

**TECHNICAL REPORT
AND
RESOURCE ESTIMATE
ON THE
GREAT BURNT COPPER PROPERTY,
CENTRAL NEWFOUNDLAND**

FOR

SPRUCE RIDGE RESOURCES LTD.

**LATITUDE 48° 20' 28" N LONGITUDE 56° 09' 06" W
UTM WGS84 Zone 21U 562869 mE 5354553 mN;
NTS 12A/08**

**NI-43-101 & 43-101F1
TECHNICAL REPORT**

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**P&E Mining Consultants Inc.,
Report 297**

**Effective Date: September 4, 2015
Signing Date: September 8, 2015**

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1.0 SUMMARY

The following report was prepared to provide a National Instrument (“NI”) 43-101 Technical Report and Resource Estimate for the copper mineralization contained in the Great Burnt Copper Property (the “Property” or “Great Burnt Property”) in central Newfoundland (“NL”), Canada. Spruce Ridge Resources Ltd. (“Spruce Ridge”) has an agreement to acquire a 100% interest in the Great Burnt Property.

The Great Burnt Property is located 75 km SW of the city of Grand Falls-Windsor, NL. The property is 40 km southeast of Teck Resources Limited’s Duck Pond Cu-Zn Mine and 70 km southeast of the past-producing Buchans Deposit. The Great Burnt Deposit is at Latitude 48° 20’ 28”N, Longitude 56° 09’ 06”W; UTM WGS84 Zone 21U 562,869 mE 5,354,553 mN; NTS 12A/08.

Spruce Ridge has a definitive agreement to acquire a 100% interest in one 165 ha mining lease (ML211) and 5 mineral exploration licences covering 156 contiguous claim units with an area of 3,900 ha (Exploration licences 6682M, 9881M, 6683M, 20961M, and 21732M) from Pavey Ark Minerals Inc. (“Pavey Ark”). The agreement is subject to certain royalties in favour of Glencore PLC (“Glencore”) and Pavey Ark.

The southern part of the Property, including the Great Burnt Copper Deposit, is road accessible from St. Alban’s, NL, by the Upper Salmon access road, an all-weather gravel road maintained by NL Hydro. It is approximately 73 km by the Upper Salmon road from St. Alban’s to the Property. Access to the northern part of the property is by trails suitable for all terrain vehicles, helicopter or float plane. St. Alban’s has a population of approximately 1,400 is located on the south shore of NL. St. Alban’s provides motel accommodation, supplies and several small stores as well as saltwater access. From St. Alban’s it is 148 km by road, north along route 360 and the Trans-Canada Highway, to Grand Falls-Windsor. Grand Falls-Windsor with a population of 13,725 is the largest town in central Newfoundland and most major supplies and services can be obtained. Gander is 234 km by road northeast of St. Alban’s and is the location of Gander International Airport. St. John’s, the provincial capital, is 428 km by road from Grand Falls-Windsor and 565 km by road from St. Alban’s.

To the north of the Property, logging roads extending south from Grand Falls-Windsor to the Atlantic Lake area and are within 15 km of the South Pond Copper Deposit. Extending these logging roads onto the Property would significantly improve access to the Property from Grand Falls-Windsor, Gander and the Buchans area. Newfoundland Hydro has a power supply line that services the Great Burnt Dam at the south end of the Property.

The area lies within the Central Plateau of NL. Topography is characterized by forested hills and ridges with intervening swampy areas. The hills rise from a base elevation of approximately 240 m asl to over 350 m asl. Great Burnt Lake is at an elevation of approximately 246 m. The terrain is locally hummocky with glacial drift and 5 to 10% exposed bedrock. Vegetation consists of relatively open bush with typical boreal forest of balsam fir and spruce, and local dense growths of alder in swampy lowlands. The climate of central NL is a cool summer subtype of humid continental. Exploration and mining activities can be undertaken on a year round basis.

The Great Burnt Copper Property has been explored by several operators since 1948. Between 1951 and 1971, 133 drill holes (over 20,345 m) were drilled in the 14-km-long favourable metavolcanic and metasedimentary stratigraphy that hosts six zones of copper and gold

mineralization including the Great Burnt Copper, North Stringer Zone, and the South Pond Copper Deposits that have mineral resource estimates. Numerous airborne and ground geophysical surveys have been conducted along with soil and till geochemical surveys.

The Buchans Mining Company (“Buchans”) discovered the South Pond Copper Deposit in 1951. The American Smelting and Refining Company (“ASARCO”) Buchans Unit (successor to Buchans Mining) discovered the North Stringer Zone in 1960, and Great Burnt Copper in 1967. In 1985, BP Resources Canada Ltd. (“BP”) purchased the Great Burnt Property from Abitibi Price and ASARCO. BP extended the South Pond Deposit with the intersection of gold values up to 4.75 g/t over 4.3 m and 1.16 g/t over 28 m. In 1993, Noranda Inc. (“Noranda”) acquired the Property, and in 1999 Celtic Minerals Ltd. (“Celtic”) acquired the property from Noranda. Celtic drilled an additional 6,367 m in 34 holes between 2001 and 2008. Pavey Ark acquired the property in 2013 from Celtic Minerals Ltd. Spruce Ridge acquired the property in 2015 from Pavey Ark.

The Great Burnt Property is underlain by rocks of the Dunnage Zone which contains the majority of polymetallic volcanogenic massive sulphide (“VMS”) deposits in NL, including the Duck Pond Copper-Zinc Mine owned by Teck Resources Limited (“Teck”) and the world-class past-producing Buchans Deposits. On the Great Burnt Property, the Dunnage Zone consists of greenschist facies Ordovician metavolcanics, metasediments and an ophiolite complex that formed within island-arc and back-arc basins. The Property straddles the fault boundary between the Exploits Subzone of the Dunnage Zone and the Meelpaeg Subzone of the Gander Zone which records the early Paleozoic opening and closure of the Iapetus Ocean.

The Great Burnt Copper Deposit is a stratabound, tabular body of pyrrhotite-chalcopyrite mineralization within an interfingering mafic volcanic-metasedimentary contact. The mineralization strikes 010°- 020° and dips steeply 65°- 80° southeast, with a 30° plunge to the south. The mineralization has a plunge length of approximately 600 m and pinches and swells from 2 to over 13 m in width along the plunge axis. It has an average vertical extent of about 120 metres with a horizontal (plan) length of 210 metres.

The North Stringer Zone is located approximately 200 m northeast of the Great Burnt Copper Deposit. The North Stringer Zone consists of 3-20% disseminated and stringer pyrrhotite ± chalcopyrite in chloritized mafic volcanic flows, tuffs and graphitic argillites. The Zone has been delineated along a strike length of 335 m and to a depth of 50 m vertically and is interpreted as the possible stringer footwall zone to the Great Burnt Copper Deposit.

The South Pond Copper Deposit is located 10 kilometres north of Great Burnt Copper Deposit and has been delineated over a more than 900 m northeasterly strike length, is up to 15 m wide and dips at 60° west to a maximum vertical depth of 150 m. The mineralization consists of disseminated to semi-massive pyrrhotite (up to 40%) with 1 to 2 percent disseminated blebs of chalcopyrite, minor pyrite and rare local arsenopyrite in variably silicified, sheared and locally brecciated mafic volcanic flows and tuffs. The rocks are moderately chloritized with pervasive carbonate alteration in the form of concordant calcite veinlets or fine-grained disseminations. Although not estimated in the current resource estimate, the South Pond Copper Deposit contains significant gold values.

Copper mineralization at the Great Burnt Copper Property occurs within metavolcanic-metasedimentary rocks that include reworked tuffs, volcanoclastics and clastic sediments associated with mafic volcanics that are interpreted to have formed in a back-arc basin. This type

of sedimentary dominated VMS mineralization has historically been classified as a “Besshi-type VMS” or more recently as mafic-siliciclastic type or mafic-pelitic type VMS. Similarities between the mineralization at Great Burnt Copper and the Rambler VMS deposits located in the Baie Verte Peninsula, NL have been noted. Both deposits have elevated gold grades and are spatially associated with ophiolite complexes.

The Great Burnt Copper Property was visited by Mr. Eugene Puritch, P.Eng. of P&E on the October 26, 2014 for the purposes of completing a site visit and conducting independent verification sampling. In addition to the site visit, Mr. Puritch visited the NL Department of Natural Resources Core Storage Facility located at Buchans, NL on October 27, 2014, for the purpose of reviewing and sampling archived drill core from the Great Burnt Copper Property that is stored at the Buchans Core Storage Facility. Mr. Puritch collected 28 samples from 12 diamond drill holes for data verification. The samples were taken to AGAT Labs, (“AGAT”) in Mississauga, ON for analysis. P&E considers that there is good correlation between copper assay values in Spruce Ridge’s database and the independent verification assays. P&E also included certified reference materials and blanks in the verification program. It is P&E’s opinion that the data are of good quality and appropriate for use in a resource estimate.

The database for this resource estimate as implemented by P&E contains results of over 156 drill holes and over 980 drill core assays by previous operators between 1961 and 2008. All data were provided to P&E by Spruce Ridge in the form of Excel files and scanned copies of original reports and logs. Industry standard validation checks were completed on the supplied databases. P&E believes that the supplied database is suitable for mineral resource estimation.

Local topography was derived from the supplied collar elevations. Domain models were generated by P&E from successive polylines spaced along drill sections oriented perpendicular to the general trend of the mineralization. A total of four domains were developed:

- GBL-Main - steeply east dipping Great Burnt Main Zone;
- GBL2 - shallow east dipping Great Burnt Lower Zone, may be connected to Main by folding;
- GBL-STR - steeply dipping low grade North Stringer Zone;
- SP - South Pond zone (located 10 km north of Great Burnt Main Zone).

Length-weighted 1.0 m composites were calculated within the defined domains. The presence of high-grade outliers for the composite data was evaluated by a review of composite summary statistics, histograms and probability plots. Based on this analysis, capping was deemed unnecessary. Isotropic semi-variograms were iteratively modeled from domain-coded composite data.

An average density of 3.21 t/m³ was applied to the four mineralized domains based on ASARCO’s historical density estimate. The Great Burnt Copper resource model was divided into a block model framework containing 28,813,400 blocks, extending 5 m in the X direction, 15 m in the Y direction and 5 m in the Z direction. A percent block model was established to accurately represent the volume and subsequent tonnage that was occupied by each block inside the constraining domain.

Mineral resources were estimated and classified as Indicated Mineral Resource and Inferred Mineral Resource in compliance with guidelines established by the Canadian Institute of Mining, Metallurgy and Petroleum. Mineral resource classification was implemented by generating three-

dimensional envelopes around those parts of the block model for which the drillhole spacing and grade estimates met the required continuity criteria. The resulting classifications were iteratively refined to be geologically reasonable in order to prevent the generation of small, discontinuous areas of a higher confidence category being separated by lower confidence areas.

The classification process resulted in a total of 1,896 grade blocks being coded as Indicated and 3,472 as Inferred.

The resulting resource estimate for the Great Burnt project at a 1.0% Cu cut-off is summarized in the Table 1.1. The project has estimated Indicated Resources of 441,100 tonnes at 2.50% Cu for a total of 24.3 million lbs of Cu plus Inferred Resources of 829,300 tonnes at 2.11% Cu for a total of 38.6 million lbs of Cu.

TABLE 1.1			
GREAT BURNT MINERAL RESOURCE ESTIMATE AT 1.00% CU CUT OFF⁽¹⁻⁴⁾			
	Tonnes	Grade - % Cu	Cu - million lbs
Great Burnt Main			
Indicated	360,000	2.65	21.0
Inferred	239,000	2.44	12.9
Great Burnt Lower Zone			
Indicated	22,000	3.23	1.6
Inferred	424,000	2.23	20.8
North Stringer Zone			
Indicated	13,000	1.24	0.4
South Pond Deposit			
Indicated	47,000	1.38	1.4
Inferred	166,000	1.30	4.8
Total			
Indicated	442,000	2.50	24.4
Inferred	829,000	2.11	38.6

- (1) Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues, although SpruceRidge is not aware of any such issues.
- (2) The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred resources as an Indicated or Measured mineral resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured mineral resource category.
- (3) The mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines.
- (4) Values in the table may differ due to rounding.

P&E considers that the Great Burnt Copper Property contains a significant copper resource and merits further evaluation. P&E's recommendations include re-assay of existing drill core for gold at the South Pond Deposit, 600 m of diamond drilling to test priority targets, metallurgical testwork, and a preliminary economic analysis (PEA).

A proposed \$268,000 program is recommended (Table 1.2).

TABLE 1.2			
RECOMMENDED PROGRAM AND BUDGET			
Program	Units	Unit Cost (\$)	Budget
Surface stripping at Great Burnt Copper	10 days	\$1,500/day	\$15,000
Core sampling and re-assaying program to evaluate South Pond Deposit gold grade	300	\$35/sample	\$10,500
Geological supervision	30 days	\$600/day	\$18,000
Drilling	600 m	\$125/m	\$75,000
Initial Metallurgical Testwork			\$25,000
Preliminary Economic Analysis (PEA)			\$125,000
Total			\$268,000

2.0 INTRODUCTION AND TERMS OF REFERENCE

2.1 TERMS OF REFERENCE

The following report was prepared to provide a National Instrument (“NI”) 43-101 Technical Report and Resource Estimate for the copper mineralization contained in the Great Burnt Copper Property (“Property”), in central Newfoundland, Canada. Spruce Ridge Resources Ltd. (“Spruce Ridge”) has an agreement to acquire a 100% interest in the Great Burnt Property.

This report was prepared by P&E Mining Consultants Inc. (“P&E”) at the request of Mr. John Ryan, President of Spruce Ridge, a public Ontario corporation that is listed on the TSX Venture Exchange and trades under the symbol “SHL”. Spruce Ridge has its head office at:

7735 Leslie Road West
Puslinch, Ontario
N0B 2J0
Tel: 519-822-5904

This report has an effective date of September 4, 2015.

Mr. Eugene Puritch, P.Eng., a qualified person under the regulations of NI 43-101, conducted a site visit to the Property on October 26, 2014. An independent verification sampling program was conducted by Mr. Puritch on the October 26, 2014 site visit and at the Newfoundland Department of Natural Resources Core Storage Facility located at Buchans, Newfoundland on October 27, 2014.

The current report updates the earlier NI43-101 technical report and resource estimate dated February 18, 2015 that was prepared for Pavey Ark by P&E. The current report has been updated to reflect Spruce Ridge’s agreement to acquire the property. In addition the exploration licence commitments have been updated to reflect the September 4, 2015 effective date. Otherwise the technical data in this report remains the same as the February 18, 2015 report.

In addition to the site visit, P&E held discussions with technical personnel from the Company regarding all pertinent aspects of the project and carried out a review of all available literature and documented results concerning the Property. The reader is referred to those data sources, which are outlined in the References section of this report, for further detail.

The present Technical Report is prepared in accordance with the requirements of NI 43-101F1 of the Ontario Securities Commission (“OSC”) and the Canadian Securities Administrators (“CSA”).

2.2 SOURCES OF INFORMATION

This report is based, in part, on internal company technical reports, maps and technical correspondence, published government reports, press releases and public information as listed in the References section at the conclusion of this report. Several sections from reports authored by other consultants have been directly quoted or summarized in this report, and are so indicated where appropriate.

The present Technical Report is prepared in accordance with the requirements of National Instrument 43-101 (NI 43-101) and in compliance with Form NI 43-101F1 of the Ontario Securities Commission (OSC) and the Canadian Securities Administrators (CSA). The Resource Estimate is prepared in compliance with the CIM Definitions and Standards on Mineral Resources and Mineral Reserves, prepared by the CIM Standing Committee on Reserve Definitions that are in force as of the effective date of this report.

2.3 UNITS AND CURRENCY

Unless otherwise stated all units used in this report are metric. Copper (Cu) assay values are reported in weight %. Gold (Au) assay values are reported in grams of metal per tonne (“g/t Au”) unless ounces per ton (“oz/T Au”) are specifically stated. The CDN\$ is used throughout this report unless the US\$ is specifically stated. At the time of this report the rate of exchange between the US\$ and the CDN\$ is CDN\$1.00=US\$0.85.

The following list shows the meaning of the abbreviations for technical terms used throughout the text of this report.

Abbreviation	Meaning
“Ag”	silver
“AGAT”	AGAT Laboratories, Mississauga
“As”	arsenic
“ASARCO”	American Smelting and Refining Company
“asl”	above sea level
“Au”	gold
“BP”	BP Resources Canada Ltd.
“cm”	centimetre(s)
“Cu”	copper
“DDH”	diamond drill hole
“EM”	Electromagnetic
“ft”	foot
“g/t”	grams per tonne
“ha”	hectare(s)
“IP/RES”	induced polarization / resistivity survey
“km”	kilometre(s)
“NL”	Newfoundland and Labrador
“NSR”	Net Smelter Royalty
“m”	metre(s)
“Ma”	millions of years
“ML”	mining lease
“MMI”	Mobile metal ion
“P&E”	P&E Mining Consultants Inc
“Pb”	Lead
“PEA”	Preliminary Economic Assessment
“P.Eng.”	Professional Engineer
“t”	metric tonne(s)
“T”	imperial ton(s)
“TEM”	Transient Electro magnetic
“UTM”	Universal Transverse Mercator grid

“VLF-EM”
“VMS”
“Zn”

Very Low Frequency Electro Magnetic
Volcanogenic Massive Sulphide
Zinc

3.0 RELIANCE ON OTHER EXPERTS

P&E has assumed that all of the information and technical documents listed in the References section of this report are accurate and complete in all material aspects. While we have carefully reviewed all of the available information presented to us, we cannot guarantee its accuracy and completeness. We reserve the right, but will not be obligated to revise our report and conclusions if additional information becomes known to us subsequent to the date of this report.

Copies of the tenure documents, operating licenses, permits, and work contracts were not reviewed. Information relating to tenure was reviewed by means of the public information available through the NL Department of Natural Resources website at: <http://www.nr.gov.nl.ca/nr/mines/exploration/minerallands/index.html>. P&E has relied upon this public information, as well as tenure information from Spruce Ridge and has not undertaken an independent detailed legal verification of title and ownership of the Great Burnt Copper Property ownership. P&E has not verified the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties but has relied on, and believes it has a reasonable basis to rely upon Spruce Ridge to have conducted the proper legal due diligence.

A draft copy of the report has been reviewed for factual errors by Spruce Ridge. Any changes made as a result of these reviews did not involve any alteration to the conclusions made. Hence, the statement and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading at the date of this report.

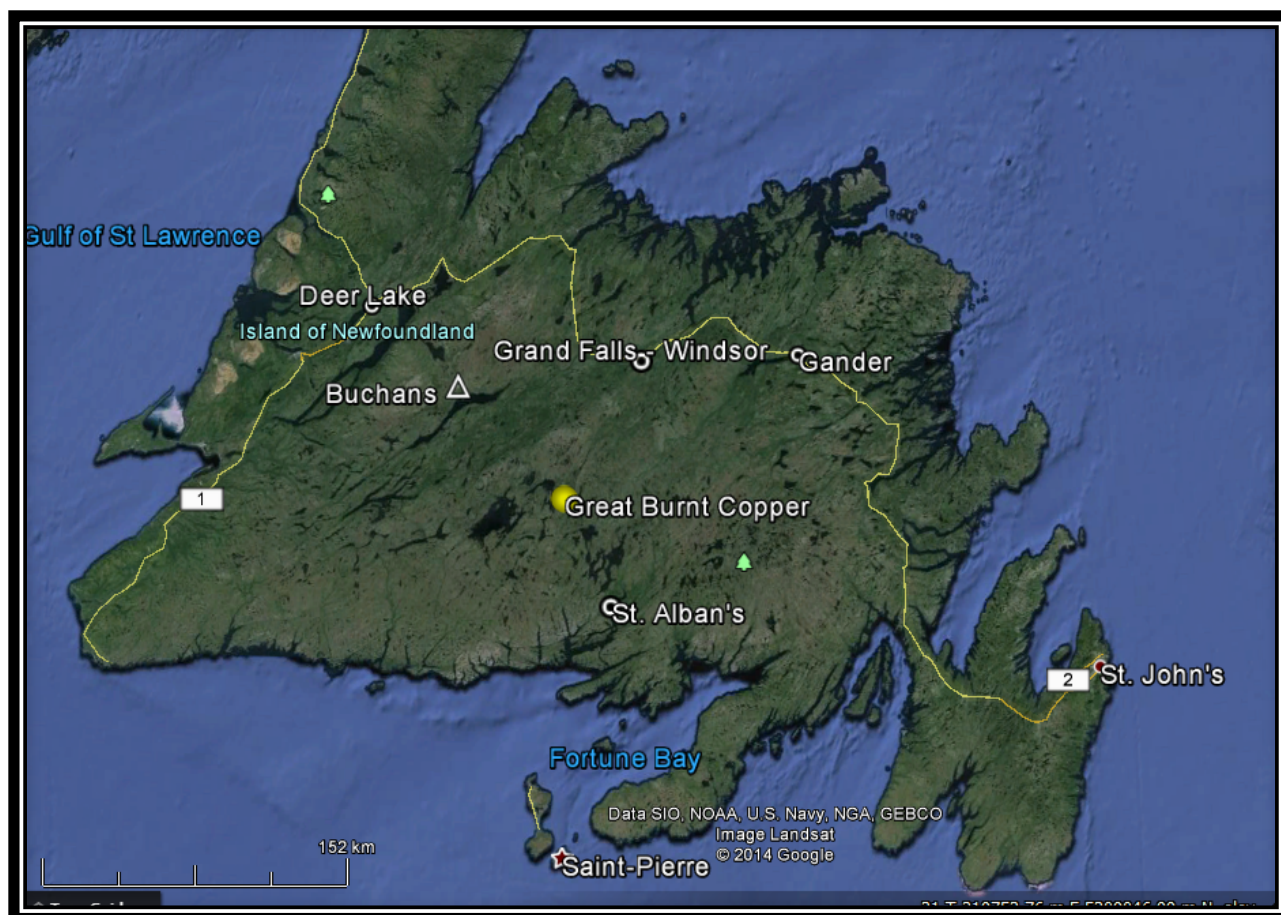
4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 PROPERTY LOCATION

The Great Burnt Property is located in south-central Newfoundland, 75 km southwest of the city of Grand Falls-Windsor, NL and 56 km northwest of the town of St. Alban's, NL. The Property is 40 km southeast of Teck's Duck Pond Cu-Zn Mine and 70 km southeast of the past-producing Buchans Cu-Zn-Pb-Ag-Au Deposit.

The Great Burnt Deposit is at Lat 48° 20' 28"N, Long 56° 09' 06"W; UTM WGS84 Zone 21U 562,869 mE 5,354,553 mN; NTS 12A/08.

Figure 4.1 Great Burnt Copper Property Location Map



Source: Google Earth 2014

4.2 PROPERTY DESCRIPTION AND TENURE

4.2.1 Great Burnt Copper Property

Spruce Ridge has an agreement to acquire a 100% interest in one 165 ha mining lease (ML211) and 5 mineral exploration licences covering 156 contiguous claim units with an area of 3,900 ha (Exploration licences 6682M, 9881M, 6683M, 20961M, and 21732M).

As announced in Spruce Ridge's press release dated September 4, 2015, to complete the acquisition, Spruce Ridge will pay Pavey Ark \$390,000.00 plus issue 200,000 common shares and 300,000 Warrants. The acquisition agreement provides for the majority of the payment in the form of a \$365,000 non-convertible loan, with principal and interest at 8% (annually) amortized over 36 months with payments starting August 2015. Pavey Ark will retain a 0.5% Net Smelter Royalty on any production from Mining Lease ML211 and that part of Exploration Licence 21732M that was part of former Exploration Licence 10210M; and a 2% net smelter royalty on any production from the Mineral Exploration Licenses numbered 6682M, 6683M, 9881M, 20961M and that part of 21732M that was not part of former Exploration Licence 10210M. In the event that the loan is paid in full prior to December 31, 2015, the 2% net smelter royalty on and production from the Mineral Exploration Licenses numbered 6682M, 6683M, 9881M, 20961M and that part of 21732M that was not part of former Exploration Licence 10210M will be reduced to 1.5%. During the term of the loan, the property will remain registered to Pavey Ark.

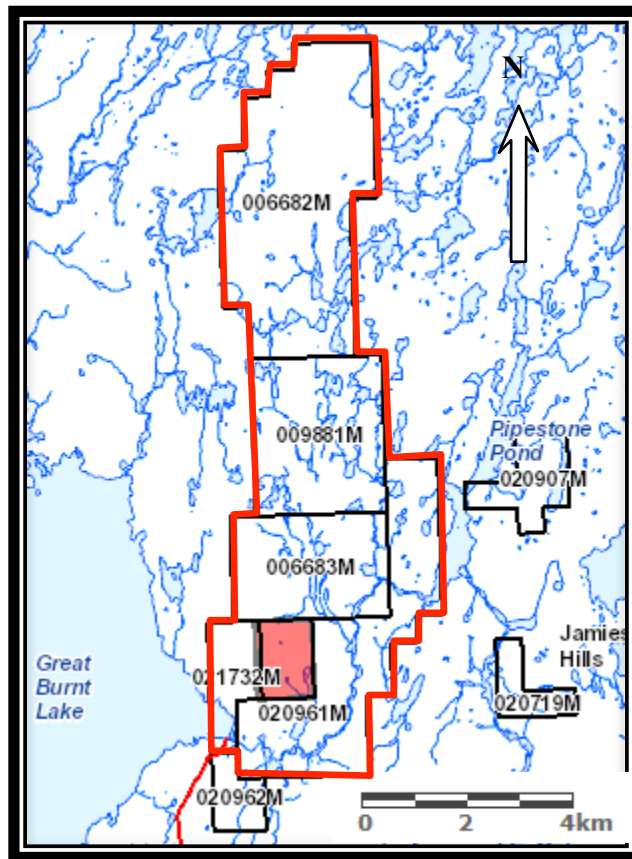
In addition to the to the royalties in favour of Pavey Ark, there is a 2% NSR royalty in favour of Glencore (as a successor to Noranda) on mining lease ML211 that covers the Great Burnt Copper Deposit. If commercial production commences from this lease, Spruce Ridge is required to make a cash payment of CDN\$1,000,000 or issue shares with equivalent value to Glencore.

Pavey Ark acquired the Property from Celtic Minerals Ltd. ("Celtic") in 2013. Subsequent to acquiring the Property from Celtic, Pavey Ark converted parts of former mineral licence 10210M into the mining lease (ML211) and acquired the claims 20961M and 21732M by map staking. As required for approval of a mining lease, a surveyor registered in Newfoundland and Labrador completed a land survey of the mining lease perimeter in 2013. The mining lease covers the area of the Great Burnt Copper Deposit.

The Property is in good standing as of the report effective date and expenditure requirements for 2016 are listed in Table 4.1. Mineral exploration and mining lease information is available on line through the Newfoundland and Labrador Department of Natural Resources website at: <http://www.nr.gov.nl.ca/nr/mines/exploration/minerallands/index.html>.

There are no environmental liabilities associated with the Spruce Ridge claims holdings. At the time of this report, Spruce Ridge has initiated an exploration program on the property and is in the process of obtaining approval for programs as required from the government of NL Department of Natural Resources.

Figure 4.2 Lease and Exploration Licence Map*



*Spruce Ridge's Great Burnt Copper property is outlined in red.
 Source: NL Department of Natural Resources website, January 2015.

TABLE 4.1 GREAT BURNT PROPERTY ASSESSMENT REQUIREMENTS			
Licence/ Lease #	Tenure	Area	Assessment/lease requirements
ML211	Mining Lease	165 ha	10 yr. lease valid to June 10, 2023, renewable, annual fee \$120/ha
6682M	Exploration Licence	57 units – 1,425 ha	Requires \$32,928.33 expenditure by March 1, 2018
6683M	Exploration Licence	24 units – 600 ha	Requires \$87,771.33 expenditure by March 1, 2016, \$58,971.33 on deposit, balance required is \$28,800
9881M	Exploration Licence	30 units – 750 ha	Requires \$9,334.26 expenditure by February 2, 2018
20961M	Exploration Licence	37 units – 925 ha	Requires \$10,665.61 expenditure by March 29, 2016
21732M	Exploration Licence	8 units - 200 ha	Requires \$2,306.08 expenditure by Dec 19, 2016,
Total		4,065 ha	

4.3 NEWFOUNDLAND MINERAL TENURE

Mineral exploration licences in Newfoundland and Labrador are acquired through map staking. A single claim unit measures 500 metres square based on one-quarter of a Universal Transverse Mercator (UTM) grid square. Licence boundaries are referenced to the map staked claims using UTM coordinates. A map staked licence can be up to a maximum of 256 claims. A fee of \$60 per claim is required at time of on-line staking. The \$60/claim fee consists of a \$10/claim staking recording fee and a \$50/claim staking security deposit. The staking security deposit is refunded upon submission and acceptance of the report covering the 1st year requirements. A mineral exploration licence is issued for a term of 5 years, but may be held for a maximum of 20 years. In order to retain claims in good standing from year to year an assessment report is required describing work completed annually, and is due on or before the anniversary date. Licence renewal fees and requirements are summarized in Table 4.2. A deposit can be made in lieu of annual expenditure.

Year of Issue	Renewal Fee	Minimum Annual Assessment Expenditure
1	N/A	\$200 per claim
2	N/A	\$250 per claim
3	N/A	\$300 per claim
4	N/A	\$350 per claim
5	\$25 per claim	\$400 per claim
6 through 10	\$50 per claim year 10	\$600 per claim
11 through 15	\$100 per claim year 15	\$900 per claim
16 through 20	N/A must be converted to lease year 20	\$1,200 per claim

To obtain a mining lease, an applicant must demonstrate to the satisfaction of the Minister of Natural Resources, that a mineral resource exists under the area of application that is of significant size and quality to be potentially economic. This must be confirmed by a qualified person. An application for a mining lease made pursuant to a map staked licence is to be accompanied by a legal survey of the area being applied for. An annual rental of \$120 per hectare is payable with respect to a mining lease.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESS

The southern part of the Property including the Great Burnt Copper Deposit is accessible from St. Alban's, NL, by the Upper Salmon access road, an all-weather gravel road maintained by Newfoundland Hydro. It is approximately 73 km by the Upper Salmon road from St. Alban's to the Property. The road was constructed by Newfoundland Hydro to service the Upper Salmon hydroelectric development project including the North Salmon Dam at Great Burnt Lake. A locked gate limits access north of the North Salmon Dam at Great Burnt Lake and permission to access the gate is obtained from the local Hydro office in St. Alban's. The driveable road ends on the property 800 m northeast of the North Salmon Dam at a rock quarry that was used for dam construction. Newfoundland Hydro does not maintain the last 20 km of the gravel road in winter.

The former drill trail continues from the rock quarry at the end of the drivable road in a northerly direction for about 15 kilometers to the South Pond Project area. Access to the northern part of the property is by ATV trails, helicopter or float plane.

Figure 5.1 Regional Location Map



Source: Google Earth 2014

5.2 CLIMATE

The climate of central Newfoundland is a cool summer subtype of humid continental. The climate has a maritime influence since the Property is less than 80 km from the Gulf of St. Lawrence. Annual precipitation is about 1,350 millimetres and at times there is heavy snowfall. The area has mean summer temperatures of about 14°C and mean winter temperatures of about -4°C. Average maximum snow depth is between 50 and 99 centimetres. Exploration including drilling and mining activities can be completed during both summer and winter months.

5.3 LOCAL RESOURCES AND INFRASTRUCTURE

Unpaved forest access roads are common throughout the area and have been developed both to provide access to hydroelectric sites and interior harvesting areas for commercial logging activity.

St. Alban's is 73 km by road south-southeast of the Property. St. Alban's has a population of approximately 1,400 and is located on the south shore of Newfoundland. St. Alban's provides motel accommodation, supplies and several small stores as well as saltwater access. From St. Alban's it is 148 km by road north along route 360 and the Trans-Canada Highway to Grand Falls-Windsor. Grand Falls-Windsor with a population of 13,725 (2011 Census), is the largest town in central Newfoundland and most major supplies and services can be obtained. Gander is 234 km by road northeast of St. Alban's on route 360 and the Trans-Canada Highway. Gander has a population of 11,054 (2011 Census) and is the location of Gander International Airport with daily scheduled air service to numerous locations including St. John's, Halifax, and Toronto. St. John's, the provincial capital, is 428 km by road from Grand Falls-Windsor and 565 km by road from St. Alban's.

To the North of the Property, logging roads extending South from Grand Falls-Windsor to the Atlantic Lake area and are within 15 km of the South Pond Copper Deposit. Extending these logging roads onto the Property would significantly improve access to the Property from Grand Falls-Windsor, Gander and the Buchans area.

A 230-kV transmission line goes from the Upper Salmon Hydroelectric Development at Godaleich Brook south to the powerhouse at Bay d'Espoir; another 230-kV transmission line runs from Baie d'Espoir north to Grand Falls-Windsor and passes about 30 kilometres East of the Property. Newfoundland Hydro has a power supply line that services the Great Burnt Dam at the South end of the Property.

Mining and mineral exploration is an important component of the Central Newfoundland economy.

5.4 PHYSIOGRAPHY

The area lies within the Central Plateau of NL. Topography is characterized by forested hills and ridges with intervening swampy areas. The hills rise from a base elevation of approximately 240 m asl to over 350 m asl. Great Burnt Lake is at an elevation of approximately 246 m. One of the higher points is a hill East of Great Burnt Lake that reaches 374 m. A northeast-trending linear ridge west of South Pond reaches about 370 metres in elevation.

The terrain is locally hummocky with glacial drift and 5 to 10% exposed bedrock. Vegetation consists of relatively open bush with typical boreal forest of balsam fir and spruce, and local dense growths of alder in swampy lowlands. Bogs, swamps and shallow lakes are common and form in glacially-scoured low areas. The area has been extensively glaciated and is generally covered by a thin mantle of drift, boulders and minor clays.

Most of the northern part of the area drains into the North Salmon River through the Gulp Pond-Pipestone Pond and Sitdown Pond watersheds. The West Salmon River is the focus for drainage in the southern part of the area, and since construction of the Upper Salmon hydroelectric dam, also receives water from the Great Burnt Lake watershed. Both rivers drain into Round Pond and thence into Bay d'Espoir and the Gulf of St. Lawrence/Cabot Strait, 50 kilometres to the southeast.

6.0 HISTORY

The Great Burnt Copper Property has been explored by several operators since 1948. This section provides a brief history of past exploration on the property and is largely summarized from Webster and Wolfson (2010) who produced an NI 43-101 technical report on the Great Burnt Property (formerly the “Great Burnt Lake Property”) for Celtic.

6.1 EXPLORATION FROM 1948 TO 1999

In 1948, the Anglo Newfoundland Development Company (“Anglo NL”) and the Buchans Mining Company Ltd. (“Buchans”) were granted exploration rights in a large area in central Newfoundland. In 1950, Buchans mapped the Great Burnt Lake and Pipestone Pond areas. Discovery and tracing of boulders hosting chalcopyrite and pyrrhotite led to trenching and the discovery of copper at the South Pond Copper Prospect (now called the South Pond Copper Deposit), near the South shore of South Pond in 1951.

Starting in August 1951, Buchans drilled a series of eleven drill holes (CL-1 to CL-11) for 1,760 m into the South Pond Copper Prospect. The holes were collared at AX (1-3/16 inch diameter) and narrowed to EX (7/8 inch diameter). The first hole, CL-1, intersected 4.3 feet (1.3 metres) assaying 4.2% copper. The 11 holes intersected disseminations and veinlets of pyrrhotite and chalcopyrite. By 1953, drilling stopped, having outlined copper values along a 3,000 ft (910 m) strike length to a depth of 500 ft (150 m).

