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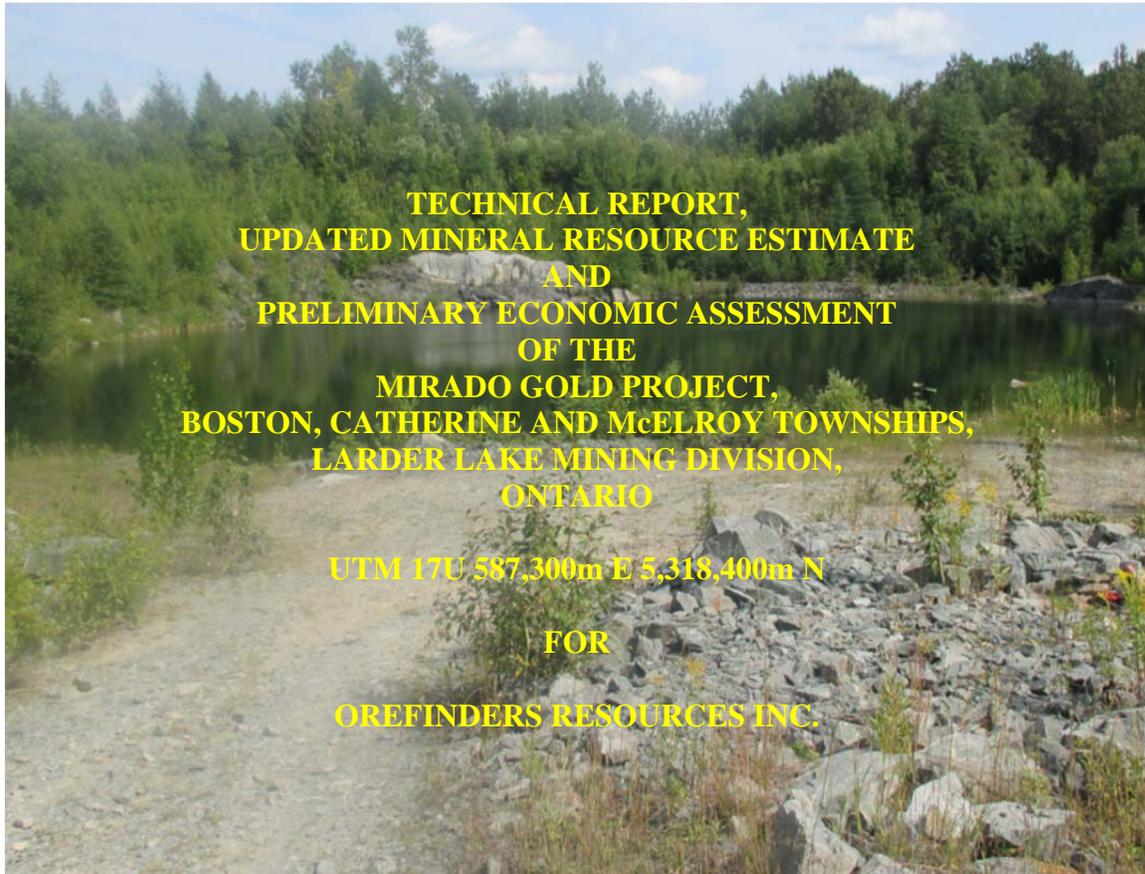
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**TECHNICAL REPORT,  
UPDATED MINERAL RESOURCE ESTIMATE  
AND  
PRELIMINARY ECONOMIC ASSESSMENT  
OF THE  
MIRADO GOLD PROJECT,  
BOSTON, CATHERINE AND McELROY TOWNSHIPS,  
LARDER LAKE MINING DIVISION,  
ONTARIO**

**UTM 17U 587,300m E 5,318,400m N**

**FOR**

**OREFINDERS RESOURCES INC.**

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

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## 1.0 SUMMARY

This Preliminary Economic Assessment (“PEA”) and Technical Report was prepared by P&E Mining Consultants Inc. (“P&E”) at the request of Mr. Stephen Stewart, Chief Executive Officer of Orefinders Resources Inc. (“Orefinders” or “the Company”). The purpose of this report is to provide a National Instrument 43-101 (“NI 43-101”) Technical Report, Updated Mineral Resource Estimate and Preliminary Economic Assessment the Mirado Property (“Mirado Property”, “Property”, “Mirado Project” or “Project”) located in Northeastern Ontario. This Technical Report is focussed on evaluating the mineralization in the Mirado Project’s Open Pit located on the South Zone of the Property.

The Mirado Project is located approximately 35 km southeast of the gold mining Town of Kirkland Lake, on patented mining claims containing surface and mining rights. Kirkland Lake is a regional centre for the gold mining industry in northern Ontario.

Surrounding the core patented claims, Orefinders has optioned and/or staked 37 additional contiguous claims covering approximately 10 km of prospective strike length. This includes Orefinders 100% owned MZ property which forms the western extension of the Mirado Project.

There has been previous intermittent mining activity on the Property by previous owners since the early 1940’s and includes three formerly producing operations. More recently, Orefinders carried out a stockpile processing project on the Property (“the Stockpile Project”) which involved the crushing, shipping and toll processing of a Mineral Resource stockpile located on site that was mined from the Mirado open pit mine during the 1980’s.

### 1.1 MINERAL 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 the generally accepted CIM “Estimation of Mineral Resource and Mineral Reserves Best Practices” guidelines. In P&E's opinion, the drilling, assaying and exploration work of the Mirado Project supports this Mineral Resource Estimate and are sufficient to indicate a reasonable potential for economic extraction and thus qualify it as a Mineral Resource under the CIM definition standards.

The Mineral Resource Estimate was derived from applying Au grade cut-off values to the block model and reporting the resulting tonnes and grade for the potentially open pit mineable areas. The following parameters were used to calculate the Au cut-off grade which determines the potentially economic portions of the constrained mineralization.

#### **Au Cut-off Grade Calculation**

Au Price	US\$1,300/oz based on Dec 31/17 - 24 month trailing average
Au Process Recovery	95.0%
Exchange Rate	US\$0.76 = C\$1.00
Mining cost (per tonne mined)	C\$3.55/t
Processing cost (per tonne milled)	C\$25/t
G&A (per tonne milled)	C\$2/t
Haulage and Crushing cost	C\$8.40/t

## Pit Optimization Parameters

The open pit Mineral Resource model was further investigated with a pit optimization and preliminary design to ensure a reasonable stripping ratio was applied and a reasonable assumption of potential economic extraction could be made. The following parameters were utilized in the pit optimization:

Au Price	US\$1,300/oz
Exchange Rate	US\$0.76 = C\$1.00
Au Recovery	95%
Mineralized Material Mining Cost	C\$3.55/tonne mined
Waste Rock Mining Cost	C\$3.25/tonne mined
Overburden Mining Cost	C\$3.00/tonne mined
Crushing & Haulage Cost	C\$8.40/tonne processed
Process Cost	C\$25/tonne processed
General/Administration	C\$2/tonne processed
Au Smelter Payable	99.8%
Pit Slopes	50 degrees

The resulting Mineral Resource Estimate is tabulated in Table 1.1. P&E considers the mineralization of the Mirado Project to be potentially amenable to open pit extraction.

<b>TABLE 1.1</b>			
<b>MIRADO PIT CONSTRAINED MINERAL RESOURCE</b>			
<b>ESTIMATE AT 1.0 G/T AU CUT-OFF (1-5)</b>			
<b>Category</b>	<b>Tonnage (kt)</b>	<b>Au (g/t)</b>	<b>Contained Au (koz)</b>
Indicated	559	2.61	46.9
Inferred	382	2.66	32.7

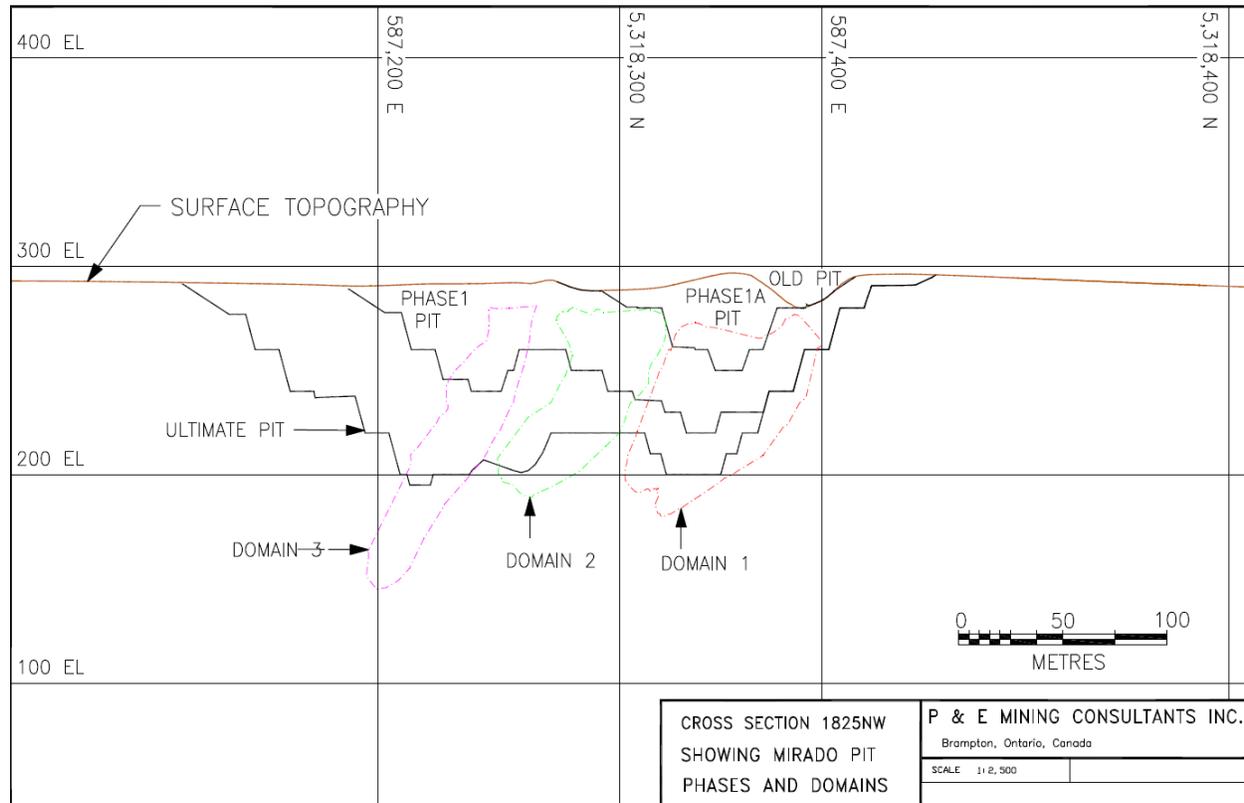
- (1) *Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability.*
- (2) *The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
- (3) *The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.*
- (4) *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.*
- (5) *Historic mined out area were removed from the model.*

## **1.2 CONCEPTUAL MINING PLAN**

The mineralized deposit of the Orefinders Mirado Project is located near surface under a relatively shallow cover of overburden and barren in-situ waste rock. This PEA is based on using a conventional truck and shovel open pit method to extract this Mineral Resource. No underground mining is envisaged in this assessment. The mining operation would be carried out by external mining contractors.

The mining methods and production capacity have been chosen to match a potential ultimate processing throughput rate of 1,000 tonnes per day (“tpd”), which is anticipated as being an acceptable mill feed rate for an external toll processing operation. The conceptual open pit depth for the Project was optimized at a point where the incremental stripping ratio and mining costs begin to exceed the potential revenue generated by the mill feed generated from mining (“the break-even cut-off grade”). See Figure 1.1

**Figure 1.1 Overall Mining Plan**



Since the life-of-mine (“LOM”) currently being contemplated is relatively short, the entire mining operation would be conducted on a contractor basis.

An open pit optimization was carried out to conceptualize an optimal open pit mining operation. The base case scenario that was selected assumed a cut-off grade of 1.0 gram per tonne (“g/t”) Au. All mineralized material grading less than 1.0 g/t Au, for the purposes of this PEA, is considered sub-economic waste. The PEA mine plan includes mining material less than 1.0 g/t Au which will be stockpiled on site, however, this material is not contemplated for shipping or processing is mineralized material could hold a recoverable Au resource upon future and alternative plans made by Orefinders.

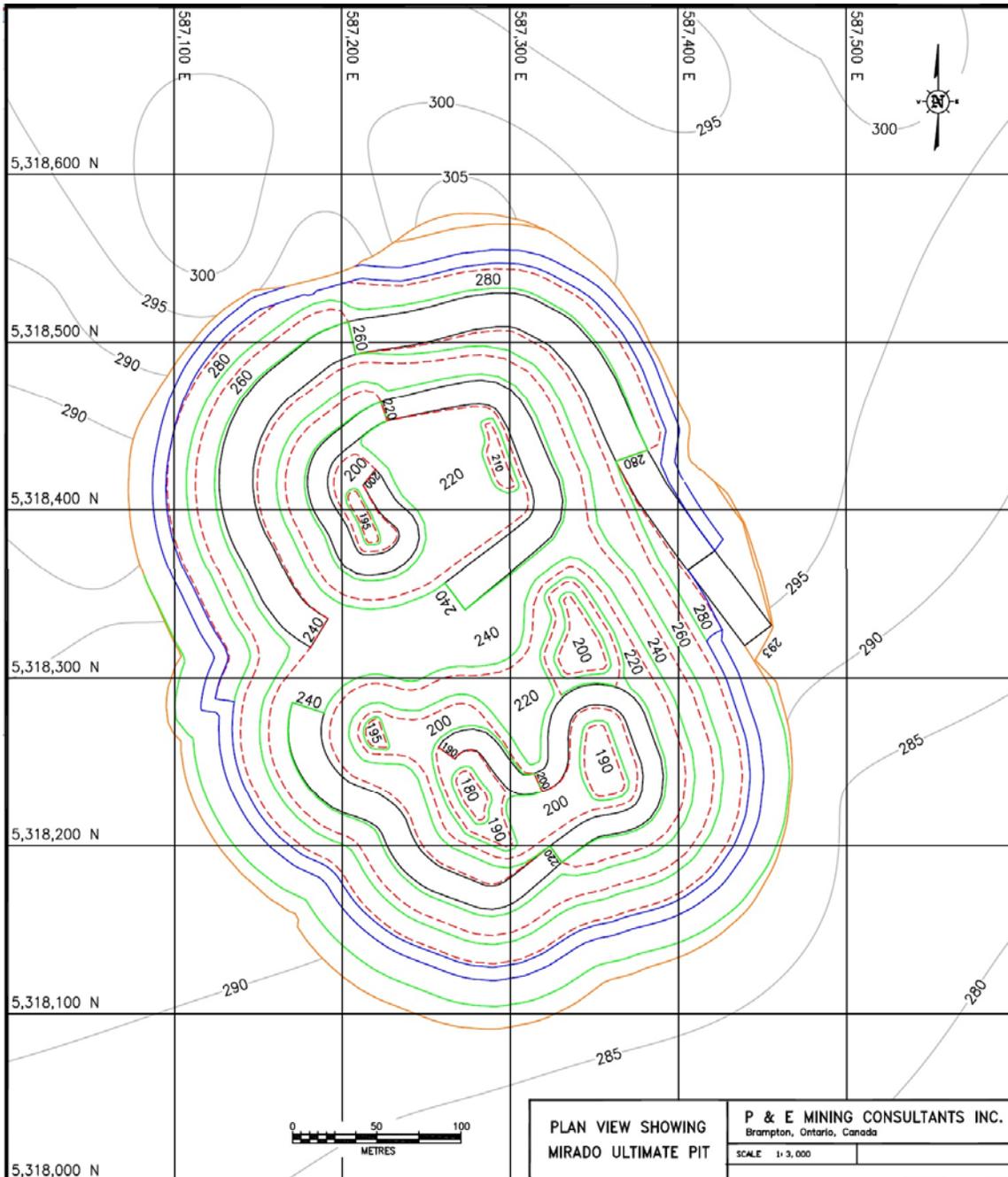
The proposed open pit would utilize conventional, open pit mining equipment and drill/blast/load/haul technologies. Open pit mining would proceed as successive pre-strip and hard rock mining operations, and follow the down dip trend of the mineralized deposit.

The conceptual pit bottom was set at the 200 masl elevation (approximately 100 m from surface), based on an open pit optimization.

The open pit mining dilution was estimated to be 20% at a grade of 0.65% g/t Au. Mineralized material extraction in the open pit mine is estimated to be 97% of the identified Mineral Resource.

Figure 1.2 shows the ultimate open pit in plan which would measure approximately 500 m long by 350 m wide and have an ultimate depth of approximately 100 m.

**Figure 1.2 Ultimate Open Pit Plan**



The mine production schedule is presented in Table 1.2.

<b>TABLE 1.2</b>					
<b>MINE PRODUCTION SCHEDULE</b>					
<b>Description</b>	<b>Mineralized Material Production ('000's of Tonnes)</b>				
	<b>Year -1</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Total</b>
Potential Process Plant Feed	0	350	350	296	996
Process Plant Feed Grade (g/t Au)		2.26	2.41	2.33	2.33
Overburden	425	1,230	292	0	1,947
Waste	475	3,670	6,358	2,461	12,964
<b>Total Material from Open Pit</b>	<b>900</b>	<b>5,250</b>	<b>7,000</b>	<b>2,757</b>	<b>15,907</b>

*Note: Some values have been rounded. The totals are accurate summations of the columns and rows of data.*

### 1.3 PROCESS PLANT

The construction of an on-site processing facility would not be justified given the current estimates of the quantity of available potential mill feed. Processing of mineralized material will be carried out on a toll processing basis at an existing nearby external processing facility.

A suitable external toll mill has not yet been selected by Orefinders. It is assumed for the purpose of this report that a direct cyanidation plant with gold recovery from solution via activated carbon (as opposed to flotation followed by cyanidation of concentrate) will be the process used at the selected toll process facility. There are several processing facilities that are located within a moderate trucking distance of the Mirado Property and it is expected that one of these will be able to accept the Mirado mill feed. One of these is the Macassa Process Plant which is owned and operated by Kirkland Lake Gold. It is located approximately 35 kilometres north of the Mirado project. The Macassa Process Plant was selected as the toll facility for the Mirado Project, for the purposes of preparing this PEA.

Preliminary metallurgical testing was conducted in 2013. The 2016-2017 Stockpile Project involved processing approximately 25,000 of material from the site at the Westwood toll process plant near Rouyn, Quebec. Estimated projected recovery rates, chemical consumption rates and power requirements were based on this experience.

### 1.4 SITE INFRASTRUCTURE

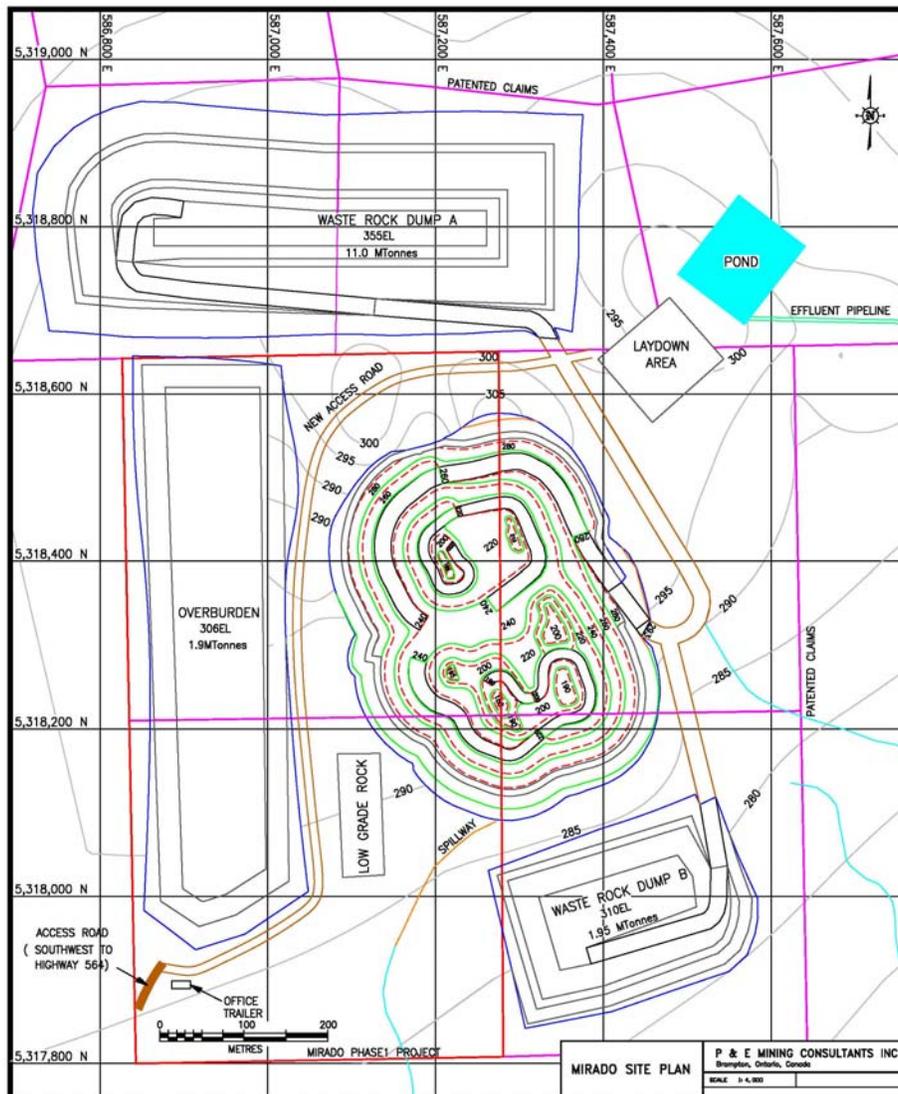
The Mirado Project does not have any on-site infrastructure in place at the current time, however, it does have access to a variety of services and skilled labour in the Kirkland Lake District. The Mirado Property is easily accessible from Kirkland Lake via paved highways 66 and 112, to the well maintained gravel surface Highway 564 which continues to Boston Creek and then eastward to the Property along a 10 km long gravel access road. The Ontario Northland Railway passes through Boston Creek and continues to Swastika, near Kirkland Lake. A high voltage power line passes within 7 km to the west of the Property.

The services and ancillary facilities required for the Project will include the following:

- Upgrade site access road to all season status;
- Site service roads;
- Office and dry trailer facilities;
- Containerized diesel power generation unit and distribution network for lighting, pumps, and office/dry trailer facilities;
- A containerized warehouse facility;
- Contractor heavy equipment maintenance shop;
- Site water management;
- Portable restrooms;
- Fuel storage and dispensing,; and
- Security, safety, and first aid facility trailers.

Figure 1.3 illustrates the locations of the open pit, rock storage areas and related infrastructure.

**Figure 1.3 Site Plan**



## 1.5 ENVIRONMENTAL IMPACT AND REHABILITATION

Orefinders initiated environmental baseline studies in 2013 to support the Mirado Stockpile Project and future project development. The focus of the previous environmental studies was to support the permitting process associated with the Stockpile Project, which was completed in 2016. The studies completed provided relevant information on the following baseline components:

- Climate;
- Air quality and noise;
- Land and resource use;
- Surface water quality and hydrology;
- Hydrogeology and groundwater quality;
- Aquatic environment;
- Terrestrial plant and animal life; and
- Geochemistry.

