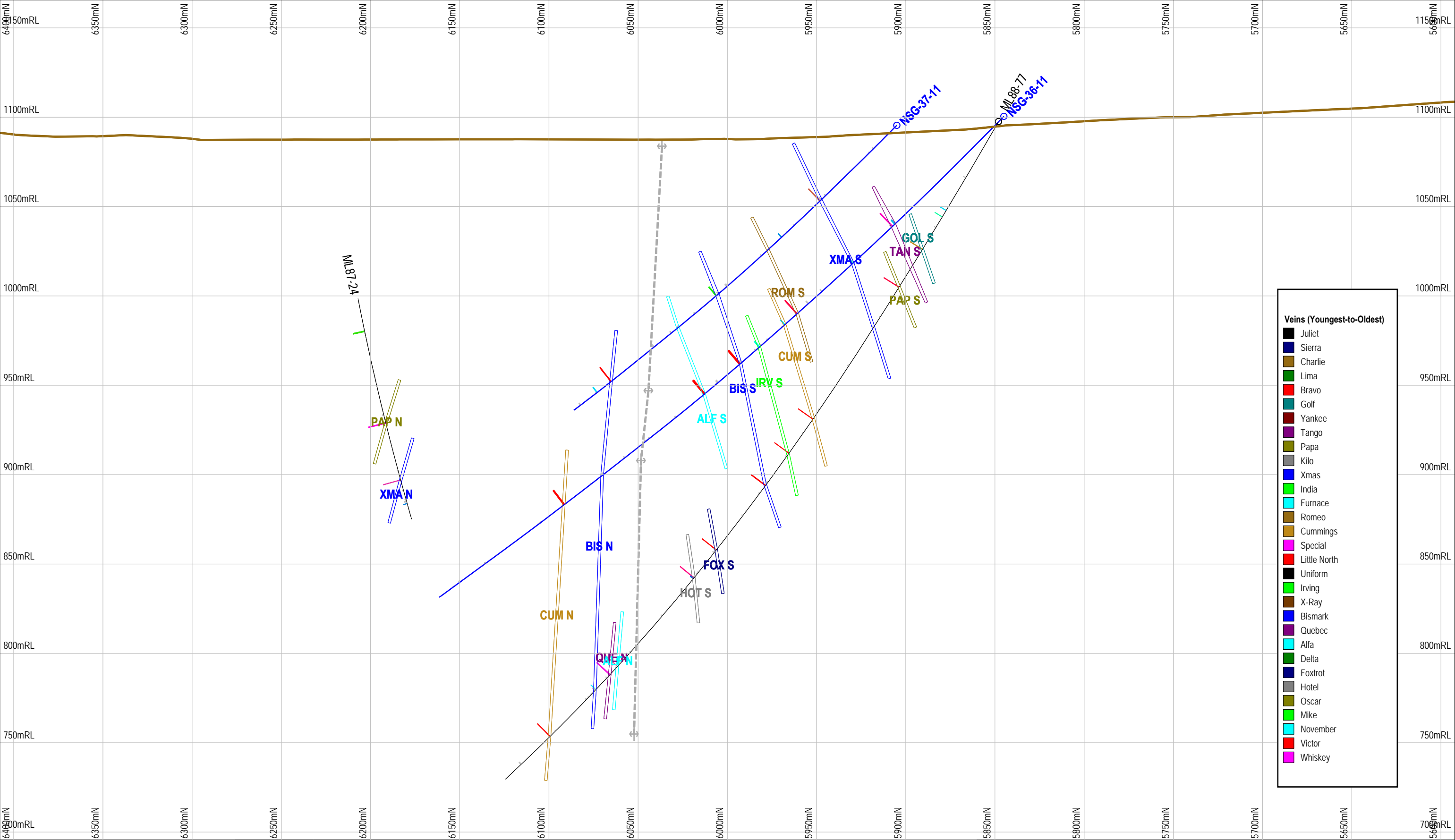










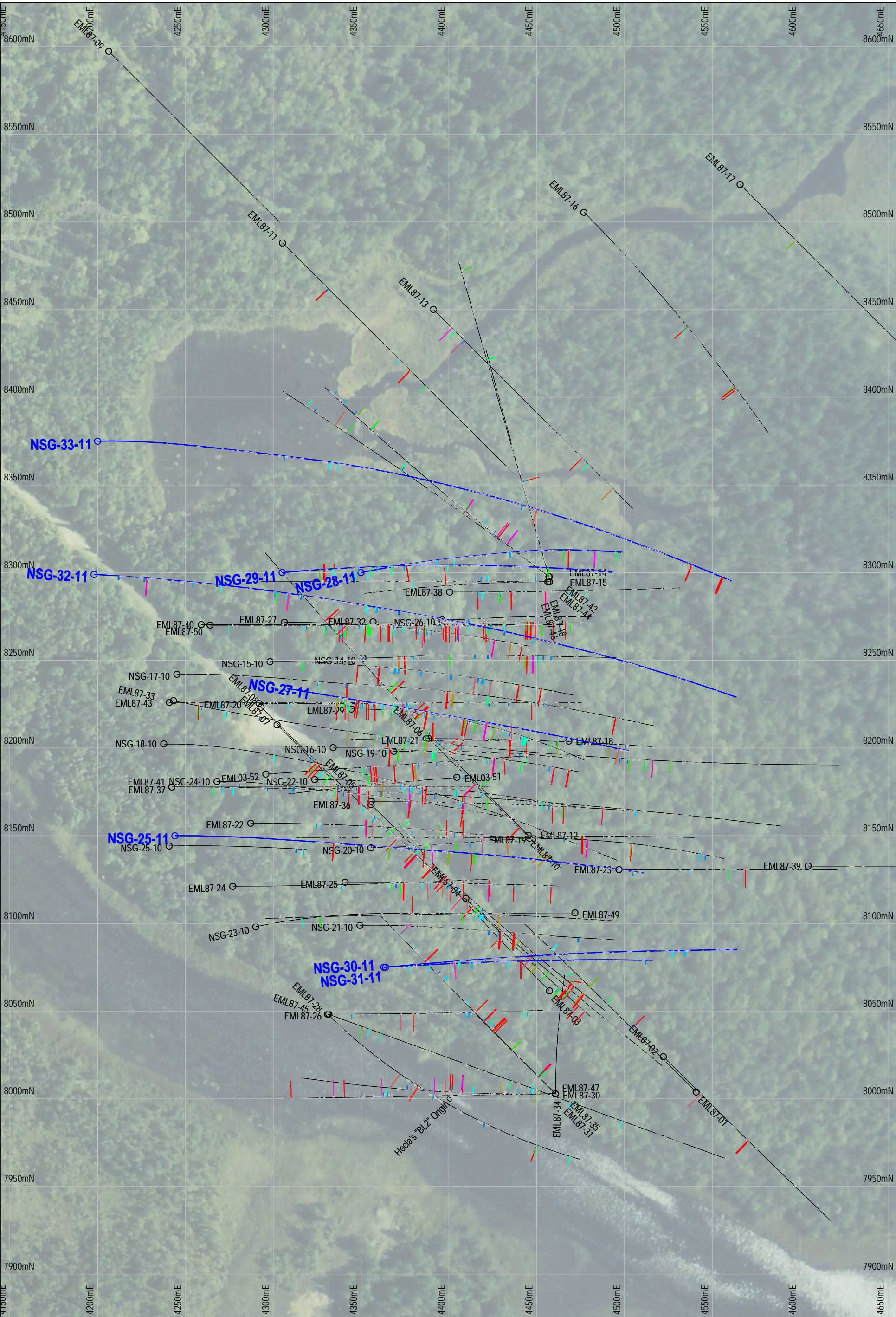




## **Appendix V**

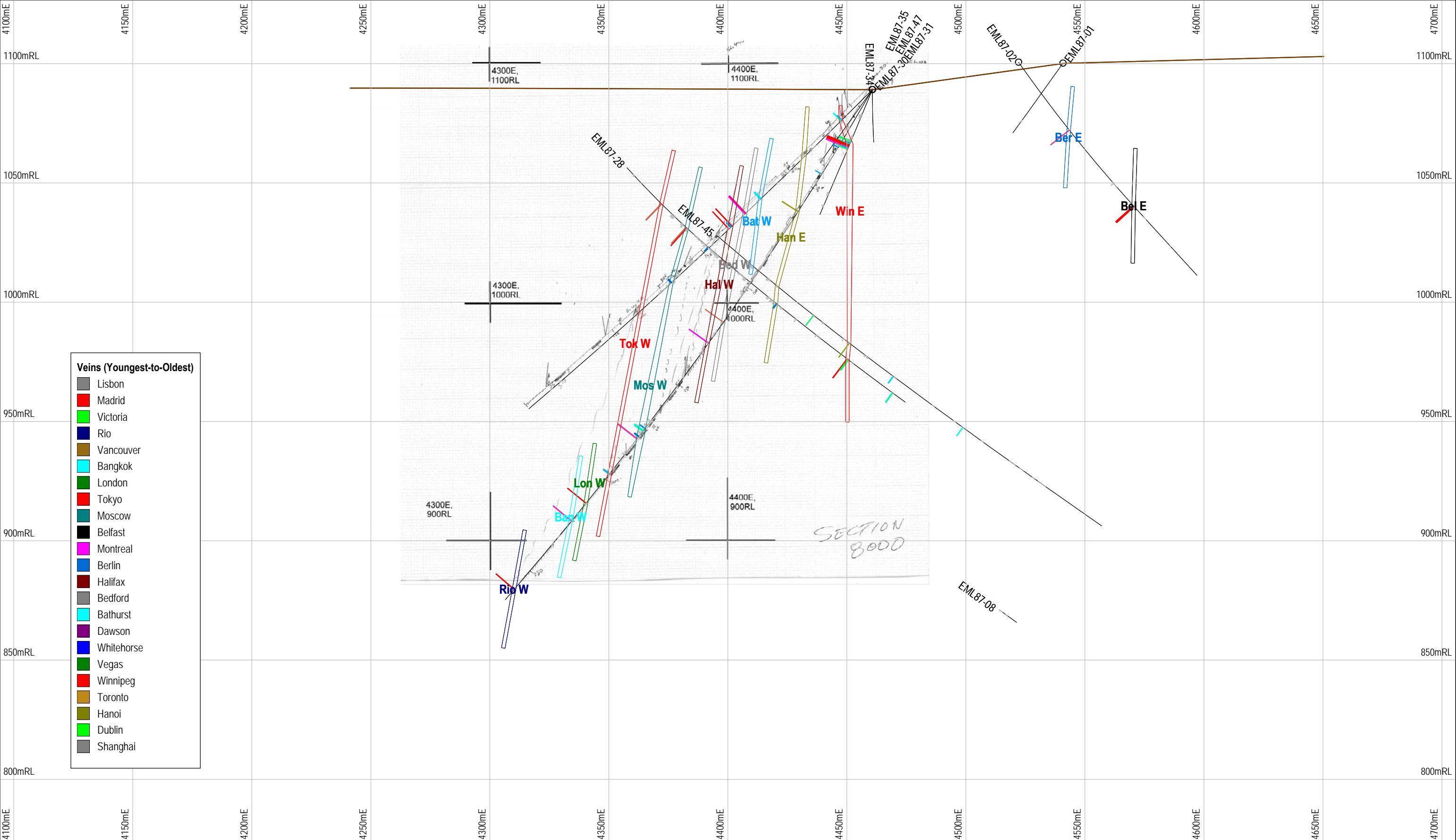
### **Cross-Sections – East Zone**





|  |                   |                          |                                       |  |  |   |   |
|--|-------------------|--------------------------|---------------------------------------|--|--|---|---|
|  | Scale<br>1 : 2000 | Plot Date<br>24-Apr-2012 | Drawn by:<br>Doug Roy, M.A.Sc., P.Eng | <b>Gold Grade (g/tonne)</b><br>0.5 to 2<br>2 to 3<br>3 to 4<br>4 to 6<br>6 to 8<br>≥ 8 | BL-2 (Hecla's, from a drawing dated 1989) origin shifted to 4400 E, 8000 E, then rotated 24 deg CCW.<br><br>Air photo position is not exact and should not be used for navigation. | <b>Mooseland East Zone<br/>Plan View of Drilling<br/>2012</b> | <br>HALIFAX, CANADA<br>1161 HOLIS ST, SUITE 211, B3P 2A3<br>(902) 429-4049<br>WWW.MINETECHINT.COM |
|  |                   |                          |                                       |  |  |   |   |
|  |                   | Version 1                |                                       |  |  |   |   |