In 1957, a year before the original concession agreement expired, Aerophysics of Canada Ltd. conducted an airborne electromagnetic survey over the Buchans properties. This included the Great Burnt Lake Property (called the Southern Area) and covered 143 line miles (230.1 km). The survey outlined 70 anomalies, which were later investigated by ground EM and geochemical surveys in 1958. There was overall good correlation between the geological formations, the magnetic contours and the broad areas of EM response. In 1958, Buchans continued exploration, conducting a ground EM survey and collecting 4,500 reconnaissance B-horizon soil samples over both the airborne and ground EM anomalies and within the package of rocks along strike from the South Pond Deposit. In 1959 the concession agreement was renewed, but over a smaller area and included 70 square miles in the South Pond, Sitdown Pond and Great Burnt Lake areas.

In 1960 Buchans was dissolved with the remaining operations consolidated as the American Smelting and Refining Company, Buchans Unit (“ASARCO”). A 20 hole drill program was completed on a mineralized zone located 200 metres north of the Great Burnt Copper Deposit that was later named the North Stringer Zone by Noranda. A new extended concession agreement was signed in 1964, but further reduced in size to 24 square miles (about 62 km²).

Exploration resumed in 1965, with reconnaissance stream sediment and soil surveys over a 52 km² area around the South Pond Deposit. One anomalous zone east of Great Burnt Lake was followed up with more detailed geochemical surveys in 1966 and a new copper-bearing outcrop was discovered. The outcrop was drilled in the fall with a portable drill resulting in GB-1 that intersected 5.5 feet (1.68 metres) of 4.8% copper. During the summer of 1967 a diamond drilling program outlined the Great Burnt Copper Deposit.

A 25-year mining lease was applied for and became effective Dec 31, 1967, covering both the South Pond and Great Burnt Lake Deposits. It was held equally by Price (Newfoundland) Pulp and Paper Company Ltd. (the successor to Anglo NL) and ASARCO. By December 1969, the

companies outlined an historical reserve at the Great Burnt Copper Deposit. By September 1971, ASARCO had completed 133 holes for 66,750 feet (20,345 metres) of mainly EX-sized core at the Great Burnt Copper Deposit. In 1976, Anglo NL relinquished its entire mineral claim to Price Brothers & Company Limited, a subsidiary of Abitibi Paper Company Ltd. and the mining lease was subsequently jointly owned by Abitibi-Price (Mineral Resources Division) and ASARCO.

Abitibi-Price resumed limited drilling on the property in 1979. During 1984-1985 Abitibi-Price analyzed some 3,000 archived soil sample pulps from the 1960's for gold, which returned numerous anomalies in a 2.5 kilometre-long continuous region south of the South Pond Deposit. Gold values up to 3,327 ppb were obtained and this area was named the South Pond Gold Prospect. During this time the re-analysis of drill core pulps from the South Pond Deposit also yielded anomalous gold values up to 5,333 ppb. Soil and drill core pulps from the Great Burnt Lake Deposit were also analyzed for gold but returned insignificant results (Desnoyers, 1987, 1991).

In 1985, BP Resources Canada Ltd. ("BP") purchased the Great Burnt Mining leases from Abitibi-Price and ASARCO. Exploration activity during 1986 was focused on the South Pond area and included relogging and sampling of archived drill core, analysis of an additional 1,185 archived soil samples for gold and 30 elements (ICP analysis) from alternate grid lines, line cutting (36.6 line kilometres), VLF-EM and magnetic surveys, outcrop sampling and geological mapping. A selection of archived soil sample and drill core pulps from the Great Burnt Lake Deposit was also analyzed (Desnoyers, 1987, 1991).

In 1987, BP (with joint venture partner Exador Resources) initiated a drilling program to test gold in soil anomalies. Drill hole GB-87-08 intersected a 29 m section assaying 1.04 g/t gold which included a 5.5 m section of 2.21 g/t gold. The gold reportedly occurred within a distinct magnetic horizon which extended south from the South Pond Deposit and bordered the western margin of the soil anomaly. Drill intersections show the gold zone varying in thickness from 12 to 25 m, dipping steeply west and having a minimum strike length of 3 km, including the South Pond Deposit.

In 1989 BP continued drilling to test coincident VLF-EM and magnetic anomalies, following the gold-mineralized horizon to the south. By the end of 1989, 4,200 metres of drilling had been completed and the gold mineralized zone had been traced over 1.4 kilometres along strike. Mineralization consisted of 10-40% pyrrhotite and 1-2% chalcopyrite in a variably silicified and locally brecciated mafic volcanic rocks.

In February 1993, Noranda acquired the Great Burnt Lake properties as part of the purchase of the Newfoundland mineral holdings of BP. In 1994, Noranda focussed on identifying deeper drill targets adjacent to known mineralization. A 2 hole drill program was completed and intersected a "zone of light erratic copper mineralization" located about 200 m northeast of the Great Burnt Copper Deposit. This zone was previously drilled by ASARCO in the 1960's and Noranda named it the "North Stringer Zone" and produced a longitudinal section, which showed that the better grade zones appear to plunge gently towards the south. The company believed that this zone could represent the edges of another mineralized zone which could become more massive down-plunge to the south and proposed that deeper (100-150 m vertical) holes be drilled to test this model.

Noranda drilled two short holes on the North Stringer Zone but significant mineralization did not occur at the expected sediment/mafic contact. Minor stringer pyrrhotite-chalcopyrite was

intersected in the mafic volcanics with the best assays in short sections. Hole GBL95-2 contained up to 10-15% combined pyrrhotite-chalcopyrite over 10-40 cm intervals and the best assay returned 2.56% copper over 60 cm. The zone was considered open at depth along strike to the south.

6.2 HISTORIC RESOURCE ESTIMATES

ASARCO completed historical resource estimates for the South Pond Copper and Great Burnt Copper Deposits. The reader is cautioned that the historical estimates are not compliant with NI 43-101 and therefore should not be relied upon. The historical estimates are superseded by the resource estimates provided in this technical report.

6.2.1 South Pond Copper

ASARCO drilling indicated that the South Pond Copper Deposit is a shallow plunging zone of pyrrhotite-chalcopyrite mineralization. The best portion of the zone was estimated to be about 460 m long and up to 90 m deep. The historical resource estimate was completed using 11 EX-sized diamond drill holes on 6 sections at 300 ft (91 m) spacing. ASARCO estimated the resource as 250,000 short tons grading 1.23% Cu. The report estimated that 80% of the reported material was recoverable with 15% mining dilution suggesting a “reserve” of 240,000 short tons at 1.07%. Subsequently, the British Newfoundland Exploration Ltd. (“Brinex”) estimated the deposit to contain 323,000 short tons at 1.33% copper based on a polygonal longsection calculation using the 11 intersections (Beavan 1972).

6.2.2 Great Burnt Copper Deposit

In 1969, ASARCO completed a sectional resource estimate for the Great Burnt Copper Deposit based on 10 cross sections at 200-ft (61-m) intervals. ASARCO estimated a resource of 856,000 short tons at 3.13% copper (Larsen, 1969). This historical estimate made no allowance for dilution and was based on 9 cubic feet per short ton. Diamond drilling indicated that mineralization continued southward beyond section 46+00N and the ASARCO inferred an additional 144,000 short tons.

In 1974 ASARCO evaluated to potential of developing the Great Burnt and South Pond Copper Deposits. Great Burnt was evaluated using decline access and sublevel open-stope mining methods over a 4-year mine life. They used published costing data on equipment and infrastructure, and calculated an underground “reserve” of 800,000 short tons at 2.48% copper for the Great Burnt Copper Deposit and an open-pit “reserve” of 240,000 tons at 1.07% copper for the South Pond Deposit. The estimates used a tonnage factor of 9 cubic feet per short ton. ASARCO also assumed the material would be milled on site and that the concentrate would be shipped from Botwood, near Grand Falls-Windsor. If an after-tax minimum rate of return of 10% was required, they calculated a required 1976 copper price of at least \$1.20 per pound.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

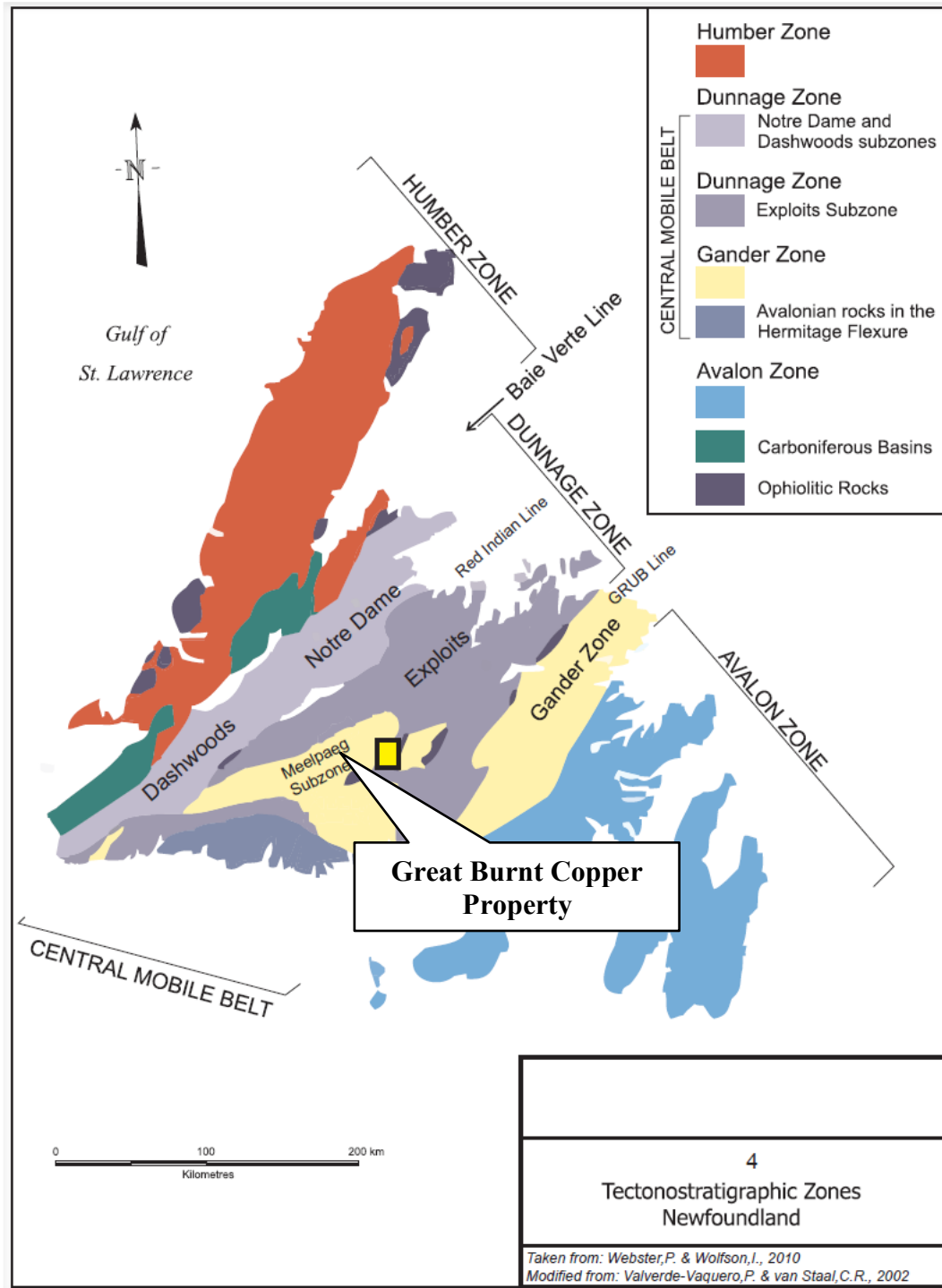
The Great Burnt Deposit is hosted by rocks of the Dunnage Zone which contains the majority of polymetallic VMS deposits in Newfoundland, including Duck Pond Mine owned by Teck Resources Limited (“Teck”) and the world-class past-producing Buchans Deposits. On the Great Burnt Property, the Dunnage Zone consists of greenschist facies Ordovician metavolcanics, metasediments and an ophiolitic complex that formed within island-arc and back-arc basins. The Property straddles the fault boundary between the Exploits Subzone of the Dunnage Zone and the Meelapaeg Subzone of the Gander Zone which records the early Paleozoic opening and closure of the Iapetus Ocean.

The following summary of geology in sections 7.1 to 7.3 is primarily summarized from the 2010 Technical Report for Celtic by Webster and Wolfson (2010).

The Dunnage Zone consists of remnants of Iapetus oceanic crust with conformably overlying island arc volcanic and associated sedimentary rocks and is divided into the Notre Dame, Dashwoods, and Exploits Subzones. The Dunnage Zone is believed to have been obducted over the Gander Zone in a west-southwest direction during the Early or Middle Ordovician. The Exploits Subzone is fault-bounded to the west by the Dashwoods-Notre Dame Subzone along the Red Indian Line. To the east the Exploits Subzone is in fault contact with the Gander Zone (continental siliciclastic sediments, gneisses and granites) along the Gander River Ultrabasic Belt (“GRUB”) Line.

The Exploits Subzone is composed of remnants of oceanic arc and back-arc complexes that formed during the Cambro-Ordovician within the eastern part of the Iapetus Ocean, close to the ancient continent of Gondwana. Within the eastern half of the Exploits Subzone are Upper Cambrian back-arc ophiolitic complexes (e.g. Pipestone Pond) localized along the faulted boundary with arenites and shales of the Gander Zone (which includes the Meelapaeg Subzone).

Figure 7.1 Regional Geology Showing Major Tectonic Zones of Newfoundland

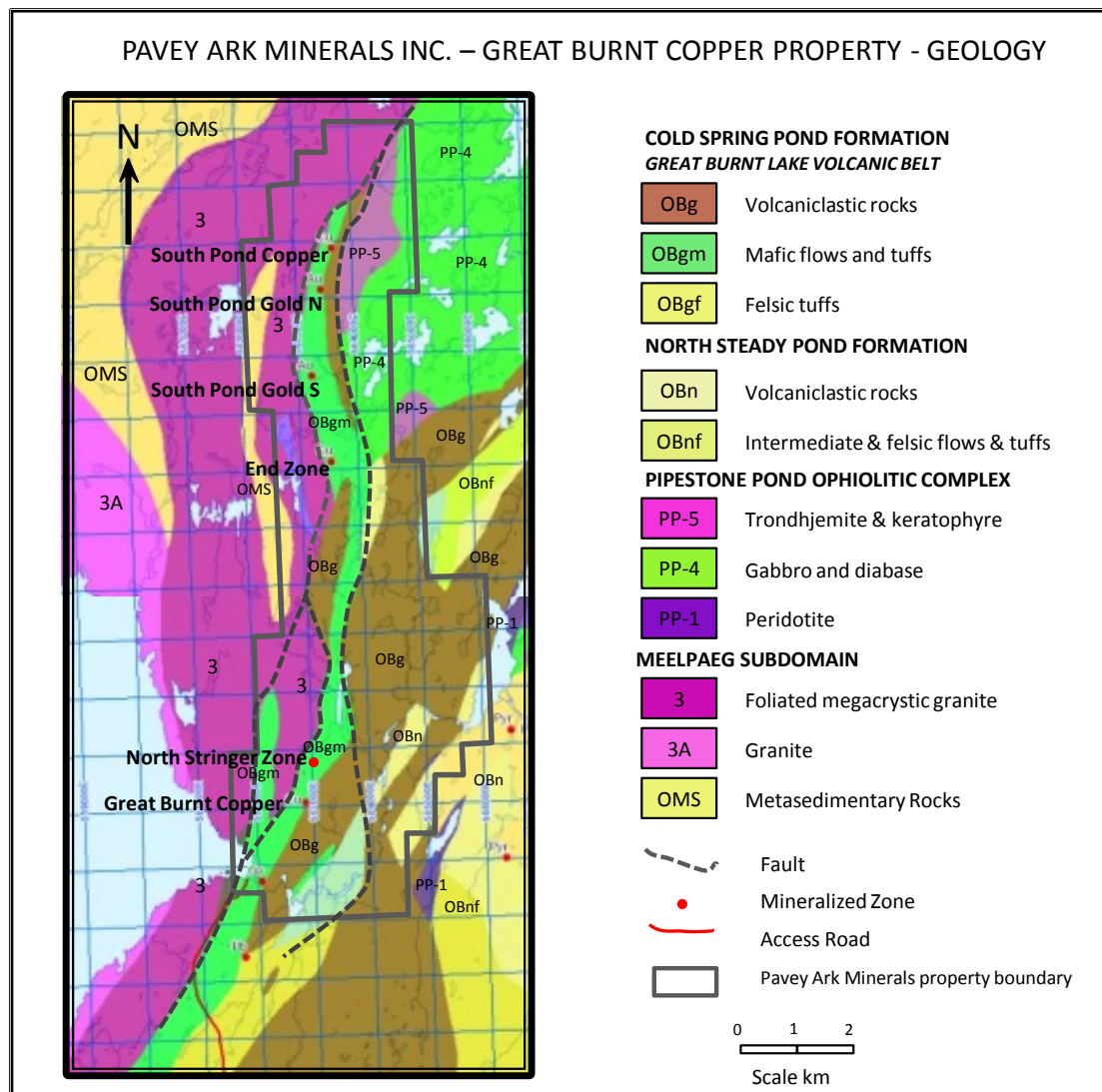


Source: Webster and Wolfson (2010)

7.2 LOCAL GEOLOGY

The Great Burnt Lake Property contains three diverse geological terranes. From West to East these are: the Meelapaeg Subzone, the Great Burnt Lake Volcanic Belt and the Pipestone Pond Ophiolite Complex (Colman-Sadd and Swinden, 1982).

Figure 7.2 Geology of the Great Burnt Copper Property



Source: Geology from NL Department of Natural Resources Website, January 2015.

7.2.1 Great Burnt Lake Metavolcanic and Metasedimentary Belt

The northeast-southwest trending belt of metavolcanic and metasedimentary rocks which is host to the main mineralization on the Property, including the Great Burnt Copper and South Pond Copper Deposits, is part of the Cold Spring Pond Formation of the Early to Middle Ordovician Baie d’Espoir Group. This north-northeast-trending belt of volcano sedimentary rocks has been traced from about 3.2 km South of Great Burnt Lake to the South Pond area. On the Property, it ranges in width from 100 to 750 m, averaging about 300 m wide.

Green to grey, fine to medium-grained, psammitic to pelitic ± graphite turbiditic sedimentary rocks are the dominant lithology in the volcanic-metasedimentary belt. The sediments are interbedded with lenses of tholeiitic volcanic flows and tuffs. The volcanic assemblage makes up about 30% of the belt and mainly consists of massive to pillowed basalts, felsic crystal and lapilli tuffs and mafic tuffs. Minor felsic volcanic rocks occur to the east of the mafic rocks, mainly South and East of Great Burnt Lake. The Cold Spring Pond Formation is in fault contact with the

other formations in the area. Its eastern margin is marked by a major north- to northeast- trending fault. Its western margin is a reverse fault against the Meelpaeg Subzone. To the South, the formation is in fault contact with the Pipestone Pond ophiolitic rocks. The volcanic belt eventually pinches out to the north near Gulp Pond, between the western reverse fault and a boundary fault with the Pipestone Pond ophiolites.

Below the dam at Great Burnt Lake, a suite of epidotic, metabasaltic pillow lavas and pillow breccias is interbedded with tuffs and bedded dark shales, all intruded by swarms of diabase dykes and sills. It may represent a conformable cover above an ophiolite suite, subsequently separated from it by faulting (Piasecki, et al., 1990).

The most commonly mapped volcanic rocks consist of green to grey-green, very fine-grained and well-foliated aphyric and plagioclase-phyric mafic flows and tuffs composed principally of chlorite with minor actinolite and local biotite. Accessory sphene, magnetite, leucoxene and apatite are also noted (McBride, 1977). The flows typically have a uniform and massive appearance; pillow selvages are not typically observed, but possible flow breccias have been mapped. The tuffs are represented by ash to lapilli tuffs and agglomerates and rare heterolithic, fragment-supported tuff-breccia. Clasts tend to be subrounded and heterolithic, commonly light grey and very-fine grained with lesser dark green and flattened chlorite-rich fragments. Where present the plagioclase phenocrysts are light grey, subhedral and average about 1 millimetre in size (Desnoyers, 1991).

The metasedimentary rocks occur as narrow, discontinuous bands interfingering with the mafic volcanics. They are typically fine-grained argillite, greywacke and wacke/siltstone (Desnoyers, 1991). The most common metasedimentary rock is medium grey to black argillite. It is typically fine-grained to aphanitic, locally graphitic, locally silicified (in drill core), well-bedded or strongly foliated and locally folded and crenulated (Desnoyers, 1991). The greywacke unit rarely occurs as thin, discrete layers; it is more commonly found as clasts within argillite. It is light grey, fine- to medium-fine grained and more massive than the other sedimentary rocks.

Rocks of Baie d'Espoir Group are considered to represent the development of an Early to Middle Ordovician island arc and back-arc basin on oceanic crust (represented by the ophiolitic complex). This "early arc" sequence records the initial building of volcanic island arcs upon oceanic crust following the onset of subduction. The felsic and mafic volcanic rocks of the Cold Spring Pond Formation show sodium and calcium depletion and local addition of potassium, indicative of sub-seafloor alteration.

7.2.2 Meelpaeg Subzone

Rocks of the Meelpaeg Subzone occur on the western side of the Great Burnt Property (Webster and Wolfson, 2010). This Ordovician terrane locally comprises variably deformed, locally gneissic, porphyroblastic granitoids and psammitic to semi-pelitic paragneiss and schist metamorphosed to upper greenschist-lower amphibolite-grade facies. The most characteristic feature of these rocks is the abundant pink to white microcline phenocrysts more than 4 centimetres in size. The eastern contact of the Meelpaeg Subzone with the Great Burnt Lake Volcanic Belt and the Pipestone Pond Complex is commonly a high-angle reverse fault marked by a mylonitic zone of intensely sheared and folded metasedimentary and metavolcanic rocks, cataclastic crush zones and local sheared and serpentized peridotite slivers (or possibly an ophiolitic mélangé), up to 2 kilometres wide, which can be traced for some 70 kilometres.

At the southern end of Cold Spring Pond, large blocks of serpentinized dunites accompanied by common blocks of quartzite and metasilstone occur within a chaotic, mylonitic mélange of unbedded, black graphitic phyllonite some 500 metres wide. This mélange represents the “docking” of the ophiolitic Dunnage oceanic crust over the clastic rocks of the westward Gander Zone sometime in the Early to Middle Ordovician (Piasecki, 1990).

7.2.3 Pipestone Pond Ophiolite Complex

This westward-facing stratigraphic succession of mafic and ultramafic rocks occurs at the eastern side of the Great Burnt Property and represents Ordovician or earlier oceanic crust that was tectonically emplaced on the Gondwanan continental margin east of the Iapetus Ocean during Late Silurian or Early Devonian. The Pipestone Pond ultramafic complex on the eastern side of of the Property is one of 3 main mafic-ultramafic complexes in the region (Webster and Wolfson, 2010).

The stratigraphically lowest rock units of the Pipestone Pond Complex are harzburgite, serpentinized pyroxenite, and minor dunite that pass westwards into pyroxenite and gabbro with lesser amounts of diabase and plagiogranite, and mafic volcanic rocks. These rocks form distinctive outcrops; massive peridotite weathers brown, while sheared and serpentinized peridotite which has undergone magnesite alteration is typically brownish-red. Leucocratic plagiogranite contains resistant quartz crystals which stand out as knobs on weathered surfaces.

Early reverse faults (dipping moderately to steeply westward and interpreted as eastward directed thrusts) juxtapose Pipestone Pond Complex with the Cold Spring Pond Formation (McBride, 1977)

7.2.4 Structure

The Great Burnt Lake region underwent two periods of deformation; the earlier folded the stratigraphy into steeply dipping isoclinal folds, which then were refolded during the 2nd deformation (McBride, 1977).

The main deformation (D1) formed common tight to isoclinal folds in the sedimentary rocks (Swinden, 1988) as shown by regional schistosity (S1), stretching, and intersection lineations (L1). The most pervasive feature is a weak to strong, northerly-trending foliation in all lithologies. Its attitude varies, however, in the area of Great Burnt Lake, the foliation generally strikes about 020° and dips 75° east. The lineations trend at 190° with a 30° plunge. This deformation is believed to have boudinaged the mineralized horizons on the Property, forming zones of pinch and swell. An axial planar cleavage is associated with first episode folds (McBride, 1977).

A second period of deformation (D2) is represented by a steeply dipping crenulation cleavage striking about 060°. It occurs sporadically throughout the region. The minor folds associated with D2 plunge steeply southeast to northeast depending on the attitude of the schistosity. The minor folds have an “S” sense; these structures are usually in the centimetre scale with a few up to 0.5 metre across. Locally the D2 event folds the D1 cleavage around moderately open, asymmetrical folds with steep eastern limbs. In the Great Burnt Lake Volcanic Belt, F2 folds have axes which trend to the northwest (Swinden, 1988).

Peak metamorphism of lower to middle greenschist facies occurred during and shortly after the D1 deformational event and prior to D2 during the Acadian orogeny. Local higher grade metamorphic facies occur in the southern part of the Baie d'Espoir Group west of the Great Burnt Lake volcanic belt and east of the Pipestone Pond Ophiolite Complex.

7.3 MINERALIZATION

Several zones of copper+/- gold mineralization have been delineated on the Great Burnt Copper Property. Following are descriptions of the mineralization in the Great Burnt Copper, North Stringer Zone and South Pond Copper Deposits for which a mineral resource is estimated in this technical report. In addition, the South Pond Gold Zone, an advanced exploration target located 1 km south of the South Pond Copper Deposit is described.

7.3.1 Great Burnt Copper Deposit

The Great Burnt Copper Deposit is a stratabound, tabular body of pyrrhotite-chalcopyrite mineralization within an interfingering mafic volcanic-metasedimentary contact (Bond and Delaney, 2005). The mineralization strikes about 010 to 020° and dips steeply (65° - 80°) to the southeast, with a 30° plunge to the south-southwest. The mineralization has a plunge length of approximately 600 m and pinches and swells from 2 to 13 m in width along the plunge axis (McBride 1977). It has an average vertical extent of about 120 metres with a horizontal (plan) length of 210 metres.

P&E has divided the Great Burnt Copper Deposit into two zones based on the wireframe modelling of the drill database. These zones are:

- GBL-Main – the steeply east dipping Great Burnt Copper Deposit Main Zone;
- GBL2 – the shallow east dipping Great Burnt Copper Deposit Lower Zone, that may be connected to the Main Zone by folding.

Mineralization consists of disseminated to massive and banded, fine- to medium-grained pyrrhotite with coarse chalcopyrite, minor sphalerite and galena and rare pyrite. Pyrrhotite is the dominant sulphide mineral present and occurs generally as massive layers while chalcopyrite forms as large blebs within the massive pyrrhotite and as discrete layers of massive mineralization up to 6 cm thick. The main mineralized zone carries sulphide concentrations ranging from less than 40% to 90%. Zinc mineralization was reported by Celtic from drill hole GB-01-07 where a 2.71 metre zone of massive sulphide mineralization returned 1.33% Cu and 2.11% Zn (Bond and Delaney, 2005).

A stringer zone of mainly pyrrhotite-chalcopyrite occurs in the upper portions of the deposit, suggesting proximity to hydrothermal discharge. Further down-plunge, mineralization becomes more massive and contains pyrrhotite-chalcopyrite-sphalerite in discrete en-echelon lenses up to 10-14 m wide. The lenses have been variously described as primary deposits or as a possible boudinaged and/or folded and transposed horizon (McBride, 1979; Bond and Delaney, 2005).

The mineralization is hosted by interbedded mafic volcanics and metasediments comprised of dark green, fine-grained chloritic and actinolitic mafic volcanic tuffs and lesser lapilli tuffs interfingered, and in gradational contact with, fine-grained, massive amphibolitic to well-banded biotitic to locally graphitic greywacke and siltstone (McBride, 1979). McBride (1977) noted that

mafic volcanics near higher concentrations of sulphides are typically greyish and more siliceous (\pm sericite).

The contact between sulphide mineralization and wall rock varies from sharp to gradational with disseminated mineralization. Colman-Sadd and Swinden (1982) interpreted the eastern contact as being the stratigraphic footwall with 30 to 40 m of the footwall being weakly altered to black chlorite and local silica with associated stringers of pyrite, pyrrhotite and chalcopyrite. The hangingwall to the west shows little evidence of alteration or mineralization contact between massive sulphide and barren rock. Wallis (2000) described both immediate footwall and hangingwall contacts as sharp with little visible alteration and suggested the sulphide mineralization had been detached from the footwall stringer zone (found at the North Stringer Zone) during the D1 deformational episode.

The deposit has an airborne EM geophysical response and an associated moderate magnetic anomaly. A weak copper-zinc soil geochemical anomaly occurs immediately east of the airborne EM anomaly and the deposit (Bond and Delaney, 2005).

7.3.2 North Stringer Zone

The North Stringer Zone is located approximately 200 m northeast of the Great Burnt Copper Deposit. The North Stringer Zone consists of weakly altered and mineralized rocks that have been delineated along a strike length of 335 metres and to a depth of 50 vertical metres by some 20 EX diamond drill holes. The surface expression of the zone is characterized by a moderate strength VLF-EM anomaly over a strike length of 400 metres with a coincident high magnetic anomaly over 300 metres (Collins, 1996).

The zone has been interpreted as the possible sheared-off stringer footwall zone to the Great Burnt Copper Deposit (Wallis, 2000). It may also represent a folded repeat of the horizon hosting the Great Burnt Lake Deposit and could be the edge of a larger mineralized trend that exists further down-plunge (McBride, 1979).

The North Stringer Zone consists of 3-20% disseminated and stringer pyrrhotite \pm chalcopyrite in variably chloritized mafic volcanic flows, tuffs and variably graphitic argillites. Bond and Delaney (2005) noted that all of the mineralization was observed to be in a very fine-grained, hard, silicified dark grey to black host rock that was difficult to identify as either volcanic or sediment. The host rock is very similar to the upper portion of the Great Burnt Copper Deposit.

7.3.3 South Pond Copper Deposit

The South Pond Copper Deposit is located 10 kilometres north of the Great Burnt Copper Deposit and is 3 km southwest of South Pond. The mineralization occurs at a similar stratigraphic level and within similar lithologies to the Great Burnt Copper Deposit. The South Pond Deposit has a 914 metre northeasterly strike length and dips about 60° to the west. It has been delineated by approximately 30 drill holes to a maximum vertical depth of about 152 metres and is up to 15 metres wide (Collins, 1995a). Swinden (1988) and Desnoyers (1991) report that the zone is discordant to both bedding and foliation.

Mineralization consists of disseminated to semi-massive pyrrhotite (up to 40%) with 1 to 2 percent disseminated blebs of chalcopyrite, minor pyrite and rare local arsenopyrite in variably silicified, sheared and locally brecciated mafic volcanic flows and tuffs. Host rocks to the deposit

consist of pillow lava, mafic tuff and fine to medium grained clastic sedimentary rocks in the form of hornblende-albite-biotite-epidote schist and hornfels interbedded with graphitic schist, cherts, quartzite and lesser mica schist and phyllite (Larsen, 1969). The rocks are moderately chloritized with pervasive carbonate alteration in the form of concordant calcite veinlets or fine-grained disseminations (Desnoyers, 1987).

The boundaries of the mineralized zone are gradational and reflect a decrease in total sulphide content and chalcopyrite.

7.3.4 South Pond Gold Zone

The South Pond Gold Zone has been delineated by approximately 4,200 m of drilling by BP in 1987 to 1989. The drilling is mainly a single tier of holes that defines the zone over approximately 1,400 m in a north-south direction. The South Pond Gold Zone is located approximately 600 m south of the South Pond Copper Deposit and occupies a similar stratigraphic horizon, such that the combined zones present over 2.0 km strike length of near surface gold-copper mineralization.

Desnoyers (1991) described the gold mineralization as being associated with disseminated to semi-massive pyrrhotite with 1 to 2% chalcopyrite and minor pyrite. High gold values are associated with elevated copper values. Typical gold assays ranged from 100 ppb to 3,000 ppb with the highest value of 13.37 g/t Au over 1.17 m in hole GB87-12.

The host rocks consist of mafic metavolcanic and volcanoclastic sediments of the Cold Spring Formation that have been strongly deformed. The host rocks display a strong penetrative foliation that strikes north to northeast with a near vertical dip.

8.0 DEPOSIT TYPES

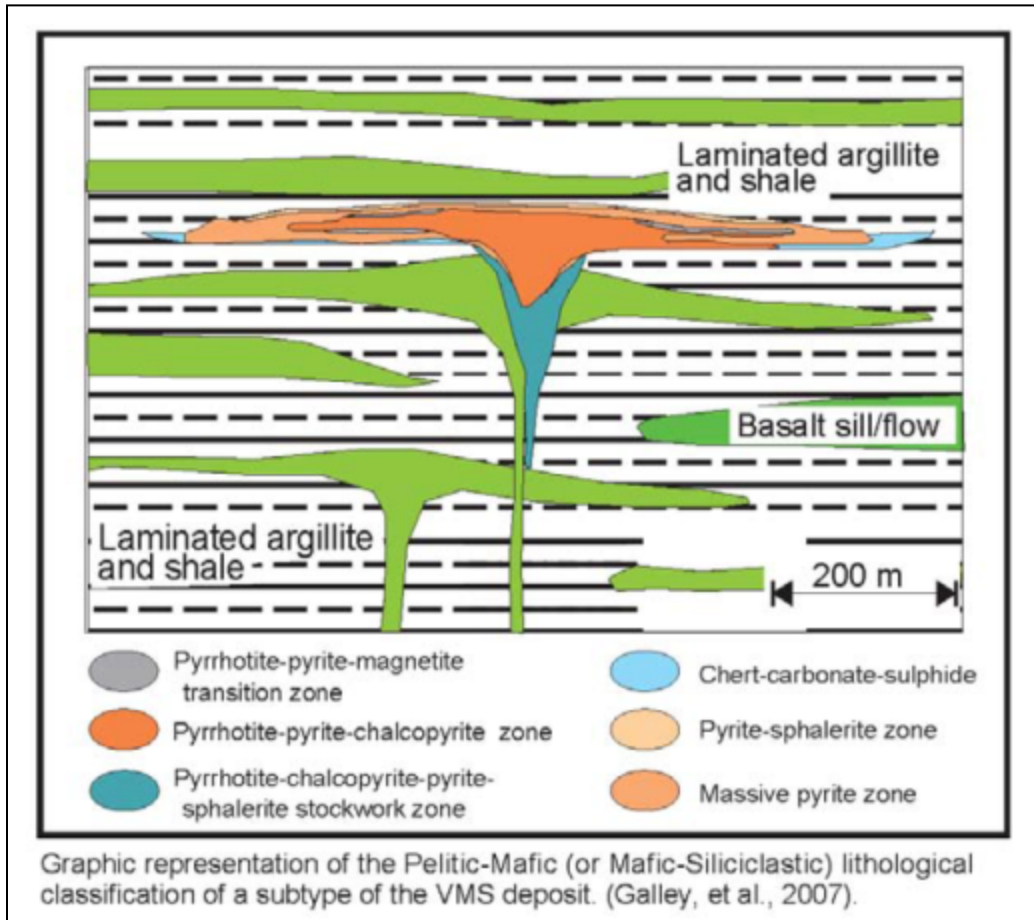
Copper mineralization at the Great Burnt Copper Deposit occurs within metavolcanic-metasedimentary rocks that include reworked tuffs, volcanoclastics and clastic sediments associated with mafic volcanics that are interpreted to have formed in a back-arc basin. This type of sedimentary dominated volcanogenic massive sulphide (VMS) mineralization has been classified as “Besshi-type” (Bond and Delaney, 2005) after the Besshi district of Japan or more recently as mafic-siliciclastic or mafic-pelitic (Galley, et al., 2007).