Additional environmental studies will be required to support the current development plans of the Project. Some of the requirements are summarized here, however, a more detailed description of the associated permitting process and environmental studies are outlined in Section 21 of this report.

Orefinders will be required to submit a Project Description to the Canadian Environmental Assessment Agency (“CEA Agency”). The CEA Agency will review the Project Description and determine if a Federal Environmental Assessment (“EA”) is required. If an EA is required, the CEA Agency will issue Environmental Impact Statement (“EIS”) guidelines to Orefinders. The EIS guidelines will outline the scope of the EA required for the Project. Additional potential federal regulatory requirements for the Project may be required.

There are no specific provincial environmental assessment requirements for mining projects in Ontario, however, some of the activities related to the development of the Project, including some ancillary infrastructure components, may require provincial permitting approval.

Aboriginal engagement activities were completed for the Stockpile Project with the following communities: Wahgoshig First Nation, Timiskaming First Nation, Matachewan First Nation, and the Métis Nation of Ontario. These communities were identified by the Ministry of Northern Development and Mines (“MNDM”) as having Aboriginal rights and/or treaty rights potentially impacted by Orefinders’ proposed activities.

Orefinders signed a communications agreement with Timiskaming First Nation and was in the process of negotiating a Memorandum of Understanding with Matachewan First Nation when the Stockpile Project was in the permitting process.

As a part of the permitting process for the Stockpile Project, Orefinders consulted with nearby residents. Orefinders issued letters and conducted meetings with several Boston Creek residents (the closest residential area).

A Closure Plan was submitted previously and filed for the Stockpile Project in 2016 (SEI, 2016).

A Closure Plan will be required for the current Project and will need to be submitted to the MNDM in accordance with Ontario Regulation 240/00: Mine Development and Closure Under Part VII of the Act (“O. Reg. 240/00”). Following closure, physical, chemical, and biological monitoring of the site will need to be conducted to ensure that the site is chemically and physically stable.

## 1.6 CAPITAL COSTS

Project capital costs include the necessary preliminary and ongoing environmental monitoring, remediation and closure work, as well as the preparation of the surface infrastructure to facilitate open pit mining. Mining contractor costs related to mobilization/demobilization, and setup and teardown will also be included in the capital costs. The pre-stripping operation for the open pit was treated as an operating cost for the Project.

The pre-revenue capital expenditure for the project is estimated to be \$2.4 million. The total capital costs of the Project LOM are estimated to be approximately \$2.6 million. A summary of LOM capital costs is presented in Table 1.3.

Description	Cost ('000's of \$)				
	Yr -1	Yr 1	Yr 2	Yr 3	Total
Environmental Baseline, Permitting	788				788
Project Engineering	100				100
Road Improvement	50				50
Infrastructure	100				100
Sustaining Capital	100	50	50	50	250
Closure Bond	1,130				1,130
Contractor Mobilization / Setup	100				100
Contractor Demobilization / Teardown				100	100
<b>Total Capital Cost</b>	<b>2,368</b>	<b>50</b>	<b>50</b>	<b>150</b>	<b>2,618</b>

*Note:* Some values have been rounded. The totals are accurate summations of the columns and rows of data.

## 1.7 OPERATING COSTS

Operating costs include pre-stripping of the open pit, open pit operating and service costs, mine production crushing, haulage of the process plant feed to the toll processing facility, toll processing costs and G&A costs. Operating costs are based on expected contractor unit and lump sum prices which include allowances for operating labour, maintenance labour, operating materials and supplies, equipment rentals, supervision and support.

The total operating costs of the Project LOM are estimated to be approximately \$87.5 million. A summary of LOM operating costs is presented in Table 1.4.

<b>TABLE 1.4 OPERATING COST SUMMARY</b>					
<b>Description</b>	<b>Cost ('000's of \$)</b>				
	<b>Year -1</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Total</b>
Mineral Mining		1,243	1,243	1,052	3,537
Overburden Removal	1,274	3,691	876		5,841
Waste Rock Mining	1,545	11,926	20,664	7,998	42,132
Crushing		1,225	1,225	1,037	3,487
Haul to Mill		1,715	1,715	1,452	4,882
Toll Milling		8,750	8,750	7,407	24,907
G&A	701	701	701	593	2,696
<b>Total Operating Cost</b>	<b>3,520</b>	<b>29,251</b>	<b>35,173</b>	<b>19,538</b>	<b>87,482</b>

*Note: Some values have been rounded. The totals are accurate summations of the columns and rows of data.*

## 1.8 FINANCIAL EVALUATION

It is estimated that the Project would generate a net undiscounted pre-tax cash flow of \$30.8 million which corresponds to a post-tax Internal Rate of Return (“IRR”) of 158% and a post-tax Net Present Value (“NPV”) of \$20.5 million, at a 5% discount rate. On this basis, the Project would have a payback period of 7 months from the start of process plant feed production;

The Life of Mine (“LOM”) cash operating cost is \$1,238 (US\$941) per ounce of gold, and the LOM all-in sustaining cost is \$1,275 (US\$969) per ounce of gold.

Note: This PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the results of the PEA will be realized. There is no guarantee that Orefinders will be successful in obtaining any or all of the requisite consents, permits or approvals, regulatory or otherwise for the Project to be placed into production.

The summary of the results of the cash flow analysis is presented Table 1.5.

<b>TABLE 1.5 BASE CASE CASH FLOW ANALYSIS</b>			
<b>Description</b>		<b>Value</b>	<b>Units</b>
Internal Rate of Return		158	%
Post-tax NPV at a Discount Rate of	0%	23.8	\$M
	5%	20.5	\$M
	10%	17.7	\$M
Project Payback Period		7	Months

## 1.9 CONCLUSIONS AND RECOMMENDATIONS

P&E concludes that the Mirado Project has economic potential as an open pit mining operation, with an external toll processing plant producing a gold doré.

In addition, P&E recommends that Orefinders advance the Project with efforts in the following areas:

- Engagement of a suitable toll processing operation to accept the Mirado mine production;
- Exploration drilling to extend Mineral Resources;
- Geological and mineralogical studies to advance technical aspects of the Project toward Pre-Feasibility requirements;
- Continuation of environmental study programs including aquatic, terrestrial, hydrology, and groundwater to provide data for permitting;
- Continue the permitting process with the Federal agencies;
- Continue First Nation and stakeholder consultation.

P&E recommends that Orefinders advances the Mirado Project to a Pre-Feasibility Study. Attention should be given to involving potential mining contractors in the process design and costing. Special consideration should be given to haul truck cycle times, haul truck requirements, haul road layouts for maintaining access to active workplaces, environmental requirements, safety, mine operating costs and mine production scheduling.

## **2.0 INTRODUCTION AND TERMS OF REFERENCE**

### **2.1 TERMS OF REFERENCE**

This report was prepared to provide a National Instrument 43-101 (“NI 43-101”) Technical Report and Preliminary Economic Assessment (“PEA”) on the Mirado Property (“Mirado Property”, “Property”, “Mirado Project” or “Project”) located in Northeastern Ontario.

This Technical Report and PEA was prepared by P&E Mining Consultants Inc. (“P&E”) at the request of Mr. Stephen Stewart., Chief Executive Officer of Orefinders Resources Inc. (“Orefinders” or “the Company”). Orefinders is a public, TSX Venture Exchange listed junior gold exploration company trading under the symbol “ORX”, with its head office located at:

120 Adelaide St West Suite 2500  
Toronto, Ontario  
M5H 1T1  
Tel: 416-644-1567

This Technical Report has an effective date of January 8, 2018.

Mr. Antoine Yassa, a Qualified Person under the regulations of NI 43-101, conducted a site visit to the Property on November 23, 2016 and a visit was also made to the core and pulps storage facility on May 4, 2017. An independent verification sampling program was conducted by Mr. Yassa at that time. Mr. Eugene Puritch, P.Eng., FEC, CET a Qualified Person under the regulations of NI 43-101, conducted a site visit to the Property on November 26, 2016.

This Technical Report includes summaries of the results from historical work carried out by previous operators and exploration completed by the current owners. Information was collected from Ontario and Canadian Government web sites, Company records, and publicly available information listed on SEDAR.

The data supporting the statements made in the Mineral Resource sections of this report have been verified for accuracy and completeness by the Authors. No meaningful errors or omissions were noted. The sources for the data are presented in the “References” section of this Technical 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 for further detail in the References section of this Technical Report.

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

The Mineral Resources in the estimate are considered compliant with the Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”), Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions.

The purpose of this report Report is to provide an independent, NI 43-101 Technical Report and Preliminary Economic Assessment on the Mirado Property. P&E understands that this report will be used for internal decision making purposes and will be filed on SEDAR as required by TSXV regulations. The Technical Report may be used for public equity and other types of financing.

## 2.2 SOURCES OF INFORMATION

This Technical 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 Technical Report, and are so indicated where appropriate.

Parts of this report refer to the NI 43-101 Technical Report by Weiershauser and El-Rassi of SRK Consulting (Canada) Inc. (“SRK”) on the Mirado Gold Project dated December 13, 2013.

## 2.3 UNITS AND CURRENCY

Unless otherwise stated all units used in this Technical Report are metric. In some cases, where the historic context dictates, the use of Imperial units is used without conversion. Tonnages are shown as tonnes ("t", equivalent to 1,000 kg), linear measurements are metres ("m"), or kilometres ("km") and precious metal values are as grams per tonne ("g/t"). In the case of historical documentation, gold values may be expressed in troy ounces per ton (“oz Au/T” or “opt”). Canadian currency (“\$”, C\$ or “Dollars”) is used throughout this report unless the United States currency (“US\$”) is specifically stated. For the purpose of calculating potential revenue from the operation, an exchange rate between the US\$ and C\$ is 0.76 US\$.

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

<b>Abbreviations</b>	<b>Meaning</b>
\$k	Thousands Of Canadian Dollars
\$M	Millions Of Canadian Dollars
AAQC	Ambient Air Quality Criteria
ABA	Acid Base Accounting
Au	Gold
Au g/t	Grams Of Gold Per Tonne
ca	<i>Circa</i> or approximate
CDN\$ or \$	Canadian Dollars
CCA	Capital Cost Allowance
CCDE	Cumulative Canadian Development Expense
CCEE	Cumulative Canadian Exploration Expense
CDE	Canadian Development Expense
CDEE	Cumulative Canadian Development Expense
CDN	Canadian
CEA Agency	Canadian Environmental Assessment Agency

CEE	Canadian Exploration Expense
CEE	Canadian Exploration Expense
CIL	Carbon-in-leach
CIM	Canadian Institute Of Mining, Metallurgy And Petroleum
cm	Centimetre(s)
Company	Orefinders Resources Inc.
Cum	Cumulative
DCF	Discounted Cash Flow
Dollars	Canadian Dollars
E	East
EA	Federal Environmental Assessment
EIS	Environmental Impact Statement
ESE	East-South-East
E-W	East-West
G&A	General And Administration
g/t	Grams Per Tonne
Ga	<i>Giga-annum</i> or billions of years
GPS	Global Positioning System
ha	Hectare(s)
ICP	Inductively Coupled Plasma
ID3	Inverse Distance Cubed
IRR	Internal Rate Of Return
ISO	International Organization for Standardization
k	Thousands
koz	Thousands of ounces
KLG	Kirkland Lake Gold
km	Kilometre(s)
km/h	Kilometres per Hour
kt	Thousands of Tonnes
LCF	Losses Carried Forward
LOM	Life-Of Mine
M	Million
m	Metre(s)
Ma	Millions Of Years
masl	Metres above sea level
mbgs	Metres below ground level
mm	Millimeters
MMER	Metal mining effluent regulations
MNDM	Ministry of Northern Development and Mines
MNRF	Ministry of Natural Resources and Forestry
N	North

NE	North-East
NI43-101	National Instrument 43-101
NN	Nearest Neighbour
NNW	North-North-West
NPV	Net Present Value
opt	Troy Ounces Per Ton
Orefinders	Orefinders Resources Inc.
ozAu/T	Troy Ounces Gold Per Ton
P&E	P&E Mining Consultants Inc.
P.Eng.	Professional Engineer
P.Geo.	Professional Geoscientist
PAG	Potentially Acid Generating
PEA	Preliminary Economic Assessment
Project	Mirado Project
Property	Mirado Property
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
QP	Qualified Person as defined by Canadian National Instrument NI 43-101
ROM	Run-of-mine
S	South
SAG	Semi-Autogenous
SEDAR	The Official Internet Website that Provides Access to Public Securities
SFE	Shake flask extraction
SGS	SGS Lakefield Research
Stockpile Project	Mirado Phase 1 Project
t	Metric tonne(s)
T	Imperial ton(s)
t/m3	Tonnes per Cubic Meter
Table 2 Standards	Full Depth Generic Site Condition Standards in a Potable Ground Water
Table 3 Standards	Full Depth Generic Site Condition Standards in a Non-Potable Ground
Technical Report	Technical Report And Preliminary Economic Assessment on Mirado Gold
the Code	The Mine Rehabilitation Code of Ontario
tpd	Tonnes per Day
tpy	Tonnes Per Year
TSP	Total suspended solids
US\$	United States Dollars
W	West
WNW	West-North-West
WSC	Water Survey of Canada

### **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 the Authors of this document have carefully reviewed all of the information provided by Orefinders and others, they cannot guarantee its accuracy and completeness. P&E reserves the right, but will not be obligated, to revise this Technical Report and its conclusions if additional information becomes known to P&E subsequent to the date of this Technical Report.

Copies of the tenure documents, operating licenses, permits, and work contracts were not reviewed. Information relating to tenure for staked mining claims was reviewed by means of the public information available through Ontario's Ministry of Northern Development and Mines' CLAIMaps online application. P&E has relied upon this public information, as well as tenure information from Orefinders, and has not undertaken an independent detailed legal verification of title and ownership of the Mirado Gold Property claims. P&E has received a title opinion letter dated January 8, 2018 from Weaver, Simmons LLP, of Sudbury Ontario, who act as legal counsel to Orefinders, confirming that as of the date of the letter, Orefinders is the recorder holder of a 100% interest in the twelve (12) patented fee simple properties in the Townships of McElroy and Catherine that are listed in Table 4.1. 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 Orefinders to have conducted the proper legal due diligence.

The Authors of this Technical Report have not verified the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) involving third parties but has relied upon, and believes it has a reasonable basis to rely upon, Orefinders to have conducted the proper legal due diligence.

Select technical data, as noted in this report, were provided by Orefinders and P&E has relied on the integrity of such data.

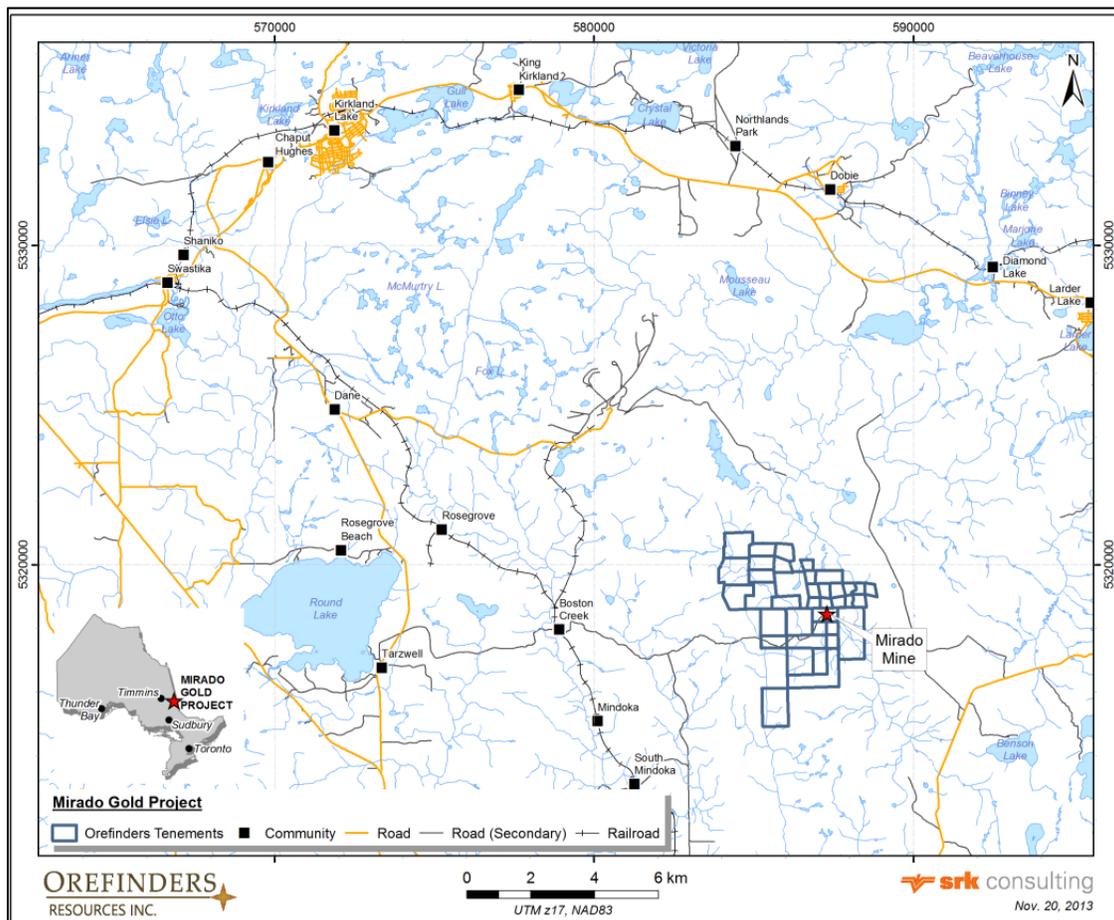
A draft copy of the Technical Report has been reviewed for factual errors by Orefinders and P&E has relied on Orefinders' knowledge of the Property in this regard. All statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading, as of the date of this Technical Report.

## 4.0 PROPERTY DESCRIPTION AND LOCATION

### 4.1 LOCATION

The Mirado Gold Project is located in the Larder Lake Mining Division, of northeastern Ontario. The Project straddles the Townships of Boston, Catherine and McElroy, near the Ontario provincial boundary with Quebec. The Project is 21 km southeast of the town of Kirkland Lake, and is approximately 490 km north of Toronto, Ontario. The Mirado Gold Project is located at UTM 17U 587300mE 5318400mN (NAD83) or 48° 00' 47" North latitude and 79° 49' 46" West longitude (Figure 4.1). The Property straddles NTS map sheets 32-D/04 and 31-M/13.

**Figure 4.1 Location Map of the Mirado Gold Property**



Source: Orefinders (2018)

### 4.2 PROPERTY DESCRIPTION AND TENURE

The Mirado Gold Project comprises 21 patented mining claims in 2 groups and 31 staked mining claims forming a contiguous property. The patented claims are all single unit claims and have a total area of approximately 336 ha. The 31 staked claims comprise a total of 140 claim units and have a total area of approximately 2,240 ha.

The patented mining claims are listed in table 4.1. P&E has received a title opinion letter dated January 8, 2018 from Weaver, Simmons LLP, of Sudbury Ontario, who act as legal counsel to

Orefinders, confirming that as of the date of the letter, Orefinders is the recorder holder of a 100% interest in the twelve (12) patented fee simple properties in the Townships of McElroy and Catherine that formed the original Mirado Patents and cover the majority of the resource estimate in this report. The patented mining claims are in good standing and are wholly owned by Orefinders subject to certain royalty considerations. The patented claims have Fee Simple Absolute title to mining and surface rights with minor surface right reservations, mostly for road allowances and power line easements. The patented claims are subject to payment of annual property taxes.

<b>TABLE 4.1</b>			
<b>MIRADO GOLD PROJECT PATENTED CLAIMS</b>			
<b>Claim Number</b>	<b>Township</b>	<b>Parcel</b>	<b>Area (ha)</b>
<b>Original Mirado Patents</b>			
L31377	McElroy	5264 SEC SST	15
L31257	McElroy	5265 SEC SST	16
L26273	McElroy	7432 SEC SST	19
L27303	McElroy	6339 SEC SST	12
L31238	McElroy	12449 SEC SST	9
L26272	McElroy	12448 SEC SST	14
L31749	McElroy	12445 SEC SST	11
L31378	McElroy	6417 SEC SST	13
L24691	Catherine	12447 SEC SST	19
L24690	Catherine	12446 SEC SST	16
L34750	Catherine	12465 SEC SST	15
L34751	Catherine	12466 SEC SST	18
		Total	177
<b>Gold Hill Patents</b>			
L10733	Catherine		
L10734	Catherine		
L10715	Catherine		
L10716	Catherine		
L10852	Catherine		
L10853	Catherine		
L10883	Catherine		
L10984	Catherine		
L14700	Catherine		
		Approx. Total	144
<b>Total</b>			<b>321</b>

The 31 staked mining claims are listed in table 4.2 with details on claim recording dates, claim due dates, work requirements, work applied and reserves. These claims are registered to Orefinders and are all valid through to at least April 2019. The claims require annual work requirements of approximately \$56,000, however, Orefinders has a significant reserve of work credits to maintain the Property through at least 2019 and 2020. These claims are on Crown Land and encompass mineral exploration rights only.

**TABLE 4.2**  
**MIRADO GOLD PROJECT STAKED MINING CLAIMS**

<b>Township / Area</b>	<b>Claim Number</b>	<b>Recording Date</b>	<b>Claim Due Date</b>	<b>Percent Option</b>	<b>Work Required</b>	<b>Total Applied</b>	<b>Total Reserve</b>
BOSTON	4274007	2014-Apr-25	2020-Apr-25	100 %	\$6,000	\$24,000	\$0
BOSTON	4274009	2014-Mar-20	2020-Mar-20	100 %	\$6,400	\$25,600	\$0
CATHARINE	1146327	2000-Apr-10	2019-Apr-10	100 %	\$1,600	\$27,200	\$327,255
CATHARINE	1192176	2002-Sep-18	2019-Sep-18	100 %	\$1,600	\$24,000	\$725
CATHARINE	1196951	2000-Aug-04	2019-Aug-04	100 %	\$1,200	\$20,400	\$40,679
CATHARINE	1199883	2002-Jul-26	2019-Jul-26	100 %	\$1,600	\$24,000	\$4,872
CATHARINE	1199884	2002-Jul-26	2019-Jul-26	100 %	\$400	\$6,000	\$2,609
CATHARINE	1241351	2002-Jun-18	2019-Jun-18	100 %	\$3,200	\$48,000	\$10,005
CATHARINE	1241353	2003-Apr-10	2019-Apr-10	100 %	\$2,400	\$33,600	\$0
CATHARINE	3002902	2002-Jul-15	2019-Jul-15	100 %	\$2,400	\$36,000	\$145
CATHARINE	3004539	2002-Sep-18	2019-Sep-18	100 %	\$800	\$12,000	\$18,503
CATHARINE	4272920	2013-Jun-06	2019-Jun-06	100 %	\$800	\$3,200	\$0
CATHARINE	4275203	2017-Oct-26	2019-Oct-26	100 %	\$2,800	\$0	\$0
MCELROY	4258214	2010-Jul-08	2019-Jul-08	100 %	\$2,800	\$19,600	\$1,270
MCELROY	4259499	2011-Oct-17	2019-Oct-17	100 %	\$800	\$4,800	\$16,308
MCELROY	4268714	2011-Dec-05	2019-Dec-05	100 %	\$1,200	\$7,200	\$0
MCELROY	4268715	2011-Dec-05	2019-Dec-05	100 %	\$800	\$4,800	\$0
MCELROY	4272911	2013-Jun-06	2019-Jun-06	100 %	\$400	\$1,600	\$0
MCELROY	4272912	2013-Jun-06	2019-Jun-06	100 %	\$400	\$1,600	\$0
MCELROY	4272913	2013-Jun-06	2019-Jun-06	100 %	\$800	\$3,200	\$0
MCELROY	4272914	2013-Jun-06	2019-Jun-06	100 %	\$1,600	\$6,400	\$0
MCELROY	4272915	2013-Jun-06	2019-Jun-06	100 %	\$800	\$3,200	\$0
MCELROY	4272916	2013-Jun-06	2019-Jun-06	100 %	\$800	\$3,200	\$0
MCELROY	4272917	2013-Jun-06	2019-Jun-06	100 %	\$800	\$3,200	\$0
MCELROY	4272918	2013-Jun-06	2019-Jun-06	100 %	\$1,600	\$6,400	\$0
MCELROY	4272919	2013-Jun-06	2019-Jun-06	100 %	\$2,000	\$8,000	\$0
MCELROY	4274003	2014-Mar-20	2020-Mar-20	100 %	\$3,200	\$12,800	\$5,940
MCELROY	4274006	2014-Mar-20	2020-Mar-20	100 %	\$3,200	\$12,800	\$0
MCELROY	4274008	2014-Mar-20	2020-Mar-20	100 %	\$2,400	\$9,600	\$0
MCELROY	4283367	2015-Jun-08	2019-Jun-08	100 %	\$400	\$800	\$0
MCELROY	4283368	2015-Jun-08	2019-Jun-08	100 %	\$800	\$1,600	\$0

*Source: [https://www.mci.mndm.gov.on.ca/claims/cf\\_claims/clm\\_cls.cfm?div=80](https://www.mci.mndm.gov.on.ca/claims/cf_claims/clm_cls.cfm?div=80) accessed January 29, 2018*



the opinion that there are no potentially hazardous conditions relating to public health and safety or to the environment on the site.