- Veins (Youngest-to-Oldest)**
- Lisbon
  - Madrid
  - Victoria
  - Rio
  - Vancouver
  - Bangkok
  - London
  - Tokyo
  - Moscow
  - Belfast
  - Montreal
  - Berlin
  - Halifax
  - Bedford
  - Bathurst
  - Dawson
  - Whitehorse
  - Vegas
  - Winnipeg
  - Toronto
  - Hanoi
  - Dublin
  - Shanghai

**NSGold**  
corporation

Scale  
1 : 1500



Plot Date  
18-Jun-2012

Cross-Section  
Facing North

Grade Composites: [X] g/t / [Y] m

Drawn by Doug Roy, M.A.Sc., P.Eng

Version 1.1

Gold Grade (g/tonne)

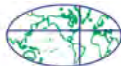
- 0.5 to 2
- 2 to 3
- 3 to 4
- 4 to 6
- 6 to 8
- >= 8

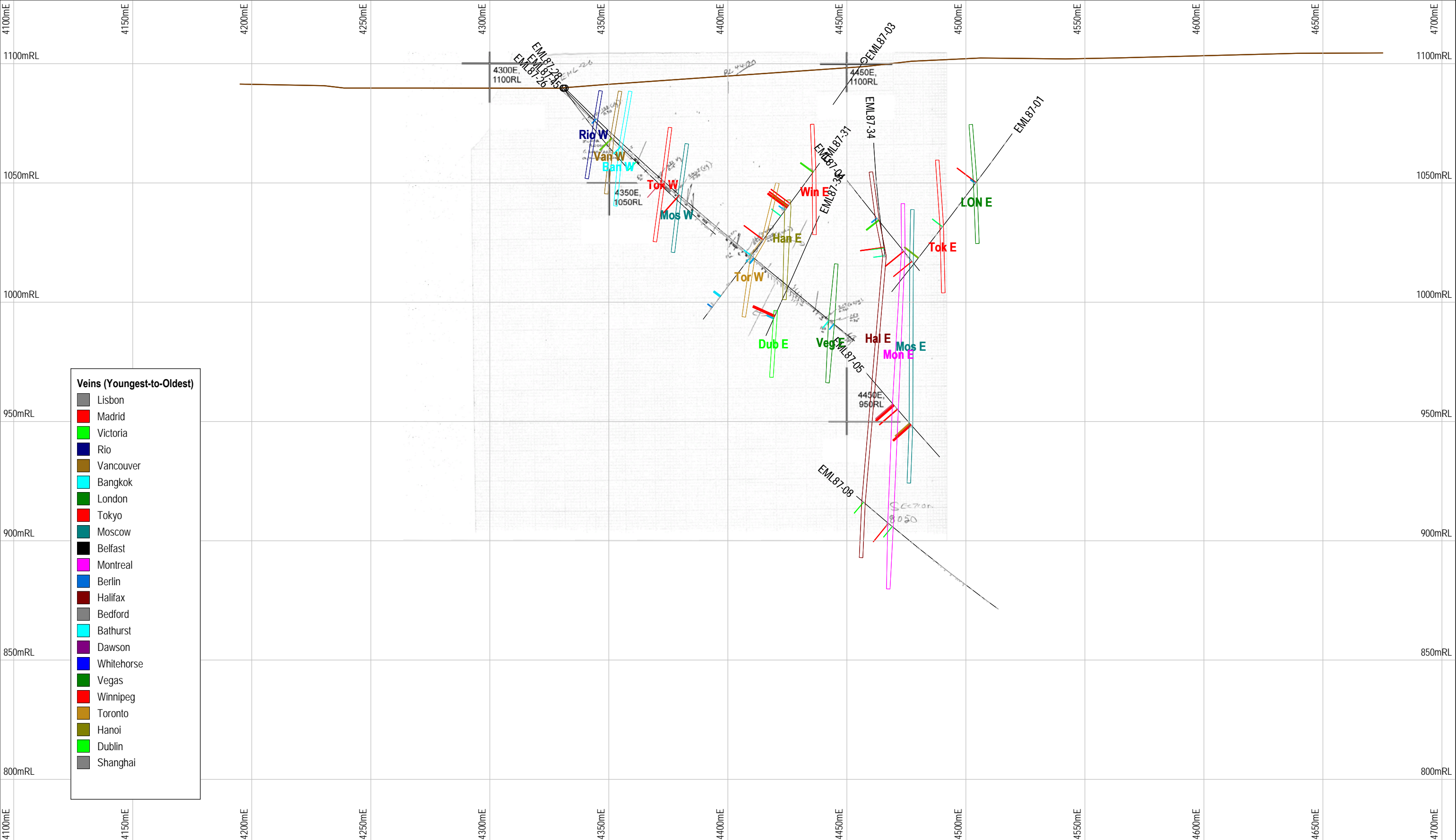
BL-2 (Hecla's Baseline from 1989) origin shifted  
to 4400 E, 8000 E, then rotated 24 deg CCW.

Background interpretation by Glen Covey, NSGold.

**Mooseland East Zone**  
**Cross-Section 8000N**  
**Facing North**

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- Veins (Youngest-to-Older)**
- Lisbon
  - Madrid
  - Victoria
  - Rio
  - Vancouver
  - Bangkok
  - London
  - Tokyo
  - Moscow
  - Belfast
  - Montreal
  - Berlin
  - Halifax
  - Bedford
  - Bathurst
  - Dawson
  - Whitehorse
  - Vegas
  - Winnipeg
  - Toronto
  - Hanoi
  - Dublin
  - Shanghai

| Gold Grade (g/tonne) |        |        |      |
|----------------------|--------|--------|------|
| 0.5 to 2             | 4 to 6 | 6 to 8 | >= 8 |
| 2 to 3               | 6 to 8 | >= 8   |      |
| 3 to 4               |        |        |      |

BL-2 (Hecla's Baseline from 1989) origin shifted to 4400 E, 8000 E, then rotated 24 deg CCW.

Background interpretation by Glen Covey, NSGold.

**Mooseland East Zone  
Cross-Section 8050N  
Facing North**

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Scale  
1 : 1500

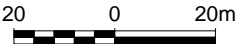
Plot Date  
19-Jun-2012

Cross-Section  
Facing North

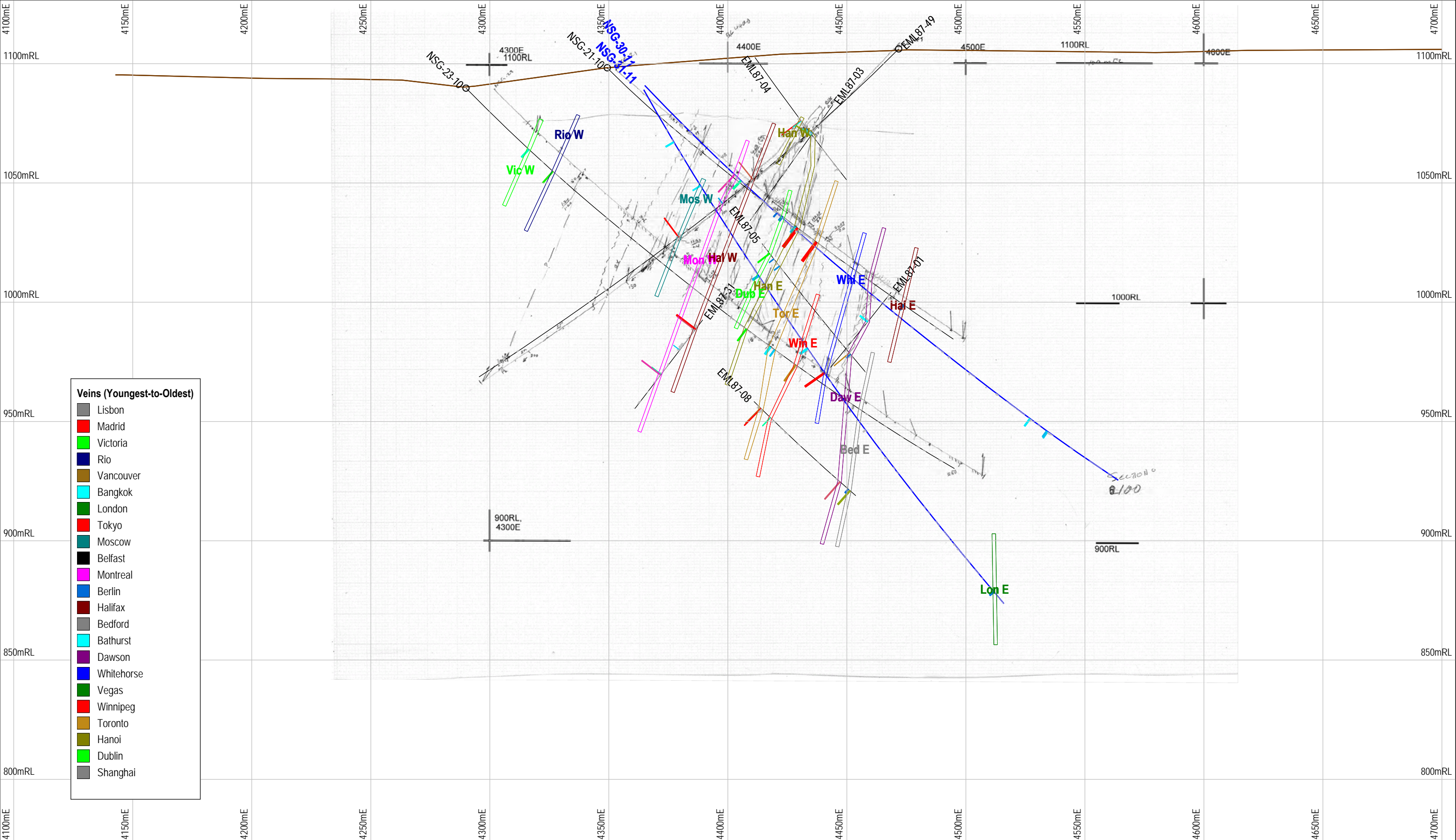
Grade Composites: [X] g/t / [Y] m

Drawn by Doug Roy, M.A.Sc., P.Eng

Version 1.1







- Veins (Youngest-to-Older)**
- Lisbon
  - Madrid
  - Victoria
  - Rio
  - Vancouver
  - Bangkok
  - London
  - Tokyo
  - Moscow
  - Belfast
  - Montreal
  - Berlin
  - Halifax
  - Bedford
  - Bathurst
  - Dawson
  - Whitehorse
  - Vegas
  - Winnipeg
  - Toronto
  - Hanoi
  - Dublin
  - Shanghai



Scale  
1 : 1500

Plot Date  
19-Jun-2012

Cross-Section  
Facing North

Grade Composites: [X] g/t / [Y] m

Drawn by Doug Roy, M.A.Sc., P.Eng

Version 1.1

- Gold Grade (g/tonne)**
- 0.5 to 2
  - 2 to 3
  - 3 to 4
  - 4 to 6
  - 6 to 8
  - >= 8

BL-2 (Hecla's Baseline from 1989) origin shifted to 4400 E, 8000 E, then rotated 24 deg CCW.