In this environment, sulphide mineralization is formed by the focused discharge of metal-enriched hydrothermal fluids, at or near the seafloor in submarine volcanic environments, forming lenses of polymetallic massive sulphide. Such deposits are mound-shaped to tabular bodies of sulphides within enclosing strata (“stratabound”) with an underlying discordant to semi-concordant stockwork of veins and disseminations of sulphides. Upper contacts between sulphide and host rock tend to be sharp; the lower contacts are typically transitional into a stringer zone consisting of disseminated and vein chalcopyrite, pyrrhotite ± pyrite within silica- and/or chlorite-altered host rocks. Alteration zones are not as pronounced as in volcanic-dominated regions (Galley, et al., 2007). Galley et al. (2007) report an average grade of 1.6% Cu, 2.6% Zn, 0.36% Pb, 29 g/t Ag, <0.9 g/t Au and an average deposit size of 34.3 Mt for Canadian Besshi-type deposits. The reader is cautioned that this may not be indicative of the size and grade of deposits on the Great Burnt Property.

Piercey (2007) noted similarities between the mineralization at Great Burnt Copper and the Rambler VMS deposits located in the Baie Verte Peninsula of Newfoundland. Both have elevated gold grades and both deposits are spatially close to ophiolitic complexes. The Rambler deposits are considered part of the upper zones of a segmented ophiolitic complex (Betts Cove Complex). The Great Burnt mineralization occurs in mafic volcanoclastics of the Cold Spring Pond Formation in close proximity to the Pipestone Pond Ophiolitic Complex to the east; the Cold Spring Pond Formation also contains tectonic slivers of Pipestone Pond lithologies.

Gold is a component of mineralization at the South Pond Deposit, the South Pond Gold Zones, and has been identified at the Great Burnt Deposit. The South Pond Gold Zones occur within a strongly foliated area that has been termed the “South Pond Deformation Zone”. At this time it is not clear whether the gold mineralization is syngenetic or epigenetic in origin.

Figure 8.1 “Besshi” or Mafic-Siliciclastic VMS Deposit Sub-Type



9.0 EXPLORATION

9.1 SUMMARY OF WORK BY CELTIC MINERALS

The following description of exploration by Celtic is summarized from Webster and Wolfson (2010).

In 1999, after acquiring the Property from Noranda, Celtic completed 3.85 line km of IP-resistivity surveys over licence 4192 using a pole-dipole array with an a-spacing of 50 metres and a maximum depth of penetration was 150 metres.

In February and March 2000, Celtic completed an IP-Resistivity survey over 37.2 line km of grid at Great Burnt Lake and the southern portion of the South Pond grid. Discovery Geophysics Inc. performed a Time-Domain Spectral IP survey using a pole-dipole array. In the spring of 2000, a ground magnetic survey (9 line kilometres) and a Transient EM (TEM) survey (about 21 line kilometres) were carried out over the remaining portion of the South Pond grid and the South Pond North Extension grid. Discovery Geophysics reported that IP survey results from the Great Burnt Lake and South Pond grids were disappointing due to lack of strong correlation between the most intense chargeability and resistivity anomalies. Graphitic metasedimentary rocks appear to have caused the most intense resistivity lows. Poor responses from known mineralized horizons lead Celtic to conclude that IP methods are not the optimal geophysical survey techniques for this geological environment.

A large loop TEM survey completed on the northern portions of the South Pond Grid provided more definitive targets. The program outlined a belt of long semi-continuous, sub-parallel conductors and provided better resolution of these targets than the airborne EM surveys in the area. The most conductive anomaly is coincident with the known location of favourable horizons that host the South Pond Copper and Gold prospects. Most of the other anomalies were explained as being associated with sedimentary and graphitic rocks. Since large-loop TEM appears to discriminate graphitic conductors from massive sulphide conductors, based on the rate of decay of the TEM response, additional surveys were recommended along strike of the conductors.

In August 2000, Celtic contracted geological consultant Roger Wallis to complete a review of geology and drilling and make recommendations for further work. Based on his review Wallis (2000) made the following observations:

- All mineral deposits display a 30° south-plunging lineation and this was observed in outcrop on the Property.
- A second lineation with a 70° south plunge was observed in outcrop and this second structural episode could provide fold interference patterns that could create zones of thicker or higher grade mineralization observed in the longitudinal section of the Great Burnt Deposit.
- The contact between the sulphide mineralization and the hangingwall and footwall rocks of the Great Burnt Deposit is sharp and there is no stockwork zone in the immediate footwall.
- There is a lack of visibly obvious alteration in either the immediate footwall or hanging wall.
- Wallis (2000) summarized his observations and suggested a number of structural dislocation scenarios to explain the distribution of mineralized zones. Wallis, (2000) made specific recommendations that included a detailed compilation of

past work on the property, relogging of selected historic drill core, the development of a new digital database and specific structural studies to assist in better understanding the distribution of mineralization on the Property.

Celtic completed eight NQ drill holes in 2001; six holes tested the down-dip and down-plunge potential of the Great Burnt Deposit, and two holes targeted the South Pond Gold Zones. One down-plunge hole (GBL-01-08) was terminated before the target was intersected and was completed in 2005 (GBL-01-08A).

In February and March of 2001, a borehole transient EM survey (BTEM) was conducted on 7 drill holes (6-2001 Celtic drill holes and one Noranda hole). A limited amount of surface surveying was also carried out on 2 lines from one of the borehole transmitter loops to provide additional information for the interpretation of the borehole TEM data. The bore hole transient EM survey of holes GB-01-01 to GB-01-07 was successful in detecting major conductors. Although the known massive sulphide zone in hole GB-01-07 was detected, the highest geophysical response appears to be associated with stringer mineralization. The contractor has suggested that transient EM would not be suitable for discriminating between massive and stringer mineralized zones but it remains a useful tool for detecting general sulphide mineralization. Off-hole conductors were interpreted from holes GB-01-02 and GB-01-05 and are about 40 to 50 metres East of the interpreted position of the Great Burnt Lake zone and may be either a separate mineralized horizon or more likely the same horizon folded back to the East in a syncline, which would explain the absence of any mineralized intersections at depth. A 70-100 m drill hole at 45° was recommended between these holes to test the off hole anomalies and determine if they represent new sulphide mineralization or the folded Great Burnt Lake zone.

In 2003, Celtic completed a 306 sample MMI (Mobile Metal Ions) soil survey program along 12 grid lines which covered the southern half of mineral licence 7262M (now part of mineral licences 12240M and 12244M), south of the Great Burnt Lake Deposit. The most significant geochemical anomaly was a north trending, multi-sample and multi-element zinc-cadmium-cobalt-palladium anomaly. Based on the tenor of the MMI geochemical response this feature may comprise disseminated mineralization with localized high-grade mineralized zones, or the mineralization could be deeply buried.

Four drill holes totalling 1,106.43 metres were completed between December 2004 and January 2005. Three holes tested the down-dip and down-plunge potential of the Great Burnt Lake Deposit and one hole (GB-05-01) tested the sulphide horizon near the North Salmon Dam. Drilling at the Great Burnt Lake Deposit intersected narrow zones (<1 metre) of massive sulphides and longer intersections (up to 18 metres) of lower grade copper (i.e. 0.56% Cu) that were shallower than planned.

In the spring of 2007, a ground gravity survey was conducted by Eastern Geophysics Ltd. over two grids (totaling 31.2 line kilometers and about 1280 stations). The survey outlined a gravity high that was open to the north due to the limits of the survey. Celtic contracted GeoScott Exploration Consultants Inc. to complete an interpretation of the anomaly. The contractor found asymmetry of the east-west profile that suggested that the body is dipping steeply to the east. The top of the body was interpreted to be about 55 metres below the surface. It has a depth extent of about 275 metres and a strike length of about 530 metres. For a density contrast of 1.0 g/cc, the consultant obtained a thickness of about 175 metres. For a density contrast of 2.0 g/cc, the consultant obtained a thickness of about 88 metres.

In August 2007, Aeroquest International conducted a helicopter-borne AeroTEM and magnetic survey of Celtic's entire claim block. The survey covered 880.9 line kilometers and was flown at a 100 metre line spacing within two survey blocks: one block had a traverse line direction of East-West; the second northern part of the claim block had a traverse line direction of 135 / 315° Az. The principal geophysical sensor is Aeroquest's AeroTEM II time domain helicopter electromagnetic system which is employed in conjunction with the Geometrics G-823A high-sensitivity caesium vapour magnetometer. Nominal survey speed over relatively flat terrain is 75 km/hr and is generally lower in rougher terrain. Aeroquest interpreted the high magnetic responses as due to the relative abundance and strength response of magnetite over other magnetic minerals such as pyrrhotite. They outlined a number of EM anomalies which were highlighted for follow-up (Aeroquest International, 2007).

Also in 2007, the entire Property was the subject of an ASTER remote sensing survey by International Natural Resources Development, which carried out multispectral processing of satellite images. The company identified a number of possible gossanous areas for further follow-up by Celtic. In the northernmost licence (13644M), a limited soil geochemical survey was carried out by Celtic personnel, with 175 samples collected. A number of samples returned gold values above 20 ppb, with the highest at 86 ppb.

Early in 2008, Celtic conducted a review of all geophysical data to select potential drill targets. As a result of this targeting a total of 16 drill holes (2,714.97 metres) were drilled throughout the property. Celtic contracted Eastern Geophysics Ltd. to conduct downhole pulse EM surveys of selected drill holes. Using 2 loops, they surveyed 7 holes: GB-01-07, GB-04-02, GB-08-01, GB-08-02, GB-08-07, GB-08-09 and GB-08-10.

10.0 DRILLING

10.1 DRILLING BY BUCHANS AND ASARCO

Spruce Ridge has complete drill logs for the drilling by Buchans and ASARCO on the Great Burnt Copper Property between 1951 and 1971 that forms a large proportion of the drill database that pertains to the Great Burnt Copper and South Pond Copper Deposits.

The logs contain header information with drill hole number, local grid coordinates, collar elevation, azimuth, dip, depth of hole, start date, completion date, and core size. The logs contain footage intervals, geological descriptions, core recovery, economic comments, and assays for Au, Ag, Cu, Zn, Pb. Down hole survey information with footage, dip, and azimuth at nominal 50 ft intervals is provided. ASARCO assay certificates dated and signed by the assayer providing the assay number, drill hole number and sample interval with assay results for Au, Ag, Cu, Zn, Pb are appended to the logs.

Although drilled several decades ago, most of the ASARCO casings have been located and are identified by original metal tags (Figure 10.1). This has enabled precise UTM coordinates to be determined for the holes. Celtic completed differential GPS surveys of the majority of the holes between 2001 and 2008 and a number of these have been subsequently verified by Pavey Ark and during the independent site visit in October 2014.

Figure 10.1 ASARCO drill casing at Great Burnt Copper Deposit with Tag Identifying Hole Number



Photo: Pavey Ark (2014)

A very complete archive of Buchans and ASARCO core is stored indoors at the NL Ministry of Natural Resources core storage facility at Buchans, NL (Figure 10.2) and is available for inspection and verification sampling subject to the terms and policies of the core storage facility.

Figure 10.2 ASARCO drill core from the Great Burnt Copper Deposit stored indoors at the Newfoundland Ministry of Natural Resources core storage facility at Buchans, NL



Photo: Pavey Ark 2014

10.2 DRILLING BY CELTIC MINERALS

Between 2001 and 2008 Celtic completed three diamond drilling programs totalling 6,367 metres in 34 drill holes throughout the property. Drilling was all NQ sized holes. Drill hole locations and results are summarized in Tables 10.1 and 10.2.

In 2001-2002, Celtic drilled 2,546 metres in 15 holes, testing the down dip extensions of the Great Burnt Lake, South Pond Deposit and the South Pond Gold Zone and a number of coincident geophysical and soil geochemistry anomalies throughout the property. One hole (GB-01-04) was drilled to confirm historical core intersections (near drill hole GB-77).

Drilling at the South Pond Deposit and South Pond Gold Zones was limited to 7 holes totalling 1,235.67 metres. The program was designed to test and confirm copper mineralization grades, to examine and undercut the gold mineralized zones, and to test significant geophysical anomalies

proximal to known mineralized zones. The drilling showed that both gold and copper mineralized zones, including pyrrhotite and chalcopyrite mineralization occur within the same sedimentary sequence. This appears to be in a similar stratigraphic position as the mineralization that occurs at the Great Burnt Lake Deposit.

In 2001, Celtic completed 8 diamond drill holes totaling 1,557.80 metres to test targets in the Great Burnt Copper Deposit. The holes were selected to test geophysical anomalies outlined from ground based IP and TEM surveys and to test the down dip extension of known mineralization outlined from previous historic drilling.

In 2004-2005, Celtic drilled four holes totalling 1,106.75 metres, testing the down-dip potential of the Great Burnt Copper Deposit in two sections and extending a hole that had caved in 2001 (GB-01-08). One hole was drilled to test a silicified zone near the North Salmon Dam (GB-05-01), intersecting a 3.43-metre zone of weakly sericitized rock flooded with abundant calcite veins and up to 3% disseminated, very fine- to coarse-grained pyrrhotite-pyrite with no significant metals. Hole GB-04-02 intersected a zone averaging 0.90% copper and 1.91g/t gold, at the Great Burnt Lake Deposit.

Following a detailed review of geophysical surveys completed on the Property in early in 2008 a total of 20 anomalies were selected for possible follow-up by diamond drilling. A winter drill program was initiated and 16 drill holes totalling 2,714.97 metres were completed throughout the Property.

TABLE 10.1
CELTIC DIAMOND DRILL HOLE LOCATIONS

Drill hole	Year	Core size	UTM Easting	UTM Northing	UTM Zone	Elev (m)	Az. (°)	Dip (°)	Length (m)
GBL-08-01	2008	NQ	563,004	5,354,111	Zone 21; NAD 83	245	282	-70	286.51
GBL-08-02	2008	NQ	563,041	5,354,045	Zone 21; NAD 83	244	282	-73	377.95
GBL-08-03	2008	NQ	563,594	5,359,501	Zone 21; NAD 83	273	270	-45	102.72
GBL-08-04	2008	NQ	563,611	5,359,582	Zone 21; NAD 83	272	270	-45	112.96
GBL-08-05	2008	NQ	563,619	5,359,673	Zone 21; NAD 83	272	270	-45	117.40
GBL-08-06	2008	NQ	563,724	5,359,508	Zone 21; NAD 83	259	270	-50	146.30
GBL-08-07	2008	NQ	563,424	5,360,513	Zone 21; NAD 83	272	270	-45	156.97
GBL-08-08	2008	NQ	563,434	5,360,608	Zone 21; NAD 83	272	270	-45	130.10
GBL-08-09	2008	NQ	563,434	5,360,608	Zone 21; NAD 83	272	270	-70	281.48
GBL-08-10	2008	NQ	563,409	5,360,699	Zone 21; NAD 83	273	270	-45	249.94
GBL-08-11	2008	NQ	563,355	5,361,310	Zone 21; NAD 83	275	090	-45	97.54
GBL-08-12	2008	NQ	563,257	5,361,301	Zone 21; NAD 83	275	090	-45	99.06
GBL-08-13	2008	NQ	564,800	5,357,110	Zone 21; NAD 83	228	270	-45	100.58
GBL-08-14	2008	NQ	564,950	5,356,440	Zone 21; NAD 83	232	270	-45	173.74
GBL-08-15	2008	NQ	563,326	5,360,711	Zone 21; NAD 83	275	270	-45	182.27

TABLE 10.1
CELTIC DIAMOND DRILL HOLE LOCATIONS

Drill hole	Year	Core size	UTM Easting	UTM Northing	UTM Zone	Elev (m)	Az. (°)	Dip (°)	Length (m)
GBL-08-16	2008	NQ	563,540	5,360,715	Zone 21; NAD 83	271	270	-55	99.45
GB-05-01	2005	NQ	562,117	5,352,742	Zone 21; NAD 27	232	285	-49	101.00
GB-04-01	2004	NQ	562,942	5,354,024	Zone 21; NAD 27	239	287	-59	374.00
GB-04-02	2004	NQ	562,986	5,354,075	Zone 21; NAD 27	239	282	-70	379.00
SP-02-06	2002	NQ	563355.95	5363420.95	Zone 21; NAD 27	312	110	-45	251.16
SP-02-07	2002	NQ	564180.33	5363981.80	Zone 21; NAD 27	294	110	-45	100.00
GB-01-01	2001	NQ	563104.39	5355060.27	Zone 21; NAD 27	281	285	-45	99.97
GB-01-02	2001	NQ	562925.14	5354450.42	Zone 21; NAD 27	268	285	-45	150.27
GB-01-03	2001	NQ	562852.77	5354612.76	Zone 21; NAD 27	262	285	-45	95.40
GB-01-04	2001	NQ	562875.98	5354398.58	Zone 21; NAD 27	265	285	-45	95.40
GB-01-05	2001	NQ	562921.59	5354385.38	Zone 21; NAD 27	260	285	-45	196.90
GB-01-06	2001	NQ	562952.48	5354193.11	Zone 21; NAD 27	245	285	-60	182.58
GB-01-07	2001	NQ	562913.00	5354077.76	Zone 21; NAD 27	242	285	-65	303.28
GB-01-08A	2001, 2005	NQ	562936.51	5353762.97	Zone 21; NAD 27	240	285	-57	434.00
SP-01-01	2001	NQ	563096.42	5361950	Zone 21; NAD 27	284	90	-50	231.34
SP-01-02	2001	NQ	563105.0	5362167.19	Zone 21; NAD 27	282	90	-53	265.18
SP-01-03	2001	NQ	563484.84	5362167.07	Zone 21; NAD 27	280	90	-45	74.07
SP-01-04	2001	NQ	563216.8	5362875.19	Zone 21; NAD 27	296	90	-50	217.32
SP-01-05	2001	NQ	562993.32	5362880.78	Zone 21; NAD 27	305	90	-45	101.50

TABLE 10.2
CELTIC DIAMOND DRILLING TARGETS AND RESULTS

Drill hole	Year	Target	Results
GBL-08-01	2008	Great Burnt Lake Deposit	Interbedded mafic volcanics and sediments. Common stringers of calcite-po-cp in fractured rock
GBL-08-03	2008	End Zone coincident magnetic, airborne EM and soil geochemical anomaly	Interbedded sediments and tuffs. End of hole hit possible fault zone (water seam)
GBL-08-04	2008	End Zone coincident magnetic, airborne EM and soil geochemical anomaly	Interbedded sediments, tuffs
GBL-08-05	2008	End Zone coincident magnetic, airborne EM and soil geochemical anomaly	Interbedded sediments, mafic tuff

TABLE 10.2
CELTIC DIAMOND DRILLING TARGETS AND RESULTS

Drill hole	Year	Target	Results
GBL-08-06	2008	End Zone coincident magnetic, airborne EM and soil geochemical anomaly	Plagiogranite, gabbro and leucogabbro. Magnetic.
GBL-08-07	2008	Mud Pond Gravity Anomaly	Interbedded tuffs, flows, flow breccias,
GBL-08-08	2008	Mud Pond Gravity Anomaly	Mafic flows, flow breccias
GBL-08-09	2008	Mud Pond Gravity Anomaly	Interbedded mafic volcanics, pillow breccias, pelites. Last 20m leucogranite.
GBL-08-10	2008	Mud Pond Gravity Anomaly	Mafics
GBL-08-11	2008	South Pond Au Zone Extension	Mafic volcanics, tuffs and pelites. Increased calcite past 75m.
GBL-08-12	2008	South Pond Au Zone Extension	Interbedded sediments, tuffs, mafic flows
GBL-08-13	2008	Gut Pond	Graphitic argillite with trace disseminated pyrrhotite
GBL-08-14	2008	Gut Pond	Mainly intermediate to mafic flows, tuffs, minor sediments; possible major fault zone 18-35m
GBL-08-15	2008	Mud Pond Gravity Anomaly	Interbedded mafic flows, tuffs and pelites.
GBL-08-16	2008	Mud Pond Gravity Anomaly	Interbedded tuffs and pelites.
GB-05-01	2005	Great Burnt Lake dam site - area of rusty, silicified and sericitic rock.	Mafic volcanoclastics, minor pelitic to psammitic sediments
GB-04-01	2004	Great Burnt Lake Deposit. Down-dip potential	Interbedded sediments, intermediate-felsic tuff, volcanic breccia, mafic flow; local qtz breccia; local dykes. Rare veinlets pyrrhotite-chalcopyrite-sphalerite 279.9-315.3m. Massive sulphide band 315.28-316.15m (0.87m) assayed at 5.4% Cu, 1.66% Zn; both contacts sheared.
GB-04-02	2004	Great Burnt Lake Deposit. Down-dip potential	Sediments, tuffs, mafic volcanics. 260.0-267.0m: pyrrhotite-chalcopyrite as disseminations and fracture-fill in a brecciated mafic volcanic; over 4m assaying over 1 g/t Au; 1m assayed 1.5%Cu.

TABLE 10.2
CELTIC DIAMOND DRILLING TARGETS AND RESULTS

Drill hole	Year	Target	Results
SP-02-06	2002	South Pond Deposit. Down-plunge extension and coincident TEM and IP anomalies.	foliated granodiorite; after which interbedded tuffs, sediments. Local mineralized sections of pyrrhotite-chalcopyrite with weakly anomalous copper values (up to 2906ppm).
SP-02-07	2002	400m northeast of South Pond Deposit. Test coincident IP and magnetic anomaly with multi-site anomalous gold in soil geochemistry.	Mainly magnetic argillite & sandstone in fault contact with variably deformed trondhjemite @ 69.5m.
GB-01-01	2001	North Stringer Zone. Coincident magnetic and gravity anomalies about 200m north of the zone.	Mafic tuffs and flows with variable disseminated magnetite. Downhole TEM produced no off-hole anomalies.
GB-01-02	2001	Great Burnt Lake Deposit. Down dip extension of zone.	Interbedded mafic volcanics/ altered sediments and sediments. No significant mineralization.
GB-01-03	2001	Great Burnt Lake Deposit. Test northern extension of deposit coincident with magnetic anomaly.	Interbedded mafic and magnetic volcanics and sediments. Local disseminated pyrrhotite and trace chalcopyrite at top of hole. No significant mineralization.
GB-01-04	2001	Great Burnt Lake Deposit. Verify an original EX core intersection.	Interbedded mafic volcanics and sediments; 50.5-64.5m: weak to moderate pyrrhotite-chalcopyrite stringers in altered sediments(?); grades up to 2.9% Cu over 2m. 64.5-69.3m: moderate to strong pyrrhotite-chalcopyrite stringer zone; grades up to 4.2% Cu over 1m. Weighted average sections of 2.23%Cu over 6.83m and 2.62%Cu over 4.88m.
GB-01-05	2001	Great Burnt Lake Deposit. Down dip extension of deposit.	Mafic volcanics, sediments. Local silica-breccia with weak pyrite / pyrrhotite-chalcopyrite stringers.
GB-01-06	2001	Great Burnt Lake Deposit. Down dip extension of deposit.	Mafic volcanics, sediments. Hole cancelled due to poor ground conditions.
GB-01-07	2001	Great Burnt Lake Deposit. Down dip extension of deposit.	Interbedded mafic volcanics and sediments. 245.13-247.84m- massive sulphides:pyrite-pyrrhotite-chalcopyrite-sphalerite; grading 1.3% Cu, 2.1% Zn over 2.71m. Next 28m contained minor disseminated to locally semi-massive sulphides with anomalous Cu and Zn values.
GB-01-	2001,	Great Burnt Lake Deposit.	1st 88.5m gabbro in fault contact with lower

TABLE 10.2
CELTIC DIAMOND DRILLING TARGETS AND RESULTS

Drill hole	Year	Target	Results
08A	2005	Down plunge extension of deposit.	interbedded sediments, tuffs, mafic volcanics. Hole caved at 181.6m in 2001; continued in 2005.181.6-434m: argillites, interbedded mafic tuffs, flows & sediments. 202.7-206.6m: minor pyrrhotite-chalcopryrite in bands and veinlets. 367.95-369.39 25% pyrrhotite-chalcopryrite-sphalerite (best grade of 3609ppm Cu over 1.44m).
SP-01-01	2001	Down-dip extension of South Pond Gold Zone	Minor anomalous gold(up to 166ppb) in a deeper intersection indicated the zone dips to east instead of west.
SP-01-02	2001	Down-dip extension of South Pond Gold Zone	Minor mineralization (no anomalous Au) in a deeper intersection indicated the zone dips to east instead of west.
SP-01-03	2001	South Pond Gold Zone: test coincident magnetic, EM, VLF and soil geochemical anomalies.	Minor mafic volcanics at start of hole; thereafter magnetic argillite (possible iron formation?), siltstone and mafic volcanics.
SP-01-04	2001	Down-dip extension of South Pond Gold Zone	Pelitic sediments and mafic tuffs and volcanoclastics. Au in altered and fractured sediments: up to 3871ppb Au over 1.24m(sample 1820).
SP-01-05	2001	South Pond Gold Zone: test coincident VLF, magnetic and IP anomaly 250m west of gold zone.	Mafic volcanic flows and coarse breccias. Minor pyrrhotite-chalcopryrite throughout hole with local zones of slightly stronger mineralization.

After acquiring the Property in 2013, Pavey Ark focussed on assembling and validating a drill database for the purpose of completing the NI 43-101 technical report and resource estimate. The current report updates an earlier NI43-101 technical report and resource estimate dated February 18, 2015 that was prepared by P&E for Pavey Ark.

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

The data reviewed for this Report and used for geological modelling and resource estimation combines various phases of historical exploration by several companies. A significant proportion of the drilling was completed by Buchans and ASARCO prior to 1971, with the most recent drill results completed by Celtic between 2001 and 2008.

11.1 HISTORICAL SAMPLING

From 1951 to 1971, Buchans and ASARCO completed 133 drill holes testing the Great Burnt Deposit and 20 holes testing the South Pond Copper Deposit. AX and EX- size core was recovered from the ASARCO drilling. Drill core recovery was generally good, and samples were collected by, or under the supervision of a geologist. During the early Buchans and ASARCO drilling programs, samples of split core were sent to the Asarco Mine Laboratory in Buchans and assayed for Cu, Zn, Pb, Ag and Au, the latter two by the fire assay method. Spruce Ridge has copies of the Buchans and ASARCO assay certificates, however, descriptions of data verification and QA/QC procedures by ASARCO, however, are not available at this time.

11.1.1 Celtic Sampling Method and Approach

Celtic's sampling methods have been described by Webster and Wolfson (2010) as part of their NI43-101 Technical Report. This description is summarized from the 2010 report.

Celtic sample intervals generally ranged from about 0.30 to 2.3 metres, with the most common sample length being 1.0 metre. The geologist assigned an identification number to each sample using uniquely numbered sample tags. Two of the three tags were marked with the date, project, drill hole number, depth from, depth to and sample interval; the third tag was left blank for inclusion in the sample bag. Webster and Wolfson (2010) report that there were no issues encountered that would materially affect or bias the accuracy and reliability of the analytical results from these drill core samples.

Once marked, the core technician cut the core at each sample break using an electric tile saw with a diamond-impregnated saw blade. One half of each core sample was placed into a 6-mil thick 12" x 18" plastic bag into which the blank sample tag was placed. The remaining half-core was put back into the core tray; one of the marked sample tags was placed at the beginning of the sample interval and stapled to the wooden tray. The plastic bag with the sample and unmarked tag was rolled up and taped shut with sturdy packing tape, and marked with the sample tag number. Every 5 to 10 samples were placed into a larger fiber rice sack which was then secured with a plastic cable tie.

Celtic's samples were transported under the direct supervision of the geologist or core technician to the sample receiving facilities of Eastern Analytical Ltd. in Springdale, Newfoundland. A series of certified reference standard (CDN-FCM-4) and blank materials (CDN-BL-3) purchased from CDN Resource Laboratories Ltd. were inserted with each batch of samples at the discretion of the geologist, using the same sample tags and plastic sample bags as the core. The analytical laboratory also used its own series of blanks, standards and duplicates during the analytical process to monitor for any contamination or problems with their sample preparation or analytical processes.

Celtic staff supervised all drill programs completed by the company and all core was stored on site during the drilling period. Although a locked storage facility was not available, Celtic staff managed access to the core, and logging and sampling was generally completed as the holes were drilled. Once drilling and sampling was completed drill holes from the 2001-2002 and 2004-2005 drill programs were sent to the government of Newfoundland and Labrador core storage facility in Buchans, Newfoundland for storage. Core from the 2008 drilling program is stacked on pallets and is stored at the unsecured Great Burnt Lake site.

11.1.2 Celtic Sample Preparation and Analysis

Celtic drill core samples were sent to Eastern Analytical for assay. Each sample was crushed to approximately 75% -10 mesh material. The complete sample was riffle split to produce 250 to 300 grams of material; the remainder of the sample was bagged and stored as coarse reject. The 250 to 300 gram split was pulverized using a ring mill to approximately 98% -150 mesh material. The sample preparation technician also inspects the rings and bowls after each sample and silica sand is used to clean equipment as needed.

The pulverized gold samples were weighed (15 or 30 grams) into an earthen crucible containing a lead oxide flux and then mixed. Silver nitrate was then added and the sample is fused in a fire assay oven to obtain a liquid which was poured into a mold and let cool. The lead button was then separated from the slag and cupelled in the fire assay oven which obtains a silver bead containing the gold. The button is digested with nitric acid, which removes the silver. Hydrochloric acid is added and the liquid was left to cool. After cooling, de-ionized water is added to bring the sample up to a pre-set volume and the liquid is analyzed for gold by atomic absorption.

Multi-element analyses were generally performed on all samples using the 30-element ICP packages. Blanks, duplicates and standards were submitted by the logging geologist at the drill site and typically one standard and one blank per sampled drill hole. Celtic used commercially prepared standards supplied by CDN Resource Laboratories Ltd. Any over-limit sample that assayed in excess of 10,000 ppm copper or 2,200 ppm zinc was re-assayed by quantitative analysis to get a percentage reading.

Eastern Analytical is not an ISO certified lab but has provided independent laboratory analysis to the mining community for many years. The laboratory utilized quality control procedures including blanks and standards and has had independent audits of its laboratory analysis and procedures completed. Webster and Wolfson (2010) were satisfied that the sample preparation, analysis and security procedures utilized by Celtic and its contractors are adequate and meet industry standards.

Webster and Wolfson (2010) completed independent sampling of two mineralized intervals reported by Celtic. Drill hole GB-01-04 and GB-01-07 were reviewed while at the government core library in Buchans Newfoundland. Core samples were marked for cutting by the authors and a one quarter core sample was sawn by core library staff. Two samples and a commercial standard were shipped to Eastern Analytical in Springdale, Newfoundland for Fire Assay and ICP analysis.

Webster and Wolfson (2010) observed good reproducibility for Cu and Zn for the two samples and concluded that the mineralization reported by Celtic from its various drilling programs is accurate and representative of the mineralization present in the drill core.

12.0 DATA VERIFICATION

12.1 P&E SITE VISIT AND INDEPENDENT SAMPLING

The Great Burnt Copper Property was visited by Mr. Eugene Puritch, P.Eng. on the October 26, 2014 for the purposes of completing a site visit and conducting independent sampling. In addition to the site visit, Mr. Puritch visited the Newfoundland Department of Natural Resources Core Storage Facility located at Buchans, Newfoundland on October 27, 2014, for the purpose of reviewing and sampling archived drill core from the Great Burnt Copper Property that is stored at the Buchans Core Storage Facility.

Mr. Puritch collected 28 samples from 12 diamond drill holes. Four (4) samples were collected from 2 Celtic NQ holes that are stored on the Great Burnt Copper Property. The verification samples from Celtic holes were collected from the entire half core that remained in the core box. At the Buchans core storage facility 19 samples were taken from 6 ASARCO EX holes from the Great Burnt Copper Deposit and 5 samples were taken from 4 ASARCO EX holes from the South Pond Copper Deposit. The ASARCO core had been split and verification samples were taken by collecting approximately 50% of the split fragments in the original ASARCO assay interval. The samples were bagged and taken directly by Mr. Puritch to AGAT Labs, (“AGAT”) in Mississauga, ON for analysis.

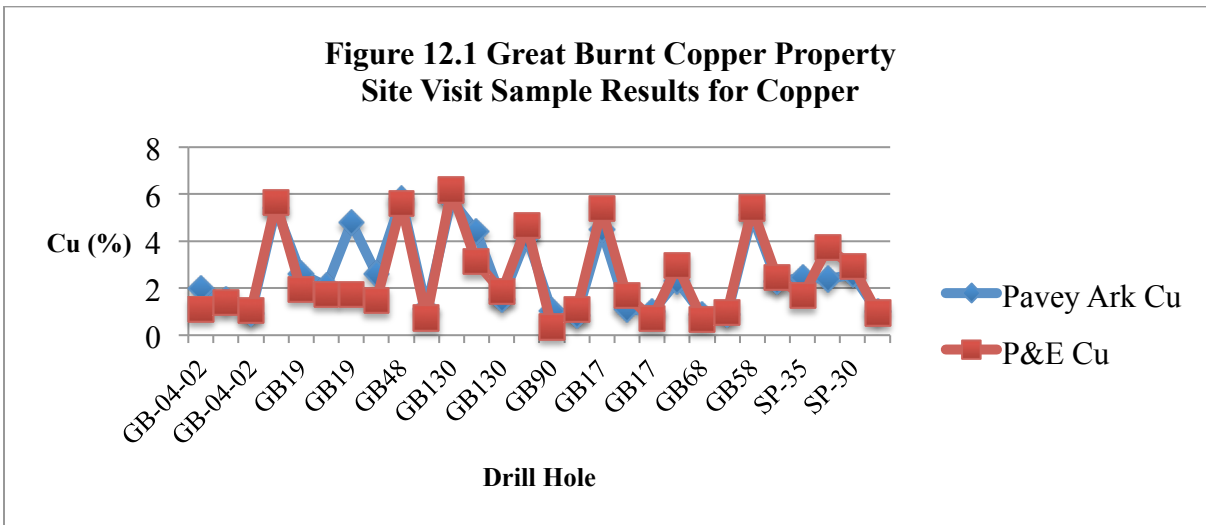
Samples at AGAT were analyzed for copper and other base metals by ICP-MS and for gold by fire assay with atomic absorption (“AA”) finish. All samples were analyzed by pycnometer at AGAT to determine specific gravity.

AGAT has developed and implemented at each of its locations a Quality Management System (QMS) designed to ensure the production of consistently reliable data. The system covers all laboratory activities and takes into consideration the requirements of ISO standards.

AGAT maintains ISO registrations and accreditations. ISO registration and accreditation provide independent verification that a QMS is in operation at the location in question. Most AGAT laboratories are registered or are pending registration to ISO 9001:2000.

Results of the Great Burnt Copper Project site visit samples for Cu are presented in Figure 12.1.

Figure 12.1 Great Burnt Copper Property Site Visit Sample Results for Copper



The P&E results for 23 samples from the Great Burnt Copper Deposit averaged 2.497% Cu, 0.235% Zn, 0.002% Pb and 0.353 g/t Au with a specific gravity of 3.31 g/cm³. The Cu results for the same intervals in Spruce Ridge’s database from ASARCO and Celtic averaged 2.71% Cu. Zn, Pb and Au were not consistently analyzed and reported for intervals in the ASARCO assays.

The P&E results for 5 samples of the South Pond Copper Deposit averaged 2.346% Cu, 0.054% Zn, 0.002% Pb and 1.64 g/t Au with a specific gravity of 2.97 g/cm³. The Cu results for the same intervals in Spruce Ridge’s database from ASARCO averaged 2.14% Cu. Zn, Pb and Au were not consistently analyzed and reported for intervals in the ASARCO assays.

The verified intervals represent 8.6% of all constrained assays in the South Pond and 17.9% of constrained assays greater than 1% Cu. A total of 6.0% of all constrained assays were verified for GB Main and 13.6% of constrained assays greater than 1% Cu.

P&E considers that there is good correlation between Cu assay values in Spruce Ridge’s database and the independent verification assays. It is P&E’s opinion that the data are of excellent quality and appropriate for use in a resource estimate.

12.2 QUALITY ASSURANCE/QUALITY CONTROL REVIEW

Performance of Certified Reference Materials

P&E inserted the OREAS 13b and WCM PB115 certified reference standards into the verification samples. Results are presented in Table 12.1 below.