No permits are required for early exploration stage work on patented mining claims with surface rights in Ontario. The Ontario Ministry of Northern Development and Mines (“MNDM”) requires that the holder of staked mining claims obtain exploration plans and permits prior to initiating exploration programs. Orefinders currently holds the following Exploration Plans and Permits:

- Plan PL-17-10838 that is valid until February 7, 2020, for line cutting and geophysical exploration on claims 425824, 4272911, 1146327, 1192176, 4259499, 4272920, 1196951, 1241351, 1199883, 3004539, 3002902, 4272913, 4272914, 4272915, 4272916, 4283367, 4272912;
- Permits PR15-10679 and PR15-10680 that are valid until August 24, 2018 for drilling and stripping on claims 4258214, 1146327, 1241351, 1192176, 1196951, 1199883, 1199884, 3004539, 3002902, 1241353;
- Permit PR15-10661 that is valid until August 24, 2018 for drilling, stripping, pitting and other activities on claims 4272911, 4272912, 4272913, 4272914, 4272915, 4272916, 4272917, 4272918, 4272919, 4272920, 4268714, 4268715.

## **5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

Information in this section has been modified from Reddick and Lavigne (2012) and Weiershauser and El-Rassi (2013).

### **5.1 ACCESS**

The Mirado property is located approximately 35 kilometres by road southeast of the town of Kirkland Lake, Ontario. Kirkland Lake is approximately 585 kilometres by road north of Toronto, Ontario. The property is accessible from Kirkland Lake via Highway 66 to Highway 112, then travelling south along Highway 112 to Highway 564, east through Boston Creek and then eastward along a gravel road to the Mirado mines.

Highways 66 and 112 are paved roads; Highway 564 and the other access roads to the property are well-maintained gravel roads. A 4-wheel drive vehicle, snowmobile or an all-terrain vehicle is needed to get to the Mirado property at certain times of the year as the road past Boston Creek is not maintained year round. Old drill and logging roads that cross the property are in a variety of conditions.

The Ontario Northland Railway passes through Boston Creek and the town of Swastika near Kirkland Lake. Kirkland Lake has a small airport, however, it is not serviced by commercial passenger flights. The nearest airports with regular scheduled passenger flights are Timmins, Ontario and Rouyn-Noranda, Quebec which are 130 km northwest and 80 km east of the Property respectively.

### **5.2 CLIMATE**

Climate conditions are typical of northern Ontario. Average winter temperatures are in the range of -12 to -17 degrees Celsius, and average summer temperatures are in the range of 15 to 18 degrees Celsius. Annual precipitation averages 884 millimetres of which 590 mm occurs as rainfall and the balance is snow (average of 294 centimetres of snowfall) ([www.climate.weatheroffice.gc.ca](http://www.climate.weatheroffice.gc.ca)).

Exploration and mining in the area take place year round and there are very few lost days due to extreme weather conditions.

### **5.3 INFRASTRUCTURE**

The Project benefits from being in the Abitibi region that includes the larger cities of Timmins and Kirkland Lake which have a long history of exploration and mining dating back to the early 1900's. The area possesses a skilled and well trained exploration and mining work force from which personnel can be sourced for new mine developments. Mining is the primary industry and employer in the area. There are analytical laboratories and abundant mining service and supply businesses in the area. Other industries include forestry and tourism.

Although the property hosts a network of old access roads, no mining-related surface infrastructure remains on the property. The Mirado project area contains several small lakes,

streams, and ponds that supply sufficient water for drilling, trenching, and exploration work in general. The Misema River flows through the Project area.

#### **5.4 PHYSIOGRAPHY**

The Project area is in the Canadian Shield that has relatively flat to mildly rugged topography with a maximum relief of approximately 50 metres. The average elevation is approximately 290 metres above sea level but ranges from about 260 to 310 metres above sea level (“masl”).

The terrain is characterized by a flat lacustrine plain with few bedrock outcrops. The vegetation ranges from mature spruce, pine, birch, and poplar to scattered, locally thick underbrush. There are numerous creeks, swamps and small lakes that provide fresh water. The area is characterized by poor drainage towards the Misema River in the east and southern part of the Property. The Misema River flows south and joins the Blanche River near Englehart and then into the Ottawa River system at Lake Temiskaming.

## 6.0 HISTORY

Exploration and drilling by Orefinders is described in sections 9 and 10. Information on historical exploration by previous operators is described in this section has been modified from Reddick and Lavigne (2012) and Weiershauser and El-Rassi (2013).

### 6.1 EXPLORATION HISTORY

Exploration for gold in the vicinity of the Mirado project commenced during the early 1920s. At that time the property was known as the Cathroy Larder property. The first gold discovery was made on Lot 7, concessions V and VI, Catharine Township, where the Gold Bank and Gold Ridge Syndicates obtained gold values ranging up to 0.12 ounces gold per ton (Bell, 1929). Almost all of the historical work on the Mirado property is concentrated in the immediate vicinity of the former underground mine.

Yama Gold Mines Limited (Yama) held the property from 1937 to 1943. After an initial surface drilling program, Yama sank a three-compartment vertical shaft to a depth of 550 feet (168 metres) and established four levels approximately 125 feet (38 metres) apart, including levels at the 125, 250, 375 and 500 feet horizons (38, 76, 114, and 128 metres). For a 15-month period between late 1941 and 1943, the company operated a small 50 to 75 tons per day mill with mill feed coming from narrow shrinkage stopes near the shaft on or above the 250 foot (76 metres) level in an area now known as the North zone.

Yama recovered 3,227 ounces of gold and 993 ounces of silver from 22,250 tons of mineralized rock. The average grade of the material was 0.145 ounces per ton gold (4.97 g/t Au). The Second World War severely curtailed production due to rationing of steel and explosives.

Cathroy Larder Mines Ltd. (Cathroy Larder) took over Yama in 1943 and concentrated their exploration efforts on an area southwest of the shaft, where a second gold bearing zone was outlined by diamond drilling in 1945 in an area now known as the South zone.

A total of 15,000 feet (4,572 metres) of surface drilling and 17,000 feet (5,182 metres) of underground drilling were completed. Underground development on the South zone by means of exploration drifts developed south of the shaft was confined to the 250 and 500 foot (76 and 152 m) levels. In total, 4,000 feet (1,220 metres) of crosscutting, 8,000 feet (2,438 metres) of drifting, 720 feet (219 metres) of raising, and 1,723 feet (525 metres) of lineal stoping and stope preparation were completed. No gold production was reported by Cathroy Larder between 1943 and 1948.

All work was suspended by Cathroy Larder in August 1948 when rising production costs and effects of the Bretton Woods Agreement that fixed gold at US\$35 per ounce, made gold mining uneconomic. The property remained in the hands of Cathroy Larder until 1960.

K. Carmichael of Kirkland Lake staked ground in the immediate vicinity of the Cathroy Larder tenements and optioned the property to Kordol Exploration Limited in 1960 ("Kordol"). Kordol completed trenching and surface sampling and reported gold values of up to 1.01 ounces per ton gold (34.63 g/t Au) from Claim 3004539. Following these results a total of 10 AX-sized core boreholes (304 metres) were completed at two targets. Following this drill program the option was allowed to lapse.

On December 12, 1960, Mirado Nickel Mines (“Mirado”) optioned the property from Cathroy Larder and proceeded to rehabilitate the underground workings. The underground workings were de-watered and re-mapped. A considerable amount of surface and underground drilling was completed, with 23,065 feet (7,030 metres) of surface drilling completed on the South zone, along with 5,760 feet (1,756 metres) of underground drilling on the North zone, and 9,083 feet (2,768 metres) of drilling on the South zone.

No additional drifting or crosscutting was carried out by Mirado. Segsworth (1964) completed an in-house historic resource estimate of 435,000 tons grading 0.23 ounces of gold per tonne. P&E cautions that this estimate is historical, has not been verified by a QP, and as such, cannot be relied upon.

In 1963, Broulan Reef Mines optioned the property from Mirado Nickel Mines and carried out approximately 5,125 feet (1,562 metres) of surface diamond drilling in the area of the South zone and then subsequently returned the property after receiving negative results from this work.

The property then remained idle until 1980, when Amax Minerals Exploration (“Amax”) compiled an extensive amount of data from the previous drill programs into a single set of level plans and sections. Amax also established a grid over the Mirado deposit on 200 foot (61 metres) centres, and completed a 13.5 mile (21.6 kilometre) very low frequency (“VLF”) survey, a 16.7 miles (26.8 kilometres) of ground magnetometer survey, an 11.0 miles (17.6 kilometres) IP survey, a 2.7 mile (4.3 kilometre) pulse electromagnetic (“PEM”) survey and a 2.2 mile (3.5 kilometre) ground horizontal loop electro-magnetic (“HEM”) survey. Detailed mapping and prospecting was performed during the summer of 1980, and three phases of diamond drilling were completed on the property.

The Phase 1 Amax core drilling program consisted of 9 BQ core boreholes for a total of 5,387 feet (1,642 metres). The Phase 2 drill program was conducted during the fall of 1980 and consisted of 15 BQ core boreholes for a total of 8,094 feet (2,467 metres). A Phase 3 program was completed during the winter in early 1981 and consisted of 31 BQ core boreholes totalling 16,760 feet (5,108 metres). During the summer of 1981, stripping and rock saw channel sampling was conducted in the vicinity of the South zone; this work was completed by the end of September. Amax returned the property to Mirado in 1983.

Golden Shield Resources Ltd. (Golden Shield) entered into an option agreement with Mirado and Royado Mines Ltd. in which Golden Shield could acquire a 100 percent interest in Mirado's Cathroy Larder gold property in August 1985. Fifteen core boreholes totalling 4,999 feet (1,524 metres) were drilled in the fourth quarter of 1985.

Golden Shield commenced their next surface diamond drilling in January 1986. A total of 86 BQ core boreholes were completed in two phases for a total of 13,753 feet (4,191 metres) between January and December of 1986.

In January 1986, Golden Shield contracted Dynatec Mining Ltd. (“Dynatec”) located in North Bay, Ontario to rehabilitate and expand infrastructure in and around the Mirado mine. Initially, Dynatec set up generators, compressors plus office and dry facilities, and then commenced with dewatering of the Mirado underground workings. Site water supply and sewage disposal systems were also installed. The underground dewatering program was completed on March 10, 1986

with the use of a 140 horsepower pump. Compressed air, water lines, underground communication lines and 18-inch gauge rail track were laid in all development drifts.

The shaft was rehabilitated and a temporary 35 foot (approximately 10 metre) high headframe plus a single drum Canadian Ingersoll Rand SE-2 hoist was installed. The underground workings were inspected and found to be in good condition. An underground drill program commenced in April 1986, during which 51 BQ core boreholes were completed for a total of 9,877 feet (3,011 metres).

The underground drilling program was undertaken from the 250 and 500 foot levels and targeted Zones D, E, F, and G, which are subzones of the South zone. Between June and December of 1986, a total of 1,551 feet (473 metres) of drifting, 420 feet (128 metres) of raising, 180 feet (55 metres) of sublevelling and 24 feet (7 metres) of crosscuts were developed underground. During this same period, detailed underground mapping and sampling programs were completed on all four levels.

In early 1986, metallurgical test work was undertaken under the supervision of A. S. Hayden of EH Associates. Settling and filtration tests were conducted and test slurries were prepared by Lakefield Research. An economic study of three alternative metallurgical processes was undertaken, including selective flotation with cyanidation of concentrate, direct cyanidation of mineralized material with Merrill- Crowe recovery, and direct cyanidation of mineralized material, with carbon in pulp gold recovery. Gold recoveries up to 93 percent were realized. In addition to amalgamation and flotation test work metallurgical recovery studies, reflected light microscopy and mineralogical studies were completed, and the Bond Work Index was determined (Hayden, 1986).

Environmental base line studies were completed for the surrounding fish and wildlife habitat and watersheds. The studies included land use, land ownership, forestry and mining activities, environmental and surficial geology, and tailings disposal. A base line water sampling program was also completed. All of this work was conducted by Environmental Applications Group Limited in 1986.

A technical and financial evaluation report for the Mirado Gold Mine project was prepared by representatives of Golden Shield and several outside consulting firms including Dynatec Mining Limited, Bryan Wilson and Associates, E. H. Associates, Environmental Applications Group Limited, and Markham Data Inc. The report included detailed plans for a proposed open pit to be developed during the winter of 1987. The pit was designed to provide access to the underground workings on the 125 foot level.

In early 1987, Dynatec stripped the South zone in an area where the D Zone was drilled near surface. Preliminary calculations indicated that an overall stripping ratio of 3:1 was economic, and that pit faces could be safely excavated to a 70 degree angle. Approximately 82,000 cubic yards of overburden was removed as part of the exploration sampling program (Golden Shield, 1987). A custom milling agreement was reached in 1986 with the owner of the McBean Mill (Queenston/Inco) for milling mineralized material at a rate of 600 tons per day. No records from the 1987 mine production or milling are available.

The property was subsequently returned to Mirado and in 2010, Mirado merged with two other junior mining companies to become Micon Gold Inc. (“Micon”). In January 2012, Micon signed the agreement with Fechi Inc.

The former MZ property experienced further exploration work between 1990 and 2012. During the summer field season of 1990, Goldfields Canadian Mining Ltd. (“Goldfields”) explored the southwestern limit of the former MZ property on what is currently Claim 1241353. A trench exposed a strongly iron-carbonate altered unit of mafic and intermediate volcanic rocks that averaged approximately 1 g/t across a true width of approximately 50 metres.

The gold mineralization was described as being hosted in gossanous quartz fracture filled mafic volcanic containing 1 to 3 percent pyrite and trace chalcopyrite. No further work has been completed on this showing since. The size of this mineralized gold showing is not known due to the extensive overburden coverage and it remains open.

In 1998, James Burns of Timmins, Ontario staked Claim 4258214 and conducted surface mapping and sampling as well as ground magnetic and EM-16 surveys. Following this phase of exploration, a single BQ-sized core borehole (137 metres) was completed. No significant assay results were reported (Burns, 1998).

Between 2000 and 2002, Messrs. Metherall and Zabudsky conducted surface sampling, mechanized trenching, and drilling with a portable X-ray drill on Claims L-1146327 and L-1196951. This work was based on the discovery of previously undocumented historical trenches and pits in the area. Surface and trench sampling yielded unspecified “significant” gold assays. Drilling consisted of eight EX-sized core boreholes (114 metres).

In December 2002, the MZ claims were optioned to 1179785 Ontario Inc. This agreement was amended in January 2003 and subsequently, transferred to Hawk Precious Metals Inc. (Hawk). During April 2003, Hawk conducted two work programs including line-cutting and a ground geophysical magnetometer survey over Claims L-1146327, L-1199884, and L-1196951, followed by additional mechanized trenching in November 2003. Quantec Geophysics Inc. completed 5.7 kilometres of a pole-dipole induced polarization survey on Claim 1146327 in 2003.

In November 2003, four new trenches were excavated to investigate gold mineralization surrounding the discovery areas named the Main and North Showing areas. Channel sampling in Trench 03-2 at the Main Showing returned 3.28 g/t Au over a horizontal width of 5.33 metres. Hawk contracted MPH Consulting Ltd. (“MPH”) of Toronto, Ontario, to complete a technical report detailing Hawk’s 2003 work program. MPH assessed the exploration potential for gold as favourable and recommended a two-phase exploration program, including a C\$225,000 Phase 1 program involving systematic geological mapping, prospecting, an induced polarization survey, and mechanized trenching, followed by a provisional C\$200,000 Phase 2 core drilling program on selected targets.

As part of the second phase exploration program, Hawk completed five NQ-sized core boreholes (767 metres) on Claim 1146327 to test targets identified from the induced polarization survey. Results from the drill program were discouraging and Hawk dropped the option and returned the property to the vendors.

White Pine Resources Inc. (“White Pine”) optioned the MZ property in 2009 and retained CXS Geophysics of Kirkland Lake, Ontario to complete 19 kilometres of pole-dipole induced polarization survey. The survey was completed in February 2010. A total of nine NQ-sized core boreholes (1,934 metres) were completed during the summer of 2010. These boreholes were completed to test targets identified through the geophysical survey and yielded results of 1 to 2 g/t Au range over several metres.

**TABLE 6.1**  
**HISTORICAL CORE DRILLING ON THE MIRADO PROPERTY**

<b>Company</b>	<b>Boreholes</b>		<b>Year</b>	<b>Feet</b>	<b>Metres</b>
Yama Gold Mines Ltd.	8	Underground	1942	450	137.2
Cathroy Larder Lake	10	Surface	1945	5,596	1,705.7
Cathroy Larder Lake	15	Underground	1945	1,171	356.9
Cathroy Larder Lake	20	Surface	1946	9,404	3,018.7
Cathroy Larder Lake	173	Underground	1946	15,809	4,818.6
Mirado Nickel Mines	Unknown	Surface	1960	23,065	7,030.2
Mirado Nickel Mines	Unknown	Underground	1960	14,483	4,414.4
Kordol Exploration Ltd.	10	Surface	1960	997	303.9
Broulan Reef Mines	Unknown	Surface	1963	5,125	1,562.1
Amax Minerals Exploration	24	Surface	1980	13,461	4,102.9
Amax Minerals Exploration	31	Surface	1981	16,760	5,108.5
Golden Shield	15	Surface	1985	4,999	1,523.7
Golden Shield	86	Surface	1986	13,753	4,191.9
Golden Shield	51	Underground	1986	9,877	3,010.5
J. Burns	1	Surface	1998	449	136.9
Metherall and Zabudsky	8	Surface	2002	374	114.0
Hawk Precious Metals Inc.	5	Surface	2004	2,517	767.2
White Pine Resources Ltd.	9	Surface	2009	6,345	1,934.0
<b>Total</b>				<b>144,635</b>	<b>44,237.2</b>

## 6.2 HISTORICAL RESOURCE ESTIMATES

Three historical Mineral Resource estimates have been prepared for the Mirado project between 1964 and 1987 (Reddick and Lavigne, 2012). P&E cautions that these estimates were prepared prior to the introduction of Canadian Securities Administrators’ National Instrument 43-101. No Qualified Person has done sufficient work to review the historical Mineral Resources. The key assumptions, parameters, and methods used to prepare the historical estimates are unknown. These estimates should not be relied upon and have been superseded by the Mineral Resource statement presented in the current report. These historical Mineral Resource estimates are tabulated in Table 6.2 and are shown for historical context only.

<b>TABLE 6.2</b>			
<b>HISTORICAL RESOURCE ESTIMATES PREPARED FOR THE MIRADO PROJECT</b>			
<b>Estimate</b>	<b>Quantity (Tons)</b>	<b>Grade (ounces of gold per ton)</b>	<b>Category</b>
Baker, 1964	400,000	0.230	
Segsworth, 1964	435,000	0.233	
Golden Shield Resources, May 30, 1987	441,000	0.340	Drill indicated

### **6.3 SRK 2013 MINERAL RESOURCE ESTIMATE**

The Mineral Resource model prepared by (Weiershauser and El-Rassi, 2013) for SRK considered 242 core boreholes (31,700 metres). The database represented drilling data acquired between 1980 and 2013 by Amax, Golden Shield, and Orefinders. The borehole data include collar location, down-hole survey data, lithology codes, and 19,091 sample intervals assayed for gold.

Mineral Resources for the bedrock and the stockpiles gold mineralization were estimated using a geostatistical block modelling approach. SRK modelled the spatial continuity of capped core gold composites and used ordinary kriging to populate the bedrock block model. An inverse distance estimation method was used to populate the stockpile block model as there is no spatial continuity between the stockpile samples.

Mineral Resources were classified according to the CIM Definition Standards for Mineral Resources and Mineral Reserves by Dr. Lars Weiershäuser, P. Geo and Glen Cole, P. Geo, both of whom were independent Qualified Persons for the purpose of National Instrument 43-101. The Mineral Resource model was based on variably spaced and oriented boreholes from three different operators, of which approximately 63 percent of the borehole database comprises historical drilling data with no analytical quality control data. The lack of specific gravity data and uncertainties about the volume of the stockpiles also impacts negatively on the confidence of the estimates. SRK classified all modelled blocks in the Inferred category within the meaning of the CIM Definition Standards for Mineral Resources and Mineral Reserves.

SRK considered that parts of the gold mineralization found at the Mirado project were amenable to open pit mining. SRK used a pit optimizer to test the “reasonable prospects for economic extraction” of the block model and to assist with the selection of appropriate reporting assumptions. SRK considered that open pit Mineral Resources can be reported at a cut-off grade of 0.45 g/t Au within a conceptual pit shell. The blocks located outside the conceptual pit shell can be reported as an underground Mineral Resource if their grade exceeded 2.0 g/t Au. Orefinders elected to report the stockpile mineral resources at a cut-off grade of 2.0 g/t Au in the view of possible off-site toll milling prior to any mine development. SRK considered that a cut-off grade of 2.0 g/t gold is appropriate for reporting for the stockpile Mineral Resources. The Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. The effective date of the SRK Mineral Resource Statement was October 30, 2013.