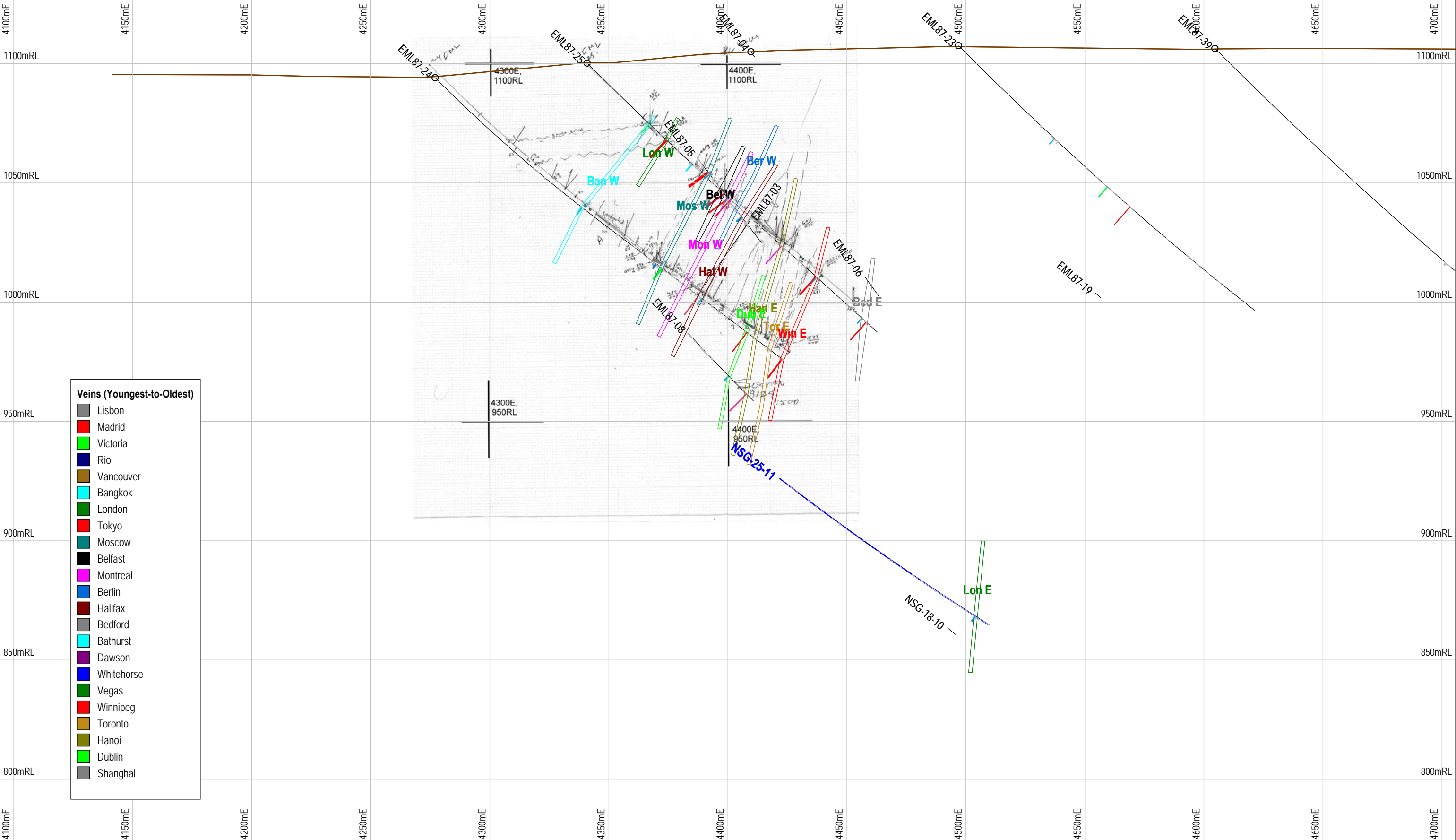
Background interpretation by Glen Covey, NSGold.

**Mooseland East Zone  
Cross-Section 8100N  
Facing North**

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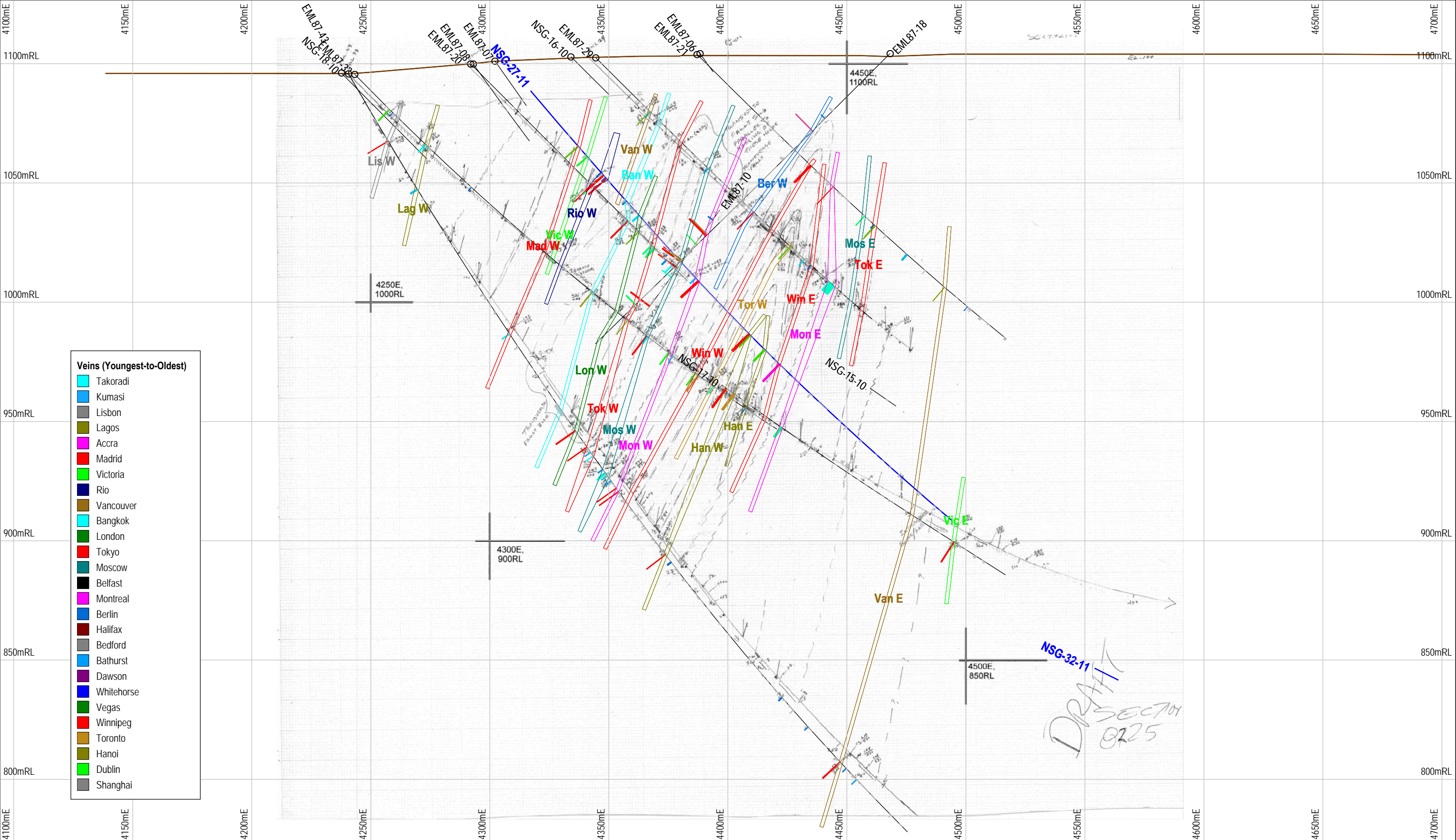
- Veins (Youngest-to-Older)**
- Lisbon
  - Madrid
  - Victoria
  - Rio
  - Vancouver
  - Bangkok
  - London
  - Tokyo
  - Moscow
  - Belfast
  - Montreal
  - Berlin
  - Halifax
  - Bedford
  - Bathurst
  - Dawson
  - Whitehorse
  - Vegas
  - Winnipeg
  - Toronto
  - Hanoi
  - Dublin
  - Shanghai











- Veins (Youngest-to-Oldest)**
- Takoradi
  - Kumasi
  - Lisbon
  - Lagos
  - Accra
  - Madrid
  - Victoria
  - Rio
  - Vancouver
  - Bangkok
  - London
  - Tokyo
  - Moscow
  - Belfast
  - Montreal
  - Berlin
  - Halifax
  - Bedford
  - Bathurst
  - Dawson
  - Whitehorse
  - Vegas
  - Winnipeg
  - Toronto
  - Hanoi
  - Dublin
  - Shanghai

**NSGold**  
corporation

Scale  
1 : 1500

Plot Date  
19-Jun-2012

Cross-Section  
Facing North

Grade Composites: [X] g/t / [Y] m

Drawn by Doug Roy, M.A.Sc., P.Eng

Version 1.1

Gold Grade (g/tonne)

- 0.5 to 2
- 2 to 3
- 3 to 4
- 4 to 6
- 6 to 8
- >= 8

BL-2 (Hecla's Baseline from 1989) origin shifted  
to 4400 E, 8000 E, then rotated 24 deg CCW.

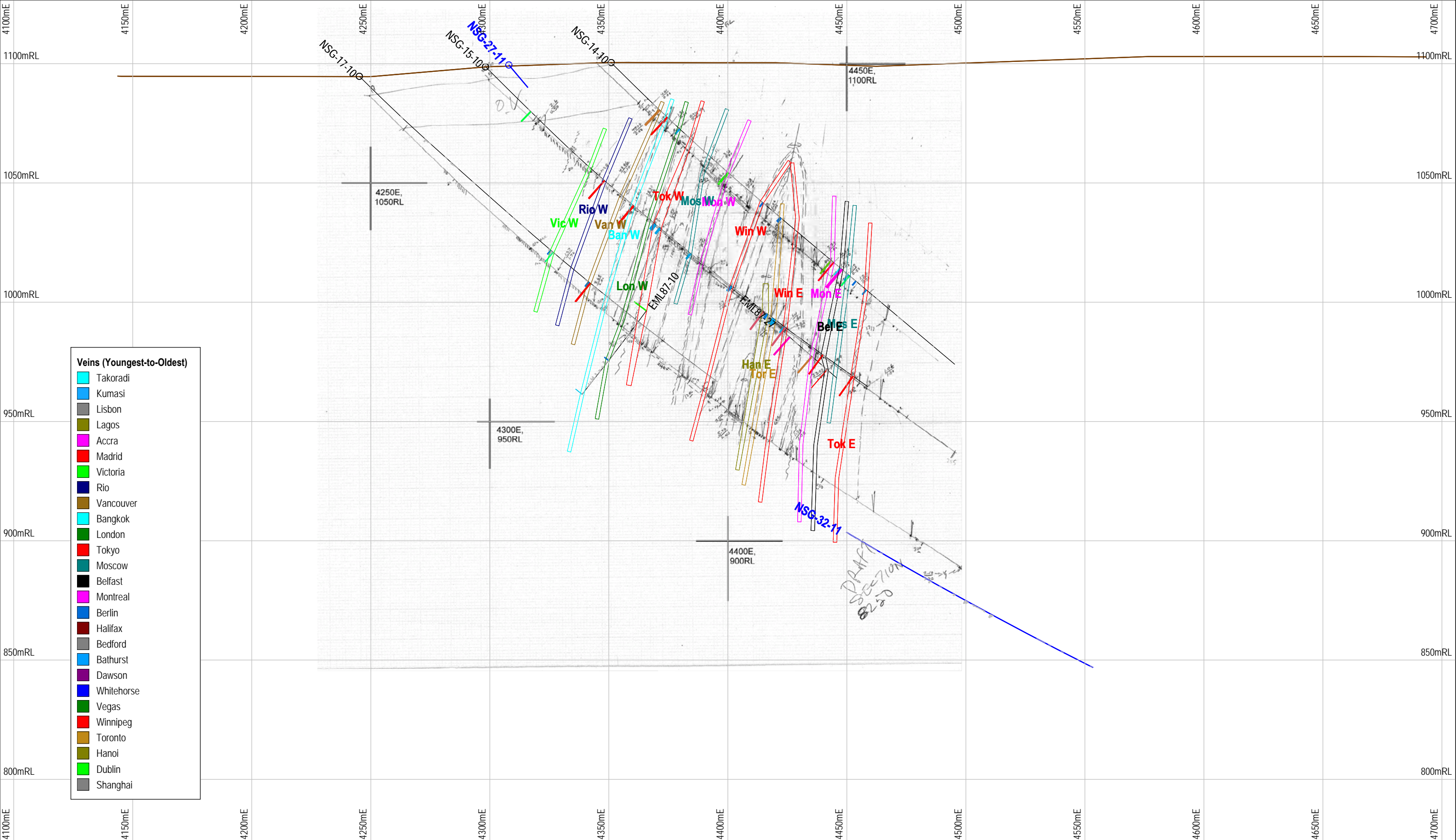
Background interpretation by Glen Covey, NSGold.