TABLE 12.1					
RESULTS FOR OREAS 13B AND WCM PB115 REFERENCE MATERIALS					
		Cu %	Pb%	Zn %	Au g/t
OREAS 13b	Certified value	0.233		0.013	0.211
	+/- 1SD	+/-0.048	--	+/-0.001	+/-0.013
	P&E Result	0.255	0.004	0.006	0.212
WCM PB115	Certified value	0.53	2.61	1.65	--
	P&E Result	0.562	2.500	1.770	0.031

The P&E results for OREAS 13b are within 1SD for Cu and Au and it is P&E's opinion that the data are of good quality and appropriate for use in a resource estimate.

12.2.1 Performance of Blank Material

P&E inserted one blank into the verification samples. The blank returned 0.002% Cu, 0.001% Pb, 0.004% Zn and 0.007 g/t Au. This is considered acceptable.

12.2.2 Performance of Pulp Duplicates

No analysis of pulp duplicates has been completed to date.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

This section is not applicable to this report.

14.0 RESOURCE ESTIMATE

The mineral resource estimate presented herein is reported in accordance with the Canadian Securities Administrators' National Instrument 43-101 and has been estimated in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines. Mineral resources are not mineral reserves and do not have demonstrated economic viability. There is no guarantee that all or any part of the mineral resource will be converted into mineral reserve. Confidence in the estimate of Inferred mineral resources is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Mineral resources may also be affected by further infill and exploration drilling that may result in changes to subsequent mineral resource estimates.

All mineral resource estimation work reported herein was carried out by Eugene Puritch, P.Eng., an independent Qualified Persons in terms of National Instrument 43-101, from information and data supplied by Spruce Ridge. Mineral resource modeling and estimation were carried out using Gemcom modeling software. To the best of P&E's knowledge no previous National Instrument 43-101 mineral resource estimate has been completed for the Property.

At a 1.0% Cu cut-off, the Great Burnt Copper Property has estimated Indicated Resources of 441,000 tonnes at 2.50% Cu containing 24.3 million lbs. of Cu plus Inferred Resources of 829,000 tonnes at 2.11% Cu containing 38.6 million lbs. of Cu.

14.1 DATABASE

All data were provided by Spruce Ridge in the form of Excel files and scanned copies of original reports and logs. The database as implemented by P&E contains results of over 156 drill holes and over 980 drill core assays by previous operators between 1961 and 2008. Drill hole plans are presented in Appendix I.

Industry standard validation checks were completed on the supplied databases. P&E typically validates a mineral resource database by checking for inconsistencies in naming conventions or analytical units, duplicate entries, interval, length or distance values less than or equal to zero, blank or zero-value assay results, out-of-sequence intervals, intervals or distances greater than the reported drill hole length, inappropriate collar locations, and missing interval and coordinate fields. P&E noted no significant validation errors. The database was verified for all historical and current assay results using old certificates and digital copies of assay certificates received from the laboratory. P&E believes that the supplied database is suitable for mineral resource estimation.

14.2 DOMAIN INTERPRETATION

Local topography was derived from the supplied drill hole collar elevations. Domain models were generated by P&E from successive polylines spaced along drill hole sections oriented perpendicular to the general trend of the mineralization. The domain outlines were influenced by the selection of mineralized material above 0.5 % Cu that demonstrated lithological and grade continuity along strike and down dip. Where appropriate lower grade mineralization was included for the purpose of maintaining zonal continuity. On each section polyline interpretations were digitized from drill hole to drill hole but not typically extended more than fifty metres. All polyline vertices were snapped directly to drill hole assay intervals, in order to

generate a true three-dimensional representation of the extent of the mineralization. Domain wireframes were then clipped above the topographic surface.

A total of four domains were developed:

- GBL-Main - steeply east dipping Great Burnt Main Zone;
- GBL2 - shallow east dipping Great Burnt Lower Zone, may be connected to Main by folding;
- GBL-STR - steeply dipping low grade North Stringer Zone;
- SP - South Pond zone (located 10 km north of Great Burnt Main Zone).

The modeled domains were used for rock coding, statistical analysis, compositing limits and definition of the extent of potentially economic mineralization. The 3D domain model is shown in Appendix II.

14.3 COMPOSITES

Assay sample lengths within the defined domains range from 0.04 m to 11 m, with an average sample length of 1.2 m. In order to ensure equal sample support, a compositing length of 1.0 m was therefore selected for mineral resource estimation.

Length-weighted composites were calculated within the defined domains, starting at the first point of intersection between the drill hole and the domain intersected, and halting upon exit from the domain wireframe. Assays and composites were then assigned a domain rock code value based on the domain wireframe that the interval midpoint fell within. A nominal grade of 0.001 was used to populate a small number of un-sampled intervals. After compositing, a small number of short-length residual composites were discarded. The remaining composites were then exported to extraction files for statistical analysis and estimation.

14.4 GRADE CAPPING

The presence of high-grade outliers for the composite data was evaluated by a review of composite summary statistics, histograms and probability plots (see log normal histograms in Appendix-III). Based on this analysis, grade capping was deemed to be unnecessary.

14.5 VARIOGRAPHY

An isotropic experimental semi-variogram was modeled from domain-coded composite data. The modeled isotropic experimental semi-variogram for the total composite data set was assessed for geological reasonableness and used for estimation and classification of the mineral resources. See semi-variograms in Appendix-IV.

14.6 BULK DENSITY

An average in situ bulk density of 3.21 t/m³ was applied to the four mineralized domains based on ASARCO's historical density estimate of 9 cubic feet per short ton. The P&E bulk density verification results for 23 samples from the Great Burnt Copper Deposit (GBL, GBL-2, and GBL-STR) averaged bulk density of 3.31 t/m³ and show the ASARCO estimate is appropriate. P&E's bulk density verification results for 5 samples from the South Pond Copper Deposit (SP) averaged 2.97 t/m³.

14.7 BLOCK MODELING

The Great Burnt Copper resource model was divided into a block model framework containing 28,813,400 blocks, extending 5 m in the X direction, 15 m in the Y direction and 5 m in the Z direction. The block model framework contains 430 columns (X), 710 rows (Y) and 78 levels (Z), and was rotated 15 degrees clockwise. Separate block models were created for copper, rock type, density, percent, and classification parameters.

A percent block model was established to accurately represent the volume and subsequent tonnage that was occupied by each block inside the constraining domain. As a result, the domain boundary is properly represented by the percent model ability to measure individual infinitely variable block inclusion percentages within an individual domain.

All composite values were used for the estimation of block grades. P&E considers this to be a robust methodology appropriate for estimating the Great Burnt Copper mineral resources. During block estimation, between 3 and 20 composites from two or more drill holes were selected, with the search ellipse for sample selection aligned to the overall orientation of the constraining mineralization domain. Composite data used during estimation were restricted to samples located in their respective domains.

The resulting Cu grade blocks can be seen on the block model cross-sections and plans in Appendix-V.

14.8 RESOURCE CLASSIFICATION

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

- Indicated Mineral Resource: “An ‘Indicated Mineral Resource’ is that part of a mineral resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough for geological and grade continuity to be reasonably assumed.”
- Inferred Mineral Resource: “An ‘Inferred Mineral Resource’ is that part of a mineral resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes.”

Mineral resource classification was implemented by generating three-dimensional envelopes around those parts of the block model for which the drillhole spacing and grade estimates met the required continuity criteria. The resulting classifications were iteratively refined to be geologically reasonable in order to prevent the generation of small, discontinuous areas of a higher confidence category being separated by lower confidence areas.

Indicated resources were defined based on a 30 metre search ellipse range modeled from the variography, and then consolidated into an envelope digitized around the central area of the blocks estimated. This process downgraded scattered and isolated higher confidence blocks and combined Indicated mineral resources into a continuous unit, and upgraded scattered and isolated Inferred mineral resources surrounded by higher confidence blocks. All remaining blocks estimated were classified as Inferred. The classification process resulted in a total of 1,896 grade blocks being coded as Indicated and 3,472 as Inferred. Classification block cross-sections and plans can be seen in Appendix VI.

14.9 RESOURCE ESTIMATE

The mineral resource estimate was derived by applying a Cu cut-off grade to the block model and reporting the resulting tonnes and grade for potentially mineable underground resources.

The following calculation demonstrates the rationale supporting the Cu cut-off grade that determines the potentially economic portions of the mineralization.

14.9.1 Mineral Resource Estimate Cu Cut-Off Grade Calculation CDN\$

Cu Price	US\$3.22/lb = US\$7,099/t (Dec 31/14 24 month trailing av'g)
\$US=\$CDN Exchange Rate	\$0.93:\$1.00 (Dec 31/14 24 month trailing av'g)
Cu Recovery	90%
Underground Mining Cost	\$40/tonne milled
Process Cost	\$15.00/tonne milled
Smelting & Refining	\$10/tonne milled
General & Administration	\$5.00/tonne milled

Therefore, the Cu cut-off grade for the underground resource estimate is calculated as follows:

$$\text{Operating costs per ore tonne} = (\$40 + \$15 + \$10 + \$5) = \$70/\text{tonne}$$

$$[(\$70)/(\$7,099 \times 1.07 \text{ Exchange} \times 0.9 \text{ Recovery})] = 1.0 \% \text{ Cu}$$

TABLE 14.1			
GREAT BURNT MINERAL RESOURCE ESTIMATE AT 1.0% CU CUT OFF⁽¹⁻⁴⁾			
	Tonnes	Grade - % Cu	Cu - million lbs
Great Burnt Main			
Indicated	360,000	2.65	21.0
Inferred	239,000	2.44	12.9
Great Burnt Lower Zone			
Indicated	22,000	3.23	1.6
Inferred	424,000	2.23	20.8
North Stringer Zone			
Indicated	13,000	1.24	0.4
South Pond Deposit			
Indicated	47,000	1.38	1.4
Inferred	166,000	1.30	4.8
Total			
Indicated	442,000	2.50	24.4
Inferred	829,000	2.11	38.5

- (1) *Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues, although Spruce Ridge is not aware of any such issues.*
- (2) *The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred resources as an Indicated or Measured mineral resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured mineral resource category.*
- (3) *The mineral resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines.*
- (4) *Values in the table may differ due to rounding.*

A sensitivity analysis to the updated mineral resource estimate was also completed simultaneously with the mineral resource estimate (Table 14.4). The inclusion of this sensitivity analysis is not meant to supersede or replace the results of the mineral resource estimate and should not be construed as a mineral resource.

TABLE 14.2								
SENSITIVITY TO UNDERGROUND RESOURCE ESTIMATE								
GBL-MAIN					GBL-2			
Cut-Off	Indicated		Inferred		Indicated		Inferred	
Cu%	Tonnes	Cu%	Tonnes	Cu%	Tonnes	Cu%	Tonnes	Cu%
2.00	181,372	3.83	139,507	3.07	13,724	4.29	179,297	3.39
1.75	213,853	3.53	170,753	2.85	14,964	4.08	196,543	3.26
1.50	256,633	3.21	200,165	2.67	16,593	3.84	246,273	2.92
1.25	310,547	2.89	222,644	2.54	18,561	3.59	359,125	2.44
1.00	359,577	2.65	238,936	2.44	21,697	3.23	424,200	2.23
0.75	408,980	2.44	242,096	2.42	26,449	2.80	482,567	2.07
0.50	457,279	2.25	242,247	2.42	34,428	2.29	505,647	2.01
0.25	474,830	2.18	242,993	2.42	35,672	2.23	526,691	1.94
0.01	489,210	2.12	243,749	2.41	35,672	2.23	537,667	1.91
GBL-STR					SOUTH POND			
Cut-Off	Indicated		Inferred		Indicated		Inferred	
Cu%	Tonnes	Cu%	Tonnes	Cu%	Tonnes	Cu%	Tonnes	Cu%
2.00	0	0.00	0	0.00	771	2.03	10,261	2.50
1.75	479	1.84	0	0.00	1,972	1.94	17,118	2.24
1.50	1,735	1.70	0	0.00	13,088	1.63	26,799	2.00
1.25	3,855	1.49	0	0.00	33,066	1.49	64,222	1.62
1.00	12,879	1.24	0	0.00	46,910	1.38	166,158	1.30
0.75	26,881	1.03	1,337	0.80	58,218	1.28	240,089	1.18
0.50	92,401	0.75	27,418	0.59	64,098	1.22	266,144	1.13
0.25	153,539	0.61	114,100	0.42	68,160	1.17	276,221	1.10
0.01	230,388	0.45	119,336	0.42	69,035	1.15	276,883	1.10

In order to evaluate the underground resource sensitivity to a potentially economic open pit mineralization in the Great Burnt Main resource model, a first pass Whittle 4X pit optimization was carried out to create an optimum pit shell for the Great Burnt Main Deposit. Near-surface resources are constrained within an optimized conceptual pit-shell that utilized Inferred and Indicated mineral resources.

The model used the following assumptions:

- Cu price of US\$3.22/lb;
- exchange rate of US\$0.93=CAD\$1;
- estimated costs including mining (\$3/t), process (\$15/t), G&A (\$5/t), smelting and refining (\$10/t);
- process recovery of 90%;
- and a pit slope of 50°.

The resulting Great Burnt Main potentially economic pit shell and mineralized domain can be seen in Appendix VII.

TABLE 14.3 GREAT BURNT MAIN PIT OPTIMIZATION SENSITIVITY		
Pit#	Mineralization kt	Grade Cu %
9	604	2.38
8	584	2.42
7	525	2.46
6	463	2.62
5	401	2.73
4	278	2.51
3	237	2.51
2	159	2.59
15	88	2.44
12	72	2.27
1	22	1.94

14.10 CONFIRMATION OF ESTIMATE

As a test of the reasonableness of the mineral resource estimate the average model block Cu grade was compared to raw constrained assays as well as to the average of the composite data. The block average is the average grade of all blocks within the mineralized domains (see Table 14.4).

TABLE 14.4 COMPARISON OF CU AVERAGES FOR RAW ASSAYS, COMPOSITES & BLOCKS		
Raw Assays	Composites	Blocks
1.52	1.55	1.61

The comparison above shows the average grade of all the Cu blocks in the constraining domains to be somewhat higher than the weighted average of the composites and assays used for grade estimation. This is due to the larger spaced distribution of some higher grade assays. The block model Au values will be more representative than the assays or composites due to the block model's three-dimensional spatial distribution characteristics. In addition, a volumetric comparison was performed with the block model volume of the model blocks versus the geometric calculated volume of the domain solids as follows:

- Geometric Volume = 624,603 m³
- Block Volume = 623,668 m³
- Difference = 0.15%

15.0 MINERAL RESERVE ESTIMATES

This section is not applicable to this report.

16.0 MINING METHODS

This section is not applicable to this report.

17.0 RECOVERY METHODS

This section is not applicable to this report.

18.0 PROJECT INFRASTRUCTURE

Unpaved forest access roads are common throughout the area and have been developed both to provide access to hydroelectric sites and interior harvesting areas for commercial logging activity.

A 230-kV transmission line goes from the Upper Salmon Hydroelectric Development at Godaleich Brook south to the powerhouse at Bay d'Espoir; another 230-kV transmission line runs from Baie d'Espoir north to Grand Falls-Windsor and passes about 30 kilometres east of the Property. Newfoundland Hydro has a power supply line that services the Great Burnt Dam at the south end of the Property.

19.0 MARKET STUDIES AND CONTRACTS

This section is not applicable to this report.

20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

Spruce Ridge has not carried out any environmental studies, permitting or social or community impact studies.

21.0 CAPITAL AND OPERATING COSTS

This section is not applicable to this report.

22.0 ECONOMIC ANALYSIS

This section is not applicable to this report.

23.0 ADJACENT PROPERTIES

There are two Exploration Licences adjoining the SW corner of Spruce Ridge's Great Burnt Copper Property. Licence number 20962M (5 claims) is held by Mr. D. Hicks of Milltown, NL and was recorded on March 29, 2013. No reports of new exploration work have been filed on the property. Licence number 22846M (5 claims) is held by Mr. R. Collier of St. Alban's, NL and was recorded on January 1, 2015. Both Mssrs. Hicks and Collier have other Exploration Licences in the vicinity of, but not adjoining, the Great Burnt Copper Property.

The Great Burnt Copper Property is 40 km southeast of Teck's Duck Pond Cu-Zn Mine and 70 km southeast of the past-producing Buchans Deposit. In 2015, Teck is in the process of closing the Duck Pond Mine.

24.0 OTHER RELEVANT DATA AND INFORMATION

To the best of the authors' knowledge there is no other relevant data, additional information or explanation necessary to make the Report understandable and not misleading.

25.0 INTERPRETATION AND CONCLUSIONS

Spruce Ridge's Great Burnt Copper Property is located approximately 75 km southwest of the city of Grand Falls-Windsor in central Newfoundland, Canada. The Property is road accessible from St. Alban's, NL and 40 km southeast of Teck Resources Limited's Duck Pond Cu-Zn Mine and 70 km southeast of the past-producing Buchans Deposit. This report provides the initial NI43-101 resource estimates for the Great Burnt Copper, North Stringer Zone and South Pond Copper Deposits on the Property.

The Property consists of one 165 ha mining lease (ML211) and 5 mineral exploration licences covering 156 contiguous claim units with an area of 3,900 ha (Exploration licences 6682M, 9881M, 6683M, 20961M, and 21732M).

The Great Burnt Copper Property is underlain by rocks of the Dunnage Zone that contains the majority of polymetallic volcanogenic massive sulphide deposits in NL, including the Duck Pond Copper-Zinc Mine owned by Teck and the world-class past-producing Buchans Deposits. On the Great Burnt Property, the Dunnage Zone consists of greenschist facies Ordovician metavolcanics, metasediments and an ophiolite complex that formed within island-arc and back-arc basins. The Property straddles the fault boundary between the Exploits Subzone of the Dunnage Zone and the Meelpaeg Subzone of the Gander Zone which records the early Paleozoic opening and closure of the Iapetus Ocean.

The Great Burnt Copper Property has been explored by several operators since 1948. Between 1951 and 1971, 133 drill holes (over 20,345 m) were drilled by the Buchan's Mining Company and subsequently ASARCO in the 14-km-long favourable metavolcanic and metasedimentary stratigraphy that hosts several zones of copper and gold mineralization. Numerous airborne and ground geophysical surveys have been conducted along with soil and till geochemical surveys. Celtic Minerals Ltd. ("Celtic") acquired the property from Noranda and drilled an additional 6,367 m in 34 holes between 2001 and 2008. Spruce Ridge acquired the property from Pavey Ark who acquired the Property in 2013 from Celtic Minerals Ltd.

Copper mineralization at the Great Burnt Copper Property occurs within metavolcanic-metasedimentary rocks that include reworked tuffs, volcanoclastics and clastic sediments associated with mafic volcanics that are interpreted to have formed in a back-arc basin. This type of sedimentary dominated VMS mineralization has historically been classified as a "Besshi-type VMS" or more recently as mafic-siliciclastic type or mafic-pelitic type VMS. There are similarities between the mineralization at Great Burnt Copper and the Rambler VMS deposits located in the Baie Verte Peninsula, NL that are currently in production.

The Great Burnt Copper Property was visited by Mr. Eugene Puritch, P.Eng. of P&E on the October 26, 2014 for the purposes of completing a site visit and conducting independent verification sampling. In addition to the site visit, Mr. Puritch visited the NL Department of Natural Resources Core Storage Facility located at Buchans, NL on October 27, 2014, for the purpose of reviewing and sampling archived drill core from the Great Burnt Copper Property that is stored at the Buchans Core Storage Facility. P&E considers that there is good correlation between copper assay values in Spruce Ridge's database and the independent verification assays and it is P&E's opinion that the data are of good quality and appropriate for use in a resource estimate.

The database for this resource estimate contains results of over 156 drill holes and over 980 drill core assays by previous operators between 1961 and 2008. At a 1.0% Cu cut-off, the Great Burnt Copper Property is estimated to contain Indicated Resources of 441,100 tonnes at 2.50% Cu for a total of 24.3 million lbs of Cu plus Inferred Resources of 829,300 tonnes at 2.11% Cu for a total of 38.6 million lbs of Cu.

The mineral resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by the CIM Council. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. The quantity and grade of reported Inferred resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred resources as an Indicated or Measured mineral resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured mineral resource category.

26.0 RECOMMENDATIONS

26.1 RECOMMENDATIONS AND PROPOSED BUDGET

P&E considers that the Great Burnt Copper Property contains a significant copper resource and merits further evaluation. P&E's recommendations include re-assay of existing drill core for gold at the South Pond Deposit, metallurgical testwork, and a preliminary economic analysis (PEA).

P&E further considers that the property has potential for delineation of additional resources. Specific exploration targets include:

- The down plunge extension of the Great Burnt Copper Deposit is currently open at depth and warrants further testing. In this regard, it has been proposed (McBride 1977, 1979) that the North Stringer Zone and the Great Burnt Copper Deposit may be on the same folded stratigraphic horizon and the potential hinge area should be tested. The off-hole EM anomalies detected in GB-01-02 and GB-01-05 are a priority target in this regard;
- The South Pond Gold Zone and the South Pond Copper Deposit present over 2.0 km of near surface gold-copper mineralization along a stratigraphic horizon that has largely been tested with only a single tier of drilling.

There is considerable potential to assay stored core from previous drilling programs to evaluate the South Pond Copper Deposit and adjacent rocks for gold mineralization. Five samples collected by P&E for verification assays from the South Pond Copper Deposit averaged 1.6 g/t Au in addition to 2.3% Cu. As the gold grade has not been estimated for this resource, further assaying of archived diamond drill core should be undertaken to develop a gold grade for this deposit. P&E recommends that further drilling on this zone should take place after the archived core has been analyzed.

P&E recommends that a PEA should be completed. This will also enable the potential open pit mineralization versus potential underground mineralization to be optimized and evaluated. As both the Great Burnt Copper and the South Pond Copper Deposits are exposed at surface there is an excellent opportunity to evaluate a low-capital cost starter pit operation with truck haulage to a local concentrator facility. Concurrently with a PEA, metallurgical test work is warranted to evaluate grinding and copper-gold recovery parameters.

A proposed \$268,000 program is recommended in Table 26.1.

Program	Units	Unit Cost (\$)	Budget
Surface stripping program on Great Burnt Deposit	10 days	\$1,500/day	15,000
Core sampling and re-assaying program to evaluate South Pond Deposit gold grade	300	\$35/sample	\$10,500
Geological supervision	30 days	\$600/day	\$18,000
Drilling	600 m	\$125/m	\$75,000
Initial Metallurgical Testwork			\$25,000
Preliminary Economic Analysis (PEA)			\$125,000
Total			\$268,000

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28.0 CERTIFICATES

CERTIFICATE OF QUALIFIED PERSON

EUGENE J. PURITCH, P. ENG.

I, Eugene J. Puritch, P. Eng., residing at 44 Turtlecreek Blvd., Brampton, Ontario, L6W 3X7, do hereby certify that:

1. I am an independent mining consultant and President of P&E Mining Consultants Inc.
2. This certificate applies to the technical report titled “Technical Report and Resource Estimates on the Great Burnt Copper Property, Central Newfoundland, for Spruce Ridge Resources Ltd.” (the “Technical Report”), with an effective date of September 4, 2015.
3. I am a graduate of The Haileybury School of Mines, with a Technologist Diploma in Mining, as well as obtaining an additional year of undergraduate education in Mine Engineering at Queen’s University. In addition I have also met the Professional Engineers of Ontario Academic Requirement Committee’s Examination requirement for Bachelor’s Degree in Engineering Equivalency. I am a mining consultant currently licensed by Professional Engineers and Geoscientists New Brunswick (License No. 4778), Professional Engineers and Geoscientists Newfoundland & Labrador (License No. 5998), Association of Professional Engineers and Geoscientists Saskatchewan (License No. 16216) and Ontario Association of Certified Engineering Technicians and Technologists (License No. 45252) the Professional Engineers of Ontario (License No. 100014010) and registered with the Ontario Association of Certified Engineering Technicians and Technologists as a Senior Engineering Technologist. I am also a member of the National and Toronto Canadian Institute of Mining and Metallurgy.

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

I have practiced my profession continuously since 1978. My summarized career experience is as follows:

- Mining Technologist - H.B.M. & S. and Inco Ltd.,1978-1980
- Open Pit Mine Engineer – Cassiar Asbestos/Brinco Ltd.,1981-1983
- Pit Engineer/Drill & Blast Supervisor – Detour Lake Mine,1984-1986
- Self-Employed Mining Consultant – Timmins Area,1987-1988
- Mine Designer/Resource Estimator – Dynatec/CMD/Bharti,1989-1995
- Self-Employed Mining Consultant/Resource-Reserve Estimator,1995-2004
- President – P&E Mining Consultants Inc,2004-Present

4. I visited the Property that is the subject of this report on October 26, 2014.
5. I am responsible for authoring Sections 13 and 14 and coauthoring Sections 12, 25 and 26 of the Technical Report.
6. I am independent of the Issuer applying the test in Section 1.5 of NI 43-101.
7. I have had no prior involvement with the project that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1. This Technical Report has been prepared in compliance therewith.
9. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: September 4, 2015

Signed Date: September 8, 2015

{SIGNED AND SEALED}

[Eugene J. Puritch]

Eugene J. Puritch, P.Eng.

CERTIFICATE OF QUALIFIED PERSON

JARITA BARRY, P.GEO.

I, Jarita Barry, P.Geo., residing at 3053 Keniris Road, Nelson, British Columbia, V1L 6Z8, do hereby certify that:

1. I am an independent geological consultant contracted by P & E Mining Consultants Inc.
2. This certificate applies to the technical report titled “Technical Report and Resource Estimates on the Great Burnt Copper Property, Central Newfoundland, for Spruce Ridge Resources Ltd.” (the “Technical Report”), with an effective date of September 4, 2015.
3. I am a graduate of RMIT University of Melbourne, Victoria, Australia, with a B.Sc. in Applied Geology. I have worked as a geologist for a total of 9 years since obtaining my B.Sc. degree. I am a geological consultant currently licensed by the Association of Professional Engineers and Geoscientists of British Columbia (License No. 40875). I am also a member of the Australasian Institute of Mining and Metallurgy of Australia (Member No. 305397);.

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

My relevant experience for the purpose of the Technical Report is:

- Geologist, Foran Mining Corp.2004
- Geologist, Aurelian Resources Inc2004
- Geologist, Linear Gold Corp 2005-2006
- Geologist, Búscore Consulting 2006-2007
- Consulting Geologist (AusIMM) 2008-2014
- Consulting Geologist, P.Geo. (APEGBC/AusIMM)2014-Present.

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Sections 1 to 11, 15 to 24 and coauthoring Sections 12, 25 and 26 of this Technical Report.
6. I am independent of the Issuer applying all of the tests in section 1.5 of National Instrument 43-101.
7. I have not had prior involvement with the project that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance therewith.
9. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Effective Date: September 4, 2015

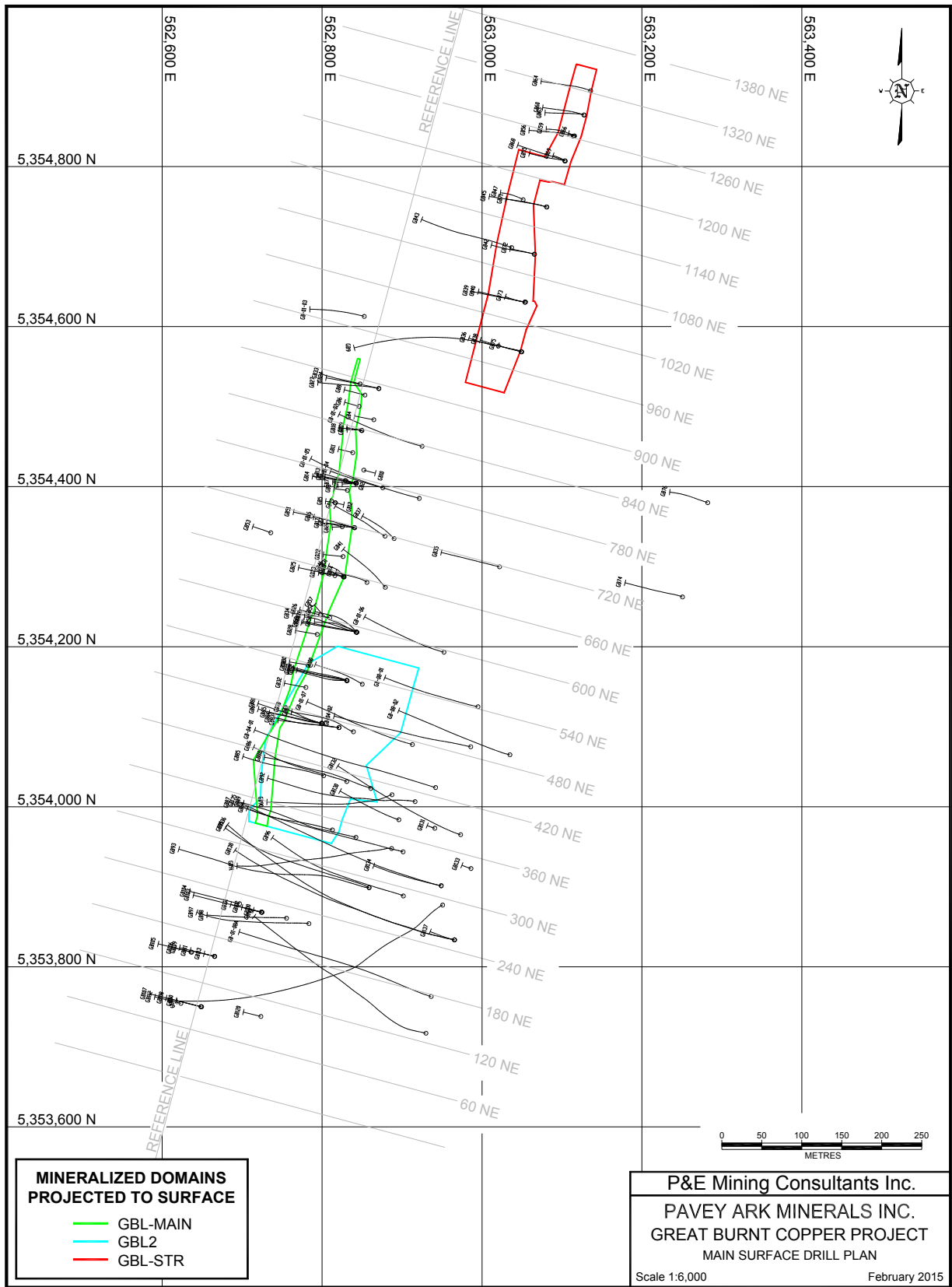
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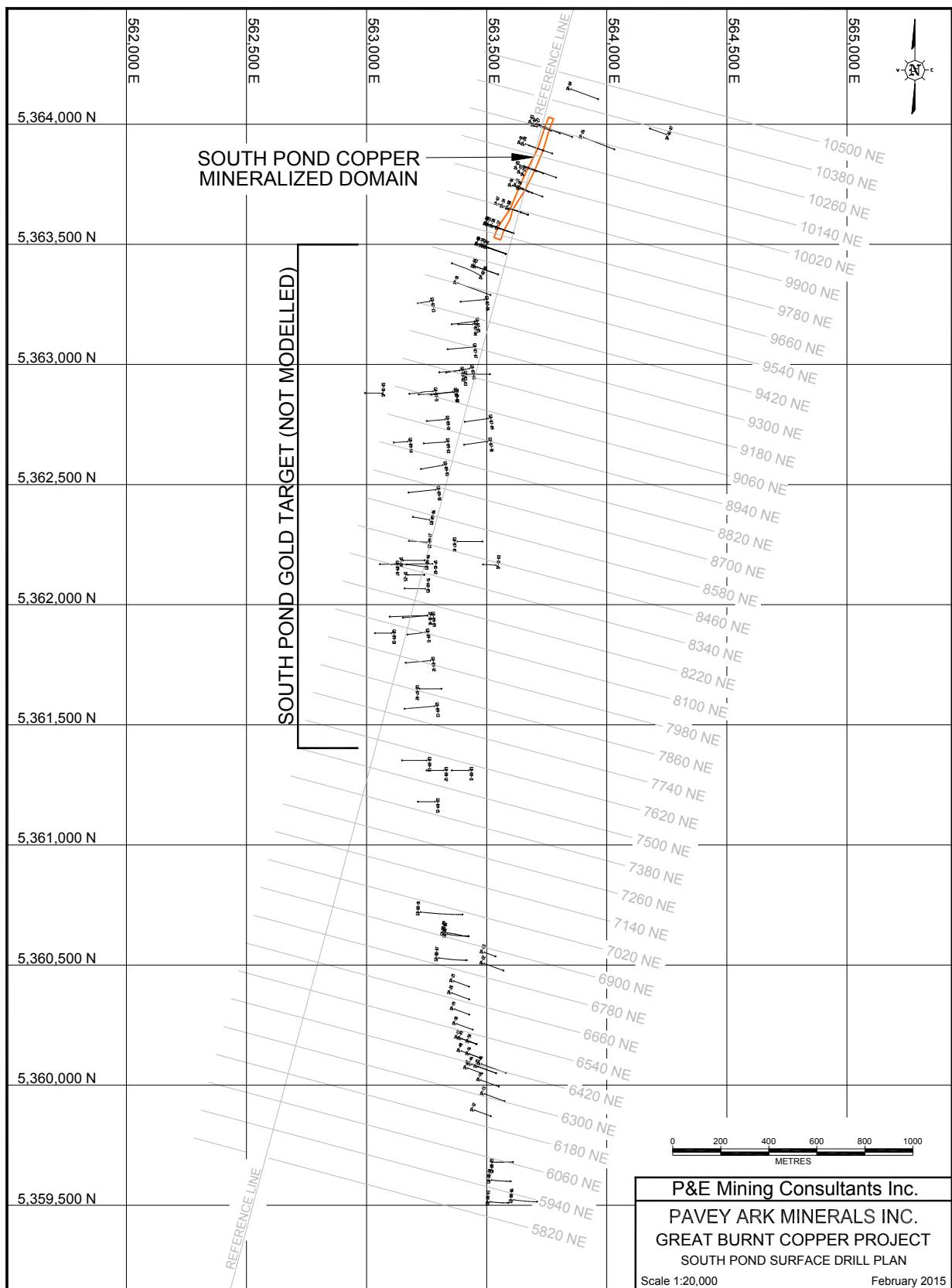
{SIGNED AND SEALED}

[Jarita Barry]

Jarita Barry, P.Geo.