<b>TABLE 6.3</b>				
<b>MINERAL RESOURCE STATEMENT*, MIRADO GOLD PROJECT, ONTARIO, SRK, OCT 30, 2013</b>				
<b>Classification/Zone</b>	<b>Cut-Off Grade</b>	<b>Quantity</b>	<b>Grade</b>	<b>Contained Metal</b>
	<b>(g/t Au)</b>	<b>(000 tonnes)</b>	<b>(g/t Au)</b>	<b>Gold (000 ounces)</b>
<b>Inferred</b>				
Open pit**	0.45	9,927	1.18	376.6
Underground**	2.00	669	2.90	62.4
Northern pile***	2.00	12	4.71	1.8
Central pile***	2.00	4	5.38	0.7
Southern pile***	2.00	5	2.74	0.4
<b>Total Inferred</b>		<b>10,618</b>	<b>1.29</b>	<b>442.0</b>

\*Mineral Resources are not mineral reserves and have not demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates. Open pit Mineral Resources are reported at a cut-off grade of 0.45 g/t Au inside a conceptual pit; underground and stockpile Mineral Resources reported at a cut-off grade of 2.0 g/t Au. Cut-off grades assume a gold price of US\$1,400 per oz; and metallurgical recovery of 95%.

\*\*Open pit and underground Mineral Resources were disclosed by Orefinders in a news release dated Dec 9, 2013.

\*\*\*Mineral Resources in historical stockpiles were disclosed by Orefinders in a news release dated Oct 30, 2013.

The SRK Mineral Resource Estimate is superseded by the Mineral Resource Estimate reported in the current Technical Report.

## 6.4 PAST PRODUCTION

Underground mining by Yama from 1937 to 1942 included the sinking of a three compartment shaft to 540 feet (165 m), with levels at 125, 250, 375, and 500 feet (38, 76, 114, and 152 m). A 50-ton per day mill was established on site. Reddick and Lavigne (2012) report that Yama production from 1938 to 1942 was 3,227 ounces of gold and 993 ounces of silver from 22,250 tons of mined material.

Production figures for Golden Shield are unavailable. Meyer et al. (2000) report total historical production from the Mirado property at 10,231 ounces of gold at an average grade of 0.114 ounce of gold per ton (3.91 g/t Au) No records for mining or milling by Golden Shield are available, but the material is reported to have been milled at Queenston's McBean mill, although the Kerr Addison mine and mill were acquired by Golden Shield in 1987.

<b>TABLE 6.4</b>					
<b>SUMMARY OF HISTORICAL PRODUCTION FROM THE MIRADO PROJECT</b>					
<b>Period</b>	<b>Quantity (tons)</b>	<b>Metal (ounces)</b>	<b>Grade (opt gold)</b>	<b>Operator</b>	<b>Reference</b>
<b>1937 – 43</b>	22,250	3,227	0.145	Yama Gold Mines Ltd.	Baker, 1962
<b>1987 – 88</b>	67,469	7,199	0.107	Golden Shield Resources*	
<b>Total</b>	<b>89,719</b>	<b>10,231</b>	<b>0.114</b>		<b>Meyer et al., 2000</b>

\*Historical production figures for Golden Shield Resources were derived by subtracting Yama Gold Mines Ltd. production figures from totals reported by Meyer et al (2000).

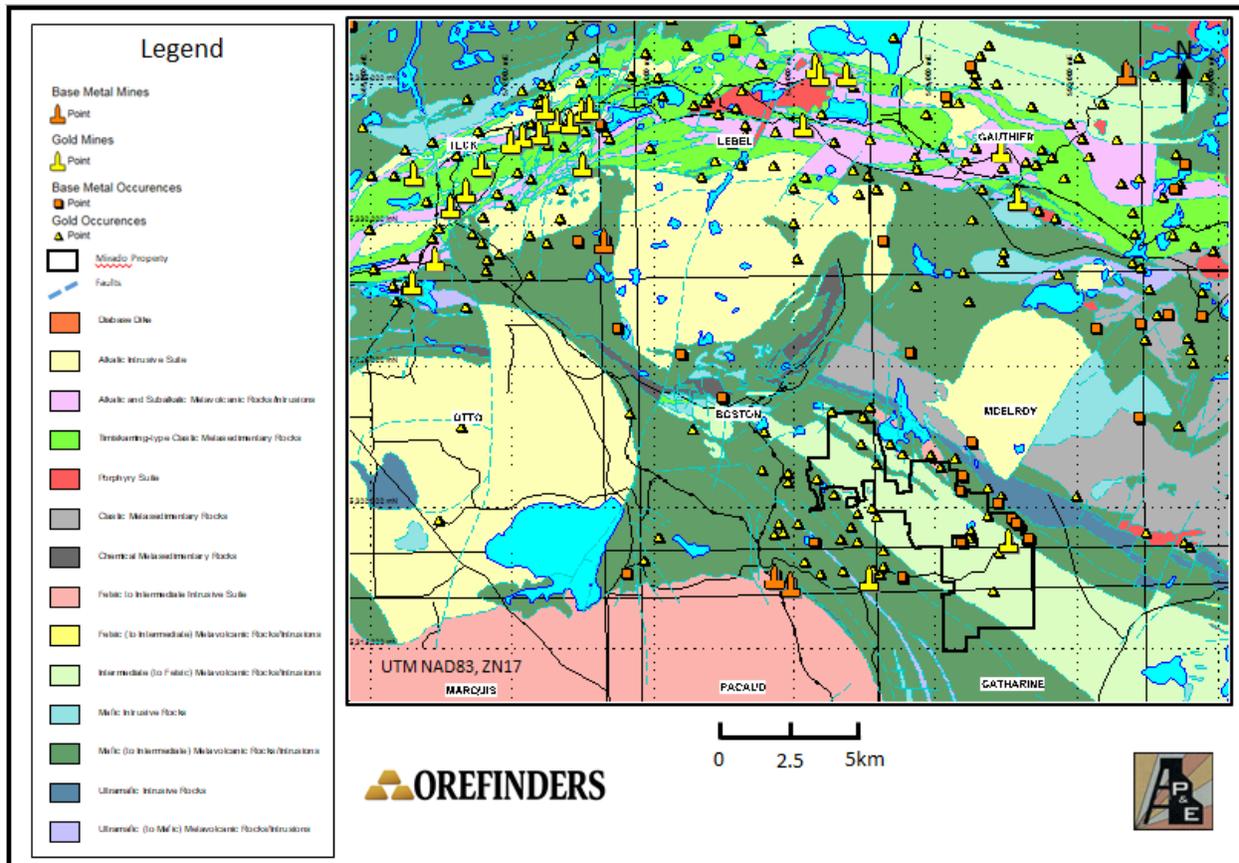
## **7.0 GEOLOGICAL SETTING & MINERALIZATION**

### **7.1 REGIONAL GEOLOGY**

The Mirado project is located in the Archean (ca. 2.7 Ga) central Abitibi Greenstone Belt of the Superior Province in north-eastern Ontario. The Abitibi greenstone belt consists of supracrustal rocks divided into tectonic-stratigraphic assemblages that include metavolcanic rocks, synvolcanic intrusions, metasedimentary rocks, calc-alkaline and alkaline intrusive rocks, and Late Proterozoic dykes (Ayer et al., 2005). Large crustal scale east-west structural zones occur throughout the Abitibi Greenstone Belt and include the Larder-Lake-Cadillac Break that is located approximately 10 km north of the Mirado project (Figure 7.1). Numerous gold deposits are located along this structure including the Kerr-Addison and the Kirkland Lake mines.

In the Kirkland Lake-Larder Lake area, the main gold mineralization events are post-Timiskaming (post ca. 2.67 Ga) and are associated with structural events corresponding with movement along the Larder Lake-Cadillac deformation zone. The brittle to brittle-ductile Kirkland Lake Main Break and its subsidiary splays are discrete fault zones within the Larder Lake Cadillac deformation zone that are closely associated with the Kirkland Lake gold deposits (Ayer et al. 2005). Precious metal production from the Kirkland Lake Gold Camp commenced in 1915 and since then, the seven largest mines along the Kirkland Lake Main Break have produced in excess of 24M ounces of gold at an average grade of 0.48 opt Au (Meyer, et al., 2000).

**Figure 7.1 Regional Geology**



Source: Orefinders (2018)

## 7.2 PROPERTY GEOLOGY

Information in this section has been modified from Reddick and Lavigne (2012) and Weiershäuser and El-Rassi (2013).

The geology of Catharine and McElroy Twps. was initially mapped by the Ontario Department of Mines in 1947-48 by Abraham (1951). The Mirado project is primarily underlain by the Skead and the McElroy metavolcanic assemblages (Figure 7.2) that have been dated at ca. 2.75 to 2.70 Ga. The assemblages are interpreted to be conformable to each other, and both are folded around the Round Lake batholith located on the west side of Catharine Township. The Mirado property is located near the top of the Skead Assemblage, a felsic, fragmental calc-alkaline volcanic sequence. A regional northwest trending fault defines the upper contact of the Skead Assemblage with the ultramafic to mafic metavolcanic rocks of the McElroy Assemblage to the north. This faulted contact is situated on the northern half of the property.

Outcrop on the Mirado property is scarce and is mostly restricted to the area around the historical open pit. Other areas of the property are mostly covered by thin glacial overburden. The geology is mostly known through government mapping, drilling, underground mining, trenching, and interpretation of geophysical data. Unpublished geological maps were produced in the 1960s by Baker (1962, 1964), Bourne (1985) and various other reports from the 1980s by Amax and Golden Shield. Orefinders has relied heavily on maps by Golden Shield.

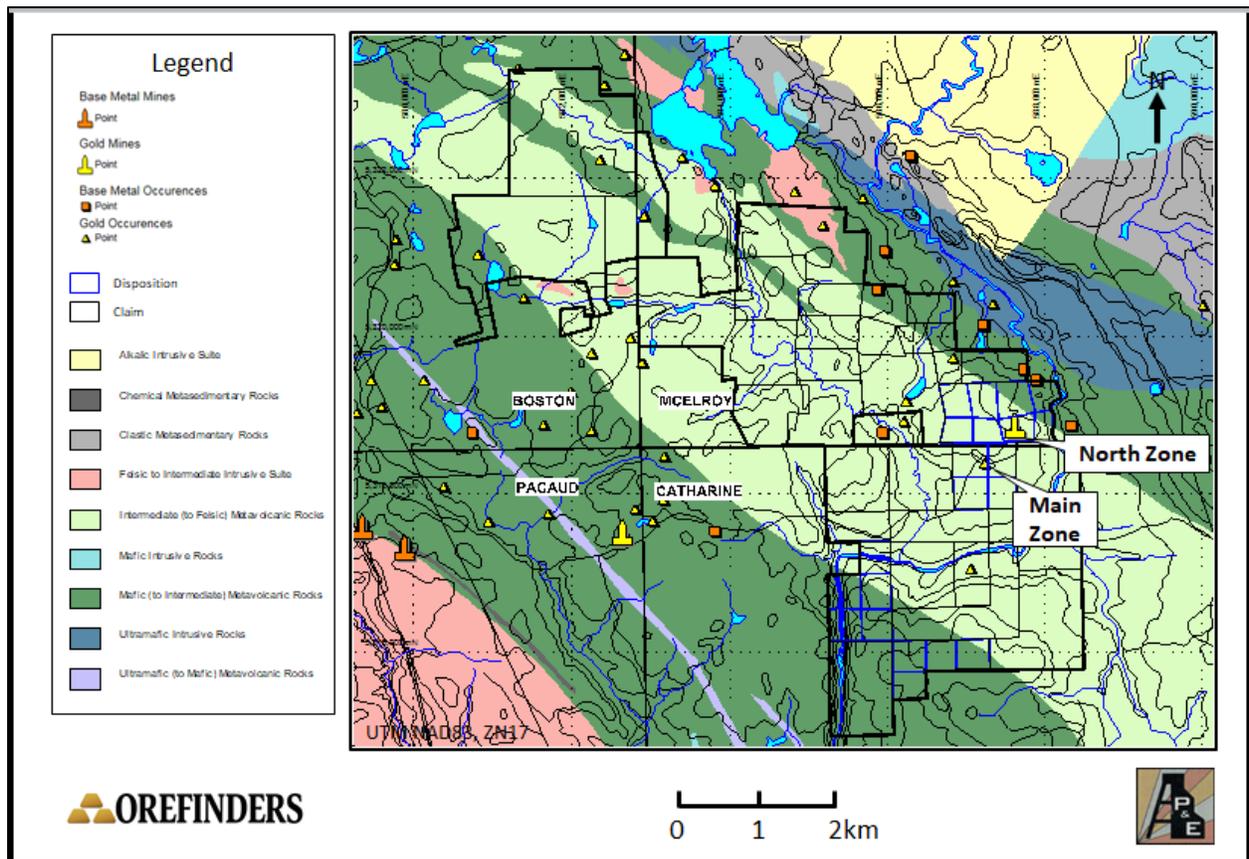
The Skead assemblage on the northeastern part of the property consists of a variety of mafic to felsic pyroclastic flows and fragmental units with minor interflow sediments. The pyroclastic units consist of monolithic to heterolithic lapilli tuff and coarse fragmental units. Minor wacke and conglomerate occur throughout. The stratigraphy faces to the north. In the Project area, Weiershauser and El-Rassi (2013) report that the lithological units strike at 290° and dip from 70 to 85 degrees to the north. The upper contact of the Skead assemblage is marked by an iron formation horizon.

The overlying McElroy assemblage comprises mainly massive mafic metavolcanic rock, subordinate felsic metavolcanic rock, and very minor komatiite.

The southernmost part of the property is underlain by metavolcanic rocks of the Catharine Assemblage.

Numerous late dykes intrude the Skead and McElroy assemblages and are described variably as syenite, syenite porphyry, feldspar porphyry, gabbro, diorite, and lamprophyre.

**Figure 7.2 Property Geology**



Source: Orefinders (2018)

### 7.3 DEPOSIT GEOLOGY

The gold mineralization at the Mirado Project that is the subject of this report is mainly associated with the zone historically named the Main Zone (and also referred to as the South zone in some historical reports). The shaft is located in the North zone located approximately

400 m northeast of the pit, but almost all exploration work since the 1960's has been focused on the Main Zone that is in the vicinity of the open pit.

Mineralization defined in the current report forms three lenses north-northwest striking lenses with up to 300 m strike length and widths of 10 to 50 m. The lenses dip west at 45 to 60° and are separated by barren intervals that are 20 to 30 m wide. The strike of the mineralized zones is broadly conformable with the regional northwest lithological and structural trends, however, the dip appears to be discordant to the described lithological trends.

Weiershauser and El-Rassi (2013) report that within the Main zone, sulphide stringers occur at varying orientations. Northwest of the open pit sulphide stringers strike mainly west-northwest. Pyrite stringers in the massive rock south of the shear zone strike dominantly north to north-northwest and northeast at a high angle to the shear zone.

## **7.4 STRUCTURE**

Gold mineralization is structurally controlled and has been identified along north-northwest trending shear zones. North-south trending brittle structures have also been recognized on the property as being favourable for gold mineralization.

Weiershauser and El-Rassi (2013) report that a west-northwest striking shear zone is associated with the Main Zone in the vicinity of the open pit. This shear zone separates massive tuff in the south from tuff with a penetrative planar fabric in the north. North of the shear zone, on the north side of the open pit, agglomerate and lapilli tuff show foliation formed by elongated clasts. The shear zone itself is characterized by tightly spaced cleavage, locally with an oblique mineral lineation. From the Main zone open pit to the North Zone the felsic tuff generally exhibits west-northwest striking cleavage of varying intensity. The shear zone dips approximately 80 degrees to the north-northeast.

Weiershauser and El-Rassi (2013) also report that a north-northeast-striking fault observed in core (Boreholes MD13-28, MD13-06, MD13-37) appears to coincide with the southeast limits of the main auriferous zone. This fault is characterized by slickensides with chlorite, and broken core and may correlate with a northeast-striking fault with subhorizontal lineation and sinistral sense-of-shear documented on the south side of the open pit.

## **7.5 MINERALIZATION**

Gold mineralization in the Main zone commonly occurs in highly silicified fragmental rock with varying amounts of pyrite and subordinate chalcopyrite and sphalerite. Sulphide mineralization occurs as stringers, blebs and disseminations. The distribution of gold is highly variable. The current resource model is based mainly on mineralization envelopes broadly defined by sulphide mineralization.

Weiershauser and El-Rassi (2013) report that some gold occurs at and near the contact with a rhyolite which, based on information from core logging, forms an irregular body on the south side and below the Main zone.

In the North zone, gold mineralization is associated with a series of sulphide, quartz, and quartz carbonate veinlets parallel to the shear zone foliation. The strike continuity of the veins is good.

Bourne (1985) reports that the North zone was mined in five parallel stopes for about 500 feet along strike on the 250 foot level and can be traced for about 1,000 feet along strike. The North zone extends to the 500 foot level and is open at depth.

## 8.0 DEPOSIT TYPES

Gold mineralization along regional fault and shear structures in the Abitibi Greenstone Belt are examples of structurally controlled mesothermal gold deposits, also known as orogenic gold deposits. The Kirkland Lake area gold mineralization is closely associated with brittle to brittle-ductile deformation that postdates the youngest supracrustal rocks. Ayer et al. (2005) interpret that the deposits as forming at relatively shallow crustal levels.

In these deposits, the gold mineralization is typically associated with a network of quartz veins containing subordinate amounts of carbonate, tourmaline, sulphides, and native free-milling gold. Gold mineralization can also be associated with disseminated sulphides in strongly deformed alteration zones without significant veining.

This style of gold deposit typically exhibit strong relationships with regional major shear zones. The deposits are formed by circulation of gold-bearing hydrothermal fluids in structurally-enhanced permeable zones developed in supracrustal rocks during regional metamorphism that typically accompanies orogenic processes. These deposits typically exhibit strong structural controls hosted in deformed and metamorphosed volcanic, sedimentary, and granitoid rocks. Gold deposition typically occurs as a result of changes in fluid solubility triggered by wallrock alteration and perturbations in the local stress field.

At the Mirado project the gold mineralization in the Main zone is primarily associated with stockwork and disseminated sulphides in variably altered rock. The characteristics of the gold mineralization in the Main zone are similar to intrusion-related gold mineralization (Robert et al. 2005). These atypical deposits display similar regional-scale controls as orogenic deposits. They differ in styles of mineralization, metal association, interpreted crustal levels of emplacement, and relative age. Those gold deposits show a close spatial association with high-level porphyry stocks.

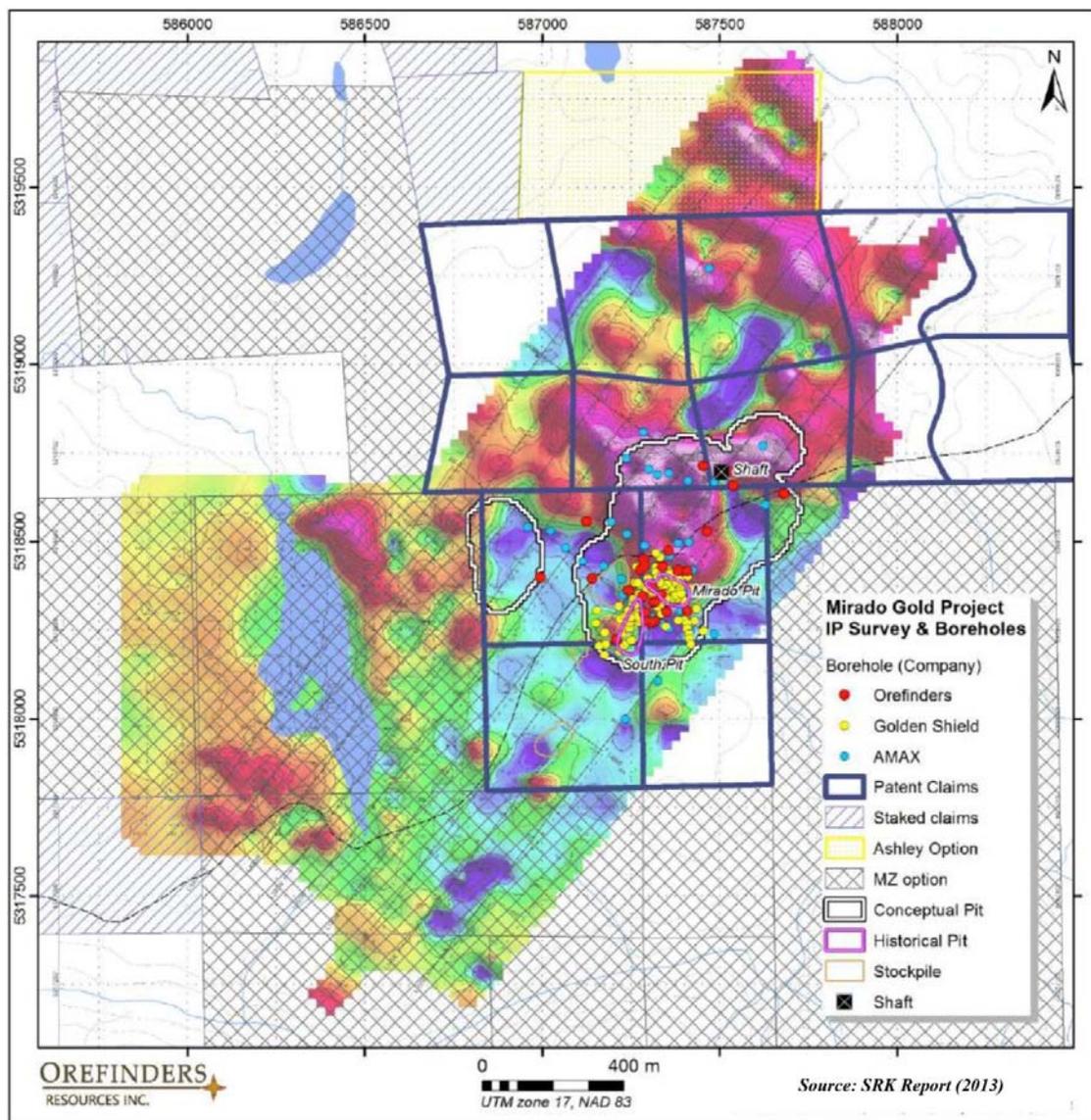
## 9.0 EXPLORATION

### 9.1 2012 EXPLORATION CARRIED OUT BY OREFINDERS

As described in SRK's December, 2013 report, Orefinders conducted basic survey and reconnaissance work including the identification of old mine survey control points and drill collars in 2012. Orefinders also completed a total of 67.8 km of line cutting. Lines were cut at a bearing of 38 degrees, and replicating historical grids.

In the spring of 2012, Orefinders engaged Canadian Exploration Services Ltd. ("CanEx") of Larder Lake, Ontario to carry out an induced polarization survey of the Property. The survey consisted of 14.5 km of dipole-dipole survey and 6 km of deep induced polarization survey. CanEx collected resistivity and chargeability data. Survey lines were spaced 100 m apart with survey stations every 25 m. The layout of the induced polarization survey is shown in Figure 9.1.

**Figure 9.1 Location and Layout of the 2012 Induced Polarization Survey**



The dipole-dipole survey used a 10 channel Elrec Pro receiver and VIP 3000 (3kW) transmitter with a Honda 5000 generator as a power plant. The dipole-dipole array consisted of 11 mobile stainless steel read electrodes and one current electrode (C1). The distance between power electrodes and read electrodes as well as the distance between read electrodes was 25 m. A two second transmit cycle time was used with a minimum number of receiver stacks of 12.

The configuration for the deep induced polarization survey comprised 21 mobile stainless steel read electrodes and two current electrodes (C1 and C2). The locations of C1 and C2 varied throughout the survey. A two second transmit cycle time was used with a minimum number of receiver stacks of 12.