**Mooseland East Zone**  
**Cross-Section 8215N**  
**Facing North**

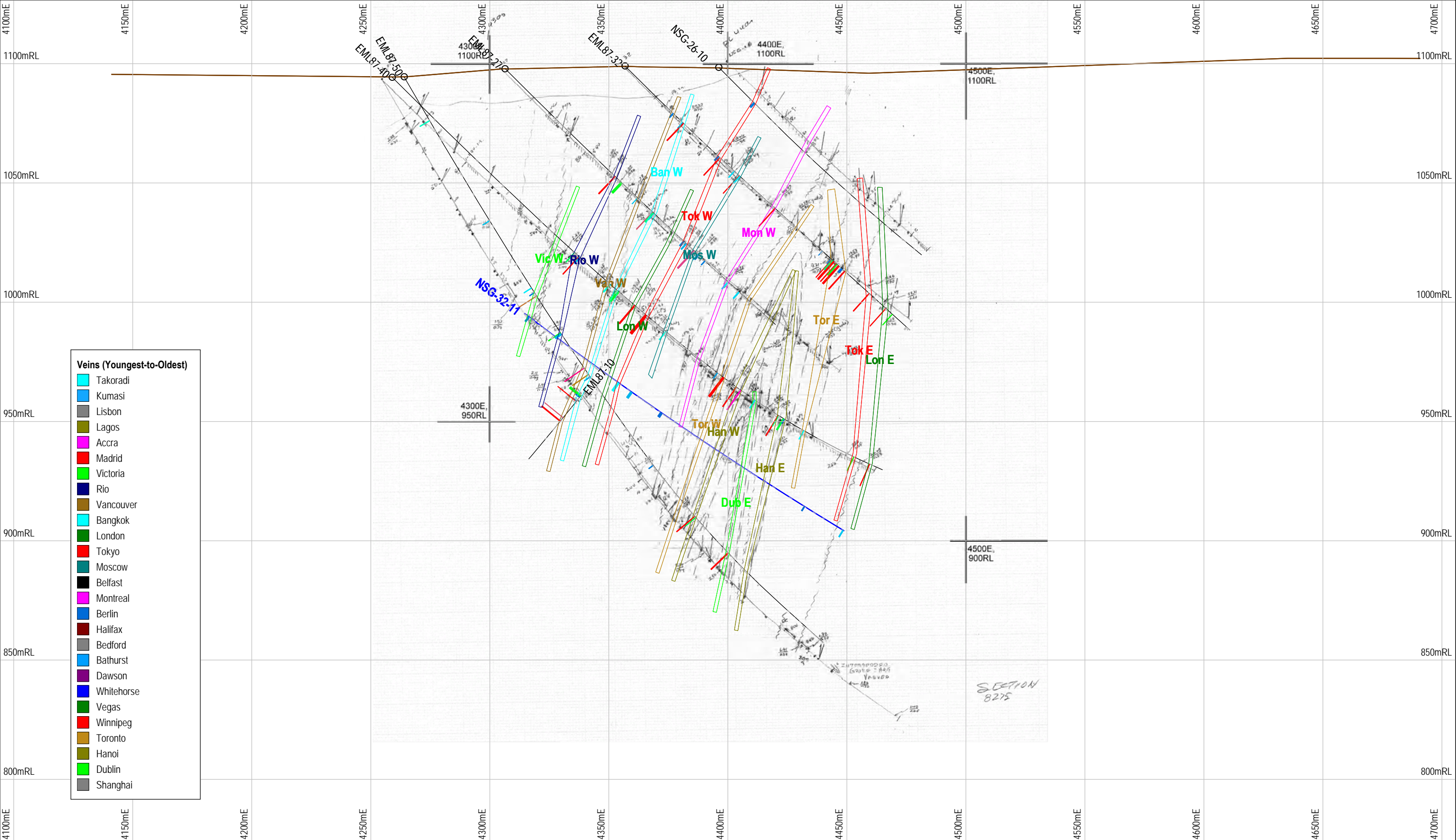
**MINETECH INTERNATIONAL LIMITED**  
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(902) 429-4049  
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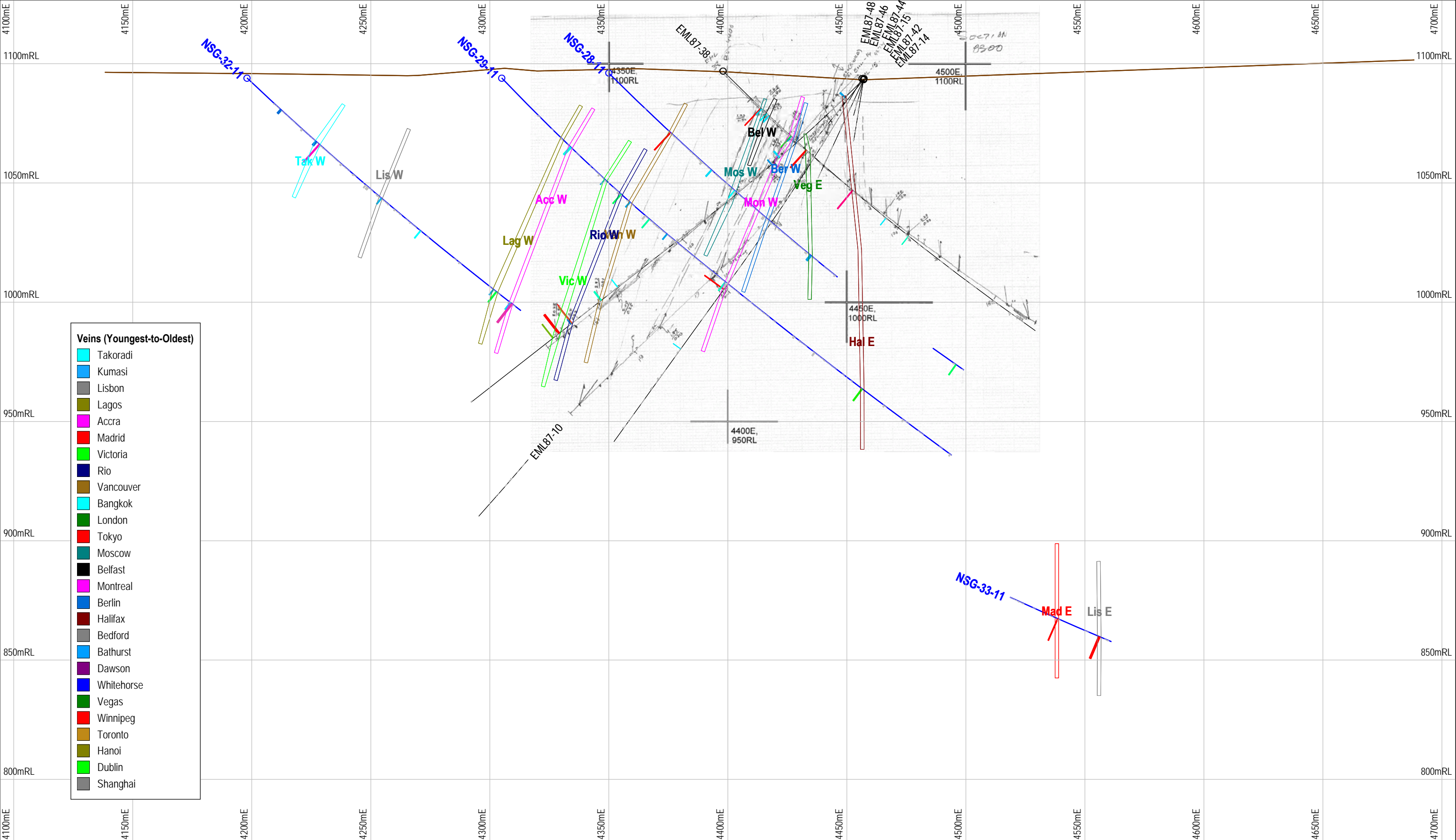


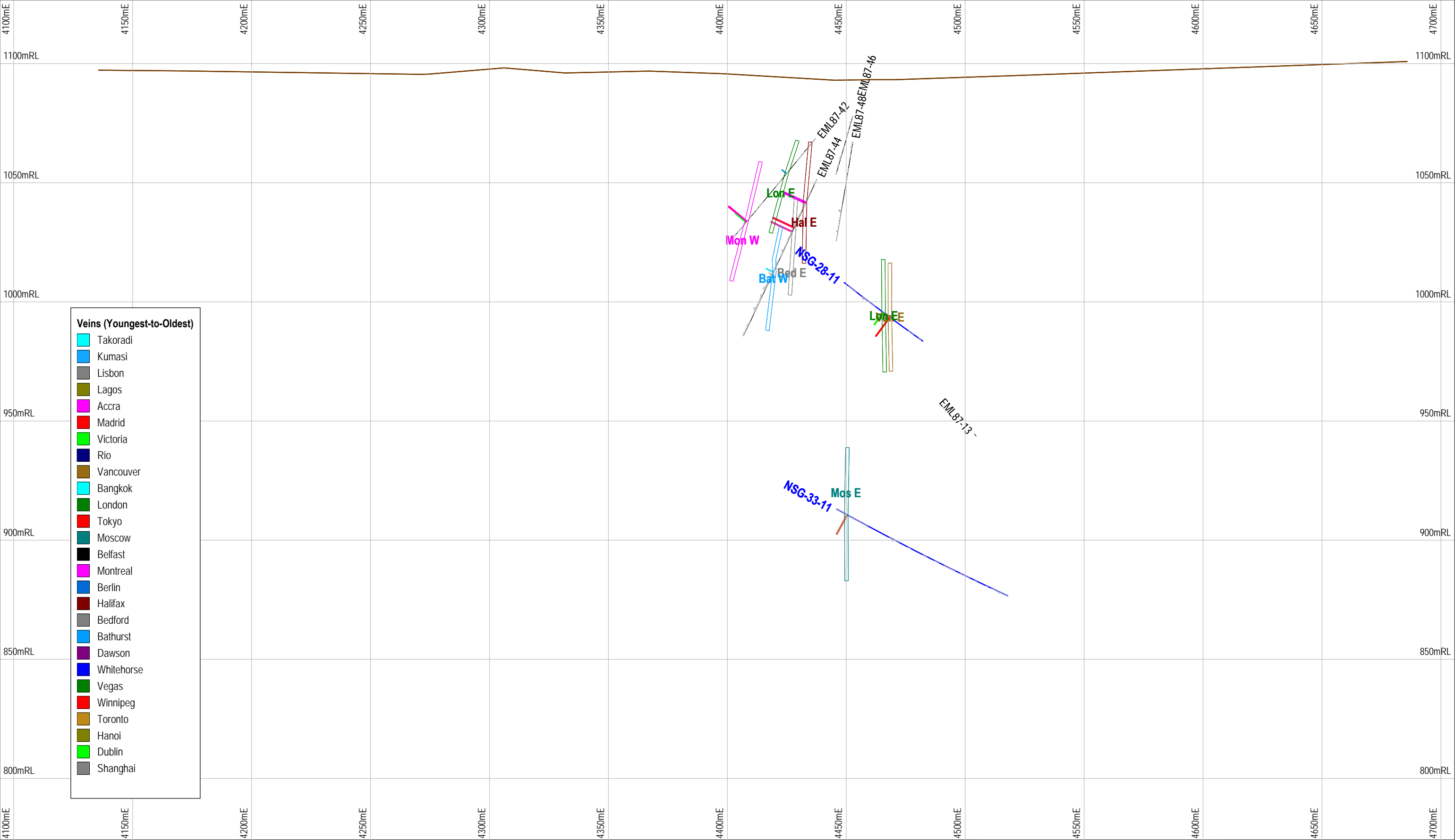












- Veins (Youngest-to-Oldest)**
- Takoradi
  - Kumasi
  - Lisbon
  - Lagos
  - Accra
  - Madrid
  - Victoria
  - Rio
  - Vancouver
  - Bangkok
  - London
  - Tokyo
  - Moscow
  - Belfast
  - Montreal
  - Berlin
  - Halifax
  - Bedford
  - Bathurst
  - Dawson
  - Whitehorse
  - Vegas
  - Winnipeg
  - Toronto
  - Hanoi
  - Dublin
  - Shanghai