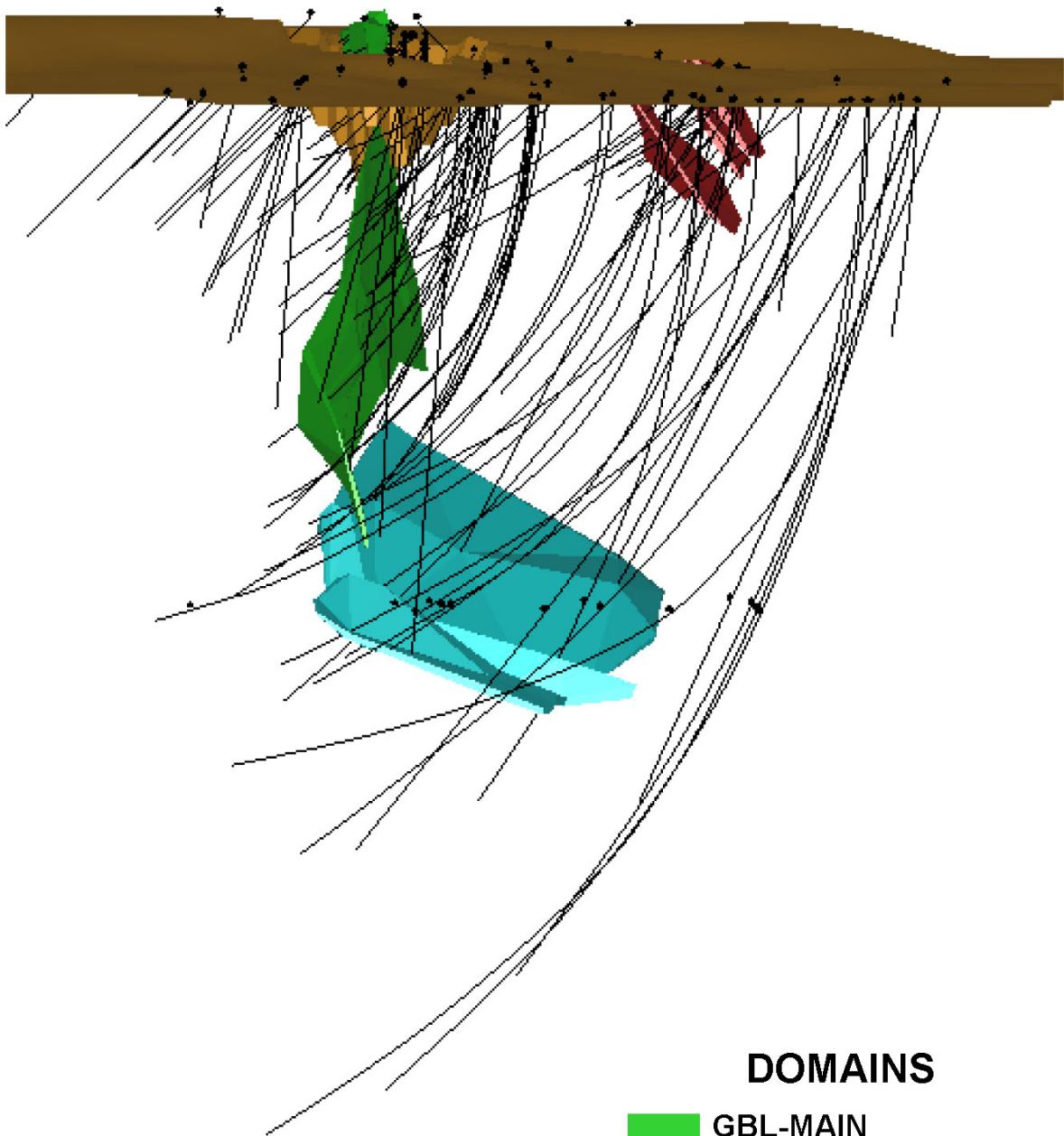
APPENDIX I. SURFACE DRILL HOLE PLANS





APPENDIX II. 3D DOMAINS

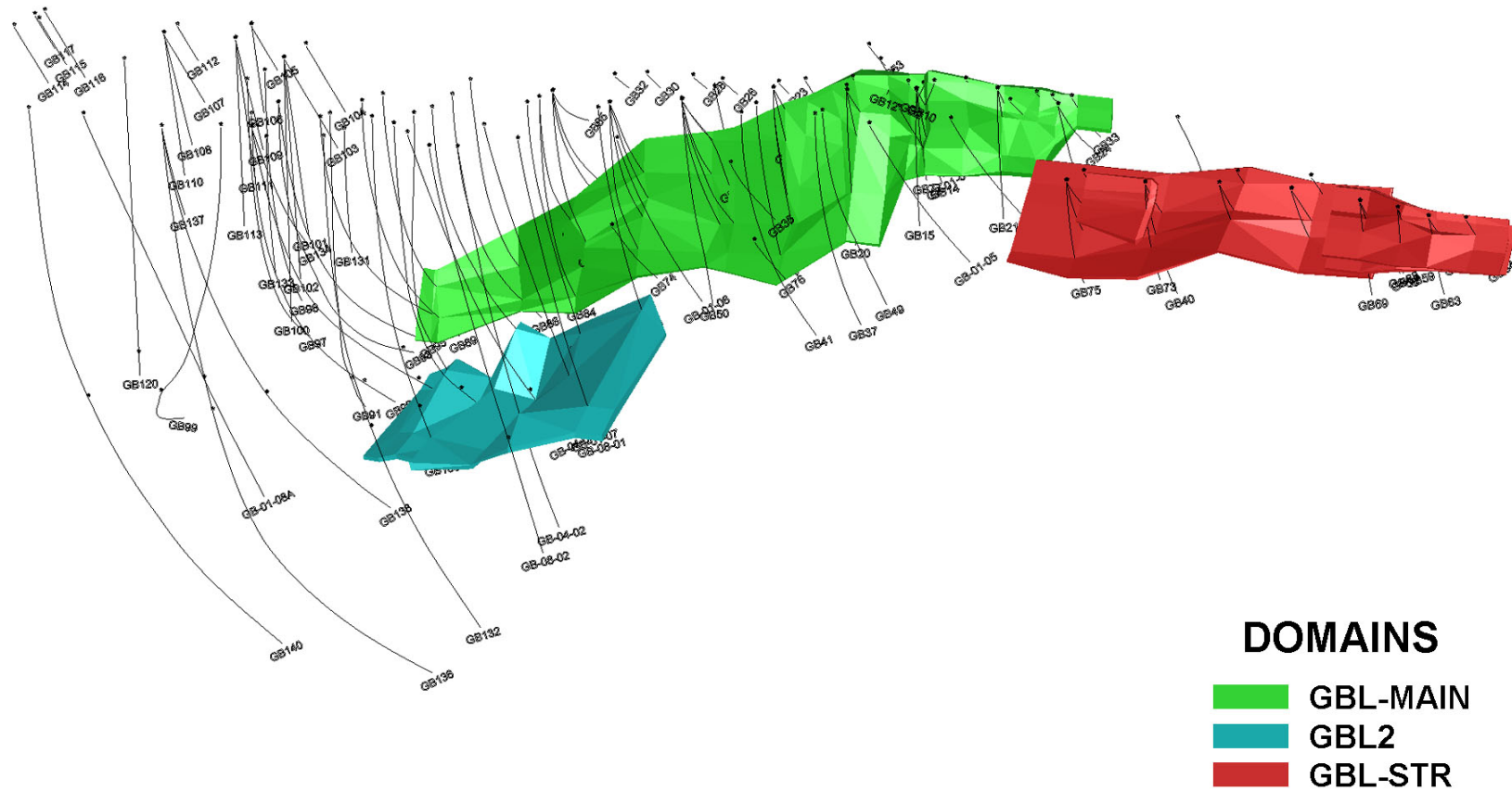
GREAT BURNT COPPER PROJECT 3D DOMAINS



DOMAINS

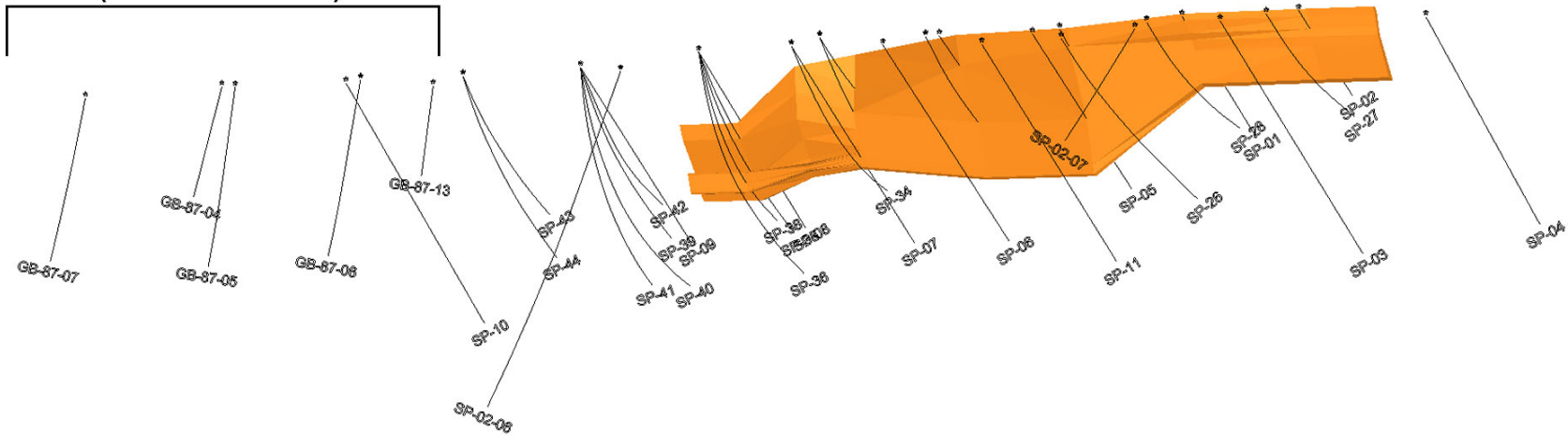
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- GBL-STR
- SOUTH POND COPPER

GREAT BURNT COPPER PROJECT - MAIN 3D DOMAINS

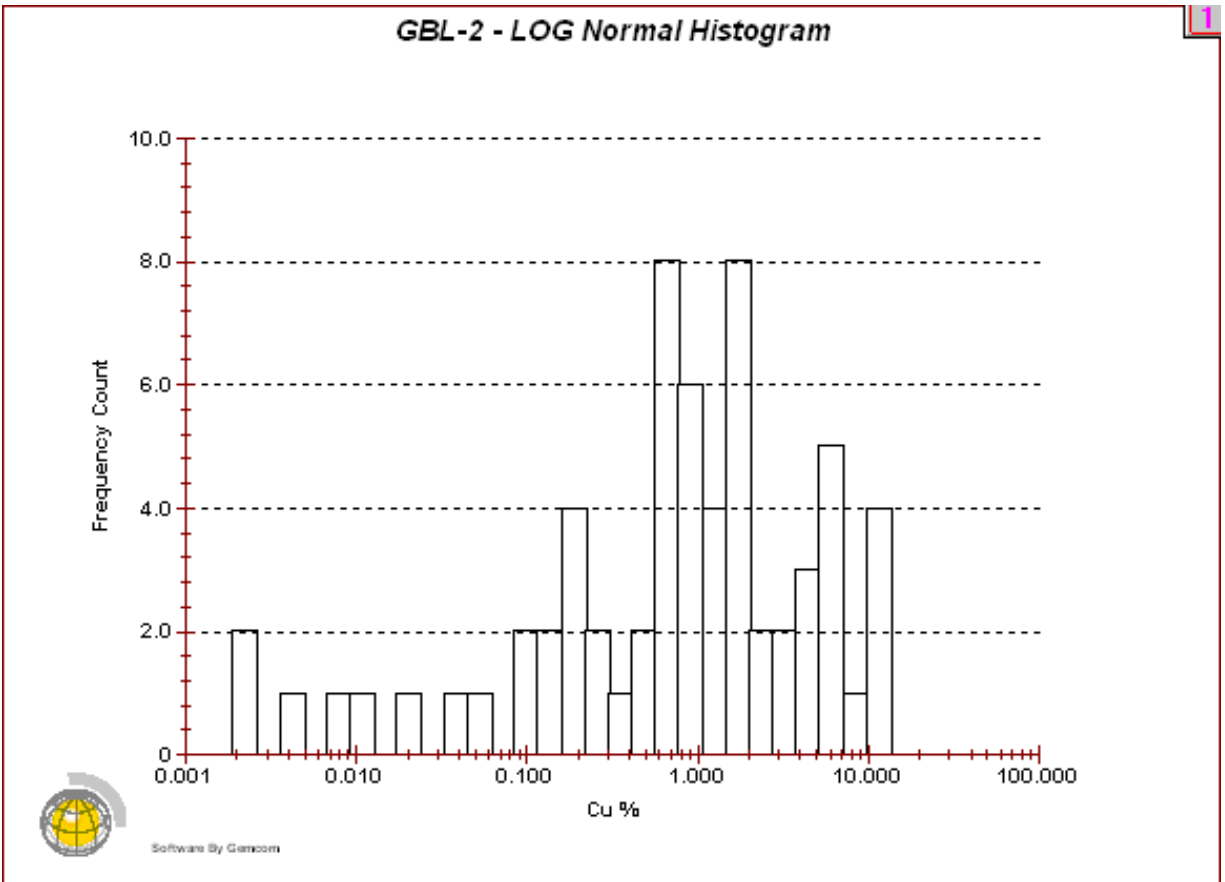
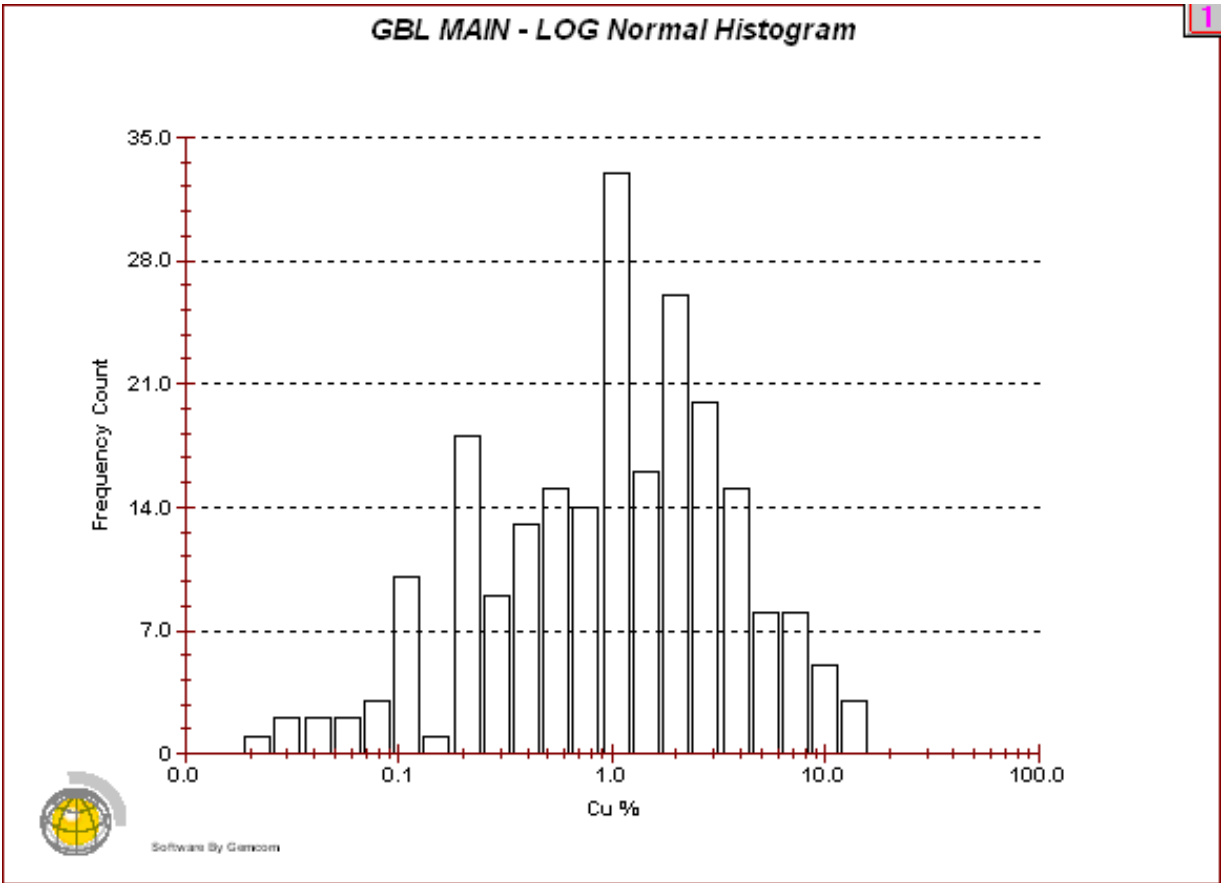


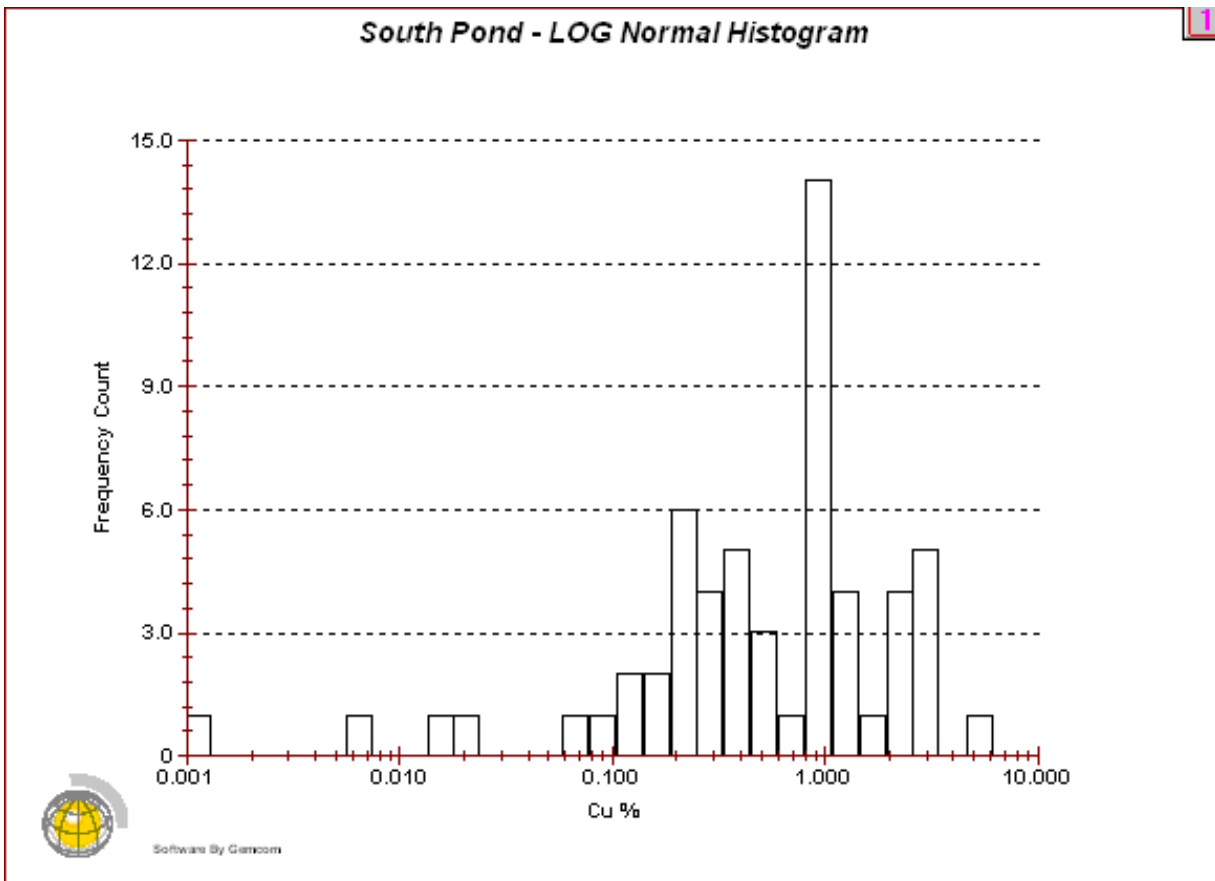
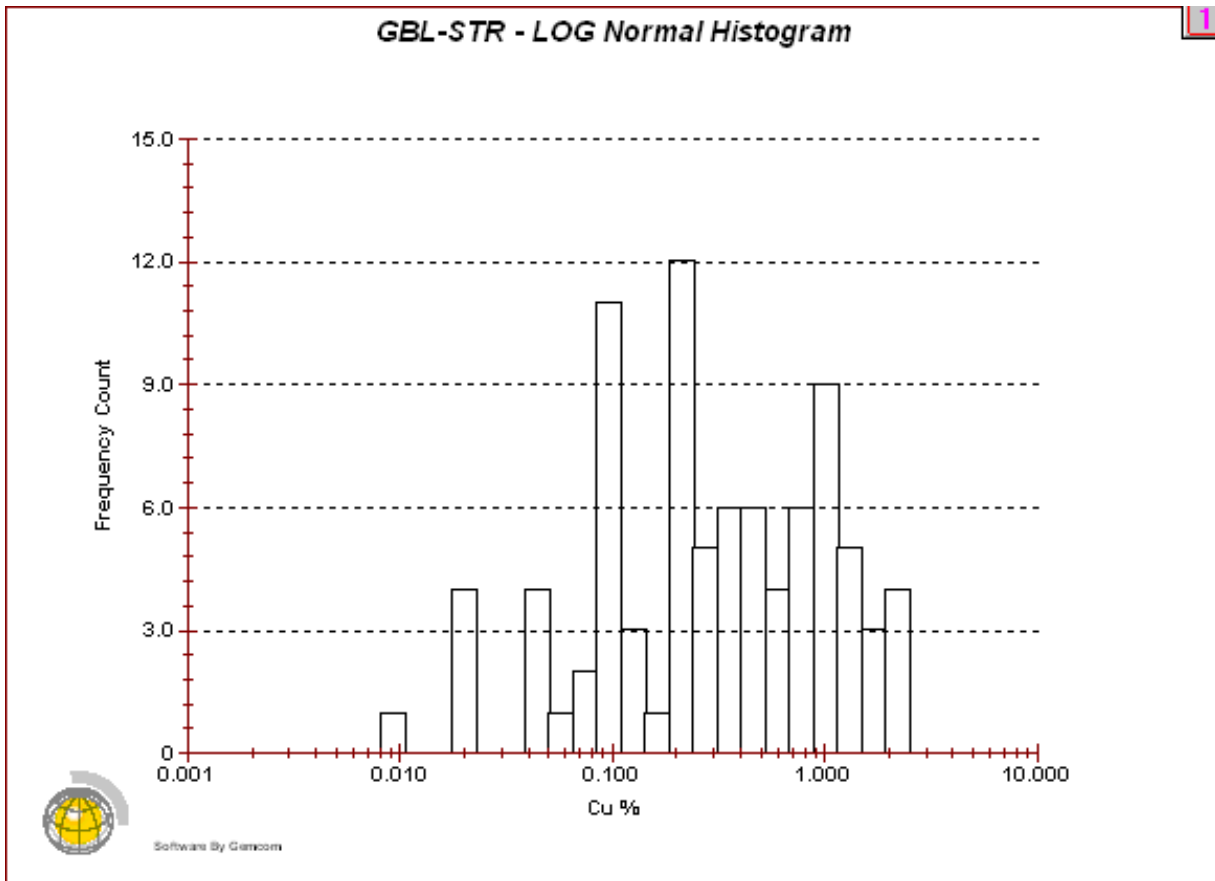
GREAT BURNT COPPER PROJECT SOUTH POND COPPER 3D DOMAIN

SOUTH POND GOLD TARGET
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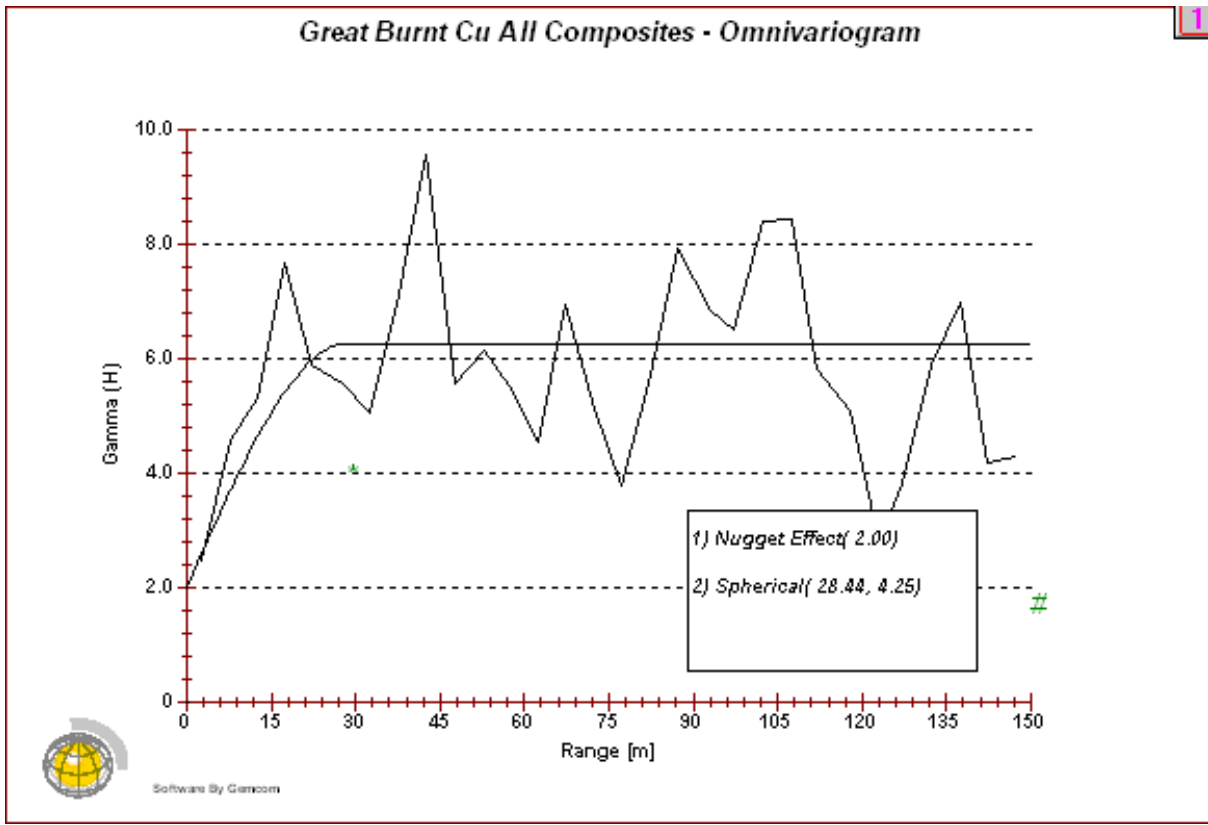