## 9.2 2013 EXPLORATION CARRIED OUT BY OREFINDERS

Orefinders' focus during the 2013 exploration program at the Project was on the consolidation and compilation of historical exploration and assay data, as well as the ongoing bedrock mapping and sampling program. A total of 37 surface samples returned gold results ranging from 0.028 g/t Au up to 137 g/t Au in outcrops located approximately 700 m along strike from the Mirado Deposit on the MZ claims. Sampling generated a number of high-grade targets and prompted a bedrock trenching and channel sampling program on the MZ claims in the fall of 2013 (Company News Release, dated January 15, 2014).

Highlights from the fall trenching and channel sampling program are given in Table 9.1.

**TABLE 9.1  
HIGHLIGHTS OF 2013 MIRADO TRENCHING PROGRAM**

2013 Trench Highlights					2013 Trench Highlights			
Trench-ID	Channel-ID	Length (m)	Au (g/t)	Au (g/t) uncut	Trench-ID	Channel-ID	Length (m)	Au (g/t)
MZTR-02	2	5.55	1.54		<b>MZTR-01</b>	<b>2</b>	<b>2.70</b>	<b>7.54</b>
MZTR-02	Including	3.10	2.62		<b>MZTR-01</b>	<b>Including</b>	<b>1.00</b>	<b>18.00</b>
MZTR-02	3	10.20	0.70		<b>MZTR-01</b>	<b>4</b>	<b>9.20</b>	<b>2.43</b>
MZTR-02	Including	1.90	1.86		<b>MZTR-01</b>	<b>Including</b>	<b>3.00</b>	<b>6.43</b>
MZTR-02	5	4.10	0.91		<b>MZTR-01</b>	<b>6</b>	<b>4.70</b>	<b>2.09</b>
MZTR-02	6	6.50	2.49		<b>MZTR-01</b>	<b>Including</b>	<b>2.20</b>	<b>4.05</b>
MZTR-02	Including	2.50	5.58		MZTR-05E	GRAB		2.22
<b>MZTR-02</b>	<b>7</b>	<b>4.80</b>	<b>*11.35</b>	<b>21.8</b>	MZTR-06W	3	0.70	1.40
<b>MZTR-02</b>	<b>Including</b>	<b>1.00</b>	<b>8.08</b>		MZTR-06W	GRAB		1.33
<b>MZTR-02</b>	<b>Including</b>	<b>1.00</b>	<b>17.80</b>		MZTR-06N	5	4.95	2.02
<b>MZTR-02</b>	<b>Including</b>	<b>0.90</b>	<b>*31.10</b>	<b>86.8</b>	MZTR-06E	GRAB		1.08
MZTR-02	8	4.90	2.42		MZTR-07N	GRAB		3.40
MZTR-02	Including	3.00	3.36		MZTR-07S	3	1.3	3.78
MZTR-03	13	6.00	0.43					

\*A capping strategy of 31.1 g/t Au was applied to all individual assays reporting > 31.1 g/t Au

Source: Company News Release, dated January 15, 2014

The Company also completed 12,060 m of diamond drilling during 2013 in 40 holes, as described in Section 10 of this Report. Drilling demonstrated that broad IP chargeability anomalies identified during the 2012 survey at the Mirado Deposit were associated with gold-enriched pyritic zones.

### **9.3 2014 EXPLORATION CARRIED OUT BY OREFINDERS**

The 2014 exploration program, as described in a Company News Releases, dated June 18, September 9 and December 3, 2014, focussed exploration around more than a dozen high priority gold targets at the newly expanded Property, located along a strike length of 9 km from the Mirado Deposit. Two styles of mineralization were recognized for further evaluation:

- Gold targets located along strike from the Mirado South Zone to be evaluated for potential to host bulk tonnage gold mineralization within flat-lying intercalated mafic/felsic volcanic stratigraphy.
- Polymetallic volcanogenic massive sulphide (VMS) occurrences hosted within vertically dipping intercalated felsic and mafic volcanic stratigraphy to be tested for potential Au-Ag-Cu-Zn mineralization.

Orefinders field crews were able to systematically prospect several key target areas covering 340 ha located throughout the Property. The field program successfully identified high-grade gold in outcrops in five target areas located outside the current resource area at Mirado (MZ, Mirado North, Bank, Zabudsky, and Charest). Orefinders collected a total of 91 grab samples at 5 gold occurrences returning gold values ranging from 0.009 to 48.5 g/t Au (Company News Release dated, September 3, 2014).

Chemical analyses were conducted in ALS Chemex's ISO 9001:2008 certified Vancouver, B.C. laboratory facility; gold values were determined using fire assay method with a gravimetric over-limit finish. All samples collected for analysis were processed using Orefinders' strict quality assurance/quality control program, including the insertion of standards, duplicates and blanks.

#### **9.3.1 MZ Trench Zone**

The MZ zone, located approximately 200 m west from the conceptual open pit, is geologically similar to the Mirado south zone. High-grade gold mineralization from Trench 13-02 is extended through to Trench 13-03 with additional sampling during the 2014 field season.

Highlights of the 2014 grab sampling program included 48.5 g/t Au obtained from previously unsampled sections of Trench 13-03. Additional sampling along this NE trend indicated continuous mineralization at surface for a strike length of approximately 100 m. During the 2014 program, 21 grab samples were collected, returning assays ranging from 0.009 to 48.5 g/t Au.

#### **9.3.2 Bank**

The Bank target area, located south of the Misema River, is hosted in felsic – intermediate tuffaceous and volcanic rocks. The mineralized zone shows strong chlorite and sericite alteration giving the rock a bleached appearance. Mineralization occurs in both metre-wide quartz veins and adjacent pyritized wall rocks. Assays returned up to 13.95 g/t Au in the intermediate tuffs

and up to 5.75 g/t Au within a quartz vein. A total of 14 grab samples were collected, with results ranging from 0.005 to 13.95 g/t Au.

### **9.3.3 Zabudsky**

The Zabudsky target lies south of the Misema River and 900 m west of the Bank zone. Mineralization appears to be associated with a hydrothermal breccia zone with up to 25% pyrite. Initial samples collected assayed up to 4.55 g/t Au. A total of 24 grab samples were collected with assays ranging from 0.10 to 4.55 g/t Au. Prospecting and sampling was limited due to sparse outcrop in the area.

### **9.3.4 Mirado North**

High grade Au-rich VMS horizons were identified at surface east of the Mirado shaft. These horizons are similar to Au-rich horizons intersected in drill core during the 2012 Mirado drilling program. A total of 9 grab samples collected during the 2014 field season identified two new VMS horizons northeast of the Mirado shaft with assays ranging up to 20.1 g/t Au.

### **9.3.5 Charest**

The Charest gold occurrence is located within a mineralized syenite intrusion. A total of 23 grab samples were collected from mineralized quartz veins up to 1 m wide, returning assays ranging from 0.005 to 14.8 g/t Au. The best assay results were obtained near a historic, abandoned shaft located within the syenite. Initial prospecting indicated an extensive quartz veining system throughout the syenite body.

Orefinders' followed up on the summer field program results with a trenching program in the fall.

Highlights from the trenching program are as follows:

**TABLE 9.2  
HIGHLIGHTS OF 2014 MIRADO TRENCHING PROGRAM**

2014 Trench Highlights				
Trench-ID	Channel-ID	Length (m)	Au (g/t)	Comments
MZTR14-07W	6	3.65	12.9	Pyritized Volcanics
MZTR14-07W	Including	1.50	30.1	Pyritized Volcanics
MZTR14-07W	8	4.45	2.23	Pyritized Volcanics
MZTR14-07W	10	GRAB	18.0	Pyritized Volcanics
MZTR14-07W	<b>1 – 12 (All Channels)</b>	<b>Combined Length of 59 Samples (49.50m)</b>	<b>1.80</b>	<b>Weighted Average of Entire Trench</b>
MZTR14-02S	4	3.35	3.66	Pyritized Volcanics
MZTR14-03N	6	1.15	9.78	Pyritized Volcanics
MZTR14-03N	8	0.70	20.5	Pyritized Volcanics
MZTR14-Bank	1	GRAB	10.9	NNE Structure
MZTR14-Bank	7	0.80	7.21	NNE Structure
MZTR14-Bank	12	GRAB	44.0	NNE Structure
MZTR14-Bank	22	0.80	8.26	NNE Structure
MZTR14-Bank	15	GRAB	20.9	E-W Shear
MZTR14-Bank	19	0.30	7.36	E-W Shear
<b>MZTR14-Bank</b>	<b>-</b>	<b>30.00 (Strike Length)</b>	<b>4.80</b>	<b>Weighted Average Along NNE Structure</b>

*Source: Company News Release, dated December 3, 2014*

Trench MZTR14-07W channel sampling returned a weighted average grade of 1.80 g/t Au over the entire surface area of the trench (130 square meters) immediately west of the conceptual pit limit.

Trenching at the Bank occurrence, 1 km south of the Mirado Deposit, exposed a north-northeast trending, steeply dipping, high-grade polymetallic massive sulphide replacement vein ranging up to 0.80 m in width. The vein averages 4.80 g/t Au over an exposed strike length of 30 m and remains open to the north and south. Individual high-grade samples reported included 44 g/t Au, 75 g/t Ag, 4.24% Zn and 0.54% Cu.

Orefinders also focused on further developing infrastructure in 2014 with all-season road development into the Mirado mine site completed. Development included the installation of a bridge and 11 culverts, as well as clear-cutting all trees growing within the Property's patented claims, resulting in a network of new all-season logging roads opening up a great deal of access into newly staked areas (Company News Release dated, February 12, 2015).

## **9.4 2015 EXPLORATION CARRIED OUT BY OREFINDERS**

The Company contracted CanEx, of Larder Lake, Ontario, to complete approximately 20 km of line-cutting and an induced polarization ground geophysics survey to test the geophysical response over high grade gold occurrences identified during the 2014 exploration program. The program targeted two distinct zones on the Mirado Project; the Gold Hill and Catharine Fault Gold Zone, and the Bank Zone along with their projected extensions (Company News Releases dated, May 19 and September 29, 2015).

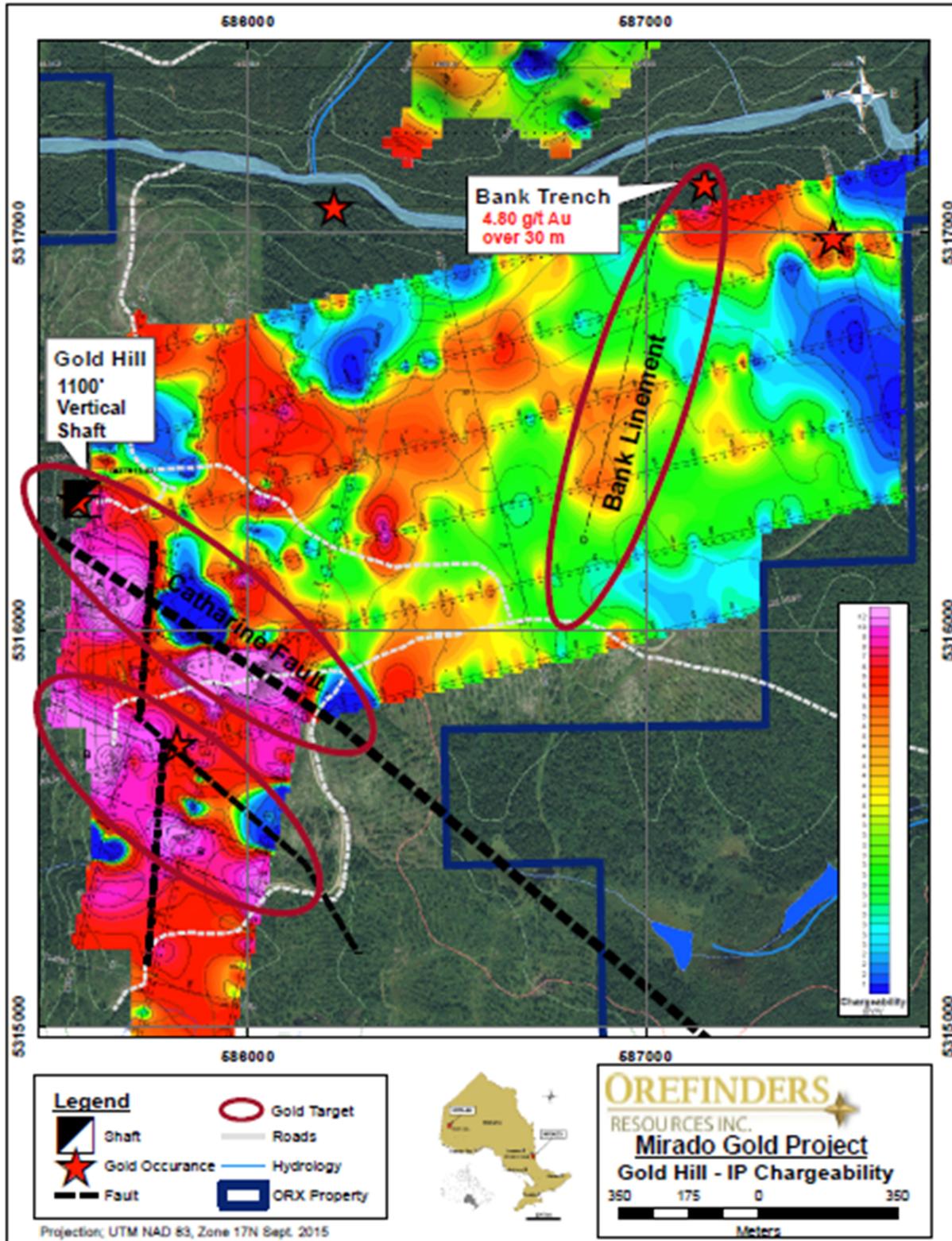
### **9.4.1 Gold Hill Zone IP**

The IP around the Gold Hill mine highlighted the Catharine Fault and a parallel trending fault 300 m to the southwest (refer to Figure 9.2). Both of these faults appear to be offset by a post mineralization north-south structure. The chargeable anomalies along these faults are significantly wider than the fault zones themselves and correlate with parallel, secondary, features that are mineralized with pyrite, chalcopyrite and gold (Company News Release dated, September 29, 2015).

### **9.4.2 Bank Zone IP**

IP line BKL-00, in the NE portion of the grid, identified the extension of the Bank polymetallic sulphide vein, approximately 40 m south of the Bank trench. The Bank trench uncovered 30 m of sulphide vein, averaging 4.80 g/t Au, during the Company's 2014 exploration program. The vein is offset by a 6 m wide shear that is highly oxidized with several high-grade quartz stringers returning results up to 26.8 g/t Au. The chargeable anomaly extends approximately 800 m to the SSW along strike of the vein. The induced polarization survey also indicates a chargeable feature trending east from the trench, which may be the trend of the mineralized shear (Company News Release dated, September 29, 2015).

Figure 9.2 Gold Hill and Bank Induced Polarization Survey



Source: Company News Release, dated September 29, 2015

## **10.0 DRILLING**

The following Section has quoted directly from portions of the 2013 SRK report on the Mirado Property.

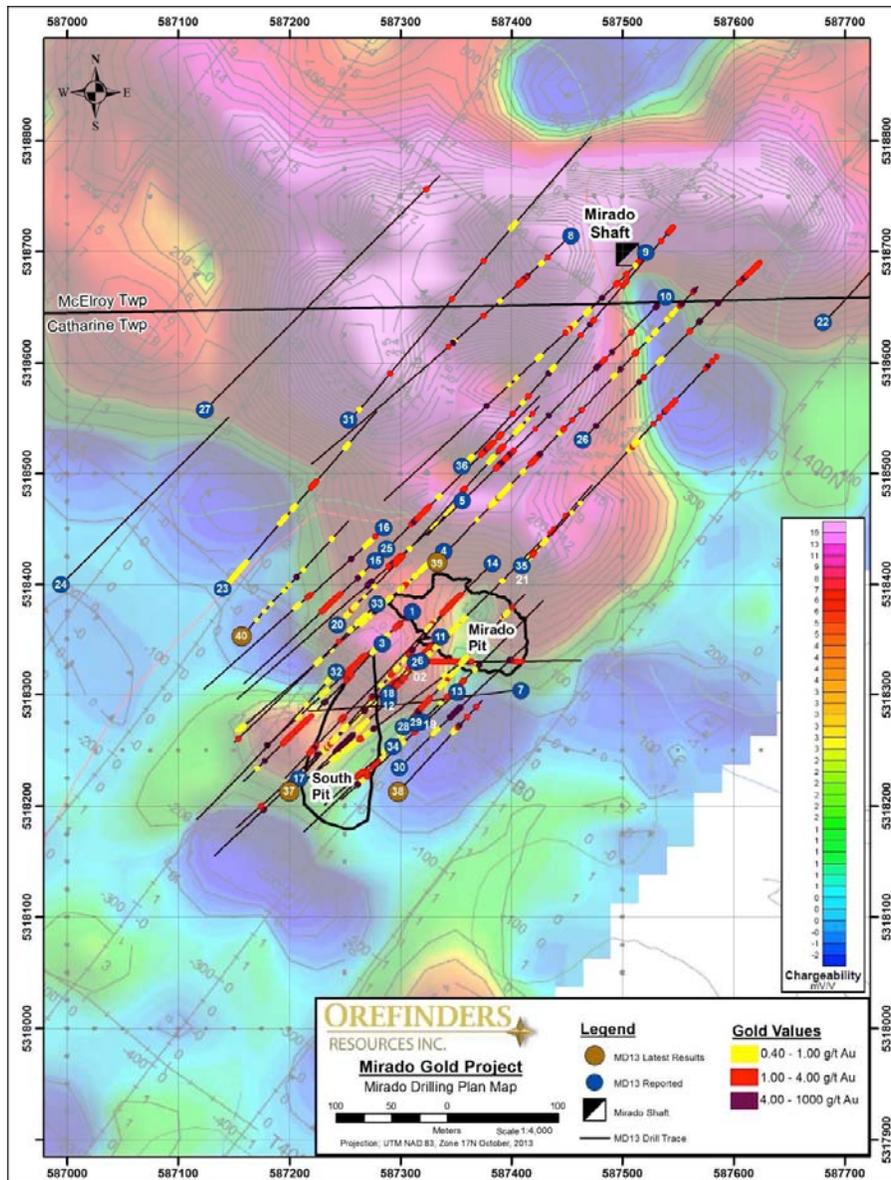
### **10.1 2013 DRILLING CARRIED OUT BY OREFINDERS**

Orefinders completed a total of 40 diamond drill holes (holes MD13-01 to MD13-40) over 12,060 m at the Property from January to September 2013 (refer to Figure 10.1 for drill hole layout). The majority of the drill holes targeted the gold mineralization in the area of the historic open pit. Four drill holes targeted the mineralization in the North zone. One drill hole was designed to test the continuity of mineralization between the North and Main zones. Two drill holes were drilled approximately 350 m west of the former Mirado open pit to assess the along-strike continuity of the known gold mineralized zones.

Orefinders used an ACT II tool to orient core from boreholes MD13-37 to MD13-40.

Drill holes were drilled with an azimuth of 045 degrees (16 drill holes) or 225 degrees (22 boreholes). Holes MD13-06 and MD13-07 had an azimuth of 090 degrees and 265 degrees, respectively. All drill holes were inclined at approximately 045 degrees. The majority of the drill holes were oriented perpendicular to the overall northwest-striking lithological contacts and the southeast-striking shear zone that appear to control the distribution of the gold mineralization.

**Figure 10.1 Location and Layout of Orefinders 2013 Drill Program**



Source: Company Website (<http://www.orefinders.ca/coreshack/>)

Core recovery for the 2013 drilling undertaken by Orefinders was excellent and only occasional intervals of blocky core were observed.

Tables 10.1 and 10.2 summarize the significant mineralization intersected during the Company's 2013 drill program and cross sections of Mirado drilling are available in Appendix V. True widths of the mineralization described in Tables 10.1 and 10.2 are approximately 80% of the stated intervals.

The author considers the drilling procedures undertaken by Orefinders to be satisfactory and in line with industry standards.