Scale  
1 : 1500

Plot Date  
18-Jun-2012

Cross-Section  
Facing North

Grade Composites: [X] g/t / [Y] m

Drawn by Doug Roy, M.A.Sc., P.Eng

Version 1.1

Gold Grade (g/tonne)

- |          |        |
|----------|--------|
| 0.5 to 2 | 4 to 6 |
| 2 to 3   | 6 to 8 |
| 3 to 4   | >= 8   |

BL-2 (Hecla's Baseline from 1989) origin shifted  
to 4400 E, 8000 E, then rotated 24 deg CCW.

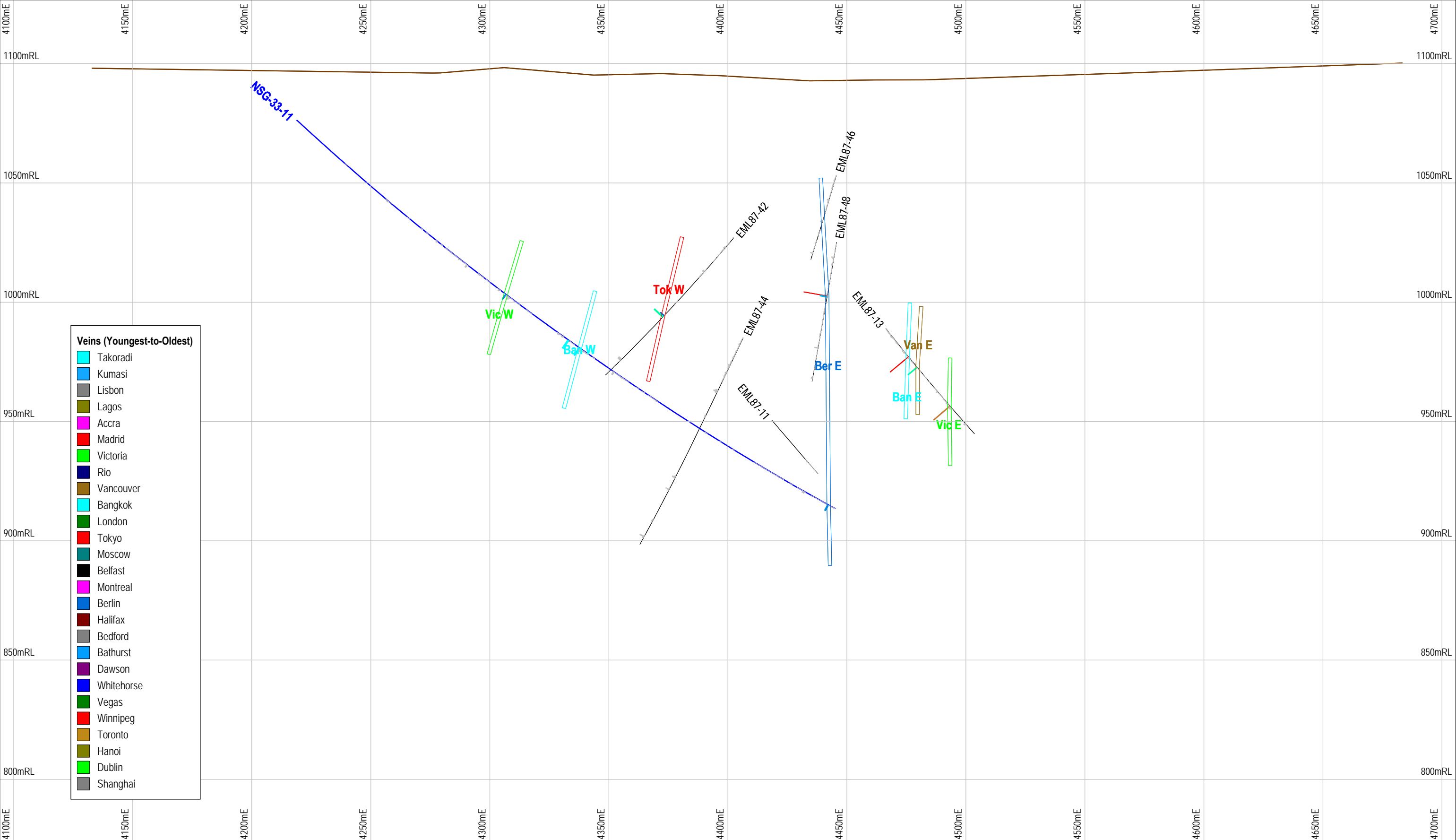
Background interpretation by Glen Covey, NSGold.

**Mooseland East Zone  
Cross-Section 8325N  
Facing North**

**MINETECH INTERNATIONAL LIMITED**  
HALIFAX, CANADA

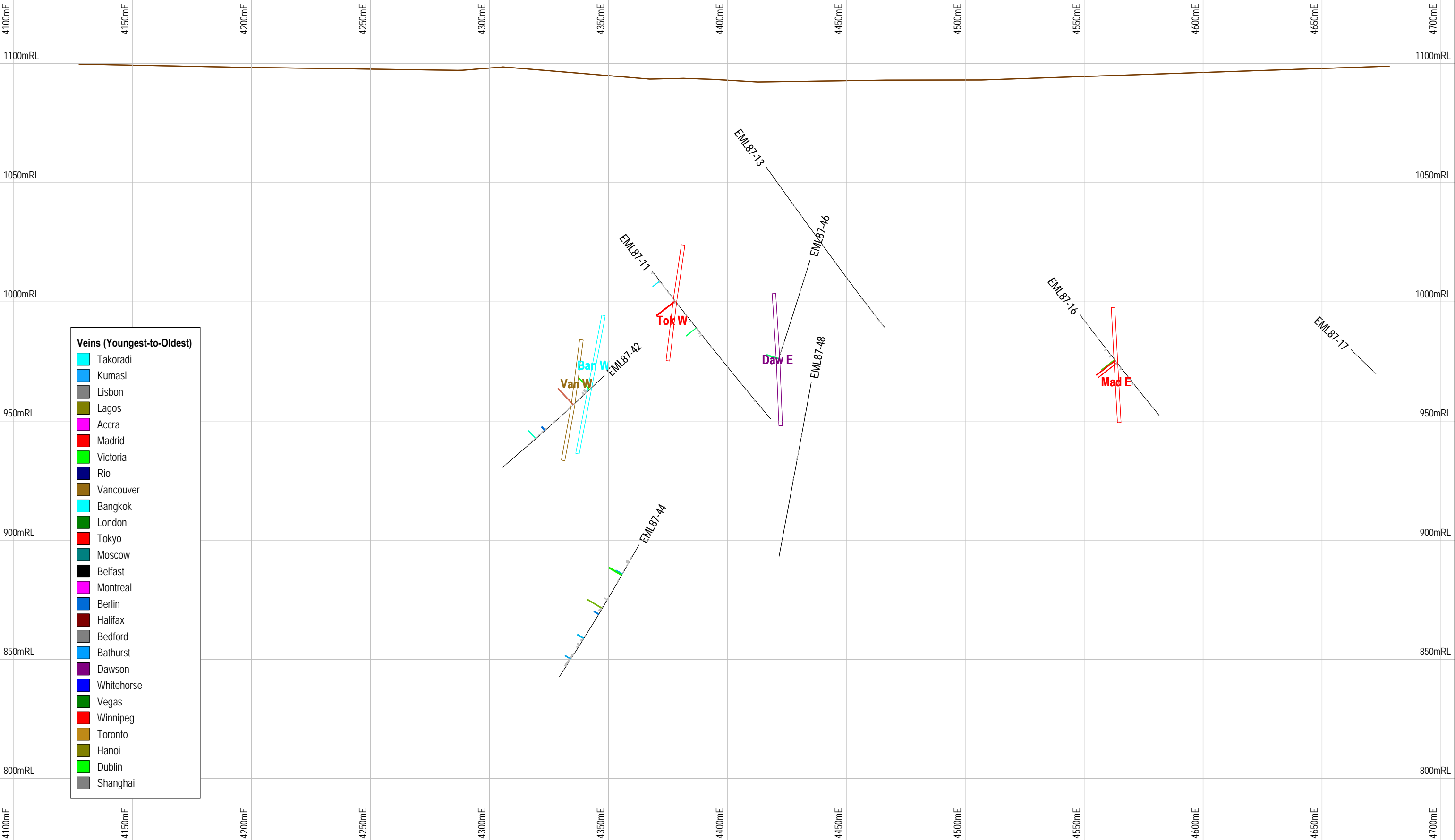
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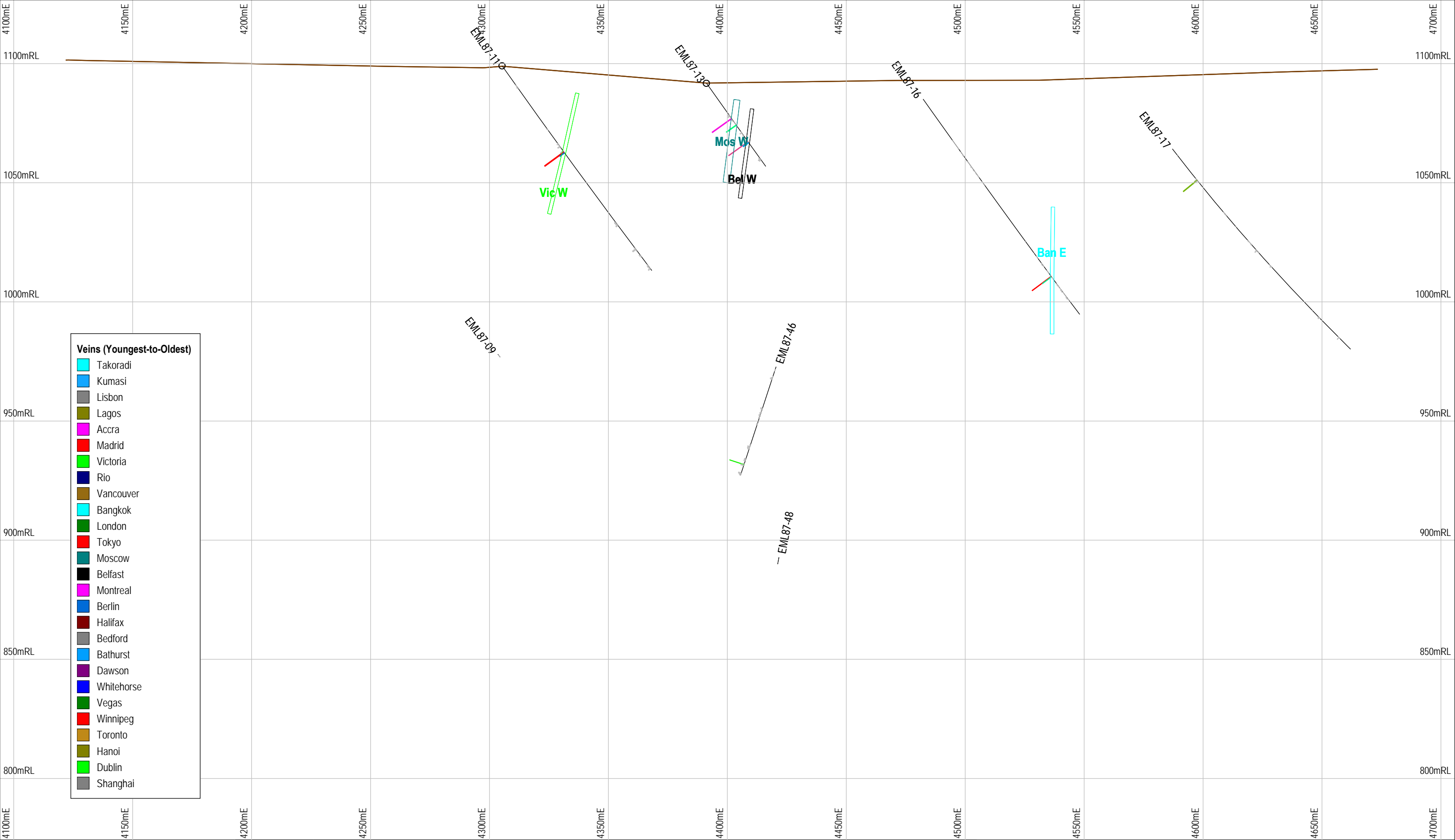