APPENDIX III. LOG NORMAL HISTOGRAMS

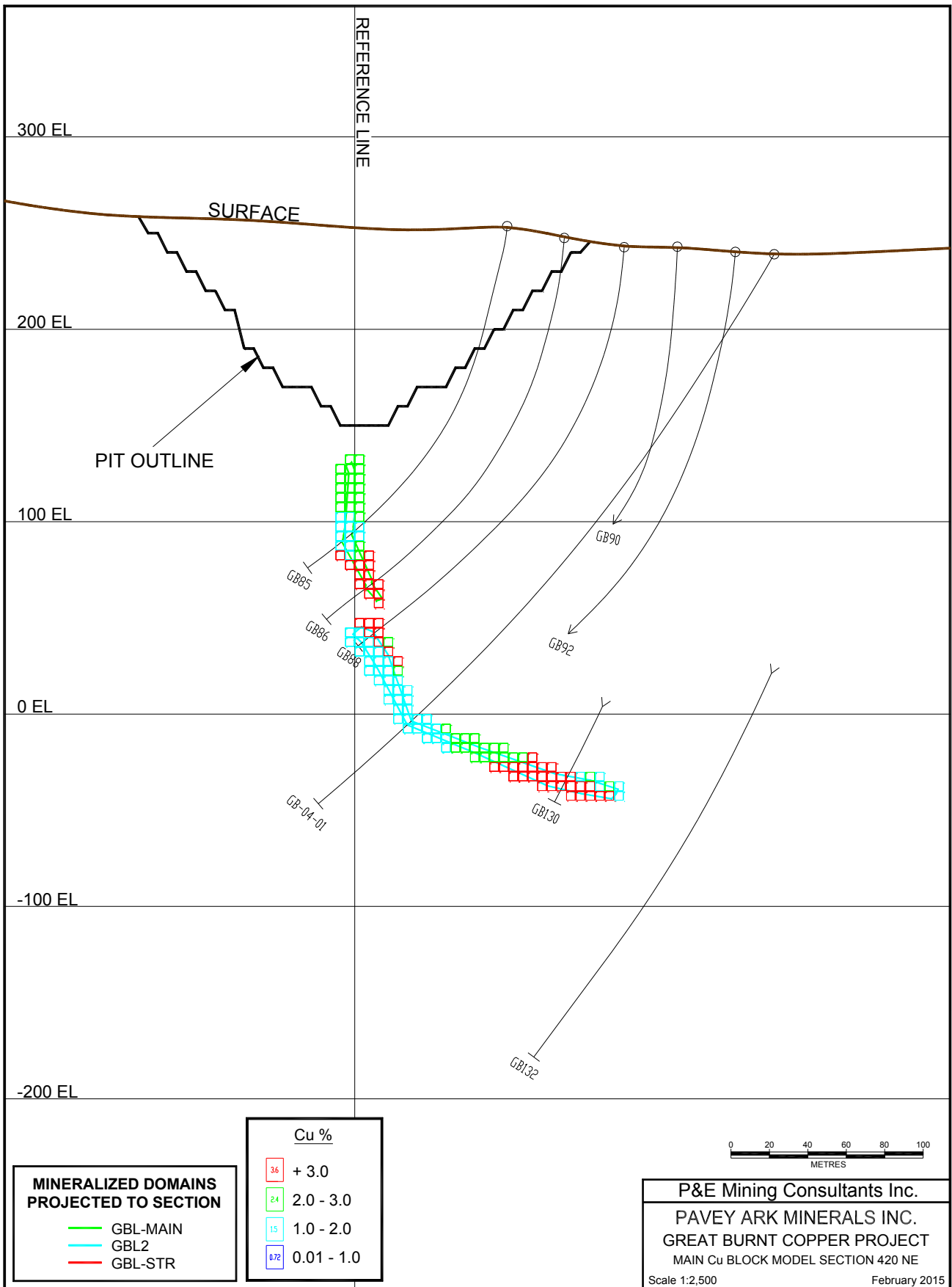


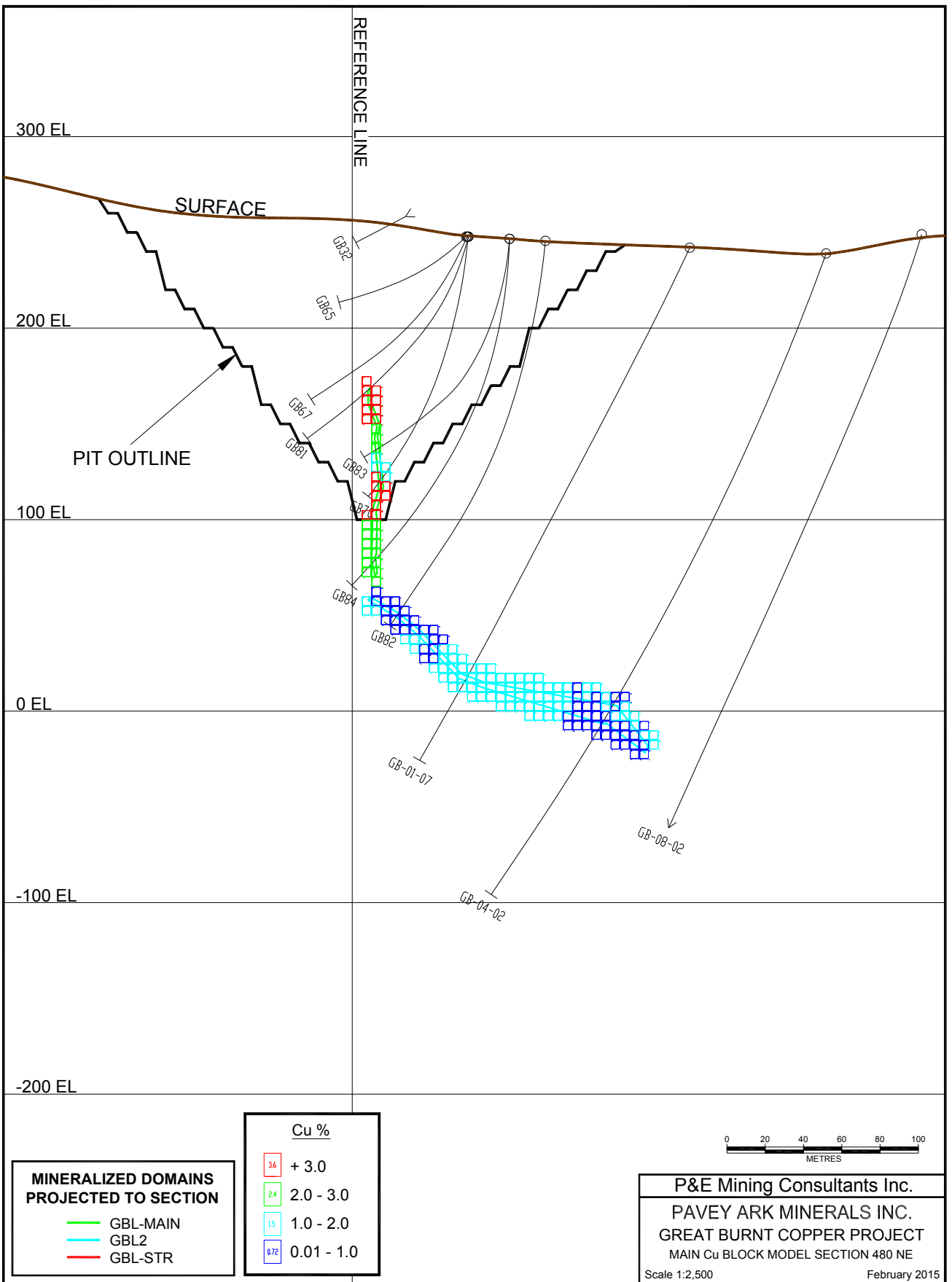


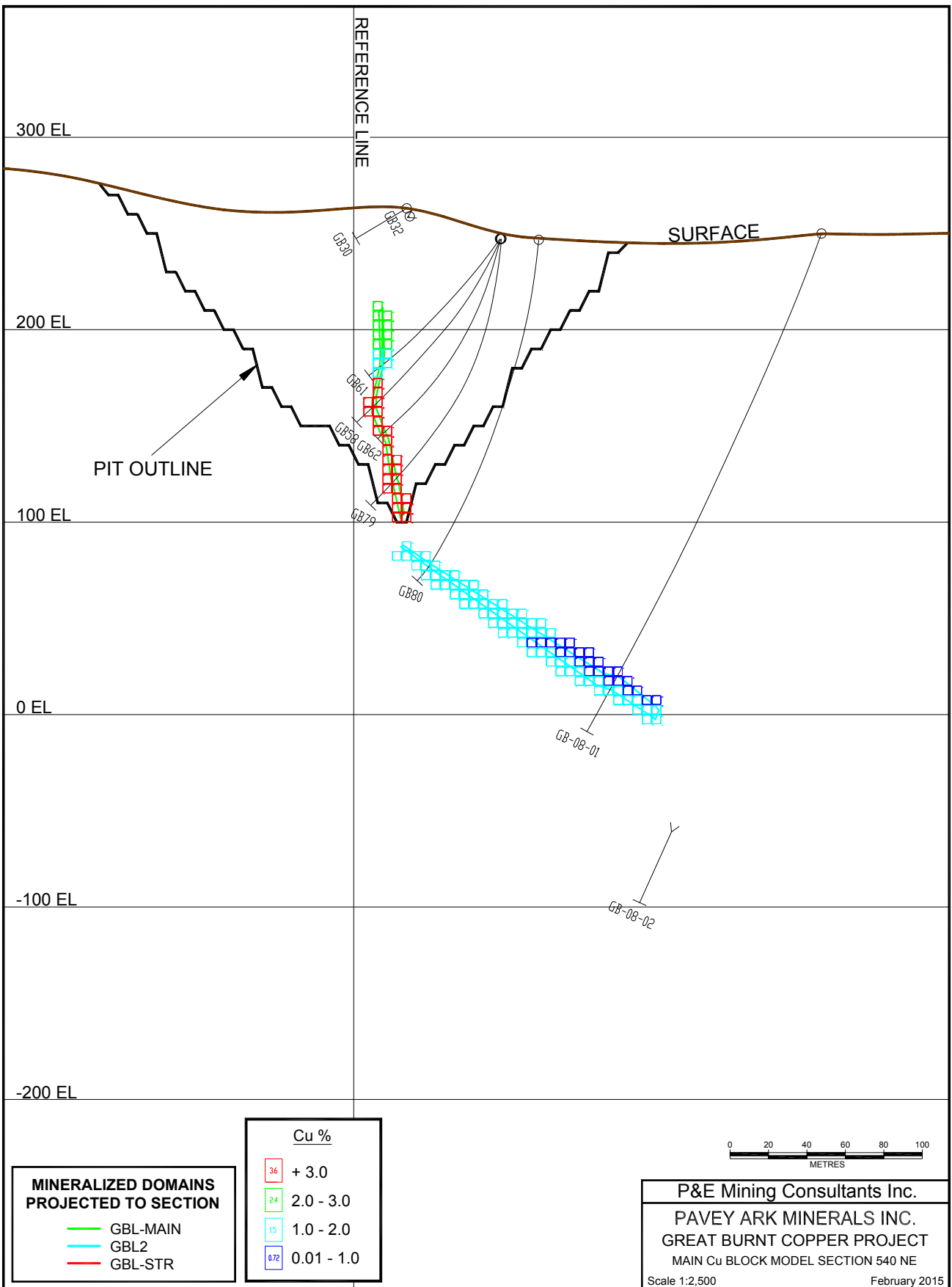
APPENDIX IV. VARIOGRAM

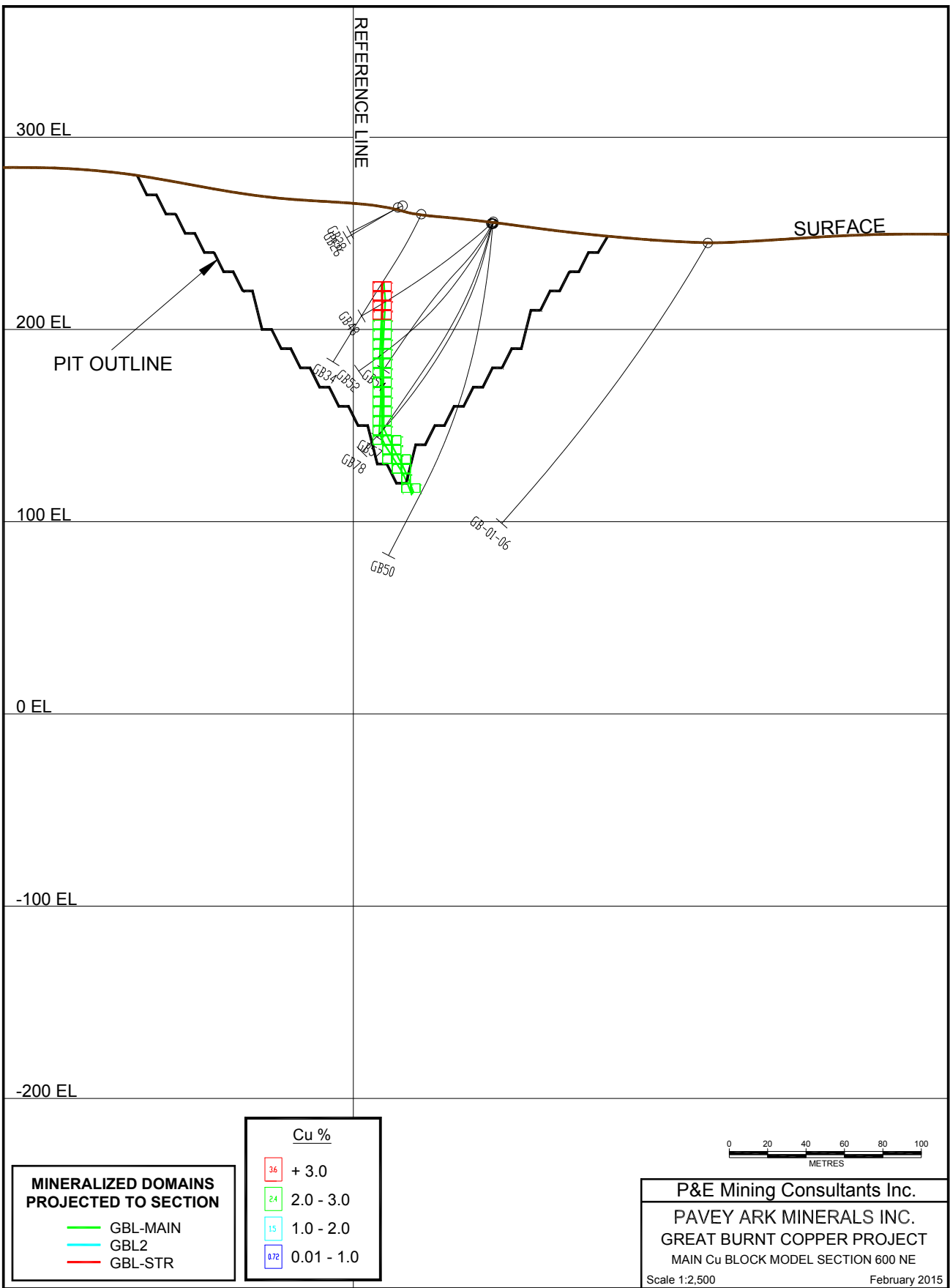


APPENDIX V. CU BLOCK MODEL CROSS SECTIONS AND PLANS





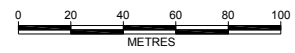




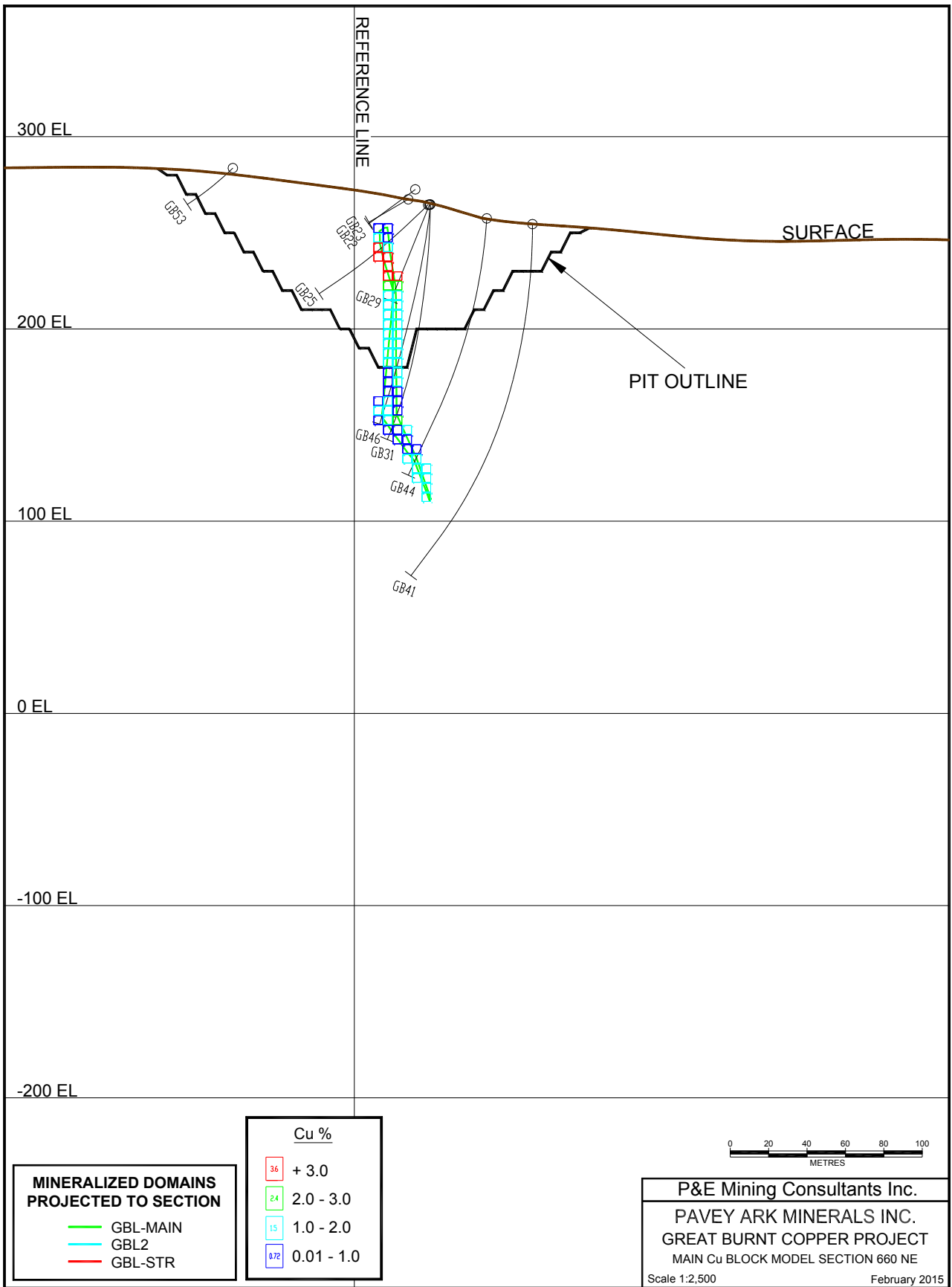
**MINERALIZED DOMAINS
PROJECTED TO SECTION**

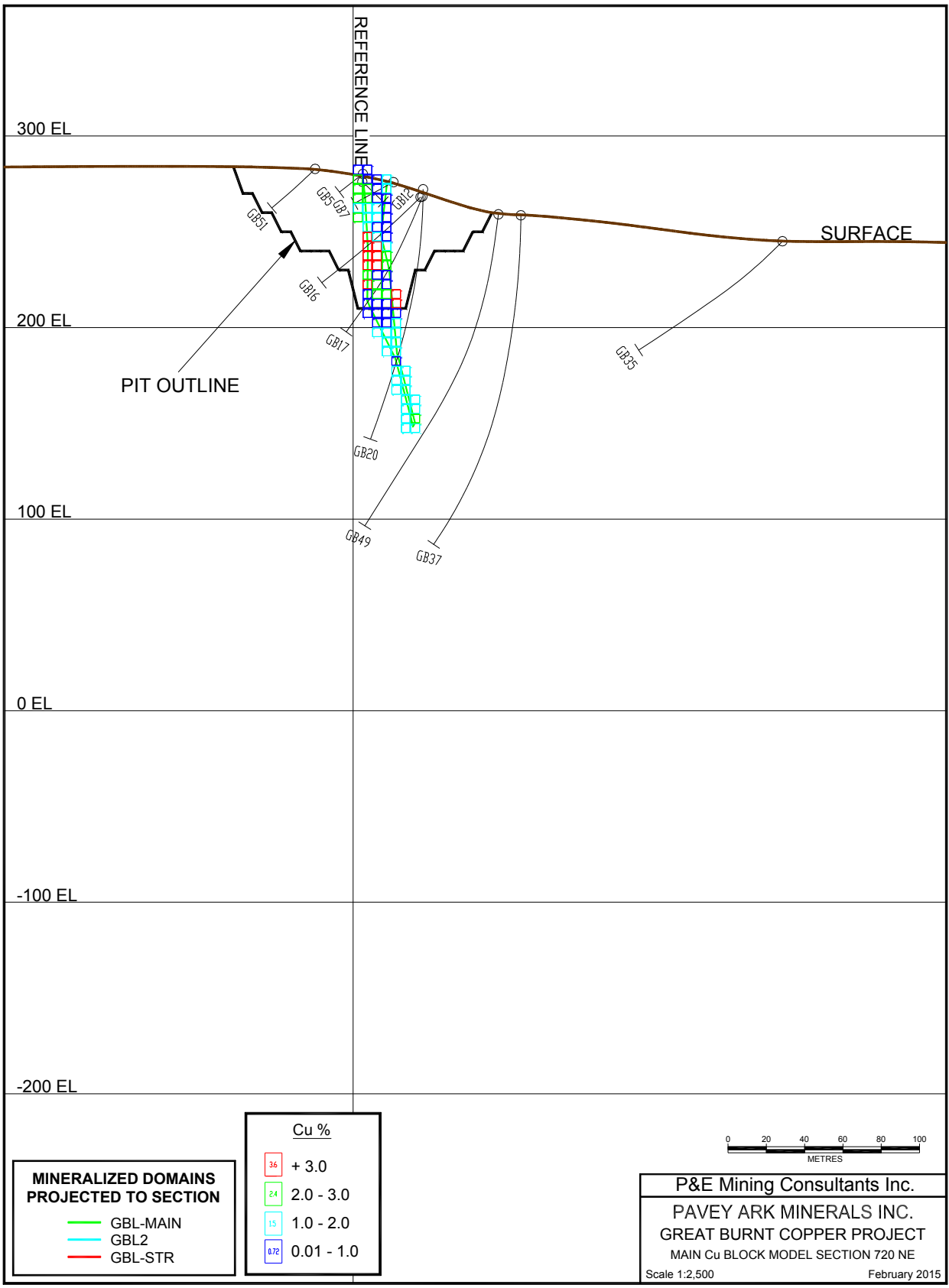
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- GBL-STR

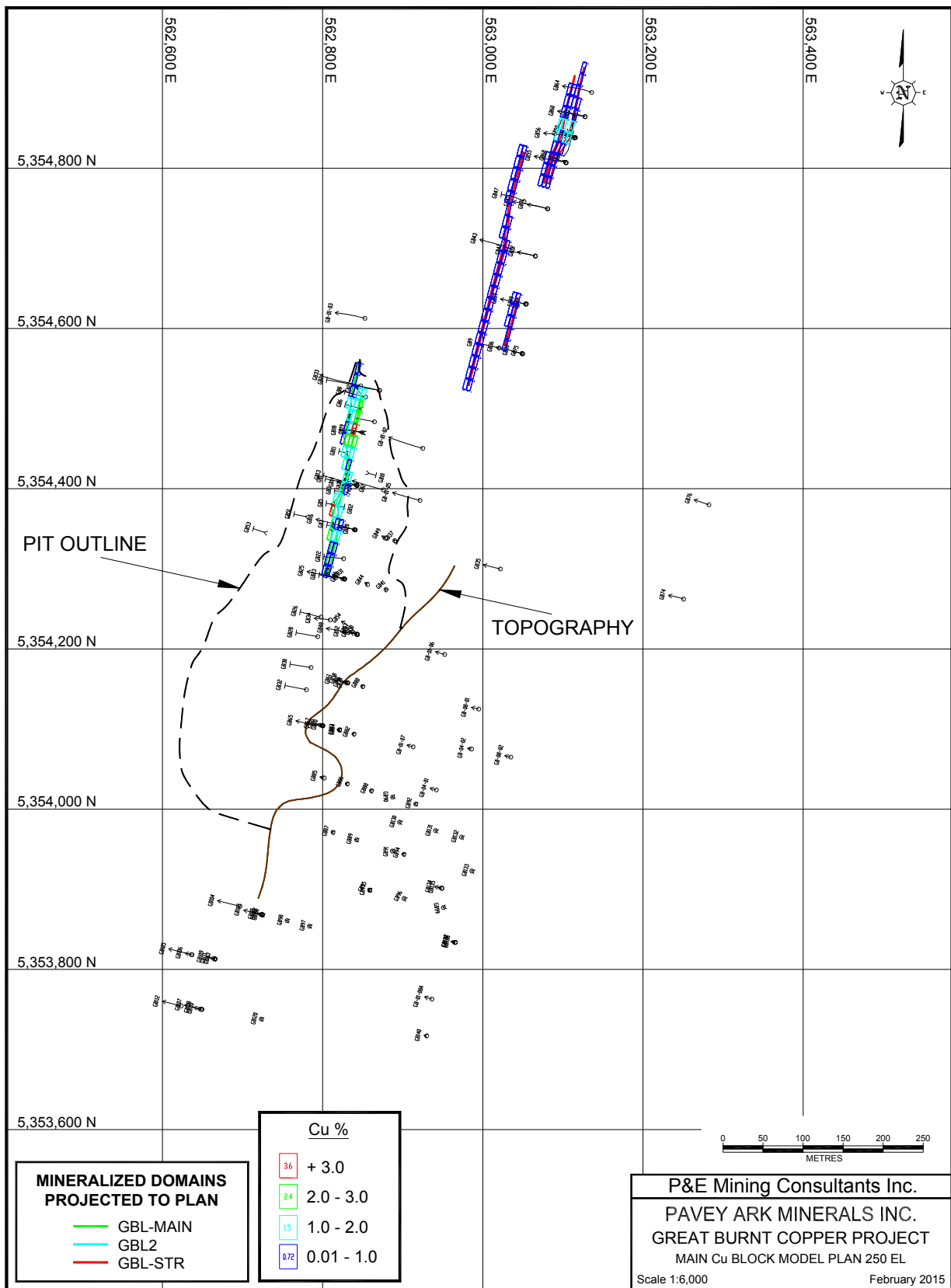
Cu %	
36	+ 3.0
24	2.0 - 3.0
15	1.0 - 2.0
0.72	0.01 - 1.0

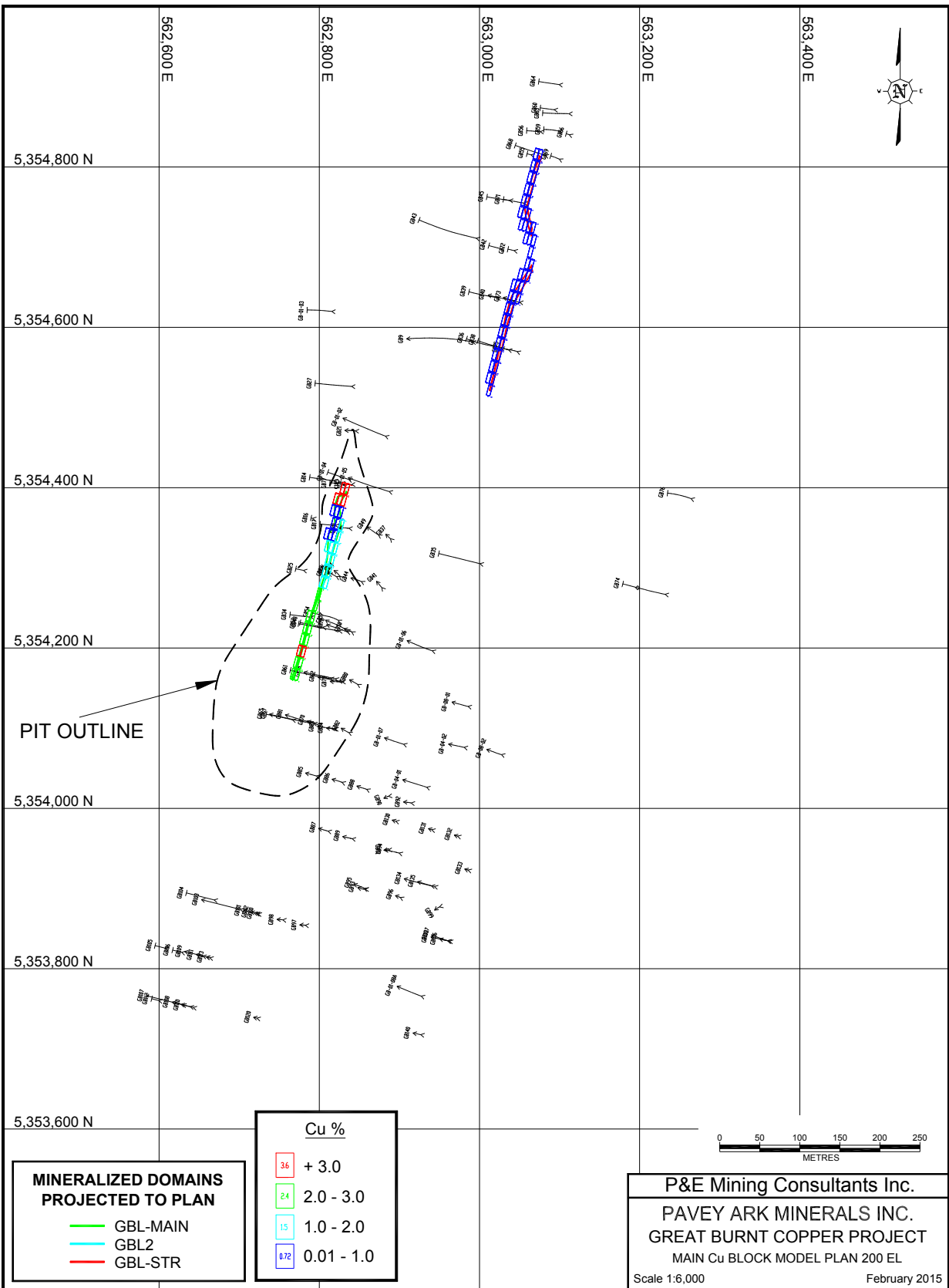


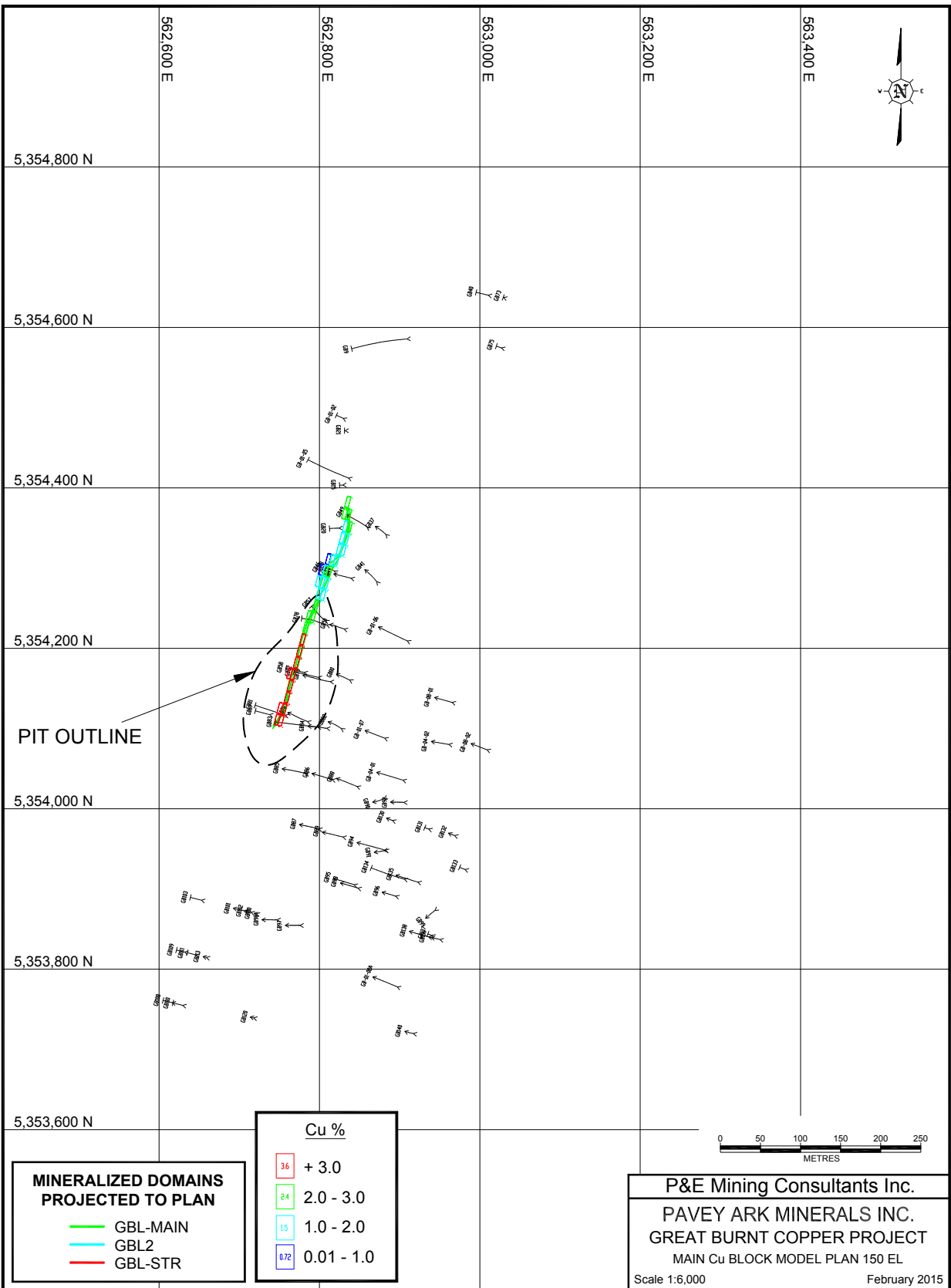
P&E Mining Consultants Inc.
 PAVEY ARK MINERALS INC.
 GREAT BURNT COPPER PROJECT
 MAIN Cu BLOCK MODEL SECTION 600 NE
 Scale 1:2,500 February 2015