**TABLE 10.1  
HIGHLIGHTS OF 2013 MIRADO SOUTH ZONE DRILLING**

<b>Mirado - South Zone Highlights</b>					
<b>Hole-Id</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Grade Au (g/t)</b>	<b>Grade Au* (g/t) Uncut</b>
MD13-01	21.30	31.60	10.30	2.39	8.56*
MD13-01	81.40	121.00	39.60	1.19	
Including	82.40	94.00	11.60	3.06	
MD13-02	33.10	59.80	26.70	2.42	4.38*
Including	56.80	57.80	1.00	31.1	83.5*
MD13-02	86.00	94.00	8.00	1.5	
MD13-02	265.50	267.50	2.00	31.1	48.6*
MD13-03	56.80	67.30	10.50	2.27	
MD13-03	104.10	107.90	3.80	5.67	15.9*
MD13-03	136.20	182.30	46.10	1.33	2.74*
Including	143.40	170.30	26.90	1.93	4.36*
and including	163.10	163.80	0.70	31.1	125*
MD13-04	114.15	120.10	5.95	4.25	
Including	117.05	118.10	1.05	21.2	
MD13-05	10.60	23.45	12.85	0.97	
MD13-05	101.00	123.40	22.40	1.41	
Including	115.90	121.50	5.60	4.15	
MD13-05	150.00	158.75	8.75	5.51	7.5*
Including	154.50	156.00	1.50	31.1	42.7*
MD13-06	1.50	62.80	61.30	1.46	1.97*
Including	51.60	62.80	11.20	3.99	6.81*
and including	57.40	58.20	0.80	31.1	70.5*
MD13-07	86.20	95.70	9.50	3.68	59.2*
Including	91.30	92.30	1.00	31.1	559*
MD13-11	14.00	57.30	43.30	1.01	
MD13-12	62.80	93.00	30.20	4.03	
Including	62.80	71.00	8.20	10.6	
and including	63.80	66.90	3.10	19.3	
MD13-13	169.10	170.90	1.80	4.22	
MD13-14	56.40	91.50	35.10	1.02	
MD13-14	311.70	325.20	13.50	2.02	4.72*
Including	315.00	319.00	4.00	5.72	14.8*
MD13-15	60.10	94.50	34.40	1.8	
MD13-17	242.30	244.80	2.50	6.22	
Including	80.50	91.00	10.50	3.99	
MD13-18	9.00	33.00	24.00	1.29	
MD13-19	77.00	91.50	14.50	8.1	13.5*
Including	82.10	88.00	5.90	19.2	32.5*
and including	84.40	87.40	3.00	27.6	53.8*
MD13-19	141.90	144.20	2.30	12.5	13.6*
MD13-25	42.90	76.80	33.90	1.48	
including	48.00	54.00	6.00	6.27	
MD13-28	18.50	50.00	31.50	3.05	10.9*
including	26.50	32.50	6.00	11.1	52.2*
and including	29.50	30.50	1.00	31.1	278*
MD13-30	90.30	109.50	19.20	4.77	10.2*
Including	100.20	106.10	5.90	9.99	27.7*
and including	105.20	106.10	0.90	31.1	148*
MD13-34	25.60	37.10	11.50	1.41	

\*yellow highlight indicates Au grades multiplied by interval that are > 50

Source: Company Website (<http://www.orefinders.ca/coreshack/>)

**TABLE 10.2**  
**HIGHLIGHTS OF 2013 MIRADO NORTH ZONE DRILLING**

<b>Mirado - North Zone Highlights</b>					
<b>Hole-Id</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Interval (m)</b>	<b>Grade Au (g/t)</b>	<b>Grade Au* (g/t) Uncut</b>
MD13-08	73.90	91.40	17.50	2.41	
Including	73.90	76.30	2.40	4.49	
Including	79.30	82.40	3.10	6.68	
Including	87.80	91.40	3.60	2.84	
MD13-09	60.50	65.00	4.50	2.05	
MD13-09	134.00	152.00	18.00	0.95	
MD13-09	282.80	283.75	0.95	31.1	44.0*
MD13-10	12.50	16.20	3.70	6.68	
MD13-10	57.90	59.50	1.60	2.34	
MD13-10	108.90	120.30	11.40	2.1	2.58*
Including	114.80	120.30	5.50	4.05	5.05*
MD13-10	265.20	284.70	19.50	3.65	
Including	265.20	269.70	4.50	6.5	
Including	278.70	284.70	6.00	6.32	
MD13-21	268.60	276.20	7.60	1.95	
Including	268.60	271.00	2.40	5.73	
MD13-21	344.60	349.90	5.30	3	3.46*
MD13-21 ext	356.30	357.80	1.50	2.62	
MD13-25	169.00	192.80	23.80	1.5	
including	179.20	182.10	2.90	6.2	
including	291.50	297.20	5.70	4.31	
Including	307.50	312.50	5.00	3.31	
MD13-26	24.50	25.50	1.00	4.32	
MD13-26	103.30	104.20	0.90	5.67	
MD13-26	195.20	197.00	1.80	2.53	
MD13-26	212.90	215.00	2.10	4.36	
MD13-26	246.50	248.50	2.00	4.32	
MD13-26	284.00	299.10	15.10	1.77	
including	291.50	297.20	5.70	4.31	
MD13-26 ext	303.50	317.10	13.60	1.41	
Including	307.50	312.50	5.00	3.31	
MD13-27	396.80	398.70	1.90	1.58	
MD13-31	188.00	189.50	1.50	2.13	
MD13-31	293.00	303.00	10.00	0.86	
MD13-35	23.00	50.00	27.00	0.44	
MD13-35	60.00	63.60	3.60	1.13	
MD13-35	92.40	95.40	3.00	2.34	
MD13-35	102.40	104.40	2.00	2	
MD13-35	141.00	143.00	2.00	1.74	
MD13-36	90.10	92.00	1.90	1.69	
MD13-36	118.70	120.50	1.80	2.27	
MD13-36	155.20	156.50	1.30	6.49	
MD13-36	161.00	167.00	6.00	0.63	
MD13-36	230.00	231.00	1.00	6.37	
MD13-36	235.00	238.70	3.70	1.57	
MD13-36	294.50	296.00	1.50	2.88	
MD13-36	356.00	357.50	1.50	3.02	
MD13-36	368.00	377.90	9.90	2.67	
Including	368.00	369.50	1.50	8.95	
MD13-39	182.80	202.10	19.30	1.15	
Including	197.30	202.10	4.80	2.91	

\*yellow highlight indicates Au grades multiplied by interval that are > 20

Source: Company Website (<http://www.orefinders.ca/coreshack/>)

## **11.0 SAMPLE PREPARATION, ANALYSIS & SECURITY**

### **11.1 HISTORICAL SAMPLE PREPARATION, ANALYSES AND SECURITY**

Amax Minerals Exploration (“Amax”) drilled 55 surface drill holes over 9,212 m from 1980 to 1981 at the Property. Golden Shield Resources Inc. (“Golden Shield”) completed 152 surface and underground drill holes, totalling 8,727 m, at the Property from 1985 to 1987.

The author is not aware of the sample preparation, analyses and security measures undertaken by Amax and Golden Shield throughout the historical drill core programs, although limited information suggests that samples were assayed by Swastika Laboratories Ltd. (“Swastika”) in Swastika, Ontario.

### **11.2 OREFINDERS (2013) SAMPLE PREPARATION, ANALYSES AND SECURITY**

The following discussion relating to the sample preparation, analyses and security measures undertaken by Orefinders during the 2013 drill program undertaken at the Property has largely been taken from the Technical Report on the Mirado Property, prepared by SRK in 2013.

Orefinders drilled 40 surface drill holes over 12,060 m during 2013 at the Project.

Core was collected by Orefinders personnel at the drill site and brought to the core shack in Kirkland Lake, where the core was laid out, washed and set into racks. A geologist logged the core and determined sample intervals by marking the core with crayon at the beginning and end of intervals and by placing a sample tag at the end of each sample interval. The average sample length was 1 m, the minimum sample length was 30 cm and sample intervals honor geological contacts. For intervals considered barren a sample length of 1.5 m was used. The geologist marked a cut line along the length of the core to prevent bias towards more or less mineralized halves while cutting the core. Core was cut using a diamonds saw.

One half of the core was placed in a plastic sample bag along with two sample tags containing a laboratory bar code. The outside of the sample bag was also labelled with a sample number using a permanent marker. A portion of the sample tag was torn off and stapled to the core box at the end of the sample interval. The sample bag was sealed using cable ties. Five to ten sample bags were placed in a rice bag and sealed with electrical tape. Each rice bag was labeled with the sample numbers included and the word “OREFINDERS”. All samples were collected by an ALS representative and taken to the Sudbury sample preparation facility. The Timmins facility was used for samples in early January 2013.

Sample preparation was undertaken by ALS Minerals (“ALS”). Except for the first batch of samples received by the laboratory on January 15, 2013, which was prepared in Timmins, Ontario, all sample preparation was undertaken by ALS’ preparation laboratory in Sudbury, Ontario. Samples were assayed by ALS in Vancouver.

Samples were prepared using a standard rock preparation procedure consisting of drying, weighing, crushing, splitting, and pulverization (codes CRU-31, SPL-21, and PUL-31). Prepared samples were assayed for gold using fire assay with atomic absorption and gravimetric finish.

The samples were assayed for a suite of 35 elements using an aqua regia digestion and inductively coupled plasma atomic emission spectroscopy (ICP-AES; code ME-ICP41).

ALS Minerals 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.

The QMS operates under global and regional Quality Control (“QC”) teams responsible for the execution and monitoring of the Quality Assurance (“QA”) and Quality Control programs in each department, on a regular basis. Audited both internally and by outside parties, these programs include, but are not limited to, proficiency testing of a variety of parameters, ensuring that all key methods have standard operating procedures (“SOP”)s that are in place and being followed properly, and ensuring that quality control standards are producing consistent results.

ALS maintains ISO registrations and accreditations. ISO registration and accreditation provides independent verification that a QMS is in operation at the location in question. All ALS laboratories are either certified to ISO 9001:2008 or accredited to ISO 17025:2005.

#### **11.2.1 Historical Quality Assurance/Quality Control**

The author is not aware of any quality control/quality assurance (“QA/QC”) measures undertaken by Amax and Golden Shield throughout the historical drill core programs.

#### **11.2.2 Orefinders (2013) External Quality Assurance/Quality Control**

The author has reviewed SRK’s evaluation of Orefinders’ external QA/QC carried out during the Company’s 2013 drill program at the Property (Weiershäuser, 2013) but has not had access to review any of the original QA/QC data.

#### **11.2.3 SRK’s Review Of 2013 Quality Assurance/Quality Control**

The following discussion relating to the QA/QC measures undertaken by Orefinders during the 2013 drill program undertaken at the Property has largely been taken from the Technical Report on the Mirado Property, prepared by SRK in 2013.

Orefinders implemented external analytical QA/QC measures on all sampling. These measures involved using control samples (blanks, certified reference material, and field duplicate) at a rate of one of each, every 20 samples. In addition, one reject duplicate, one sample preparation duplicate and one pulp duplicate were inserted for every 30 samples. A total of 9,936 drill core samples, 574 certified reference material (“CRM” or “standard”) samples, 530 field blank samples and 30 field, 336 preparation, 329 pulp and 334 coarse reject duplicate samples were sent to ALS for analysis.

### **11.3 PERFORMANCE OF CERTIFIED REFERENCE MATERIALS**

Orefinders used nine commercial CRM samples (Table 11.1) with low, medium, and high gold grade. The CRM was provided in pre-packaged bags containing 60 or 75 grams, depending on the material.

Six CRMs were sourced from CDN Resources Laboratories Ltd. (“CDN”), Canada, and three certified standard reference materials were sourced from Rocklabs Ltd. (“Rocklabs”), New Zealand. CRM specifications are listed in Table 11.1.

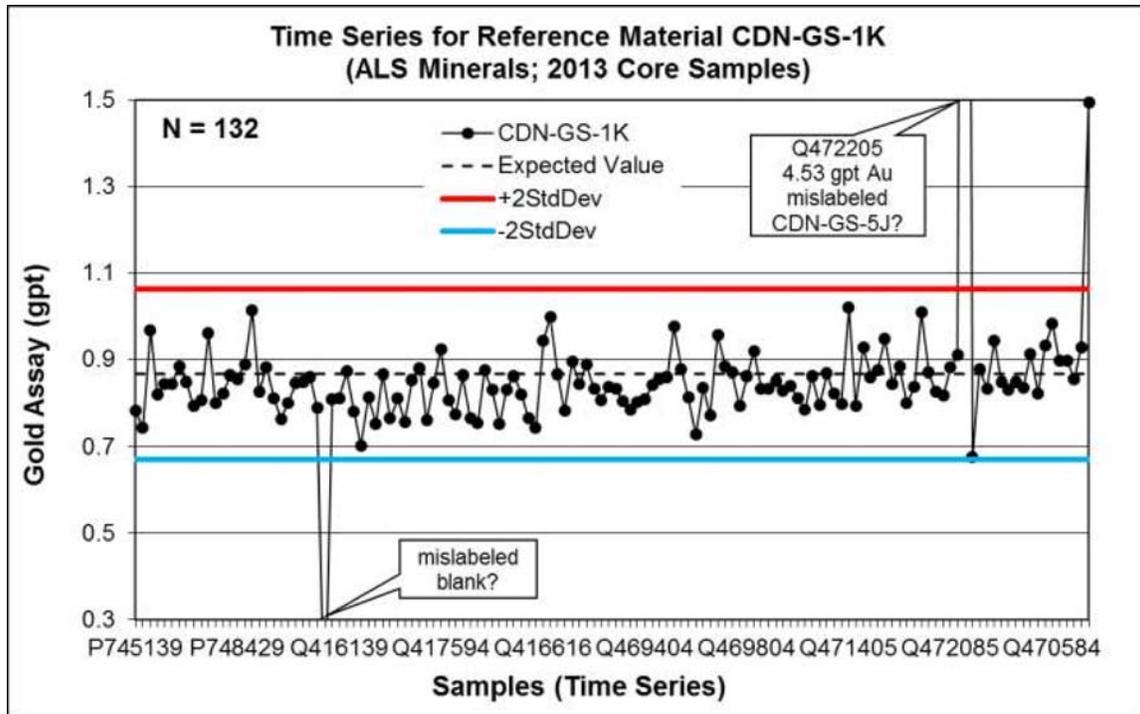
<b>TABLE 11.1</b>				
<b>SPECIFICATIONS OF CERTIFIED REFERENCE MATERIAL USED BY OREFINDERS IN 2013</b>				
<b>Lab</b>	<b>CRM</b>	<b>Recommended Value (ppm Au)</b>	<b>Standard Deviation (ppm Au)</b>	<b>Sample Count</b>
CDN	CDN-GS-1K	0.87	0.10	132
	CDN-GS-1K-1P5F	1.40	0.12	127
	CDN-GS-5J	4.96	0.42	24
Rocklabs	SG56	1.03	0.01	31
	SG66	1.06	0.01	37
	Si64	1.78	0.01	134
	SL61	5.93	0.06	32
	SN60	8.60	0.07	47
	OxH82	1.28	0.01	10
<b>Total</b>				<b>574</b>

*Source: SRK 2013*

Assay results of the CDN-GS-1K, CDN-GS-1P5F and CDN- GS-5J standards from CDN submitted with core samples, were mostly within two standard deviations of the certified value. One result well below two standard deviations for CDN-GS-1K is likely a misallocated blank, and one sample with an expected result similar to CDN-GS-5J, also likely a mislabelled sample. Performance of all CRMs is demonstrated in Figures 11.1 to 11.9.

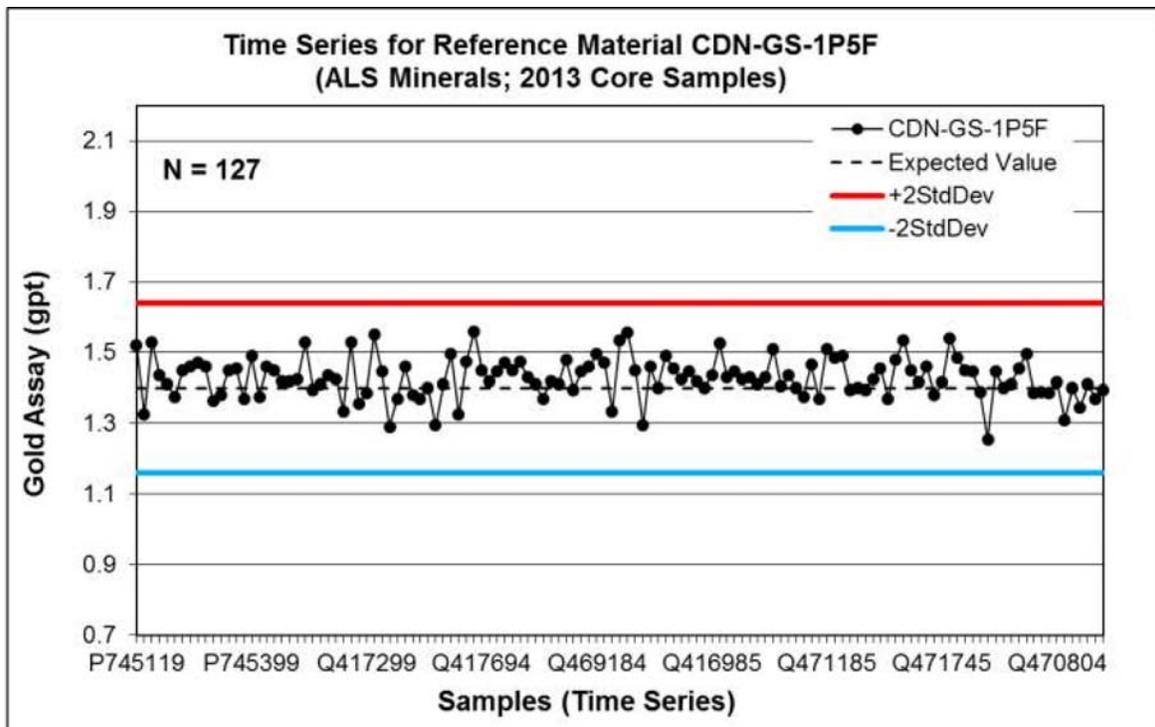
The CRM samples from Rocklabs submitted with core samples show greater deviation from the expected value. For reference material Si64, half of the values are outside two standard deviations, although the majority of results are within three standard deviations, suggestive of ALS having difficulty in assaying this control sample.

**Figure 11.1 Performance of CDN-GS-1K Standard Used by Orefinders in 2013**



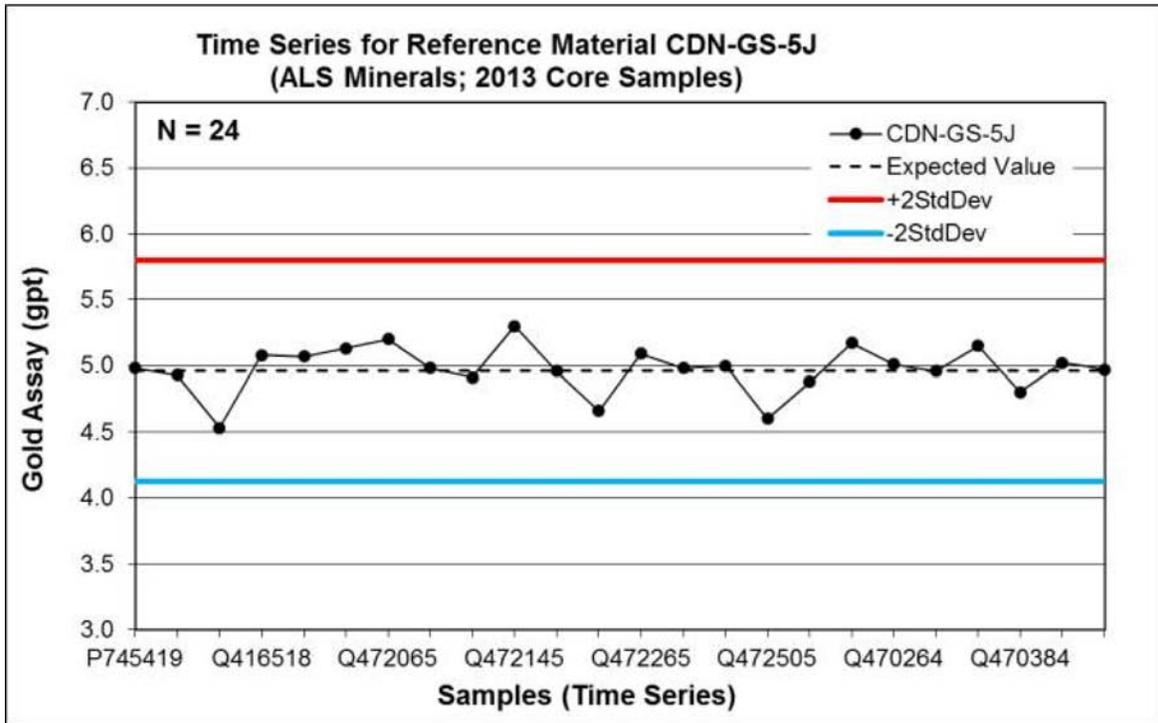
Source: SRK (2013)

**Figure 11.2 Performance of CDN-GS-1P5F Standard Used by Orefinders in 2013**



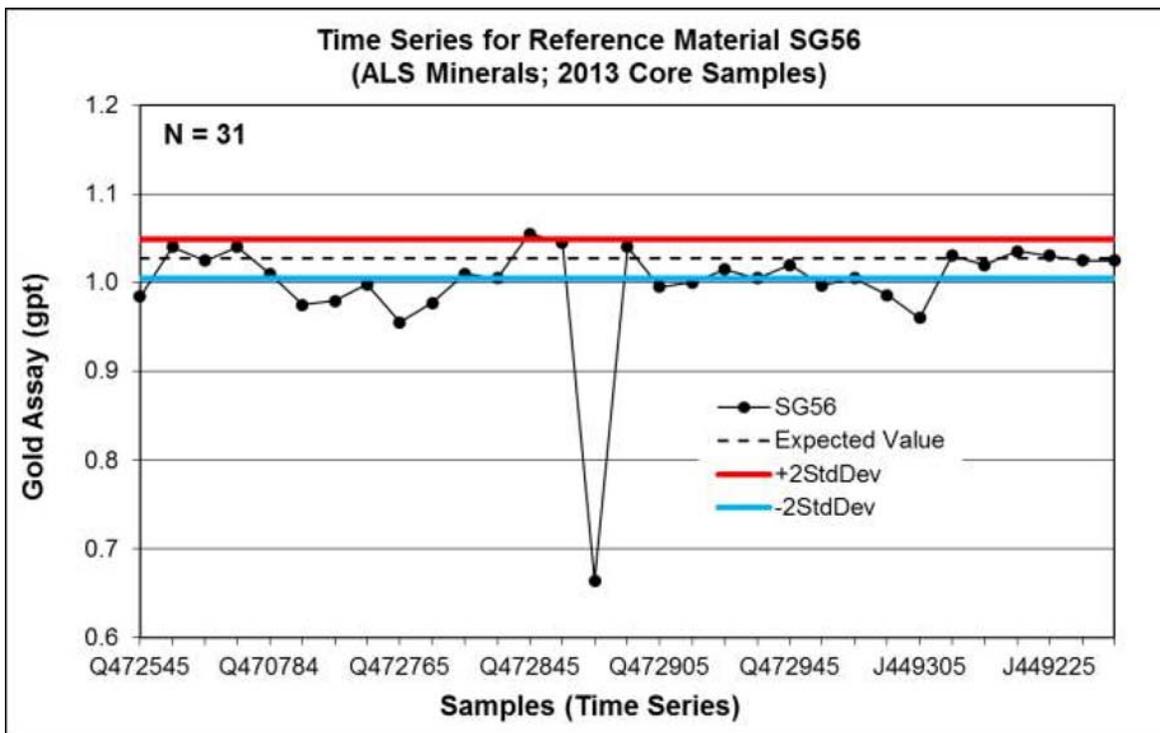
Source: SRK (2013)

**Figure 11.3 Performance of CDN-GS-5J Standard Used by Orefinders in 2013**



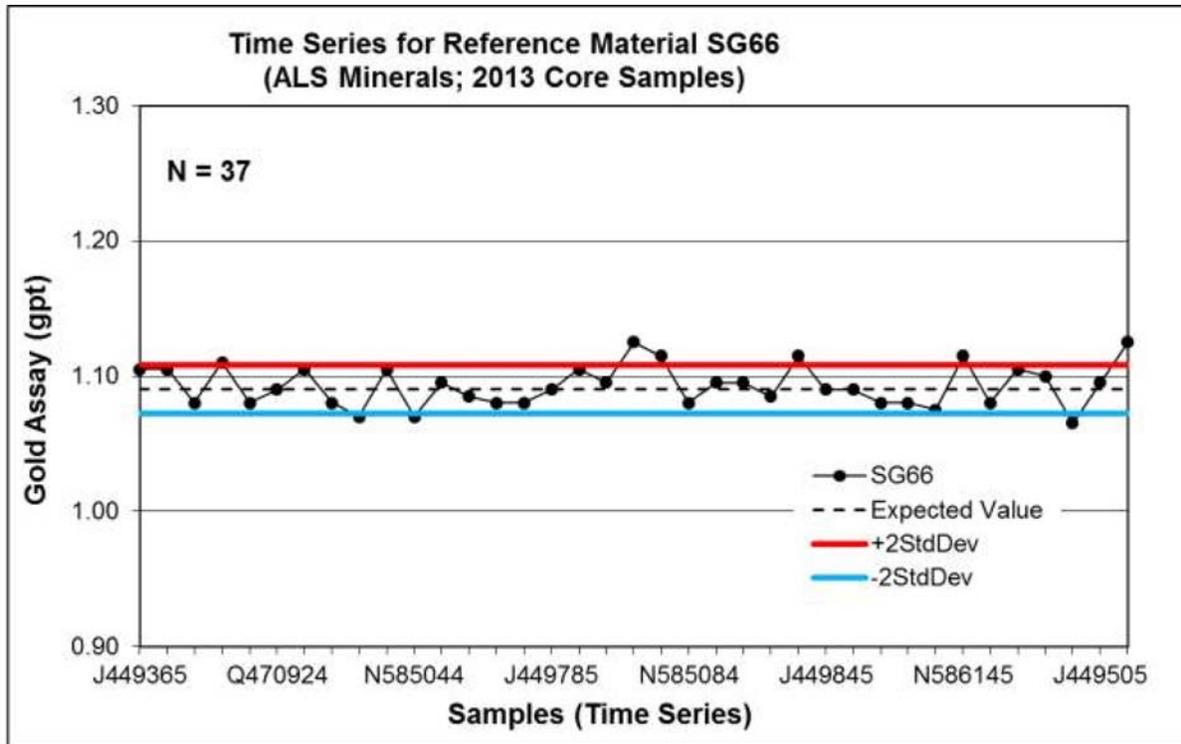
Source: SRK (2013)