- Veins (Youngest-to-Oldest)**
- Takoradi
  - Kumasi
  - Lisbon
  - Lagos
  - Accra
  - Madrid
  - Victoria
  - Rio
  - Vancouver
  - Bangkok
  - London
  - Tokyo
  - Moscow
  - Belfast
  - Montreal
  - Berlin
  - Halifax
  - Bedford
  - Bathurst
  - Dawson
  - Whitehorse
  - Vegas
  - Winnipeg
  - Toronto
  - Hanoi
  - Dublin
  - Shanghai







- Veins (Youngest-to-Oldest)**
- Takoradi
  - Kumasi
  - Lisbon
  - Lagos
  - Accra
  - Madrid
  - Victoria
  - Rio
  - Vancouver
  - Bangkok
  - London
  - Tokyo
  - Moscow
  - Belfast
  - Montreal
  - Berlin
  - Halifax
  - Bedford
  - Bathurst
  - Dawson
  - Whitehorse
  - Vegas
  - Winnipeg
  - Toronto
  - Hanoi
  - Dublin
  - Shanghai

| Gold Grade (g/tonne) |        |        |      |
|----------------------|--------|--------|------|
| 0.5 to 2             | 4 to 6 | 6 to 8 | >= 8 |
| 2 to 3               | 6 to 8 | >= 8   |      |
| 3 to 4               |        |        |      |

BL-2 (Hecla's Baseline from 1989) origin shifted to 4400 E, 8000 E, then rotated 24 deg CCW.

Background interpretation by Glen Covey, NSGold.

## Mooseland East Zone Cross-Section 8450N Facing North

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## **Appendix VI**

### **Glossary**



## Appendix IV - Glossary

Table 1 - Glossary of Companies

|                         |  |
|-------------------------|--|
| <b>Acadia</b>           | Acadia Mineral Ventures Ltd., a mineral exploration company that was active on the Mooseland Property in the 1980s (not to be confused with Acadian Mining Corporation of Nova Scotia) |
| <b>Azure</b>            | Azure Resources Corporation, a mineral exploration company that was active on the Mooseland Property in the 2000s.   |
| <b>Flexit</b>           | A Swedish manufacturer of downhole survey instruments  |
| <b>Globex</b>           | Globex Mining Enterprises, Inc., a mineral exploration and development company based in Rouyn-Noranda, Quebec  |
| <b>MEX</b>              | M.E.X. Explorations Limited, a mineral exploration company active near the Mooseland Property in the 1980s   |
| <b>MineTech</b>         | MineTech International Limited, a consulting engineering company based in Halifax, Nova Scotia   |
| <b>MPH</b>              | MPH Consulting Limited, a consulting engineering company that prepared a non-43-101 compliant mineral resource estimate of the Mooseland Property in the 1980s                         |
| <b>NSDNR</b>            | Nova Scotia Department of Natural Resources  |
| <b>NSGold</b>           | NSGold Corporation, a precious metals company with a near-term exploration focus based in Vancouver, British Columbia  |
| <b>Tri-Explorations</b> | Tri-Explorations Limited, a mineral exploration company that was active on the Mooseland Property in the 1980s.  |

Table 2 - Glossary of Technical Terms

|                     |  |
|---------------------|--|
| <b>AA</b>           | Atomic Absorption spectroscopy, a laboratory procedure that determines the quantity of elements by measuring absorption of optical radiation by the sample. In gold analysis, samples prepared by fire assay can be measured using AA. |
| <b>Anticline</b>    | A rock structure characterized by folded rock whose sides dip from a common line or crest. The opposite of syncline.   |
| <b>Argillaceous</b> | Sedimentary rock composed of clay-grade particles  |
| <b>Arsenopyrite</b> | The most common arsenic mineral and principal ore of arsenic; occurs in many sulfide ore deposits  |
| <b>Assay</b>        | Analysis of rock to determine the proportions of various metals contained within   |
| <b>Baseline</b>     | A surveyed line that serves as a reference to which surveys are coordinated and correlated   |
| <b>Bench-scale</b>  | Small-scale testing, e.g. using laboratory-sized samples   |
| <b>Blanks</b>       | Non-gold-bearing material sent to assay laboratories to check if the laboratory is reporting false positives   |





|                             |  |
|-----------------------------|--|
| <b>Carboniferous</b>        | A geological period, running from approximately 345 to 280 million years ago   |
| <b>Core Shed</b>            | A building that houses drill core  |
| <b>Decline</b>              | A ramp from the surface to the underground   |
| <b>Devonian</b>             | A geological period, running from approximately 416 to 360 million years ago   |
| <b>Diamond Drill</b>        | A drilling machine with a rotating, hollow, diamond-studded bit that cuts a circular channel around a core, which can be recovered to provide a more or less continuous and complete columnar sample of the rock penetrated                                |
| <b>Downhole Survey</b>      | A measurement of azimuth (bearing) and dip (vertical inclination) within a diamond drill hole  |
| <b>Drill Collar</b>         | The top of a diamond drill hole  |
| <b>FE</b>                   | Frequency Effect, a method used to analyze induced-polarization geophysics data  |
| <b>Fire Assay</b>           | A sample preparation method in which a representative subsample is melted, used in gold analysis, allowing results measured in the low parts per million   |
| <b>Gravimetric</b>          | A laboratory procedure that measures the quantity of substances by weight. In gold analysis, samples prepared by fire assay can be measured gravimetrically.   |
| <b>Greywacke</b>            | A rock name generally applied to dark grey, coarse-grained sandstone consisting of grains of quartz and feldspar (see dictionary for more complete definition)   |
| <b>Headframe</b>            | A frame at the top of a shaft, which carries the pulley for the hoisting rope  |
| <b>Hydrothermal</b>         | A hydrothermal deposit is one in which the minerals are precipitated from a hot aqueous solution   |
| <b>Igneous</b>              | Rocks and minerals that solidified from molten or partly molten material   |
| <b>Metamorphic</b>          | Any rock derived from pre-existing rocks by mineralogical, chemical, and/or structural changes   |
| <b>Sedimentary</b>          | Rock formed by deposition of a sediment  |
| <b>IP</b>                   | Induced Polarization, a geophysical technique in which a current is passed through the ground, producing a polarizing effect in sulphide minerals  |
| <b>Magazine</b>             | A building that houses explosives on a mine site   |
| <b>Mesh</b>                 | Tyler-scale mesh sizes, denoting the number of openings per unit area  |
| <b>Nugget Effect</b>        | Anomalously high precious metal assays resulting from the analysis of samples that may not adequately represent the composition of the bulk material tested due to nonuniform distribution of high-grade nuggets in the material to be sampled (SME, 1992) |
| <b>Orogeny</b>              | A mountain-building process, by which structures within fold-bent mountainous areas were formed  |
| <b>Pluton</b>               | A body of igneous rock that formed beneath the surface by crystallization of magma   |
| <b>Screen-for-metallics</b> | An assay process that consumes and analyzes an entire sample (compare with Fire Assay, which reduces a large sample to a fraction of its original size before analyzing for metals)  |
| <b>Standards</b>            | Laboratory-prepared material of a known metal content (within a known standard deviation) sent to assay laboratories to check that the laboratory is reporting correct values  |
| <b>Strike</b>               | The course or bearing of the outcrop of an inclined bed, vein or fault plane on a level  |



surface.

|                   |   |
|-------------------|---|
| <b>Top-cut</b>    | A statistical tool used in resource estimation, whereby assay results above a certain threshold are reduce in order to provide a more accurate model of a deposit |
| <b>Umpire Lab</b> | A second assay laboratory used to check the accuracy and precision of the main assay laboratory used on a given project   |
| <b>VLF-EM</b>     | Very Low Frequency - Electromagnetic. A type of geophysical survey that relies on radio signals   |