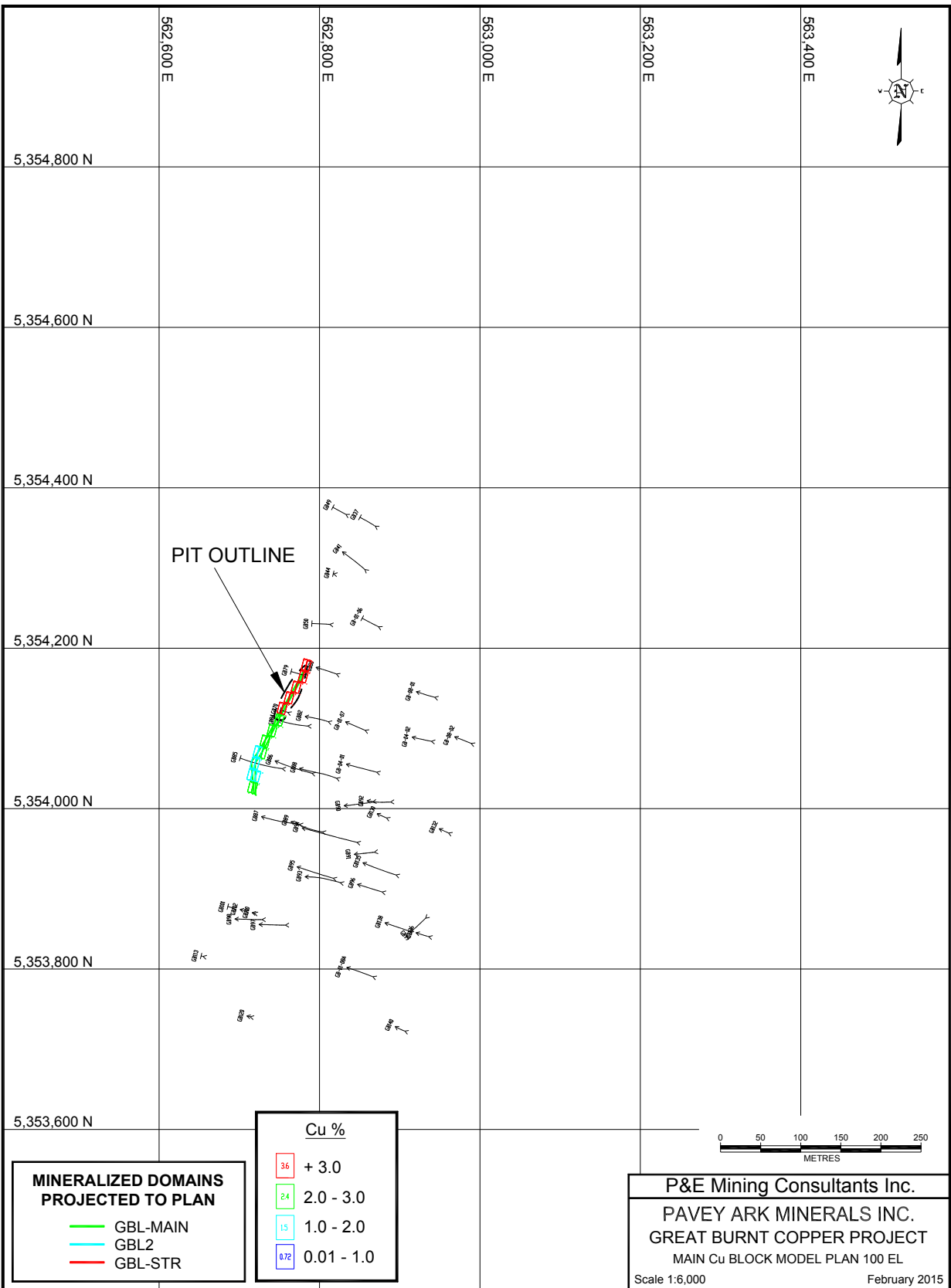


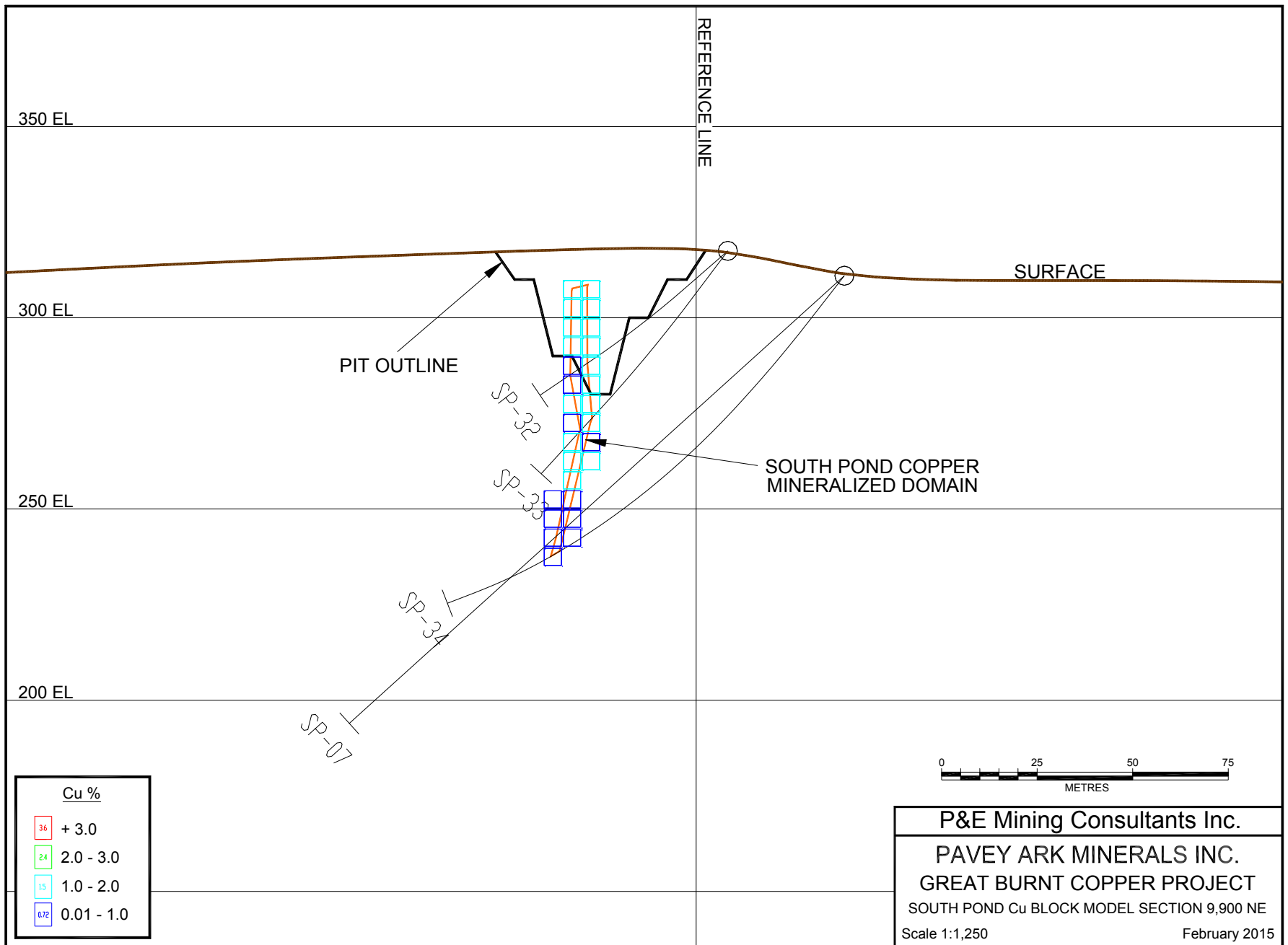


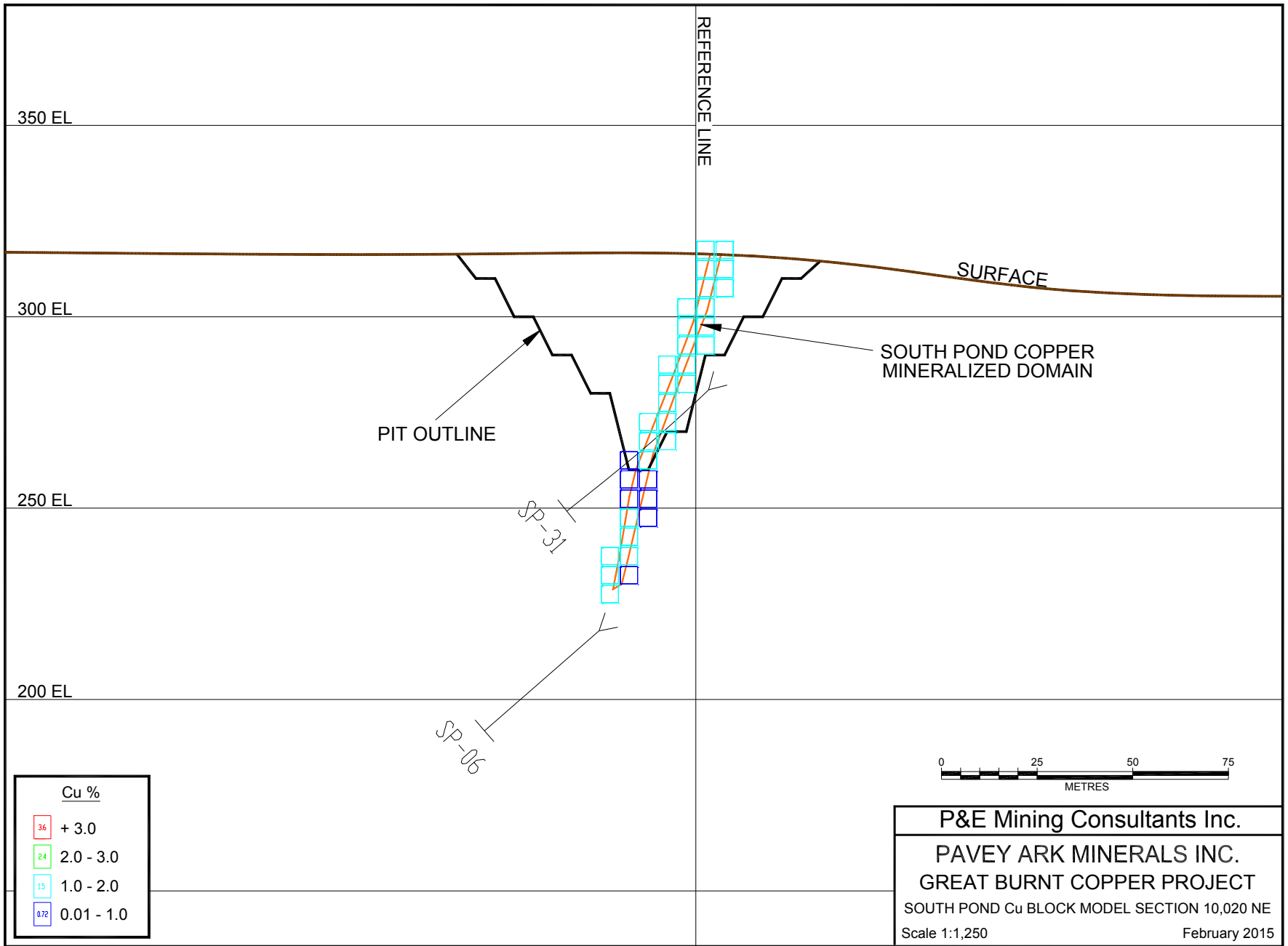


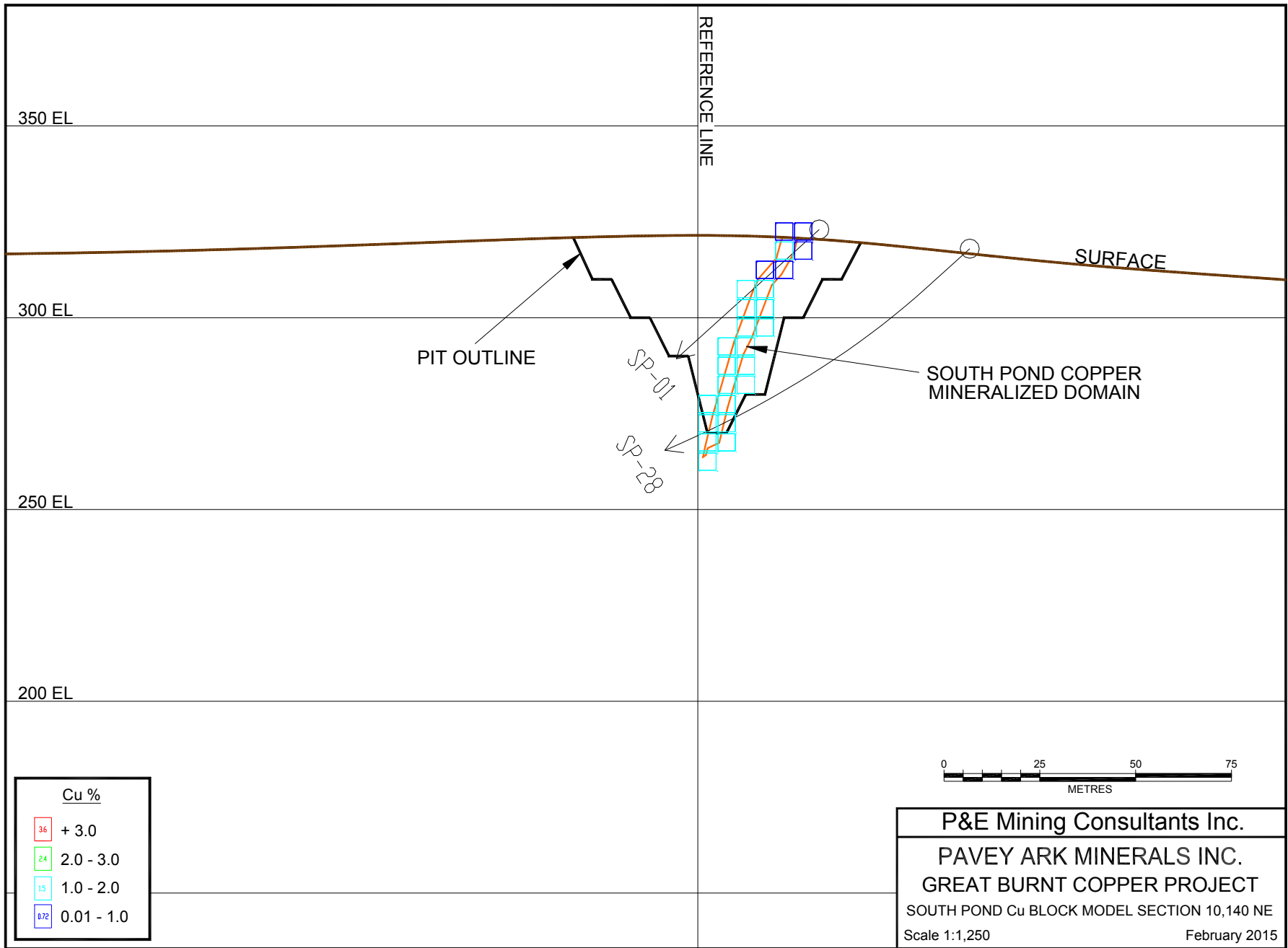


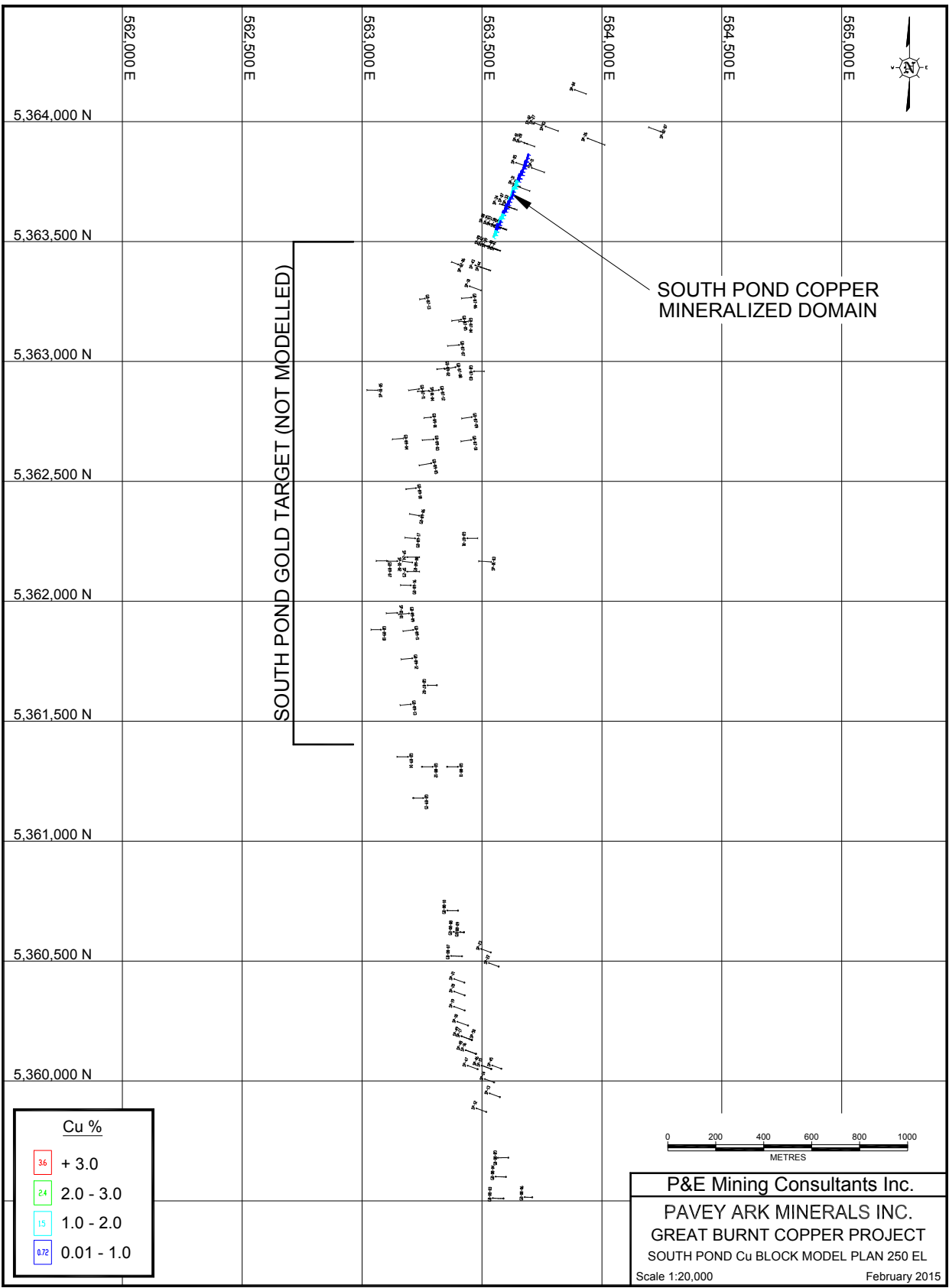


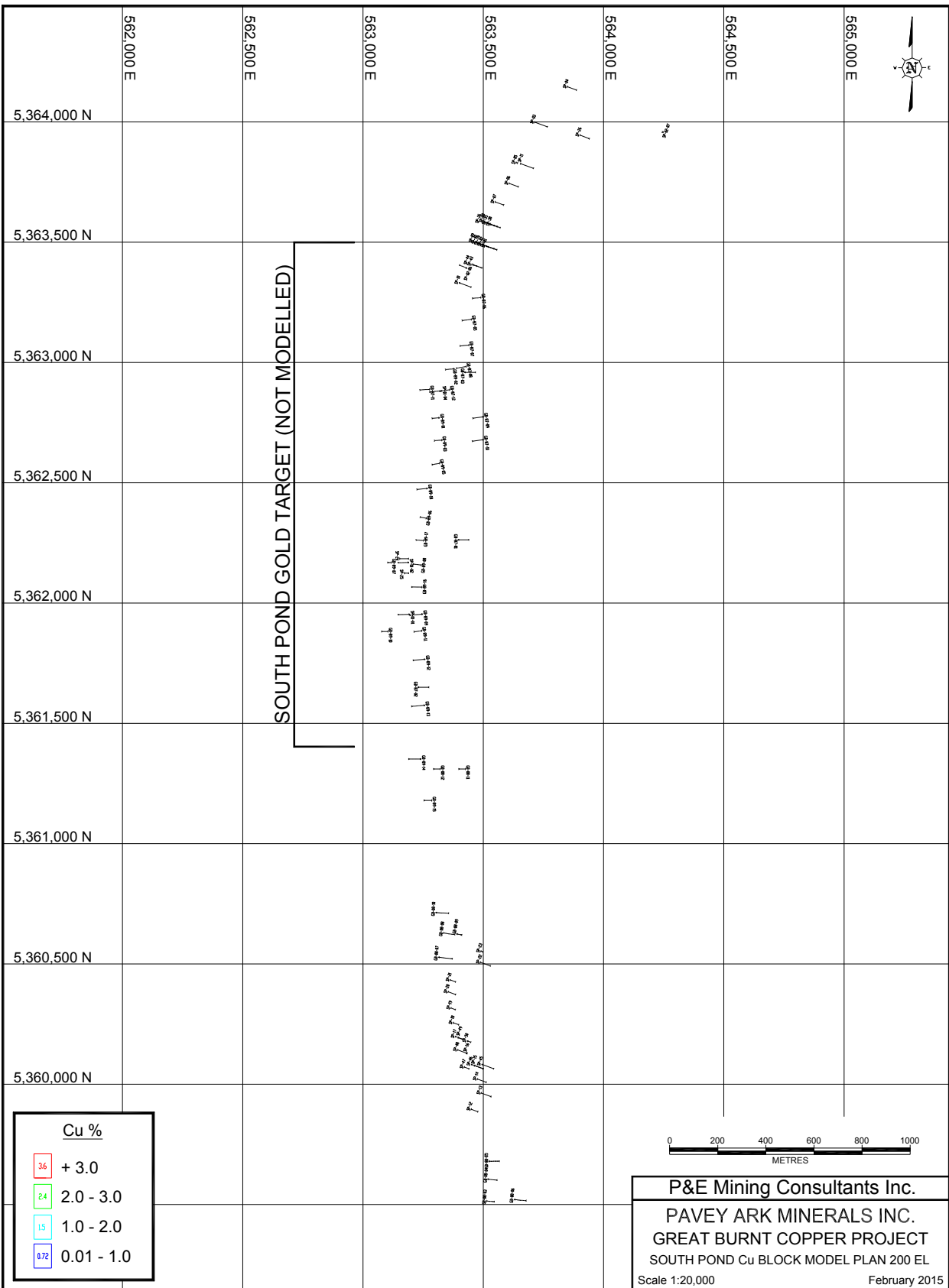




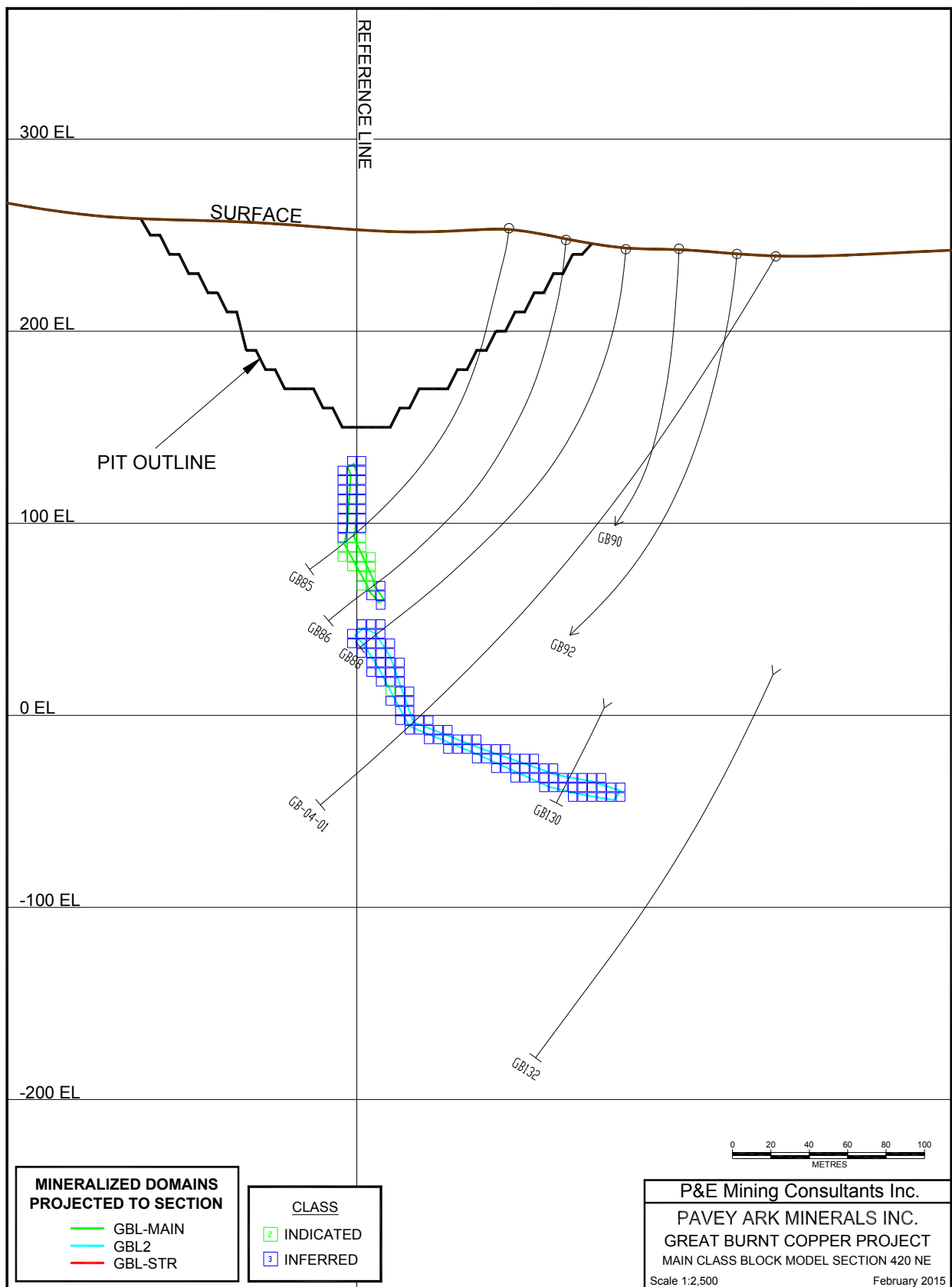


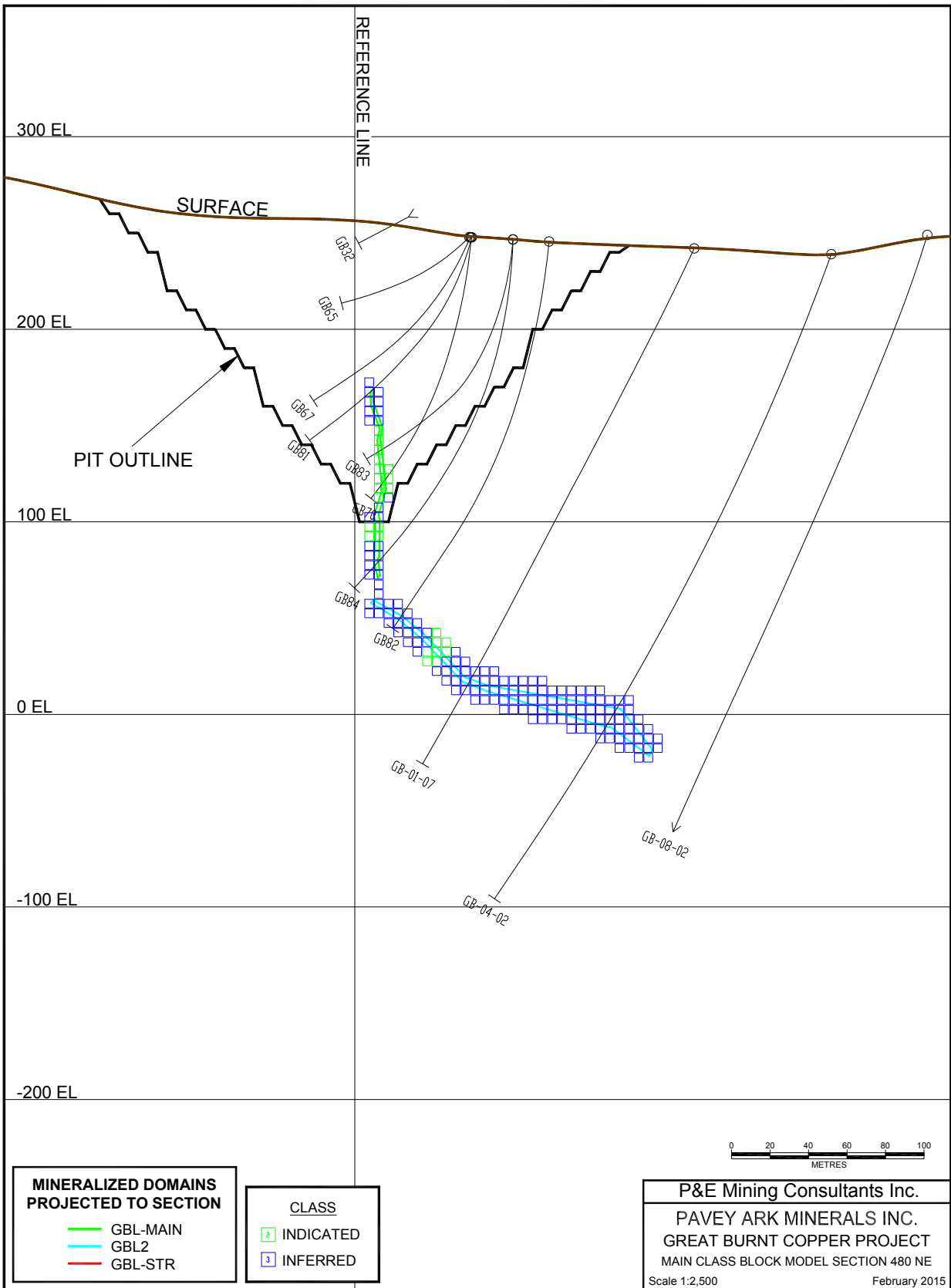


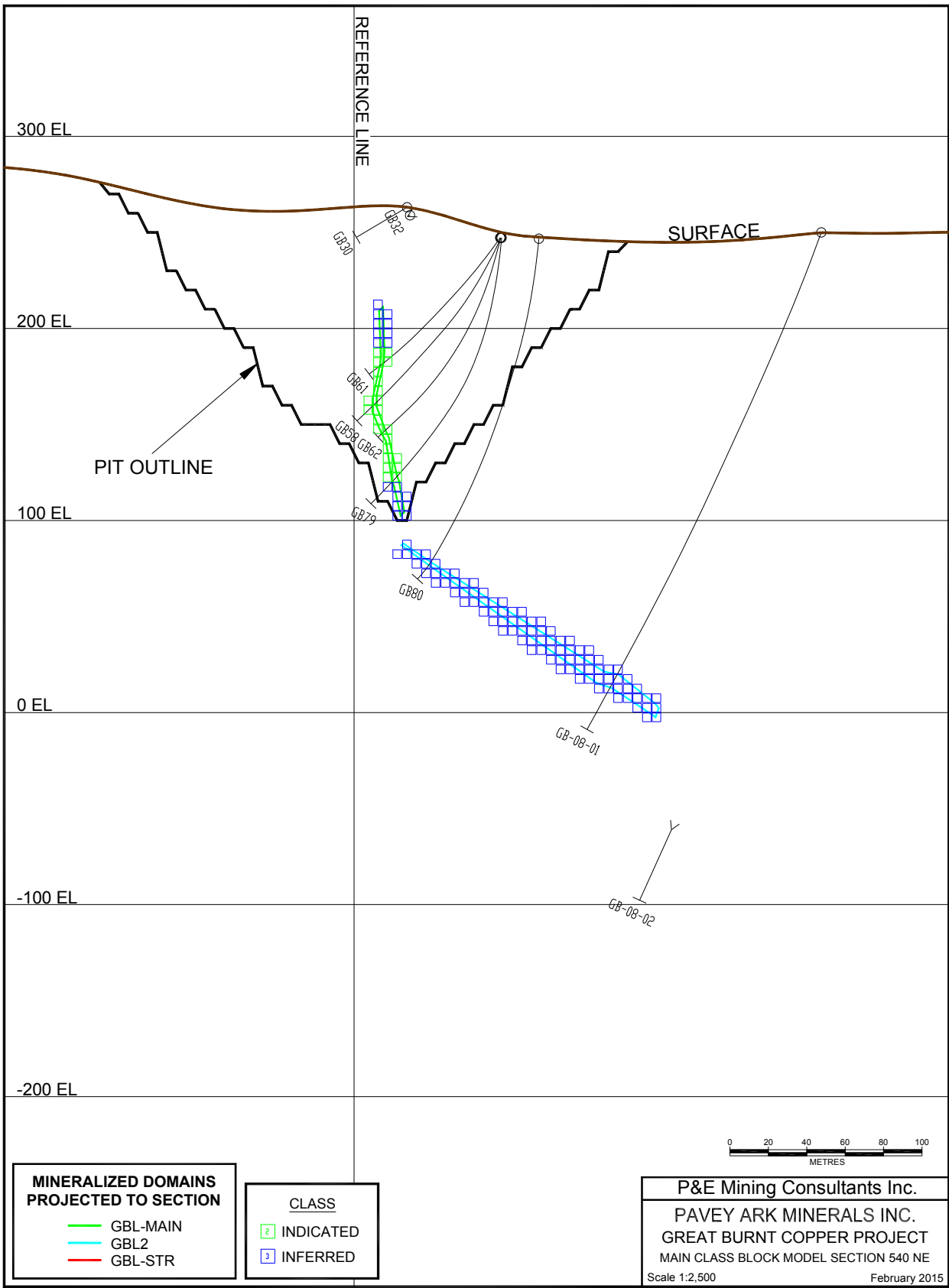


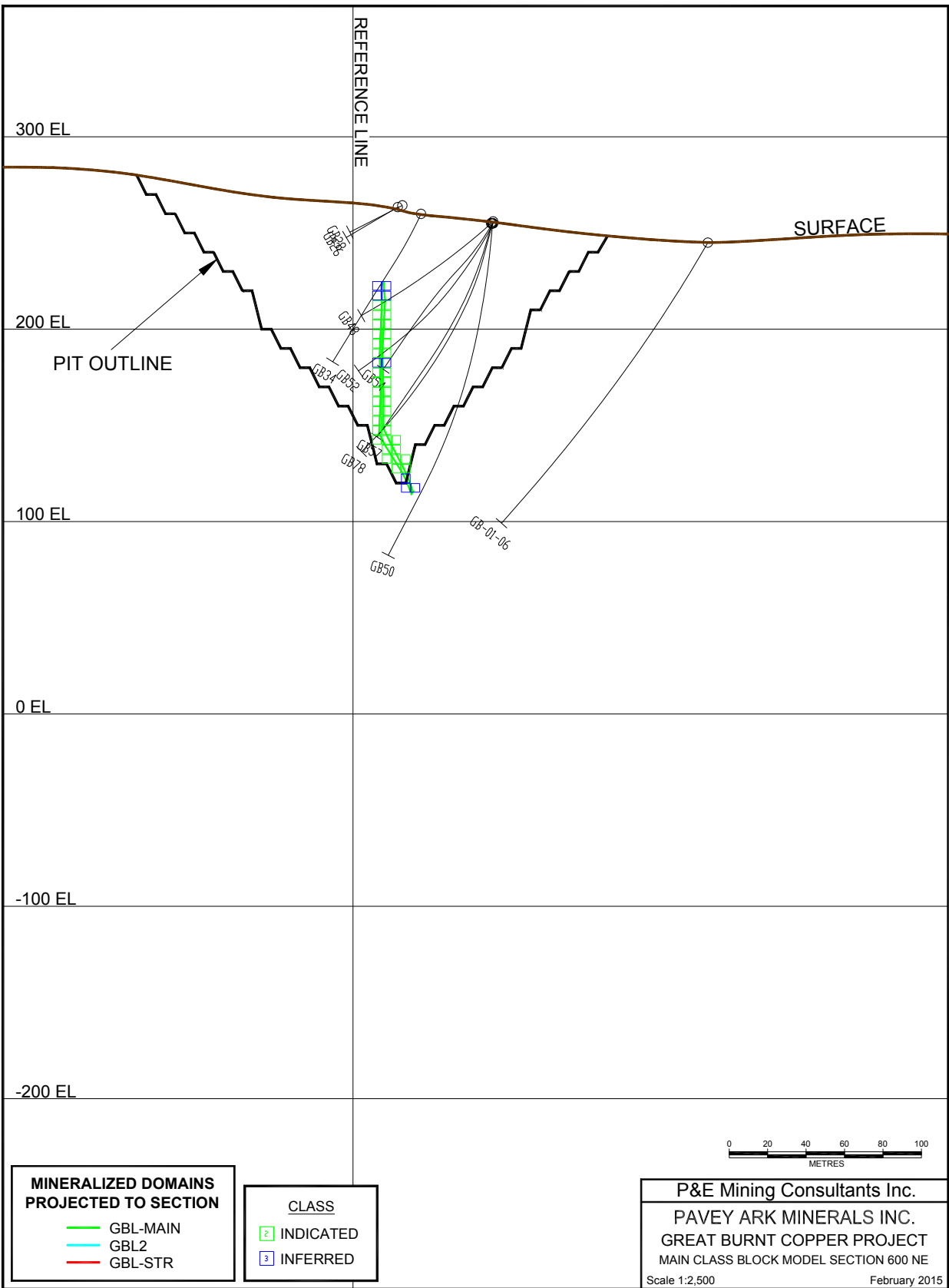


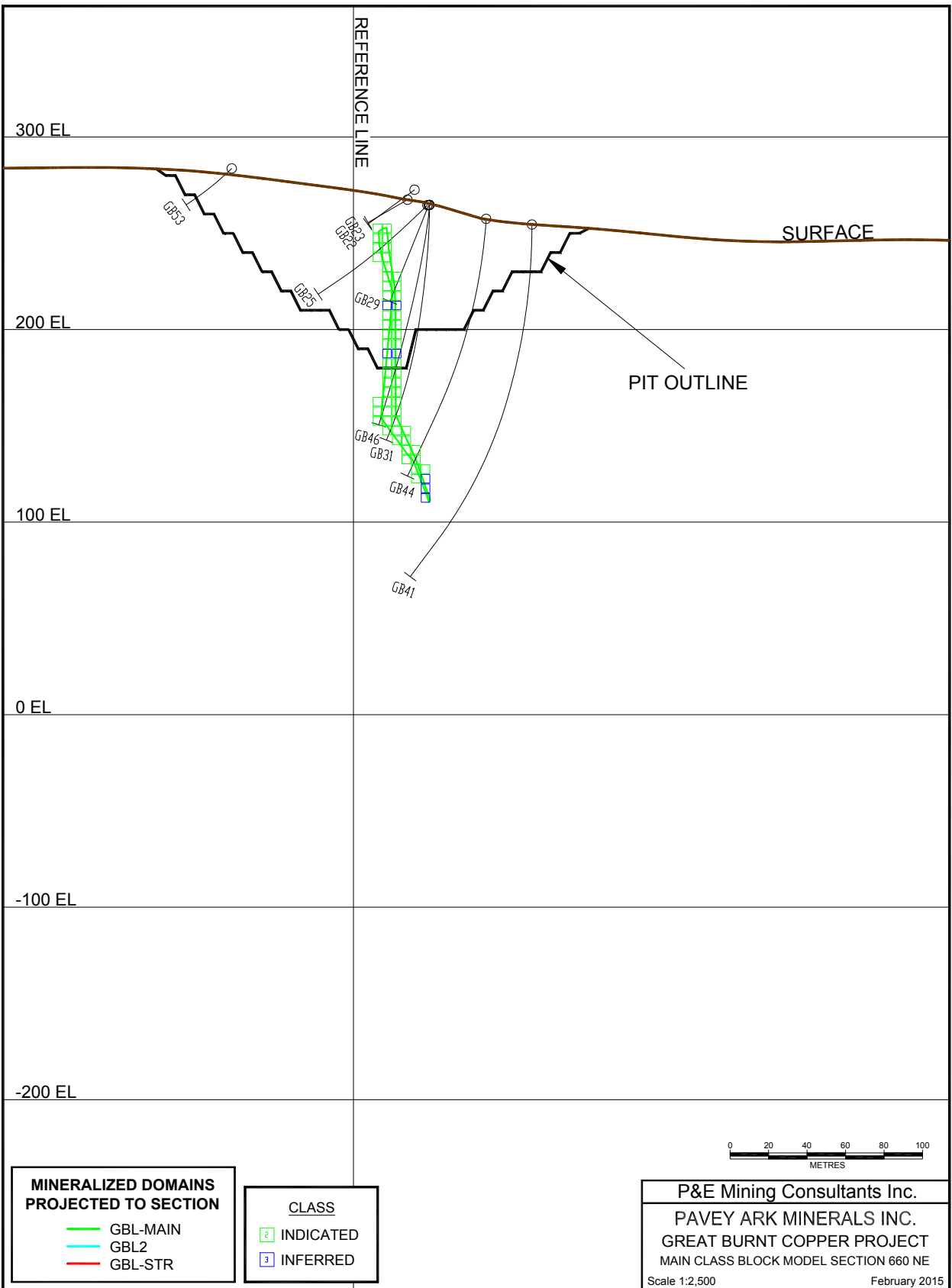
APPENDIX VI. CLASSIFICATION BLOCK MODEL CROSS SECTIONS AND PLANS

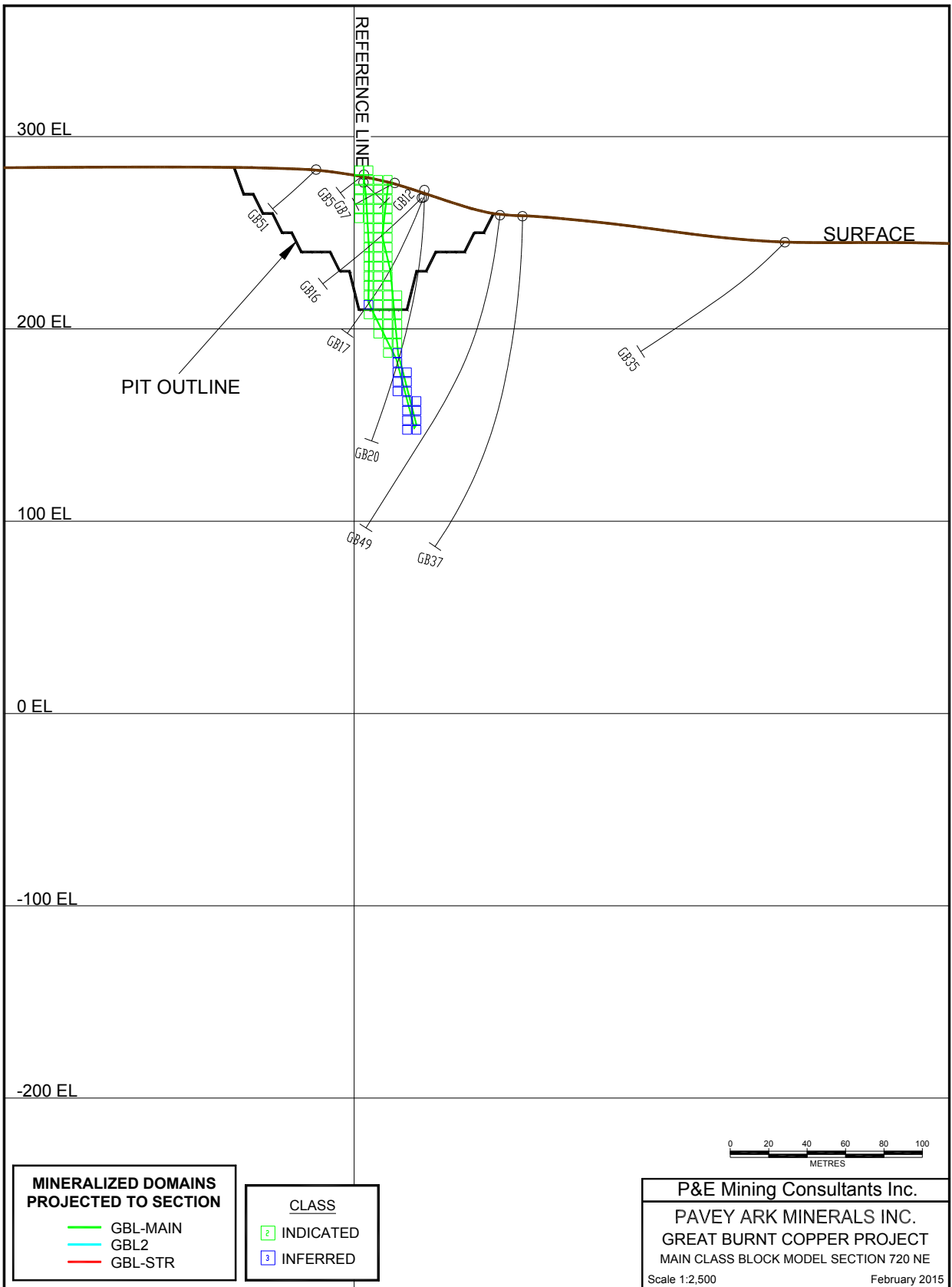