**Figure 11.4 Performance of SG56 Standard Used by Orefinders in 2013**



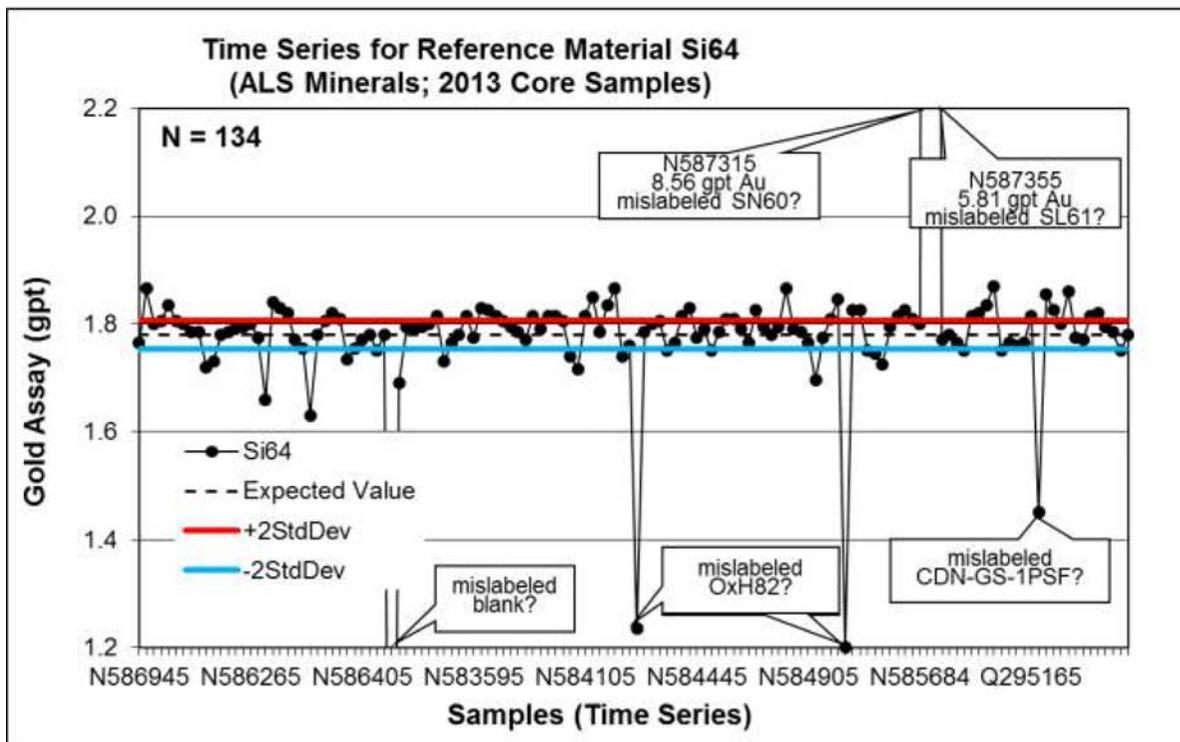
Source: SRK (2013)

**Figure 11.5 Performance of SG66 Standard Used by Orefinders in 2013**



Source: SRK (2013)

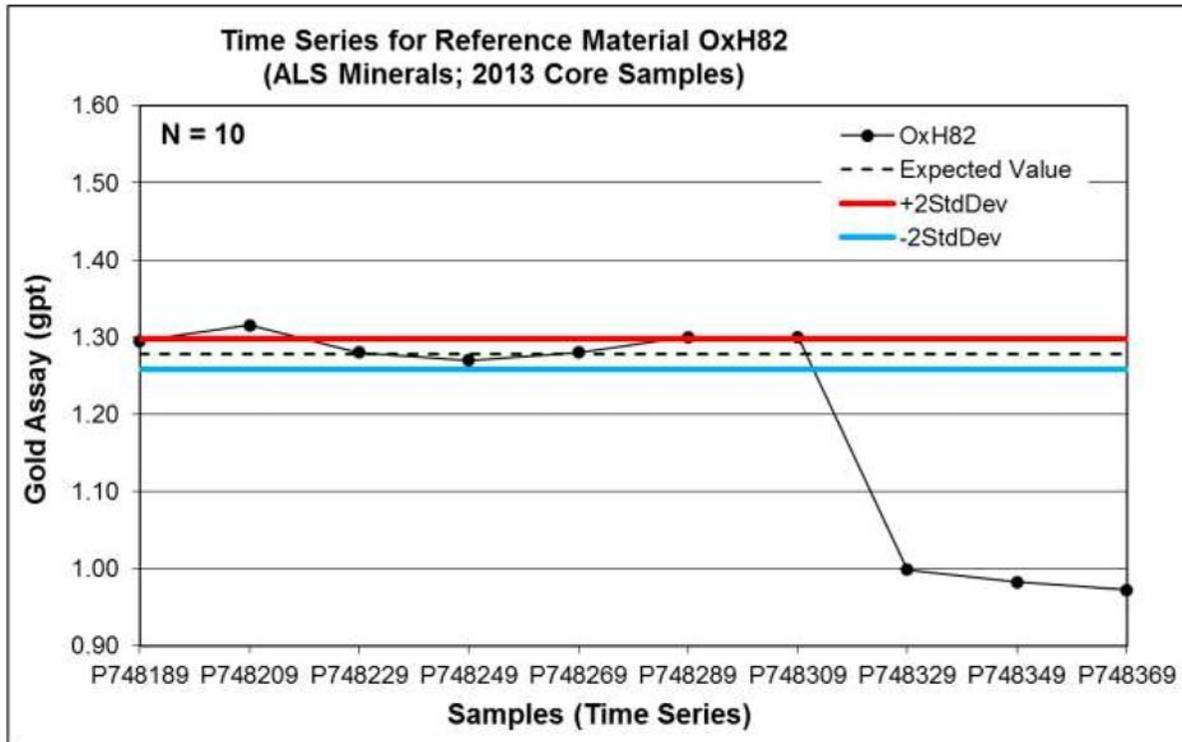
**Figure 11.6 Performance of Si64 Standard Used by Orefinders in 2013**



Source: SRK (2013)



**Figure 11.9 Performance of OxH82 Standard Used by Orefinders in 2013**



Source: SRK (2013)

P&E considers that the standards demonstrate acceptable accuracy.

#### 11.4 PERFORMANCE OF BLANK MATERIAL

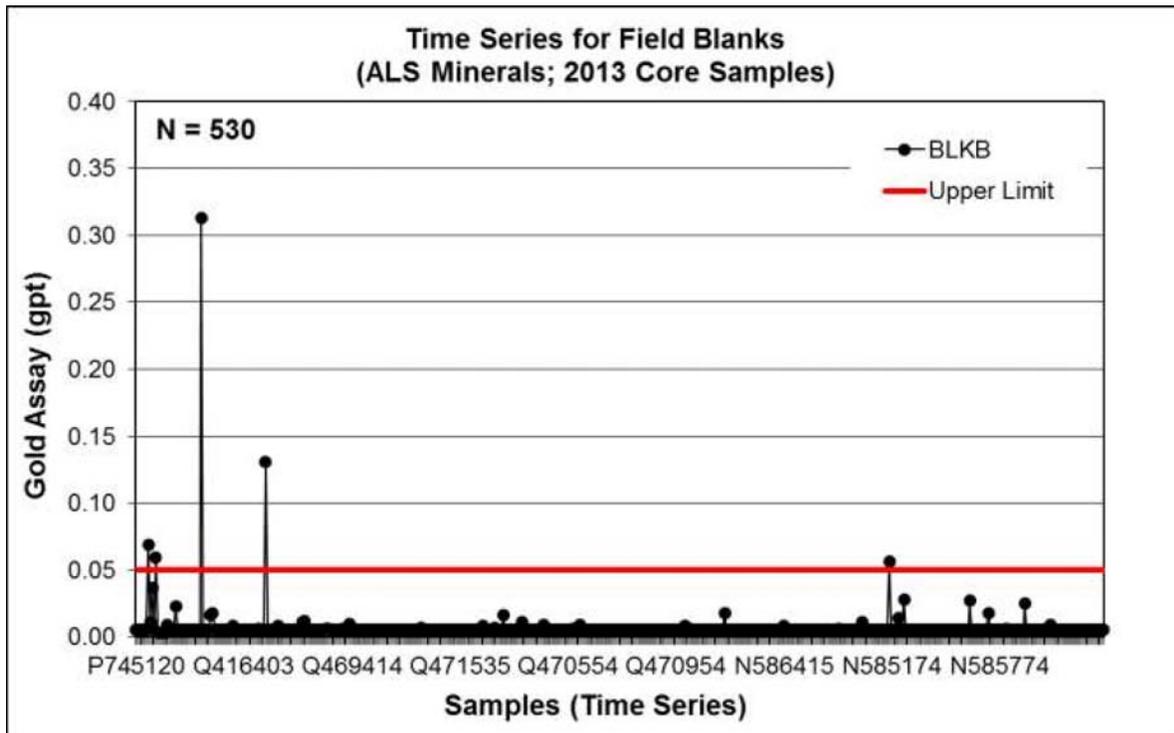
The blank sample consisted of approximately 200 grams of broken concrete or red brick.

There were a total of 530 blank data points for Au. An upper tolerance limit of ten times the lower detection limit of 0.005 g/t was set (0.05 g/t).

Approximately 0.9 % of blank samples inserted with the core samples returned assay values above ten times the detection limit of 0.005 g/t Au. One blank sample returned a gold value 60 times greater than the detection limit, indicating possible sample misidentification. Another four points exceeding the set tolerance limit are not considered of material impact to the current resource estimate.

Performance of the blank material is demonstrated in Figure 11.10.

**Figure 11.10 Performance of OxH82 Standard Used by Orefinders in 2013**



Source: SRK (2013)

The author is of the opinion that contamination does not appear to be an issue in the 2013 drill hole data.

### 11.5 PERFORMANCE OF FIELD, PREP, PULP AND REPLICATE DUPLICATES

The field duplicate samples were generated by splitting the half core in two quarters. Each of the quarters was bagged separately as a sample. Orefinders discontinued the use of field duplicates after drill hole MD13-07 when review of analytical results suggested poor reproducibility.

A total of 30 fields, 336 preparations, 329 pulps and 334 coarse reject duplicate samples were analyzed at the ALS laboratories in Sudbury and Vancouver.

SRK plotted the data to assess duplicate precision and found the field duplicate assay data to have very poor repeatability, common in deposits with coarse gold (refer to SRK's 2013 report on the Project for full details, available at [www.sedar.com](http://www.sedar.com)). Rank half absolute difference ("HARD") plots show that only 53 % of the field duplicate sample pairs have HARD values below 10 % and greater than 60 percent of the preparation, pulp, and coarse reject duplicates plot within 10%.

SRK also generated Quantile-quantile ("Q-Q") plots for each duplicate type and the field duplicates demonstrate a bias towards higher assay values in the original samples. Q-Q plots for preparation, pulp, and reject duplicates demonstrate no obvious bias between the original and the duplicate assay values.

## 11.6 ALS LAB'S (2013) INTERNAL QUALITY ASSURANCE/QUALITY CONTROL

The author also reviewed ALS' internal laboratory QA/QC data for all analytical methods in the assay certificates provided by Orefinders. The laboratory inserted multiple blanks, standards and duplicates into each batch of samples assayed.

A total of 495 internal lab blanks were reviewed and all blank samples returned with values below three times the lower detection limit.

The 966 internal lab CRMs were also assessed and there were only four failures (greater than three standard deviations) represented in the laboratory data.

A total of 926 internal laboratory duplicates were also reviewed and precision was found to be acceptable at this level.

The author considers the data to be of good quality and satisfactory for use in a resource estimate.

## 11.7 2012 CHECK ASSAYING: OREFINDERS (ALS) VS AMAX

### 11.7.1 Comparison of Data

Orefinders undertook check assaying at ALS in Sudbury, Ontario in late 2012 to confirm gold mineralization in Amax's historical boreholes, drilled at the Property during 1980 and 1981. The Company selected 168 core samples of varying grades from 27 of the 55 Mirado drill holes completed by Amax. An additional seven samples were taken from the historical boreholes that had not been previously sampled by Amax. These samples have not been included in the author's review of the check assays. Samples were selected from remaining half-core that was ¼ core sawn, as well as previously unsampled core that warranted sampling.

Table 11.2 details the holes selected for sampling, including intervals sampled and the original Amax results compared to Orefinders' check assay results analyzed at ALS between December 2012 and January 2013.

<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Length (m)</b>	<b>Original Assay (g/t)</b>	<b>Check Assay (g/t)</b>	<b>Sample ID</b>
A-1	54.25	57.30	3.05	0.03	0.05	P748137
	57.30	57.61	0.30	3.57	0.52	P748138
	57.61	60.66	3.05	0.04	0.05	P748139
	88.39	91.44	3.05	0.23	0.23	P748140
	108.51	110.28	1.77	1.96	0.69	P748141
	110.28	111.71	1.43	0.58	0.19	P748142
	116.40	117.93	1.52	0.54	0.25	P748143

**TABLE 11.2**  
**SUMMARY OF OREFINDERS 2012 CHECK ASSAY SAMPLES**

<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Length (m)</b>	<b>Original Assay (g/t)</b>	<b>Check Assay (g/t)</b>	<b>Sample ID</b>
	119.45	120.98	1.52	0.47	0.30	P748152
	138.17	139.20	1.04	0.95	0.52	P748144
	153.47	155.45	1.98	0.51	0.73	P748145
	164.59	167.64	3.05	0.41	0.48	P748146
	167.64	170.69	3.05	1.14	0.87	P748147
A-4	4.27	4.69	0.43	0.28	0.54	P748477
A-6	56.39	56.75	0.37	0.53	0.87	P748005
	69.28	69.62	0.34	1.51	0.57	P748006
	69.62	70.10	0.49	0.10	0.01	P748007
	105.16	106.62	1.46	0.55	0.01	P748008
	110.31	111.25	0.94	0.58	0.75	P748009
A-8	13.05	13.66	0.61	0.22	0.03	P748153
	24.38	27.43	3.05	1.44	0.55	P748154
	27.43	30.48	3.05	0.34	0.13	P748155
	30.48	33.53	3.05	1.04	0.34	P748156
	76.20	79.25	3.05	0.69	0.53	P748157
	170.23	173.74	3.51	0.65	0.16	P748158
A-16	23.77	24.23	0.46	0.70	0.28	P748159
	24.23	25.60	1.37	0.22	0.15	P748160
	39.75	40.26	0.52	1.32	0.10	P748161
	40.26	42.67	2.41	0.23	0.08	P748162
A-22	20.73	22.25	1.52	0.82	0.73	P748099
	22.25	23.77	1.52	0.87	0.53	P748100
	23.77	25.42	1.65	0.51	0.49	P748101
	26.94	28.47	1.52	0.62	0.22	P748102
	29.99	31.55	1.55	0.65	0.77	P748103
	60.96	62.48	1.52	0.62	0.40	P748104
	70.10	71.63	1.52	0.75	0.14	P748105
	87.02	88.39	1.52	0.56	0.26	P748106
	102.11	103.63	1.52	0.91	2.94	P748107
	111.25	112.78	1.52	0.51	0.95	P748108
	112.78	114.30	1.52	0.59	0.07	P748111
	115.82	117.35	1.52	0.92	1.13	P748112
	135.64	137.16	1.52	0.92	0.78	P748113
	152.64	154.59	1.95	0.58	0.39	P748114
	165.81	167.34	1.52	0.59	0.59	P748115
185.32	186.84	1.52	0.65	0.37	P748116	

**TABLE 11.2**  
**SUMMARY OF OREFINDERS 2012 CHECK ASSAY SAMPLES**

<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Length (m)</b>	<b>Original Assay (g/t)</b>	<b>Check Assay (g/t)</b>	<b>Sample ID</b>
A-25	18.75	19.20	0.46	0.16	0.38	P748455
	19.20	19.66	0.46	1.00	0.53	P748456
A-27	6.86	7.32	0.46	0.35	0.32	P748491
	16.09	16.40	0.30	1.00	0.34	P748492
A-28	14.57	15.03	0.46	0.28	0.26	P748469
	15.03	15.48	0.46	0.75	0.74	P748470
	15.48	15.94	0.46	0.64	1.05	P748471
	18.91	19.37	0.46	0.65	0.54	P748472
	28.51	28.97	0.46	0.97	1.22	P748473
A-29	3.05	3.66	0.61	0.51	0.10	P748021
	9.60	10.06	0.46	1.08	2.07	P748022
	15.09	15.54	0.46	0.73	34.60	P748023
	16.00	16.46	0.46	0.72	0.69	P748024
	22.40	22.86	0.46	0.48	1.05	P748025
	32.46	32.92	0.46	0.70	5.95	P748026
	32.92	33.38	0.46	0.86	1.54	P748027
	38.40	38.62	0.21	0.52	0.70	P748028
A-30	44.35	44.81	0.46	0.58	2.39	P748031
	3.66	4.48	0.15	0.08	0.73	P748041
	6.40	6.61	0.21	1.62	1.64	P748042
	8.23	9.14	0.91	0.51	0.31	P748043
	16.00	16.46	0.46	1.05	0.78	P748044
	18.29	18.75	0.46	0.71	0.43	P748045
	18.75	18.93	0.18	1.37	0.18	P748046
	22.40	23.07	0.67	0.61	0.75	P748047
	23.07	23.32	0.24	0.63	0.57	P748048
	23.32	23.77	0.46	0.57	0.40	P748051
	25.09	25.60	0.52	0.72	0.31	P748052
A-32	32.00	32.92	0.91	0.50	1.74	P748053
	7.77	8.23	0.46	0.39	0.38	P748459
	10.06	10.52	0.46	0.56	0.60	P748460
	10.52	10.97	0.46	0.63	0.53	P748461
	13.72	14.17	0.46	0.37	0.51	P748462
	14.17	14.57	0.40	1.99	0.45	P748463
	14.57	15.09	0.52	0.06	0.29	P748464
	15.54	15.96	0.41	0.76	1.37	P748081
21.95	22.86	0.91	0.78	0.25	P748465	

**TABLE 11.2**  
**SUMMARY OF OREFINDERS 2012 CHECK ASSAY SAMPLES**

<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Length (m)</b>	<b>Original Assay (g/t)</b>	<b>Check Assay (g/t)</b>	<b>Sample ID</b>
	25.15	25.71	0.56	0.17	0.17	P748466
	30.78	31.53	0.75	0.06	0.08	P748467
A-33	15.09	15.54	0.46	0.34	0.04	P748003
	15.54	16.00	0.46	0.36	0.01	P748004
	32.43	33.22	0.79	0.16	0.07	P748474
	41.15	41.45	0.46	0.82	0.53	P748475
	41.61	42.06	0.46	0.16	0.11	P748476
A-34	3.20	3.66	0.46	0.18	0.10	P748011
	16.00	16.46	0.46	1.35	0.50	P748012
	19.20	19.66	0.46	0.37	0.03	P748013
	20.12	20.57	0.46	0.99	0.34	P748014
	24.23	24.69	0.46	0.78	0.43	P748015
	26.97	27.43	0.46	0.07	0.08	P748016
	33.38	33.83	0.46	1.13	1.21	P748082
A-36	5.49	5.94	0.46	0.81	0.33	P748032
	6.86	7.32	0.46	0.51	0.25	P748033
	7.77	8.23	0.46	0.62	0.73	P748034
	8.69	9.14	0.46	0.65	0.32	P748035
	30.78	31.55	0.76	0.54	0.41	P748036
	49.83	50.29	0.46	1.07	0.15	P748037
	50.29	50.83	0.53	0.55	2.76	P748038
A-37	3.20	3.66	0.46	0.51	5.35	P748457
	25.15	25.60	0.46	0.38	0.31	P748451
	26.06	26.52	0.46	0.25	0.41	P748452
	26.52	26.97	0.46	0.86	0.38	P748458
	35.66	36.39	0.73	0.54	0.50	P748453
	38.37	38.89	0.52	0.70	0.52	P748454
A-38	6.40	7.32	0.91	0.51	0.35	P748117
	26.97	27.43	0.46	0.61	0.61	P748119
	27.43	27.89	0.46	1.58	0.78	P748120
	27.89	28.35	0.46	0.34	0.57	P748121
A-39	4.27	4.60	0.34	0.38	0.34	P748017
	5.18	5.78	0.59	0.04	0.03	P748018
	6.40	6.86	0.46	0.92	0.38	P748019
	32.77	33.68	0.91	0.44	0.41	P748020
A-42	4.57	4.88	0.30	0.14	0.18	P748093
	17.83	18.29	0.46	0.49	0.24	P748094

**TABLE 11.2**  
**SUMMARY OF OREFINDERS 2012 CHECK ASSAY SAMPLES**

<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Length (m)</b>	<b>Original Assay (g/t)</b>	<b>Check Assay (g/t)</b>	<b>Sample ID</b>
	26.06	26.52	0.46	0.84	0.06	P748095
	43.43	43.89	0.46	0.34	0.36	P748096
	47.55	48.01	0.46	0.14	0.33	P748097
	55.32	55.78	0.46	0.21	0.14	P748098
A-43	3.66	4.11	0.46	0.80	0.07	P748084
	30.18	30.63	0.46	0.03	0.09	P748085
	41.15	41.54	0.40	0.71	0.55	P748086
	74.98	75.44	0.46	0.82	0.29	P748091
	76.35	76.60	0.46	0.51	0.58	P748092
A-44	10.06	10.52	0.46	0.21	0.18	P748481
	10.97	11.43	0.46	0.05	0.06	P748482
	11.43	11.89	0.46	0.35	0.40	P748483
	12.34	12.80	0.46	0.21	0.16	P748484
	13.26	13.72	0.46	0.24	0.19	P748485
	27.43	28.35	0.91	0.77	0.47	P748486
	29.26	30.18	0.91	0.49	0.59	P748487
	44.81	45.26	0.46	0.82	0.16	P748083
A-46	10.52	10.97	0.46	0.80	1.00	P748125
	10.97	11.43	0.46	0.63	0.78	P748126
	12.80	13.26	0.46	0.51	0.68	P748127
	13.26	13.72	0.46	1.06	1.38	P748128
	13.72	14.30	0.58	0.32	0.28	P748131
	37.49	37.86	0.37	0.27	0.09	P748132
	44.81	45.26	0.46	0.99	2.95	P748133
	45.26	45.72	0.46	0.71	0.35	P748134
A-49	20.12	21.03	0.91	0.51	0.32	P748064
	35.20	35.66	0.46	0.51	0.62	P748065
	36.12	36.70	0.58	0.62	1.66	P748066
	53.95	54.86	0.91	0.89	2.98	P748067
	64.01	64.92	0.91	2.05	7.42	P748068
	64.92	65.84	0.91	0.10	0.15	P748071
	73.61	74.07	0.46	0.51	0.32	P748072
A-50	8.85	10.06	1.20	0.64	0.44	P748074
	29.26	30.18	0.91	0.60	0.24	P748075
	30.18	31.09	0.91	0.85	1.05	P748076
	31.09	32.00	0.91	0.56	0.11	P748077
	39.96	40.49	0.53	1.75	0.67	P748078