## **Appendix VII**

### **Drill Hole Collars**



## East Zone

| Hole      | North   | East    | RL     | Depth  | Dip | Azimuth |
|-----------|---------|---------|--------|--------|-----|---------|
| EML87-01  | 8003.89 | 4540.79 | 1100.2 | 187.1  | -45 | 315     |
| EML87-02  | 8023.97 | 4522.12 | 1100.6 | 173.7  | -45 | 135     |
| EML87-03  | 8061.62 | 4457.2  | 1101.2 | 176.8  | -45 | 315     |
| EML87-04  | 8114.1  | 4409.68 | 1105   | 134.1  | -45 | 135     |
| EML87-05  | 8167.8  | 4355.68 | 1104   | 245.4  | -45 | 135     |
| EML87-06  | 8205.55 | 4388.36 | 1104.2 | 146.3  | -45 | 135     |
| EML87-07  | 8213.34 | 4302.16 | 1101.1 | 71.78  | -45 | 135     |
| EML87-08  | 8223.36 | 4293.09 | 1099.8 | 387.1  | -45 | 135     |
| EML87-09  | 8597.19 | 4206.34 | 1109.5 | 192.03 | -45 | 135     |
| EML87-10  | 8150.13 | 4445.26 | 1106.7 | 295.4  | -45 | 315     |
| EML87-11  | 8488.07 | 4305.28 | 1099.1 | 253.96 | -45 | 135     |
| EML87-12  | 8148.73 | 4445.76 | 1106.7 | 181.4  | -45 | 270     |
| EML87-13  | 8450.03 | 4391.2  | 1091.8 | 218.5  | -45 | 135     |
| EML87-14  | 8294.86 | 4457.25 | 1093.7 | 213.83 | -45 | 270     |
| EML87-15  | 8294.77 | 4456.36 | 1093.7 | 184.7  | -60 | 270     |
| EML87-16  | 8505.56 | 4476.84 | 1092.8 | 216    | -45 | 135     |
| EML87-17  | 8521.25 | 4565.84 | 1092.9 | 195.26 | -45 | 135     |
| EML87-18  | 8203.88 | 4468.22 | 1104.3 | 173.7  | -45 | 270     |
| EML87-19  | 8148.55 | 4448.11 | 1106.7 | 151.5  | -45 | 90      |
| EML87-20  | 8225.42 | 4291.96 | 1099.9 | 128.57 | -45 | 90      |
| EML87-21  | 8205.34 | 4387.07 | 1103.9 | 176.52 | -45 | 90      |
| EML87-22  | 8157.2  | 4287.18 | 1099.1 | 186    | -45 | 90      |
| EML87-23  | 8130.51 | 4496.91 | 1107.5 | 166.7  | -45 | 90      |
| EML87-24  | 8121.2  | 4277    | 1094.1 | 188.5  | -45 | 90      |
| EML87-25  | 8123.41 | 4340.9  | 1100.3 | 166.1  | -45 | 90      |
| EML87-26  | 8048.26 | 4331.6  | 1089.7 | 161.5  | -45 | 90      |
| EML87-27  | 8271.71 | 4306.42 | 1097.9 | 191.1  | -45 | 90      |
| EML87-28  | 8048.39 | 4330.88 | 1089.7 | 213.4  | -45 | 135     |
| EML87-29  | 8222.31 | 4344.52 | 1102.5 | 184.4  | -45 | 90      |
| EML87-30  | 8002.85 | 4460.7  | 1089.1 | 197.2  | -45 | 269     |
| EML87-31  | 8002.85 | 4460.7  | 1089.1 | 195.45 | -45 | 315     |
| EML87-32  | 8271.92 | 4356.81 | 1099   | 163.07 | -45 | 90      |
| EML87-33  | 8226.93 | 4243.27 | 1095.5 | 452.6  | -45 | -24     |
| EML87-34  | 8002.85 | 4460.7  | 1089.1 | 98.4   | -45 | 0       |
| EML87-35  | 8002.85 | 4460.7  | 1089.1 | 121    | -60 | 315     |
| EML87-36  | 8169.4  | 4355.73 | 1103.8 | 205.7  | -45 | 90      |
| EML87-37  | 8177.79 | 4242.27 | 1096   | 425.2  | -45 | 90      |
| EML87-38  | 8288.92 | 4400.47 | 1096.9 | 170.7  | -45 | 90      |
| EML87-39  | 8132.64 | 4604.6  | 1106.4 | 304.8  | -45 | 90      |
| EML87-40  | 8270.39 | 4258.99 | 1094.3 | 265.2  | -45 | 90      |
| EML87-41  | 8177.79 | 4242.27 | 1096   | 358.4  | -65 | 90      |
| EML87-42  | 8297.73 | 4457.01 | 1093.3 | 246.9  | -45 | 307     |
| EML87-43  | 8226.01 | 4240.71 | 1095.7 | 396.2  | -60 | 90      |
| EML87-44  | 8297.73 | 4457.01 | 1093.3 | 301.8  | -60 | 307     |
| EML87-45  | 8048.39 | 4330.88 | 1089.7 | 303.3  | -45 | 110     |
| EML87-46  | 8297.72 | 4457.02 | 1093.3 | 250    | -45 | -16     |
| EML87-47  | 8002.85 | 4460.7  | 1089.1 | 264    | -60 | 269     |
| EML87-48  | 8297.73 | 4457.01 | 1093.3 | 243.8  | -60 | -16     |
| EML87-49  | 8105.96 | 4471.8  | 1106.2 | 224    | -45 | 270     |
| EML87-50  | 8270.01 | 4264.03 | 1094.4 | 296.81 | -60 | 90      |
| EML03-51  | 8183.15 | 4404.61 | 1104.5 | 130    | -45 | 266     |
| EML03-52  | 8185.13 | 4295.83 | 1101   | 210.2  | -45 | 86      |
| NSG-14-10 | 8251.26 | 4351    | 1100.4 | 192    | -45 | 89      |
| NSG-15-10 | 8249.27 | 4298.19 | 1098.7 | 225    | -45 | 89      |





|           |         |         |        |       |     |    |
|-----------|---------|---------|--------|-------|-----|----|
| NSG-16-10 | 8200.16 | 4334.09 | 1102.9 | 189   | -45 | 89 |
| NSG-17-10 | 8242.12 | 4245.2  | 1094.7 | 345   | -45 | 89 |
| NSG-18-10 | 8202.24 | 4237.71 | 1096   | 357   | -45 | 89 |
| NSG-19-10 | 8198.1  | 4368.59 | 1103.6 | 135   | -45 | 89 |
| NSG-20-10 | 8143.17 | 4355.62 | 1102.1 | 248.5 | -49 | 89 |
| NSG-21-10 | 8098.94 | 4349.34 | 1098.2 | 185   | -45 | 89 |
| NSG-22-10 | 8181.86 | 4323.61 | 1102.3 | 194.5 | -45 | 89 |
| NSG-23-10 | 8098.11 | 4289.99 | 1089.8 | 261   | -45 | 78 |
| NSG-24-10 | 8180.93 | 4267.94 | 1098.9 | 330   | -64 | 89 |
| NSG-25-10 | 8144.15 | 4240.63 | 1095.3 | 116   | -50 | 89 |
| NSG-26-10 | 8273.02 | 4396.22 | 1098.4 | 116   | -45 | 89 |
| NSG-25-11 | 8150    | 4244    | 1095.3 | 354.2 | -50 | 90 |
| NSG-27-11 | 8234    | 4308    | 1099.5 | 280   | -50 | 90 |
| NSG-28-11 | 8300    | 4350    | 1096   | 195.2 | -45 | 90 |
| NSG-29-11 | 8300    | 4305    | 1094   | 247   | -45 | 90 |
| NSG-30-11 | 8075    | 4363    | 1092   | 267   | -60 | 90 |
| NSG-31-11 | 8075    | 4364    | 1092   | 261   | -45 | 90 |
| NSG-32-11 | 8299    | 4198    | 1094   | 453   | -45 | 90 |
| NSG-33-11 | 8375    | 4200    | 1094   | 444   | -45 | 90 |

## West Zone

| Hole    | North | East | RL      | Depth  | Dip | Azimuth |
|---------|-------|------|---------|--------|-----|---------|
| ML86-01 | 5882  | 2150 | 1108.91 | 366.98 | -55 | 359     |
| ML87-02 | 5846  | 2075 | 1112.64 | 290.6  | -45 | 359     |
| ML87-03 | 5928  | 2150 | 1106.95 | 151.49 | -50 | 359     |
| ML87-04 | 6104  | 1800 | 1111.77 | 205.74 | -45 | 179     |
| ML87-05 | 5918  | 2075 | 1111.63 | 269.75 | -45 | 359     |
| ML87-06 | 6098  | 1700 | 1114.01 | 151.18 | -45 | 179     |
| ML87-07 | 6115  | 1600 | 1114.28 | 135.94 | -45 | 179     |
| ML87-08 | 5929  | 2000 | 1110.29 | 190.5  | -45 | 359     |
| ML87-09 | 6122  | 1500 | 1114.06 | 95.4   | -45 | 179     |
| ML87-10 | 5926  | 2200 | 1104.46 | 201.17 | -45 | 359     |
| ML87-11 | 5951  | 1700 | 1115.79 | 194.16 | -45 | 359     |
| ML87-12 | 5927  | 2250 | 1100.16 | 53.95  | -45 | 359     |
| ML87-13 | 5947  | 1700 | 1115.84 | 121.31 | -45 | 179     |
| ML87-14 | 5927  | 2250 | 1100.16 | 53.95  | -60 | 359     |
| ML87-15 | 5919  | 2300 | 1101.3  | 212.45 | -50 | 359     |
| ML87-16 | 5929  | 1800 | 1114.32 | 197.21 | -50 | 359     |
| ML87-17 | 5933  | 1900 | 1112.89 | 197.21 | -50 | 359     |
| ML87-18 | 6236  | 2300 | 1089.12 | 145.31 | -50 | 179     |
| ML87-19 | 5936  | 1950 | 1110.05 | 245.97 | -50 | 359     |
| ML87-20 | 6193  | 2300 | 1089.84 | 89.13  | -50 | 179     |
| ML87-21 | 6135  | 2200 | 1094.88 | 190.5  | -45 | 179     |
| ML87-22 | 5925  | 2025 | 1112.11 | 191.41 | -50 | 359     |
| ML87-23 | 6236  | 2305 | 1089.55 | 42.67  | -45 | 103     |
| ML87-24 | 6222  | 2300 | 1089.55 | 247.15 | -60 | 103     |
| ML87-25 | 5931  | 1850 | 1113.81 | 227.69 | -45 | 359     |
| ML87-26 | 6033  | 2300 | 1090.41 | 178.92 | -56 | 359     |
| ML87-27 | 5935  | 1750 | 1114.65 | 233.78 | -50 | 359     |
| ML87-28 | 6075  | 2250 | 1091.42 | 228.9  | -50 | 179     |
| ML87-29 | 5946  | 1500 | 1118.71 | 221.59 | -50 | 359     |
| ML87-30 | 6069  | 2050 | 1105.37 | 212.45 | -45 | 179     |
| ML87-31 | 5852  | 1500 | 1118.3  | 167.64 | -50 | 359     |
| ML87-32 | 6071  | 2100 | 1104.08 | 76.5   | -50 | 179     |
| ML87-33 | 6000  | 1400 | 1116.6  | 258.17 | -50 | 359     |
| ML87-34 | 6069  | 2100 | 1104.08 | 245.97 | -60 | 179     |