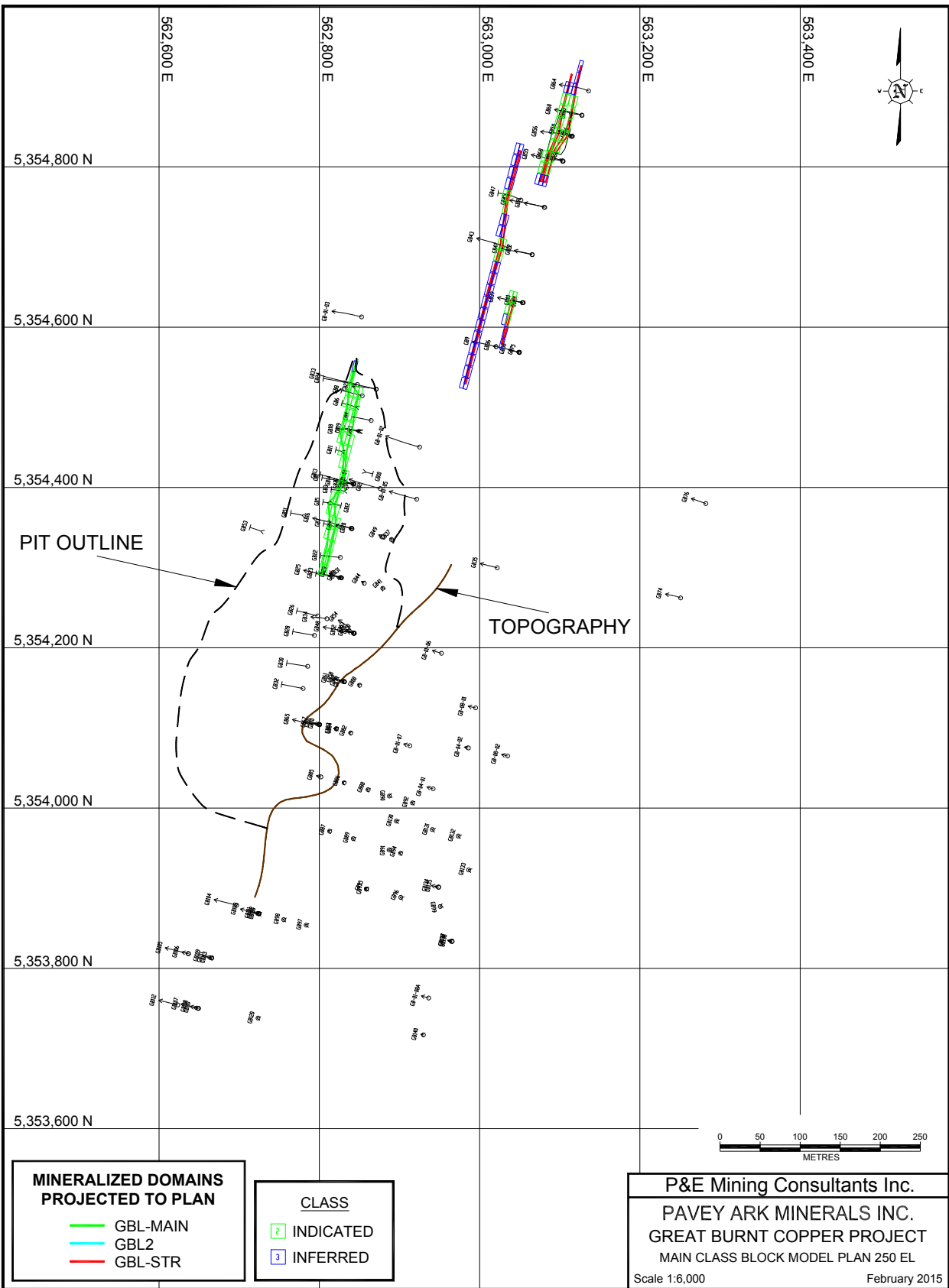


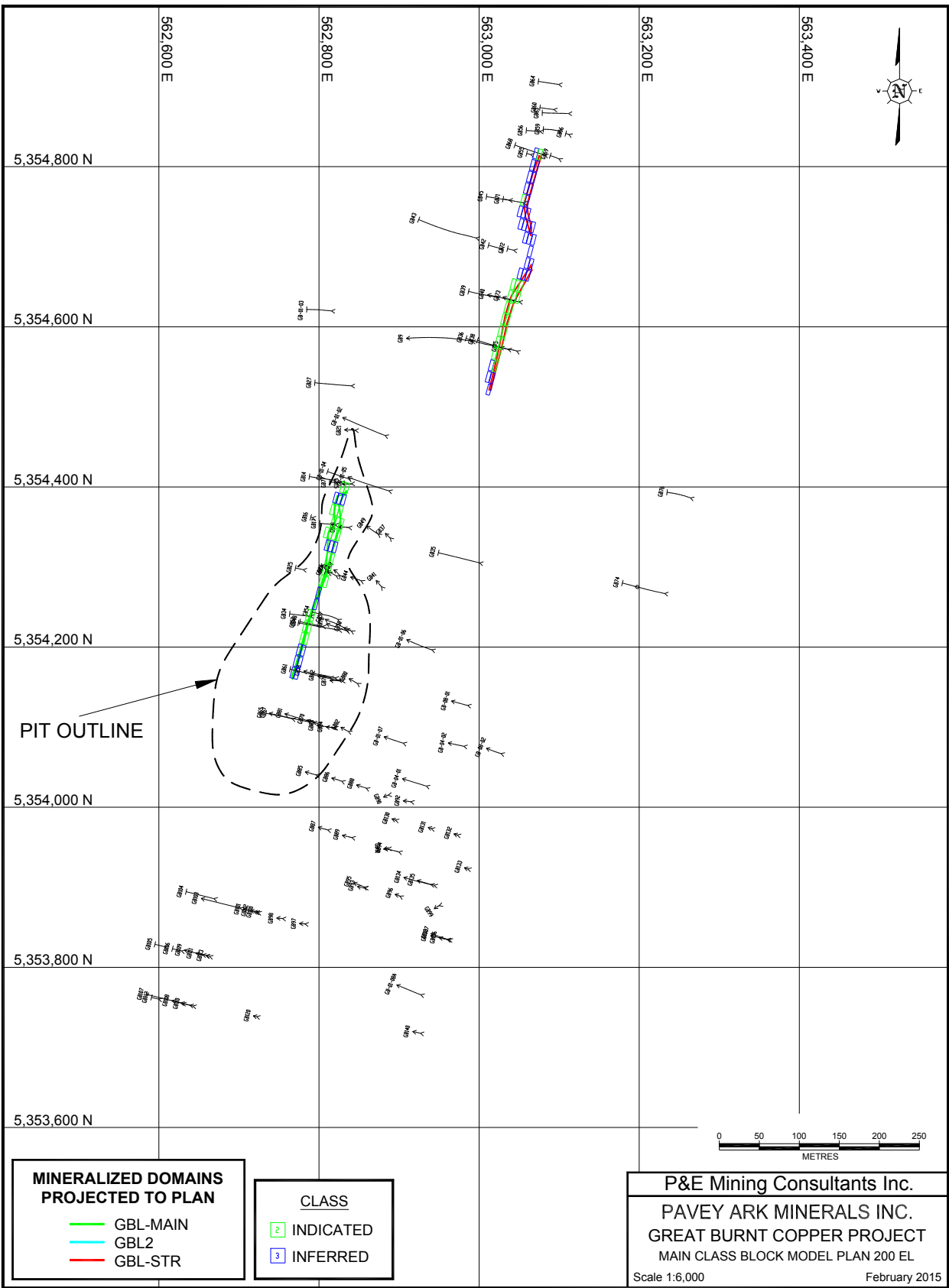


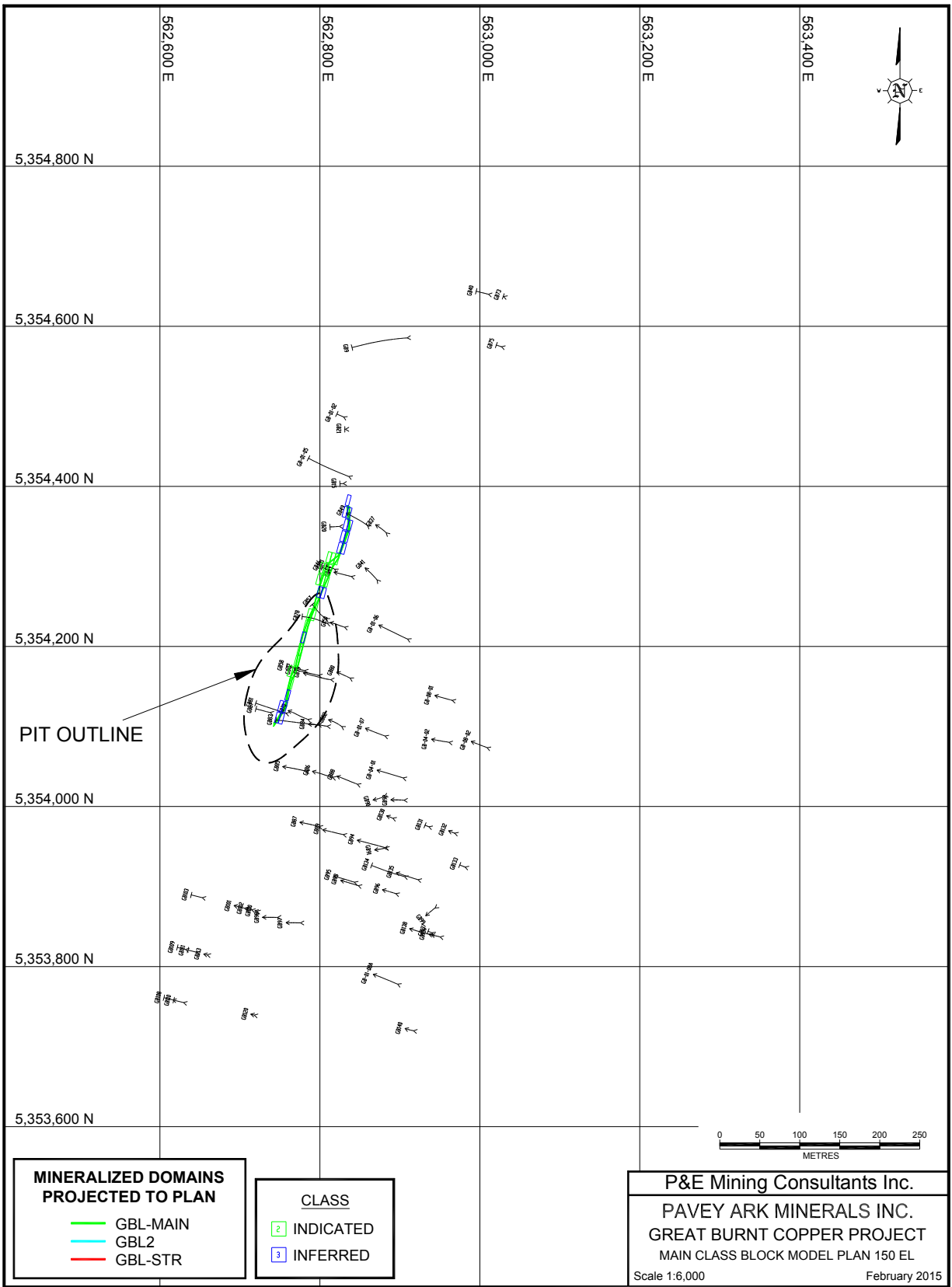


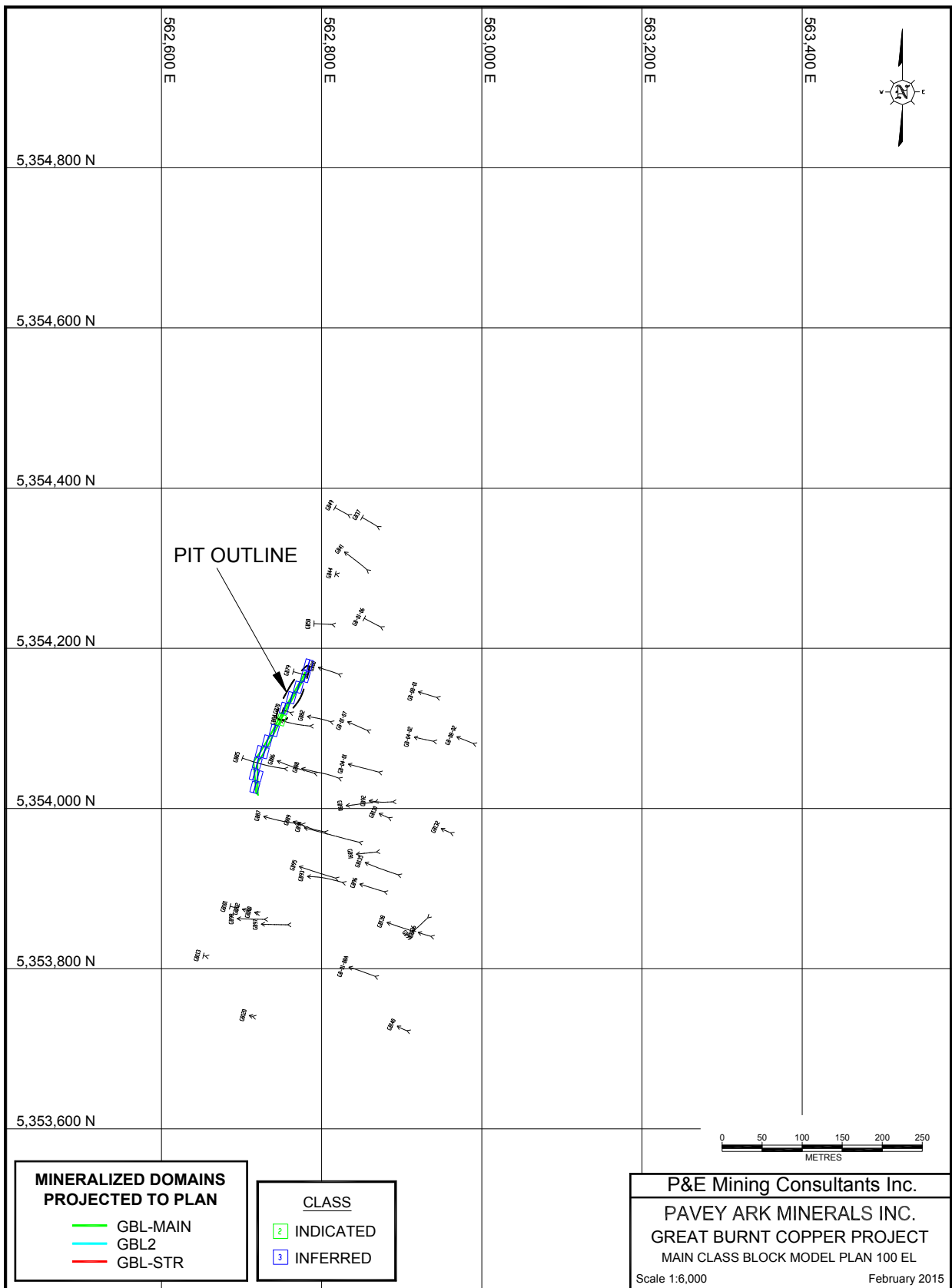


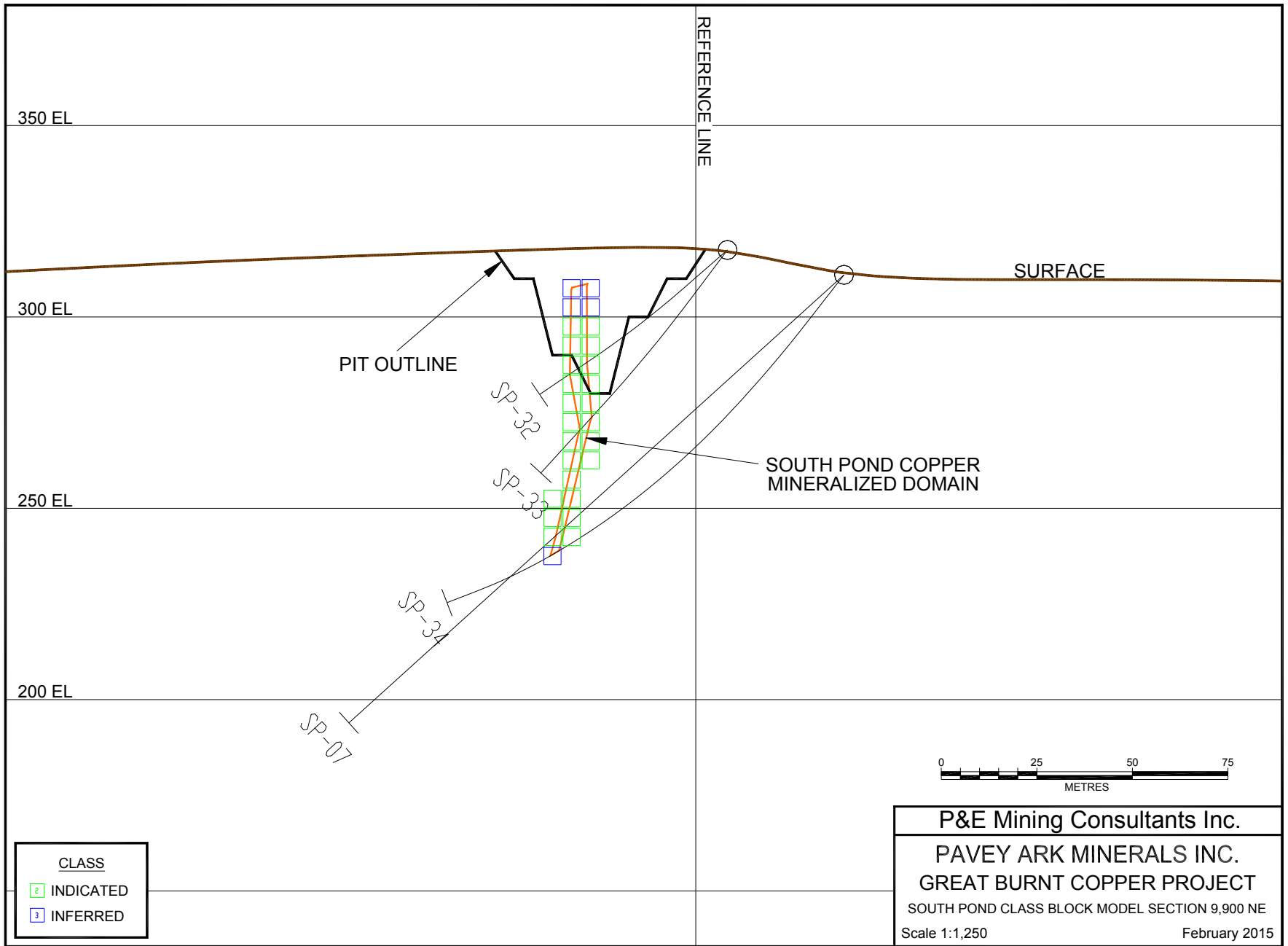


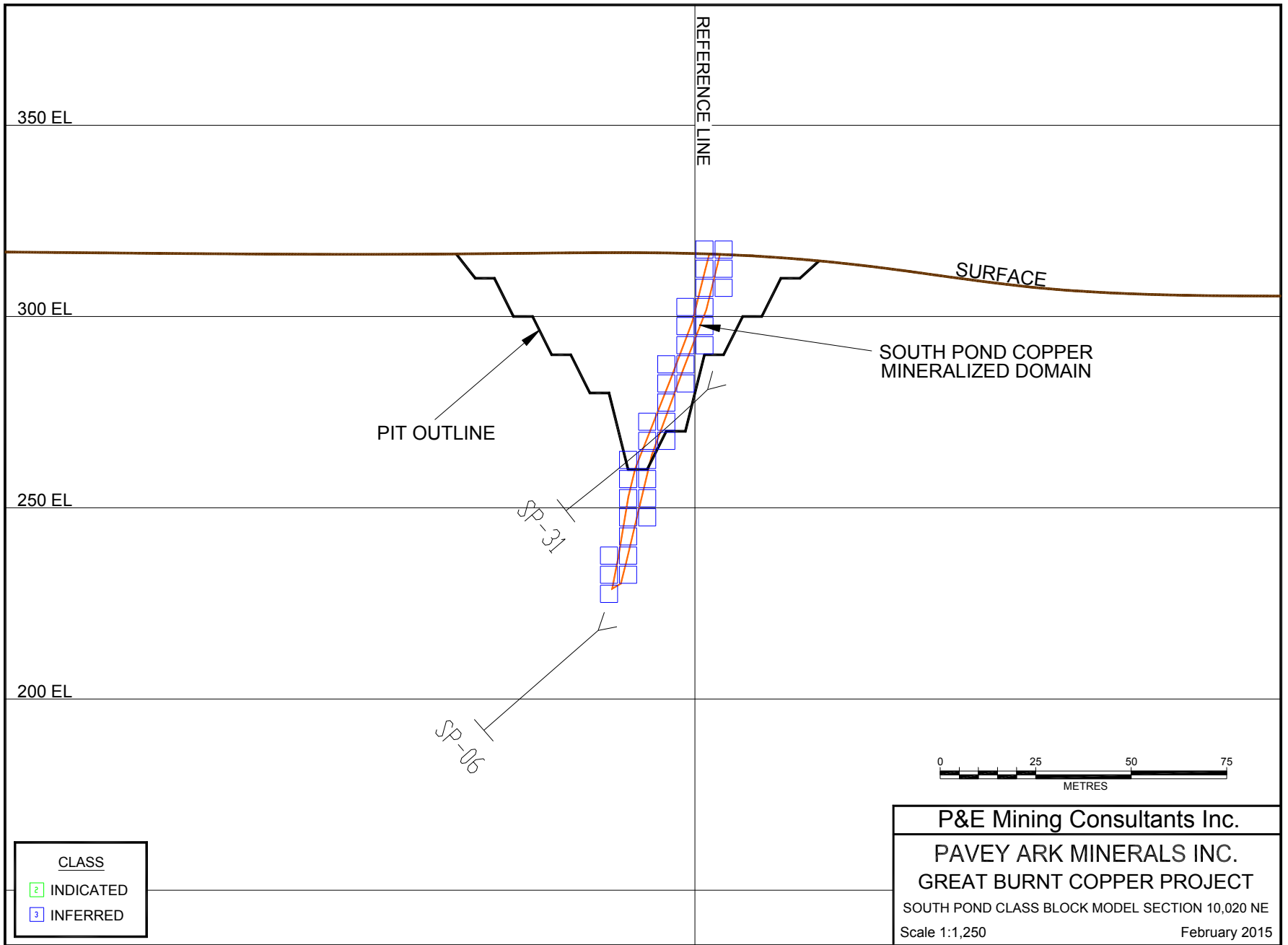


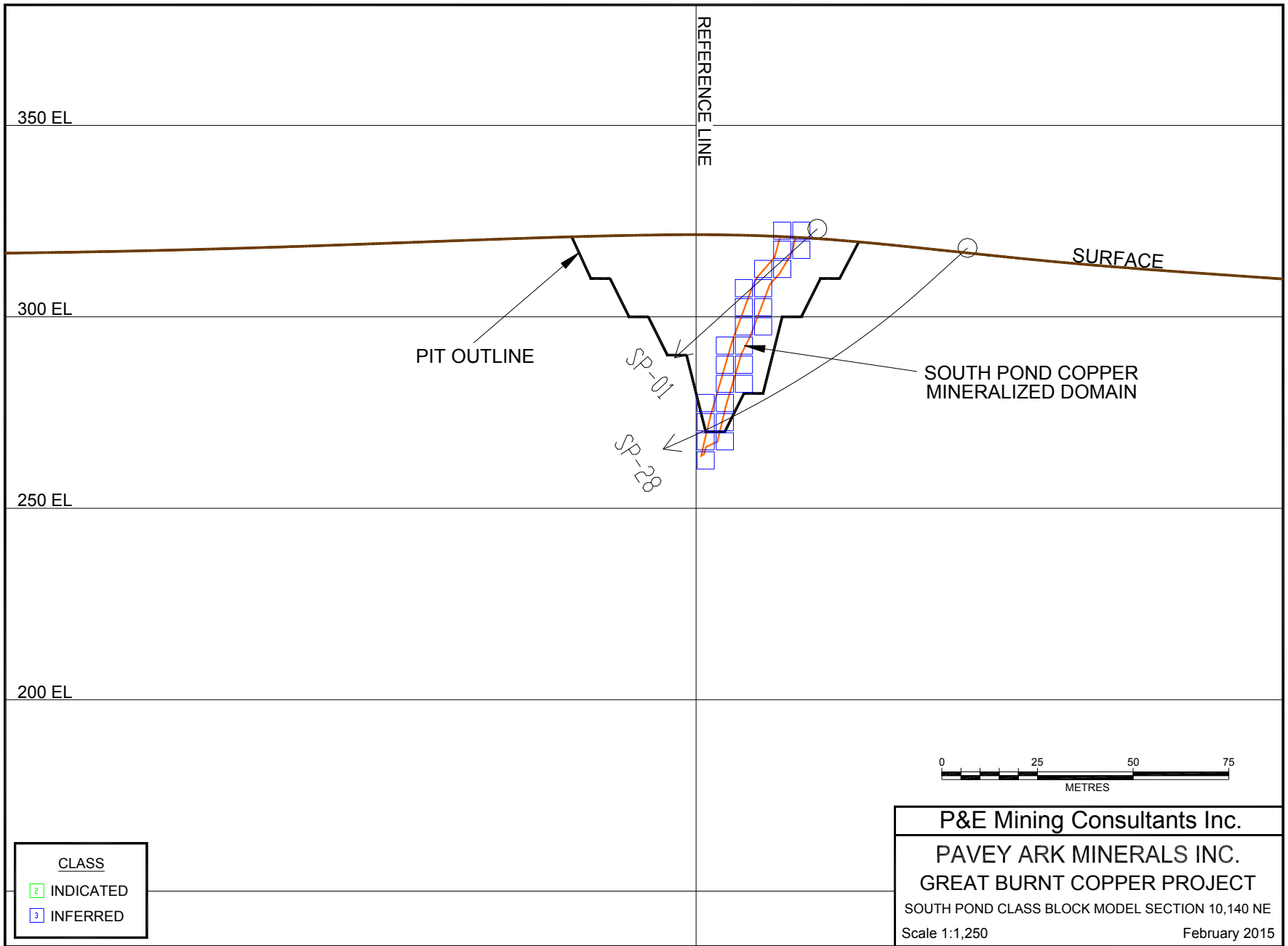


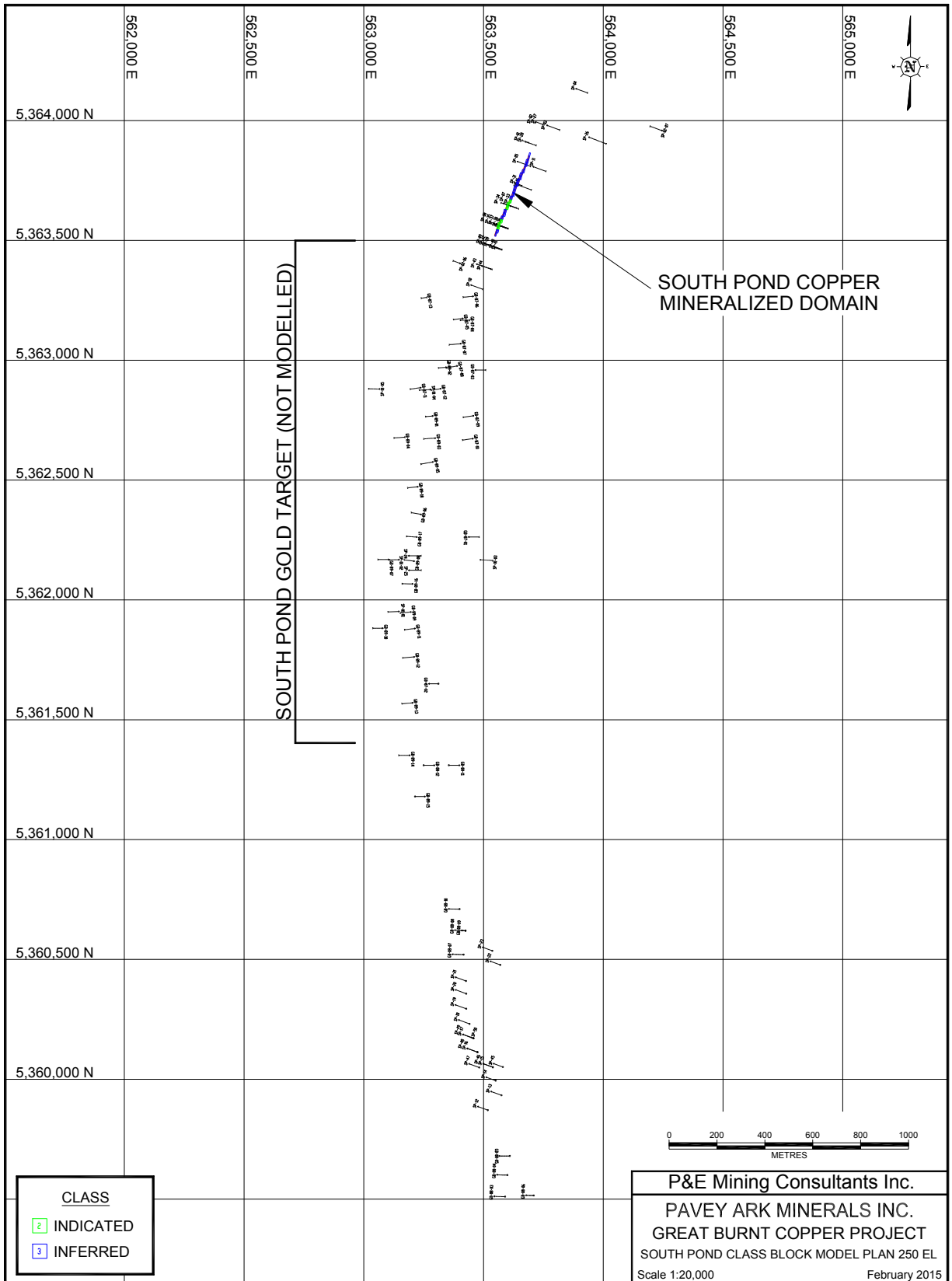


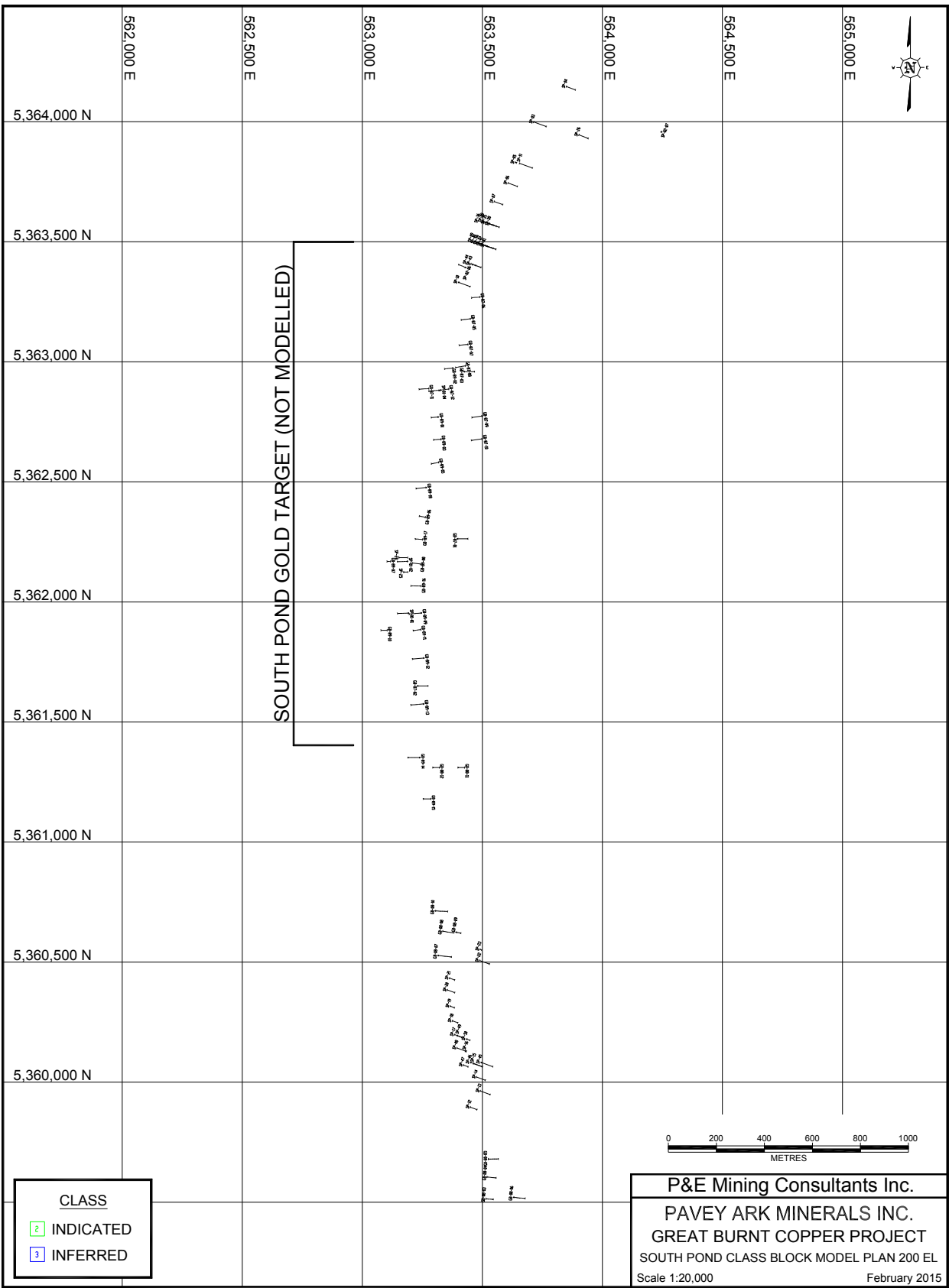






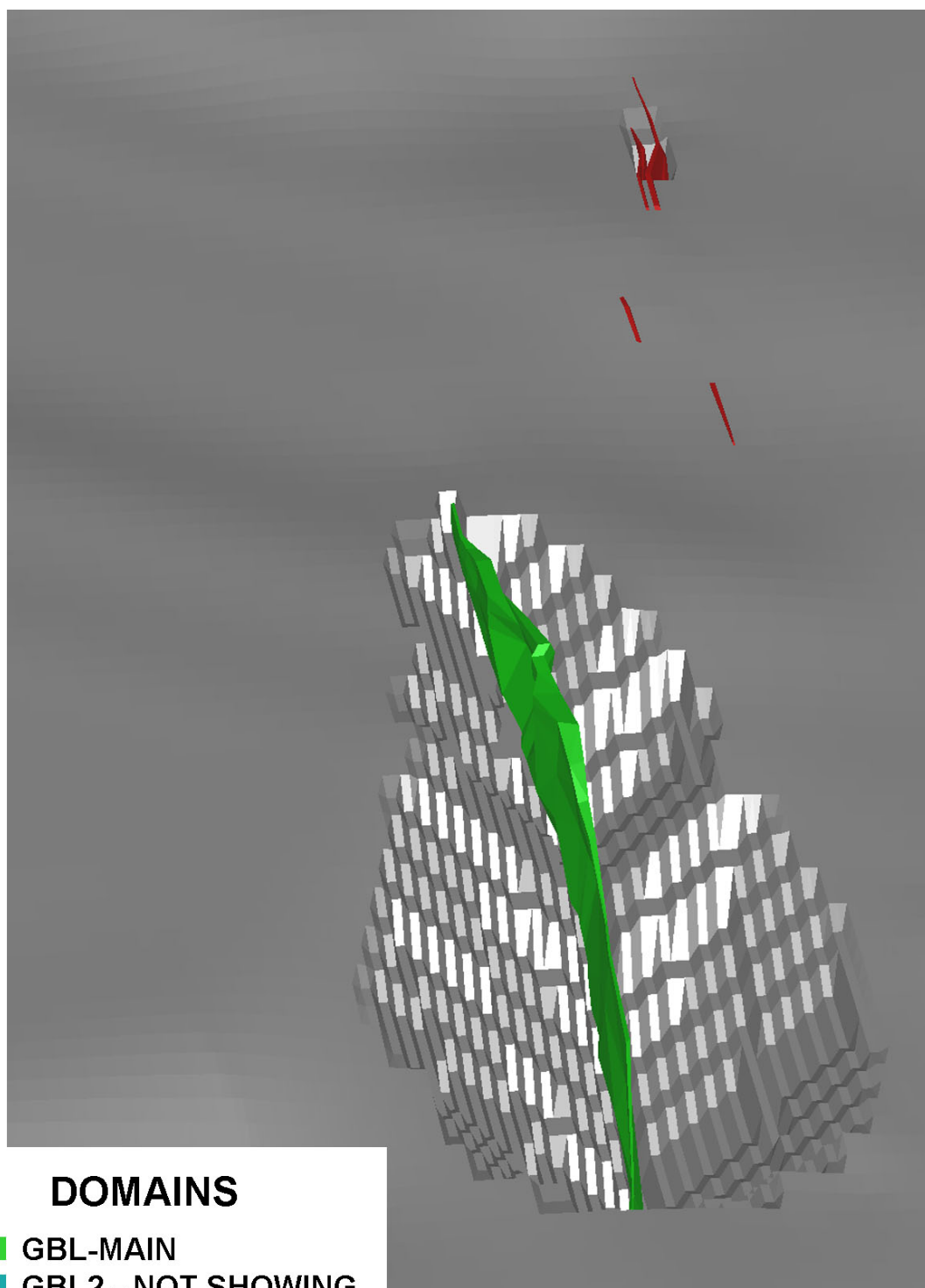






APPENDIX VII.OPTIMIZED PIT SHELLS

GREAT BURNT COPPER PROJECT MAIN OPTIMIZED PIT SHELL



GREAT BURNT COPPER PROJECT SOUTH POND COPPER OPTIMIZED PIT SHELL