|          |      |        |         |        |     |     |
|----------|------|--------|---------|--------|-----|-----|
| ML87-35  | 5853 | 2100   | 1111.24 | 428.85 | -75 | 359 |
| ML87-36  | 5852 | 1500   | 1118.3  | 330.1  | -75 | 359 |
| ML87-37  | 6074 | 2000   | 1106.66 | 244.45 | -50 | 179 |
| ML87-38  | 5942 | 1725   | 1115.11 | 246.58 | -50 | 336 |
| ML87-39  | 6080 | 2150   | 1098.19 | 213.06 | -45 | 179 |
| ML87-40  | 5854 | 2000   | 1114.56 | 385.57 | -50 | 359 |
| ML87-41  | 5854 | 2000   | 1114.56 | 419.1  | -75 | 359 |
| ML87-42  | 5973 | 1675   | 1116.6  | 151.49 | -50 | 359 |
| ML87-43  | 6028 | 2075   | 1107.49 | 78.33  | -75 | 269 |
| ML87-44  | 6145 | 2075   | 1103.74 | 175.87 | -50 | 179 |
| ML87-45  | 5975 | 1775   | 1114.93 | 154.53 | -45 | 359 |
| ML87-46  | 5975 | 1825   | 1112.96 | 101.19 | -45 | 359 |
| ML87-47  | 5858 | 1900   | 1116.28 | 382.52 | -50 | 359 |
| ML87-48  | 6147 | 2100   | 1101.64 | 233.78 | -50 | 179 |
| ML87-49  | 6030 | 1875   | 1110.36 | 89     | -45 | 359 |
| ML87-50  | 6028 | 1925   | 1110.68 | 107.9  | -60 | 179 |
| ML87-51  | 6023 | 1925   | 1110.86 | 94.51  | -45 | 359 |
| ML87-52  | 5858 | 1900   | 1116.28 | 495.91 | -70 | 359 |
| ML87-53  | 6143 | 2050   | 1105.04 | 215.54 | -50 | 179 |
| ML87-54  | 5951 | 2025   | 1110.76 | 121.31 | -45 | 4   |
| ML87-55  | 5950 | 1975   | 1109.66 | 136.28 | -45 | 359 |
| ML87-56  | 6148 | 1950   | 1107.05 | 237.12 | -50 | 179 |
| ML87-57  | 6026 | 1875   | 1110.36 | 109.42 | -45 | 179 |
| ML87-58  | 5990 | 1600   | 1116.02 | 195.07 | -45 | 359 |
| ML87-59  | 5550 | 2150   | 1119.95 | 93.57  | -45 | 359 |
| ML87-60  | 5550 | 2150   | 1119.95 | 102.74 | -45 | 359 |
| ML87-61  | 5855 | 2100   | 1110.98 | 367.37 | -45 | 359 |
| ML87-62A | 5515 | 2025   | 1122    | 123.44 | -45 | 359 |
| ML87-62B | 5515 | 2025   | 1122    | 48.46  | -60 | 359 |
| ML87-63  | 5515 | 2025   | 1122.05 | 153.92 | -60 | 359 |
| ML87-64  | 5858 | 2200   | 1107.15 | 380.09 | -50 | 359 |
| ML87-65  | 5858 | 2200   | 1107.15 | 486.77 | -70 | 359 |
| ML87-66  | 5855 | 2300   | 1100.44 | 357.62 | -50 | 359 |
| ML87-67  | 5855 | 2300   | 1100.44 | 416.76 | -70 | 359 |
| ML87-68  | 5856 | 1950   | 1115.62 | 435.06 | -50 | 359 |
| ML87-69  | 6169 | 2153   | 1098.81 | 287.19 | -45 | 359 |
| ML87-70  | 5854 | 2000   | 1114.89 | 503.05 | -60 | 359 |
| ML87-71  | 5858 | 1900   | 1116.28 | 399.29 | -57 | 359 |
| ML87-72  | 5852 | 2100   | 1111.07 | 387.4  | -60 | 359 |
| ML88-73  | 5855 | 2200   | 1106.98 | 370.63 | -60 | 359 |
| ML88-74  | 6255 | 2200   | 1089.73 | 89.3   | -70 | 179 |
| ML88-74A | 6254 | 2200   | 1089.74 | 462.38 | -70 | 179 |
| ML88-75  | 5850 | 2300   | 1100.98 | 399.28 | -60 | 359 |
| ML88-76  | 5852 | 2050   | 1113.3  | 367.59 | -60 | 359 |
| ML88-77  | 5848 | 2400   | 1097.46 | 462.07 | -60 | 359 |
| ML88-78  | 5852 | 2050   | 1113.3  | 498.95 | -70 | 359 |
| ML88-79  | 6245 | 1950   | 1104.32 | 468.48 | -70 | 179 |
| ML88-80  | 5847 | 1850   | 1116.5  | 391.36 | -45 | 359 |
| ML88-81  | 5850 | 2150   | 1108.87 | 387.8  | -60 | 359 |
| ML88-82  | 6248 | 1911.5 | 1104.73 | 443.9  | -65 | 179 |
| ML88-83  | 6267 | 2000   | 1102.42 | 470.61 | -67 | 179 |
| ML88-84  | 6271 | 2100   | 1095.51 | 455.98 | -67 | 179 |
| ML88-85  | 6252 | 1850   | 1105.56 | 451.71 | -67 | 179 |
| ML03-86  | 5803 | 2180   | 1109    | 220.5  | -45 | 0   |
| ML03-87  | 5925 | 2150   | 1107    | 179    | -65 | 360 |
| ML03-88  | 5900 | 2110   | 1100    | 220.5  | -45 | 360 |
| ML03-89  | 5875 | 2075   | 1113    | 207.5  | -45 | 360 |



|           |      |      |         |     |     |     |
|-----------|------|------|---------|-----|-----|-----|
| NSG-1-10  | 5901 | 2200 | 1108    | 288 | -45 | 360 |
| NSG-2-10  | 5909 | 2176 | 1108    | 195 | -45 | 360 |
| NSG-3-10  | 5937 | 2123 | 1108    | 225 | -49 | 360 |
| NSG-4-10  | 5901 | 2024 | 1112    | 225 | -52 | 360 |
| NSG-5-10  | 5901 | 2024 | 1112    | 225 | -48 | 360 |
| NSG-6-10  | 5897 | 2000 | 1112    | 255 | -45 | 360 |
| NSG-7-10  | 5897 | 2045 | 1112    | 252 | -49 | 360 |
| NSG-8-10  | 5811 | 2070 | 1110    | 315 | -45 | 360 |
| NSG-9-10  | 5826 | 2125 | 1109    | 411 | -55 | 360 |
| NSG-10-10 | 5803 | 2150 | 1109    | 375 | -58 | 360 |
| NSG-11-10 | 5778 | 2175 | 1112    | 411 | -45 | 360 |
| NSG-12-10 | 5915 | 2072 | 1111.63 | 171 | -45 | 360 |
| NSG-13-10 | 5929 | 1994 | 1110.5  | 132 | -45 | 360 |
| NSG-34-11 | 5850 | 2298 | 1107.5  | 105 | -45 | 360 |
| NSG-35-11 | 5849 | 2298 | 1107.5  | 525 | -65 | 360 |
| NSG-36-11 | 5845 | 2350 | 1100.5  | 461 | -45 | 10  |
| NSG-37-11 | 5905 | 2400 | 1095.5  | 243 | -45 | 352 |
| NSG-38-11 | 5987 | 1975 | 1112    | 246 | -45 | 2   |
| NSG-39-11 | 5876 | 1800 | 1117    | 294 | -45 | 6   |
| NSG-40-11 | 5908 | 1700 | 1118    | 402 | -62 | 360 |
| NSG-41-11 | 5884 | 1750 | 1117    | 330 | -45 | 360 |



## **Appendix VIII**

### **Certificates of Authors**





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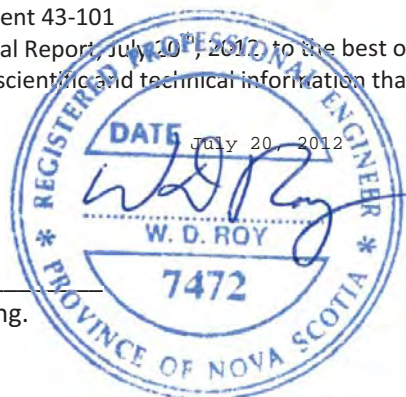
Certificate of Co-Author: William Douglas Roy, M.A.Sc., P.Eng.

I, William Douglas Roy, of the Province of Nova Scotia, do hereby certify that:

- a) I live at 35 Colindale Street, Halifax, Nova Scotia, and I am a Professional Engineer (Mining)
- b) This certificate applies to the report entitled "43-101 Resource Update on the Mooseland Gold Property, Halifax County, Nova Scotia, 44°56' N, 62°46' W, NTS 11D/15C", dated July 20<sup>th</sup>, 2012
- c)
  - I) I graduated with a Bachelor of Engineering ("B.Eng.") degree in Mining Engineering from the Technical University of Nova Scotia (now Dalhousie University) in 1997, and with a Master of Applied Science ("M.A.Sc.") degree in Mining Engineering from Dalhousie University in 2000.
  - II) I have worked as a mining engineer for more than fourteen years since graduating from university. This work has included the estimation of resources and reserves for precious metals, base metals and industrial minerals, as well as participation in pre-feasibility and feasibility studies.
  - III) I am a Licensed Professional Engineer in the Province of Nova Scotia (Registration Number 7472). I am a member of the Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") and of the Prospectors and Developers Association of Canada ("PDAC")
  - IV) I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101"). I certify that, by reason of my education, affiliation with a Professional Association (as defined by NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- d) I supervised exploration work on the Mooseland Gold Property (the Property) on-site in December 2010 during a 1-day site visit. Previously, I conducted a site visit in 2009 as part of MineTech's 2010 Technical Report on the Property. From 2002 to 2004, I visited the site several times as part of MineTech's work with Azure, during which I worked on the surface and underground surveys.
- e) I am responsible for all sections except for section 7 (Geological Setting) of this Technical Report
- f) I have no prior relationship with the Issuer. I neither own nor control a beneficial interest in the Property that is the subject of this report. I am independent of the issuer applying all the tests in section 1.5 of National Instrument 43-101, Standards of Disclosure for Mineral Projects (NI 43-101).
- g) From 2002 to 2004, I visited the site several times as part of MineTech's work with Azure, during which I worked on the surface and underground surveys. I was an independent Qualified Person for two previous Technical Reports on the Property, both of which were prepared for NSGold.
- h) I have read National Instrument 43-101 and the aforementioned sections of this Technical Report for which I am responsible. I certify that the aforementioned sections for which I am responsible for have been prepared in compliance with National Instrument 43-101
- i) At the effective date of this Technical Report, July 20<sup>th</sup>, 2012, to the best of my knowledge, information, and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated this 20<sup>th</sup> day of July, 2012

William Douglas Roy, M.A.Sc., P.Eng.  
MineTech International Limited





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Certificate of Co-Author: Patrick J.F. Hannon, M.A.Sc., P.Eng.

I, Patrick James Francis Hannon, of the Province of Nova Scotia, do hereby certify that:

a) I live at 1152 Cartaret Street, Halifax, Nova Scotia, and I am a Professional Engineer (Mining and Geological)

b) This certificate applies to the report entitled *"43-101 Resource Update on the Mooseland Gold Property, Halifax County, Nova Scotia, 44°56' N, 62°46' W, NTS 11D/15C"*, dated July 20th, 2012

c)

I) I am a graduate of the Dalhousie University, Halifax Nova Scotia (M.A.Sc., Mining Engineering, 1987), Queen's University at Kingston (B.Sc. Geological Engineering 1972), and the Haileybury School of Mines (Senior Mining Technician, 1968).

II) I have worked as an engineer for 40 years, in Canada, USA, SE Asia, Central Asia, FSU and West Africa. Between 1972 and 1983 I was employed with Imperial Oil Limited as senior geologist, chief mine geologist, and mine superintendent. Between 1983 and 1987, I was employed by the Nova Scotia Department of Mines and Energy as Manager of Mining Engineering. Between October 1987 and May of 1989, I was employed as Chief Mining Engineer for the consulting firm A.C.A. Howe International Limited and I continue to work for that firm on an associate basis. Since May 1989 until the present (December 2008), I have been President of MineTech International Limited. I have had mining assignments in various parts of the world. Assignments have included valuation of mining properties at various stages of development, management of an open pit mine, technical consultant on mine safety regulations and team leader for mine feasibility studies. Between 2004 and 2006, I was Vice President, Exploration for Claude Resources Inc., for whom I managed the exploration for gold in northern Saskatchewan, Manitoba and Ontario. Between 2004 and 2006 and I was also President of ScoZinc Limited and looked after the Scotia zinc-lead mine until the sale of the Company to Acadian Gold Corporation in 2006. I have over 5 years of experience in exploration, development, and regulation of turbidite hosted, narrow-vein gold deposits, the subject of this report.

III) I am a Licensed Professional Engineer in the Northwest Territories and Nunavut, Registration Number L2466. I am also a registered Professional Engineer in the Province of Nova Scotia, (registration No. 2734), Newfoundland and Labrador (registration No. 06025) and the Province of Ontario, (registration No. 18260018).

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

d) I have not visited the Property for this assignment, although I did a considerable amount of work on the Property for the previous mineral right holders between 2003 and 2004.

e) I am responsible for section 7 (Geological Setting) of the Technical Report.

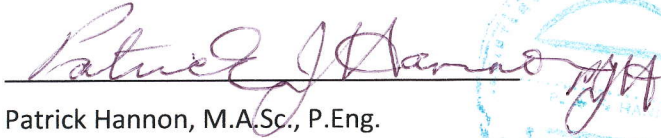
f) I have no prior relationship with the Issuer. I neither own nor control a beneficial interest in the Property that is the subject of this report. I am independent of the issuer applying all the tests in section 1.5 of National Instrument 43-101, Standards of Disclosure for Mineral Projects (NI 43-101).

g) From 2002 to 2004, I visited the site several times as part of MineTech's work with Azure, during which I worked on the surface and underground surveys.

h) I have read National Instrument 43-101 and the aforementioned sections of this Technical Report for which I am responsible. I certify that the aforementioned sections for which I am responsible for have been prepared in compliance with National Instrument 43-101

- i) At the effective date of this Technical Report, July 20<sup>th</sup>, 2012, to the best of my knowledge, information, and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated this 20<sup>th</sup> day of July, 2012



Patrick Hannon, M.A.Sc., P.Eng.

MineTech International Limited