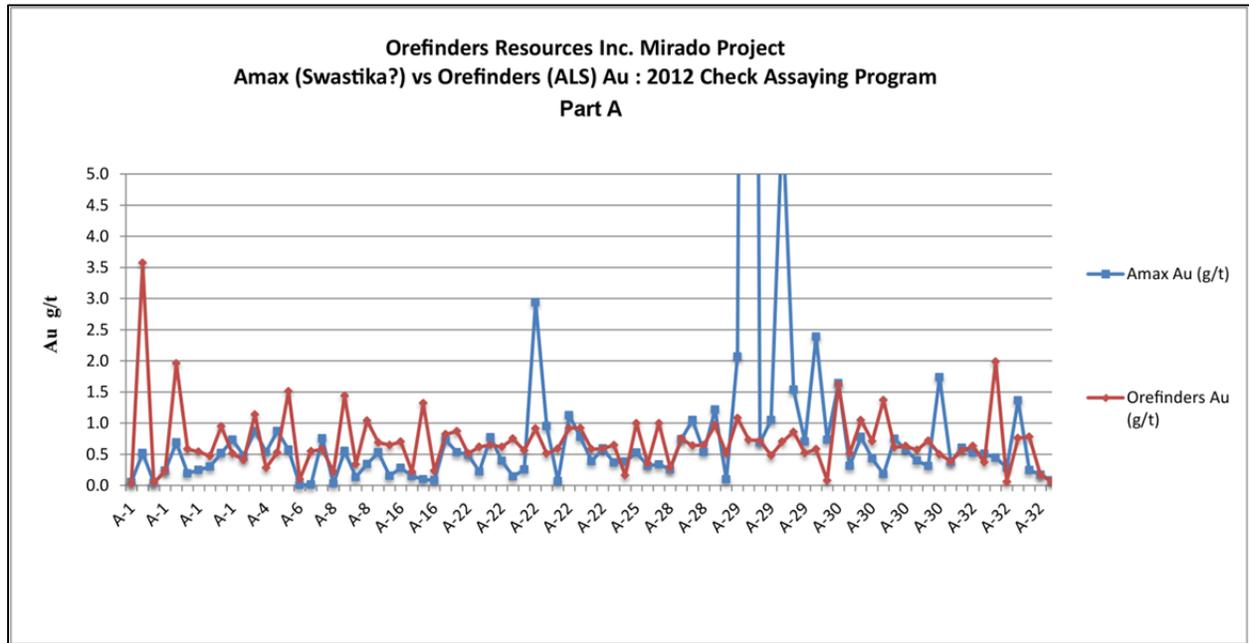
<b>TABLE 11.2</b>						
<b>SUMMARY OF OREFINDERS 2012 CHECK ASSAY SAMPLES</b>						
<b>Drill Hole ID</b>	<b>From (m)</b>	<b>To (m)</b>	<b>Length (m)</b>	<b>Original Assay (g/t)</b>	<b>Check Assay (g/t)</b>	<b>Sample ID</b>
	46.63	47.09	0.46	0.17	0.08	P748079
	47.55	48.01	0.46	0.11	0.11	P748080
A-51	3.66	4.57	0.91	0.21	0.19	P748496
	5.49	6.40	0.91	0.40	0.54	P748497
	6.40	7.32	0.91	1.05	0.11	P748498
	23.58	24.23	0.66	0.41	0.37	P748001
	64.92	65.84	0.91	1.06	0.24	P748002
A-54	11.28	12.19	0.91	0.08	0.06	P748488
	12.68	13.11	0.46	0.10	0.07	P748489
	33.38	33.83	0.46	0.36	0.24	P748490
A-55	26.52	27.43	0.91	0.82	0.74	P748164
	28.35	29.26	0.91	0.59	0.27	P748165
	29.26	30.18	0.91	0.41	0.31	P748166

All samples were analyzed for gold by fire assay method with an AAS finish, as well as 35 other elements using aqua regia digestion with an ICP-AES finish. Gold samples grading >10 g/t Au were re-analyzed by fire assay method with a gravimetric finish.

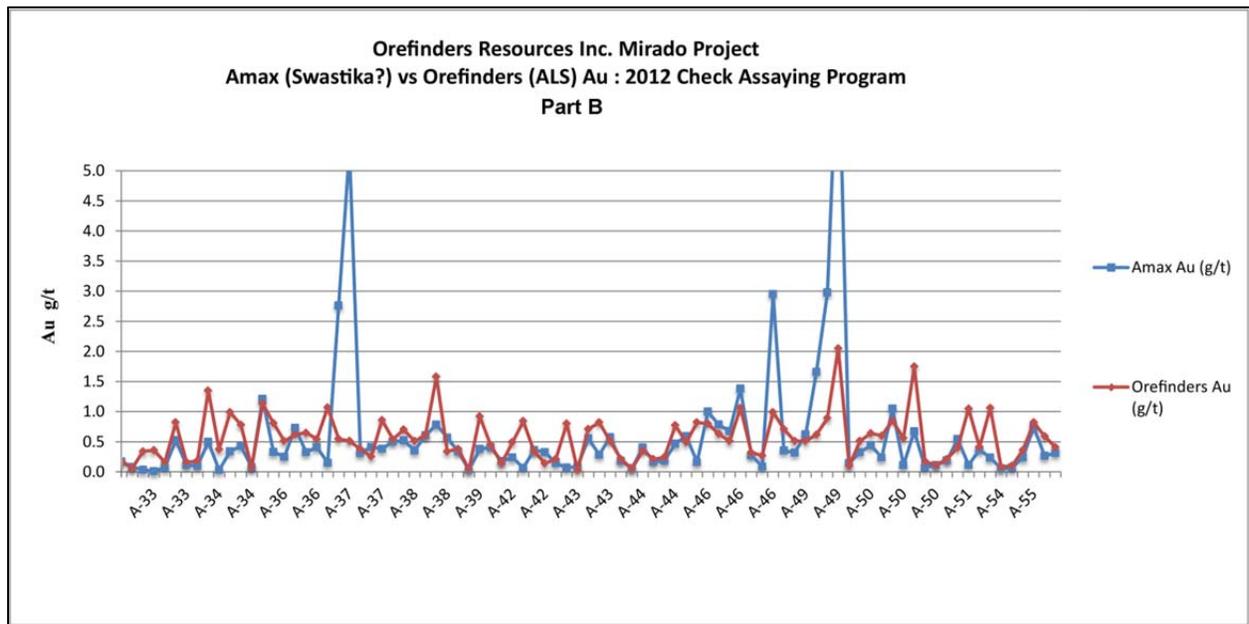
Both sets of results were graphed in order to compare the check assays with the original reported grades (refer to Figures 11.11 and 11.12). When taking into considering the potential differences influencing both sets of analytical results (different laboratories and test methods, likely differences in sampling methods, improved analytical procedures, not to mention nugget effect being a factor) the author considers the comparison between the original and check assays to be reasonable. The majority of check assays analyzed by ALS exceed the original Amax results, aside from a select few which do have noticeably higher results, as can be seen in Figures 11.11 and 11.12.



**Figure 11.13 2012 Orefinders (ALS) vs Amax: Results < 5 g/t Au (Part A)**



**Figure 11.14 2012 Orefinders (ALS) vs Amax: Results < 5 g/t Au (Part B)**

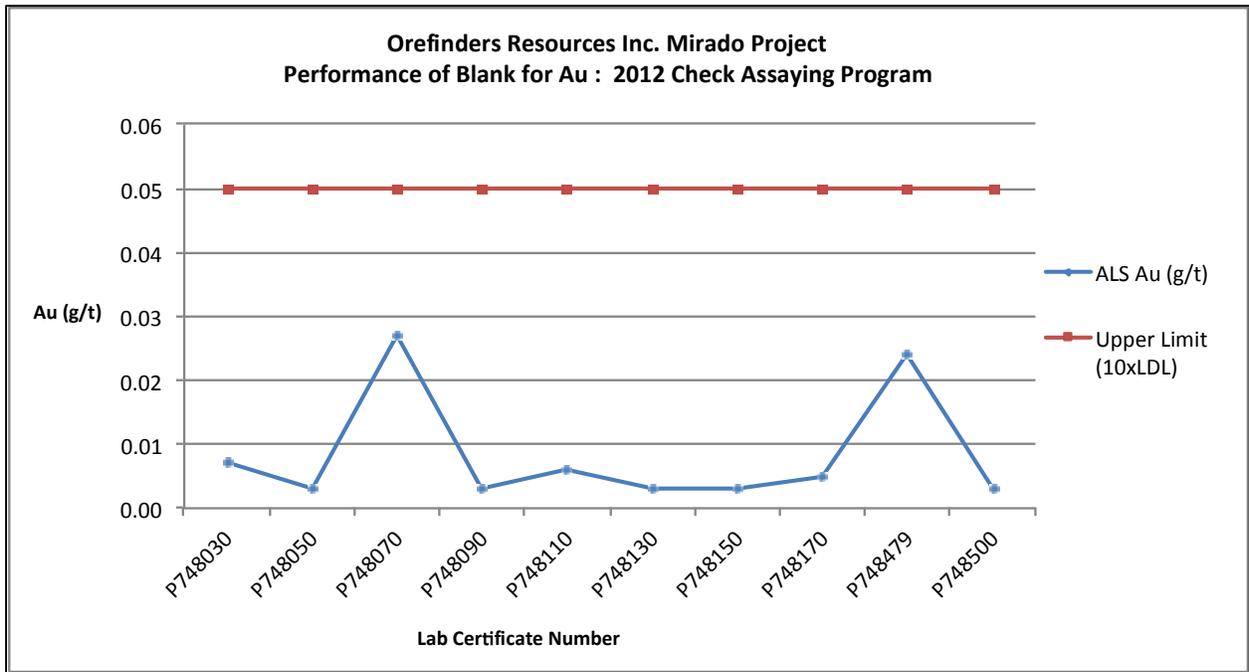


**11.8 2012 CHECK ASSAY QUALITY ASSURANCE/QUALITY CONTROL**

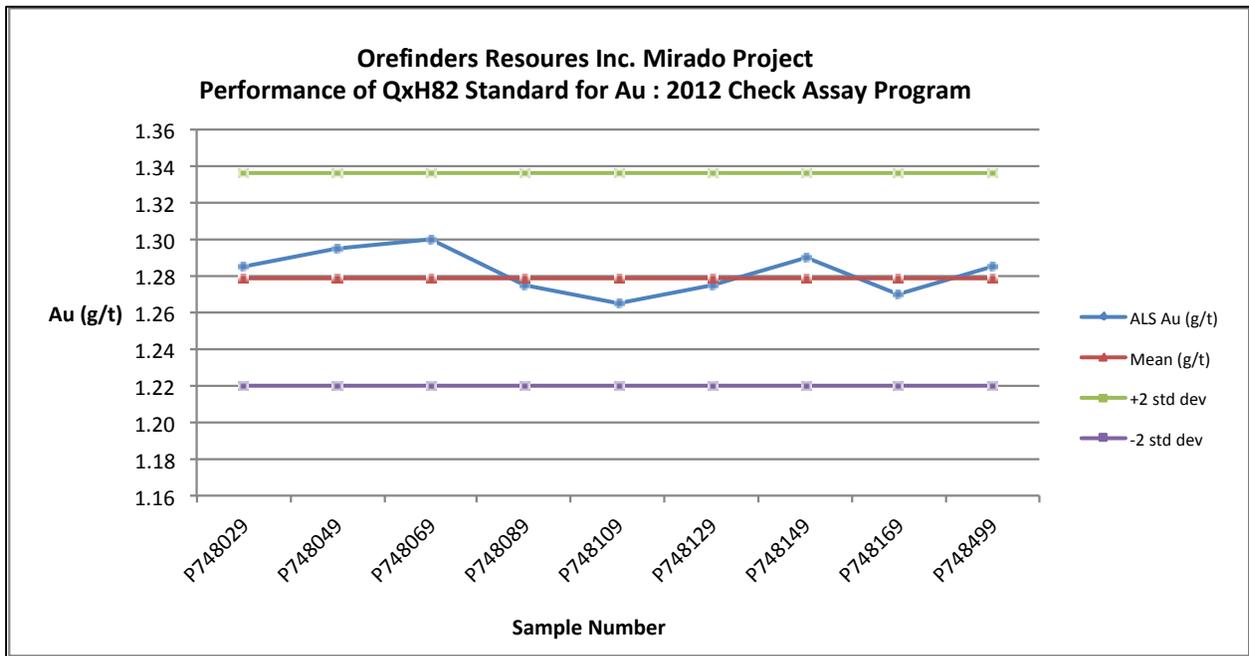
Orefinders sent a total of 175 drill core samples to ALS in Sudbury for gold analysis during the check assaying program. Along with the drill core samples, ten blank samples and nine OxH82 CRMs were inserted into the sample stream to monitor lab performance.

Performance of the blanks and standards are graphed in Figures 11.13 and 11.14. All blanks and standards performed well.

**Figure 11.15 Performance of 2012 Check Assay Blanks for Au**



**Figure 11.16 Performance of 2012 Check Assay QxH82 Standard for Au**



## 12.0 DATA VERIFICATION

P&E conducted verification of the drill hole assay database by comparison of the database entries with the assay certificates provided in digital format from Orefinders. The assay certificates were unable to be obtained directly from the assay laboratory.

Assay data from 2013 were verified for the Mirado Project. 51% (9,778 out of 18,994) of the drilling assay data were checked for Au, against the ASL laboratory certificates, with 29% (962 out of 3,313) of this data being constrained. Two very minor errors were observed and corrected in the Au data, with the overall impact to the database being negligible.

### 12.1 P&E SITE VISIT AND INDEPENDENT SAMPLING

The Mirado Project site was visited by Mr. Antoine Yassa, P.Geo., on November 23, 2016 and a visit was also made to the core and pulps storage on May 4, 2017 for the purposes of completing due diligence sampling. During the site visit in November, Mr. Yassa viewed access to the Property, drill hole collar and trench locations, geology and topography, as well as took several GPS readings to confirm the location of the baseline grid intersections and locate several drill hole collars.

Mr. Yassa collected nine core samples that were stored at the Project core storage facility from two Mirado drill holes during the November 2016 site visit, and a further eight core samples from six drill holes during the May 2017 site visit. The verification samples were collected by cutting the split core for each sample interval selected by Mr. Yassa. One half of the resulting ¼ core sample was placed into a plastic bag into which the blank sample tag was placed. The remaining 1/4-core was put back into the core box. The samples were bagged and taken directly by Mr. Yassa to AGAT Labs, (“AGAT”) in Mississauga, ON for analysis.

In May 2017, eight core verification samples and six pulp samples were collected to independently confirm the presence and tenor of gold mineralization at the Project. Due to the lack of average to high grade samples (used for metallurgical purposes and 2012 check assaying) eight low-grade samples near cut-off grade, were selected from core samples and a further six samples (1809 to 1814) were collected from 2012 pulps to cover medium-high grades. The pulp samples were originally in the custody of ALS and then stored under lock & key at Canadian Exploration Services Ltd. storage facility in Larder Lake under the supervision of Orefinders staff.

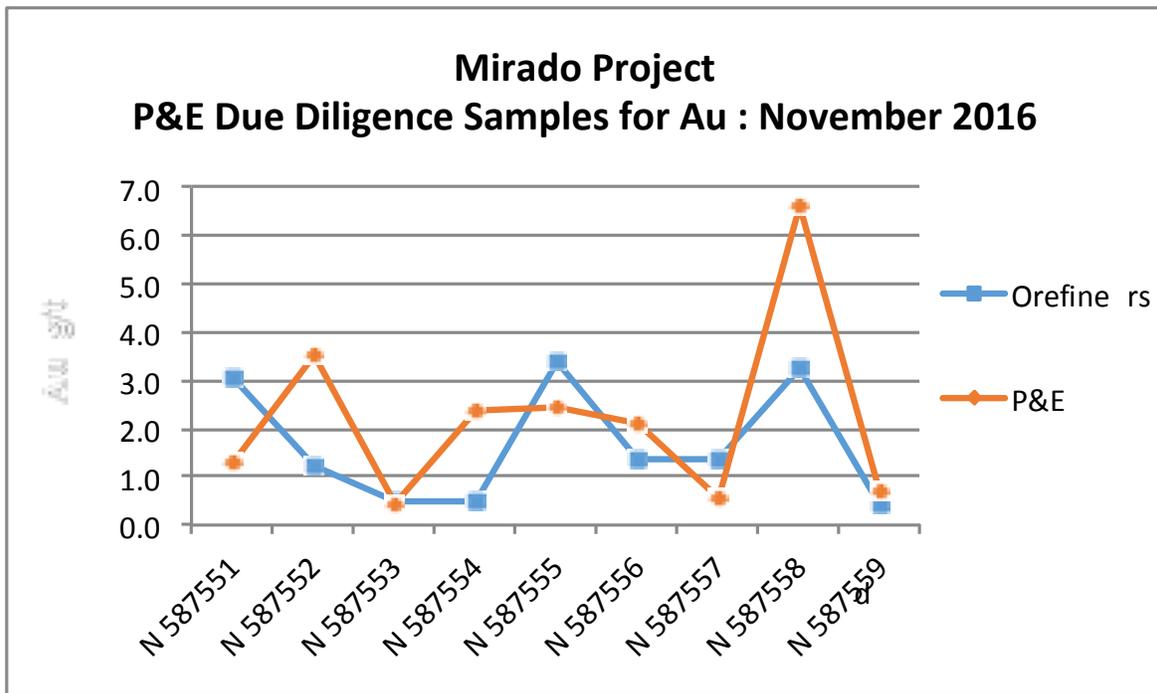
Samples at AGAT were analyzed for gold by fire assay with AAS finish. All samples were analyzed by pycnometer at AGAT to determine specific gravity.

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.

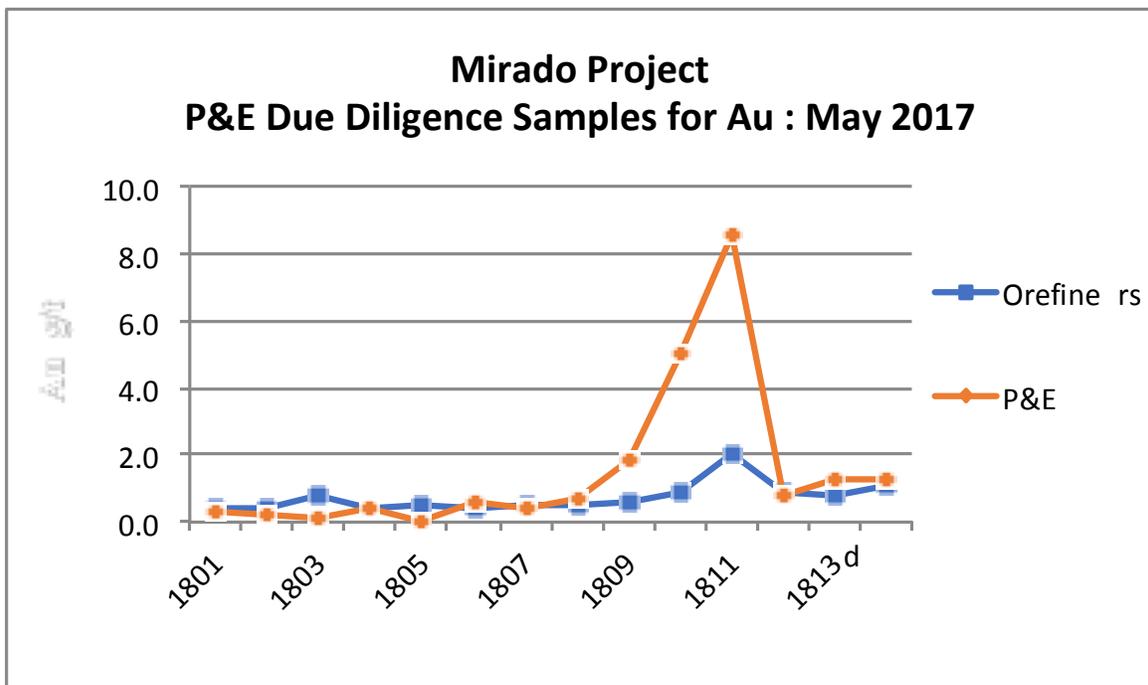
AGAT maintains ISO registrations and accreditations. ISO registration and accreditation provide independent verification that a QMS is in operation at the location in question. Most AGAT laboratories are registered or are pending registration to ISO 9001:2000.

Results of the Property site visit verification samples for gold are presented in Figures 12.1 and 12.2.

**Figure 12.1 Results of verification sampling by P&E – November 2016**



**Figure 12.2 Results of verification sampling by P&E – May 2017**



P&E considers there to be good correlation between the majority of P&E’s independent verification samples analyzed by AGAT and the original analyses in the Mirado database. Grade

variation is evident in samples N587558 and 1811, however this is common when coarse gold is present and the author considers the due diligence results to be acceptable.

Based upon the evaluation of the QA/QC program undertaken by Orefinders, including the 2012 verification program, along with P&E's due diligence sampling, it is P&E's opinion that the results are acceptable for use in the current resource estimate.

### **13.0 MINERAL PROCESSING & METALLURGICAL TESTING**

In late 2013 four samples designated A, B, C, D were taken from a Mirado stockpile and provided to SGS Lakefield Research (SGS) for preliminary testwork consisting of Bond ball mill index measurements at a closing screen of 100 mesh, and cyanidation tests. Measured Bond indices ranged from 15.4 to 18.3 kWh/t (indicating material of medium hardness).

Head assays by the pulp metallics method for the four samples ranged from 0.76 g/t to 2.6 g/t Au (Sample C averaged 2.39 g/t) Variability in the head determinations is attributable to the presence of significant free gold. An ICP scan of the four samples plus a combined sample (ABCD) showed no elements likely to present processing difficulty. A separate test for the presence of asbestos was negative.

Five scoping level carbon in leach (CIL) tests were performed which returned >90% gold extractions in 24 hours (best test was 94.3%), except for one test on sample B (CN-2 at a grind of 107 microns which yielded 85.3 % extraction. All tests except CN-2 were ground to 46 - 84 microns. Finer grinds should yield higher extractions. Reagent consumptions were moderate at 3 to 4 kg/t NaCN and 0.7 kg/t CaO.

## **14.0 MINERAL RESOURCE ESTIMATES**

### **14.1 INTRODUCTION**

The purpose of this Technical Report section is to provide a Mineral Resource Estimate for the Orefinders Resources Inc. (“Orefinders”) Mirado Project. 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 the 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 a 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 be affected by further infill and exploration drilling that may result in increases or decreases in subsequent Mineral Resource Estimates.

This Mineral Resource Estimate was based on information and data supplied by Orefinders, and was undertaken by Yungang Wu, P.Geo., Antoine Yassa, P.Geo. and Eugene Puritch, P.Eng., FEC, CET of P&E Mining Consultants Inc. of Brampton, Ontario, all independent Qualified Persons in terms of NI 43-101. The effective date of this Mineral Resource Estimate is January 8, 2018.

### **14.2 DATABASE**

All drilling and assay data were provided in the form of Excel data files by Orefinders. The Geovia Gems V6.8 database for this Mineral Resource Estimate, compiled by P&E, consisted of 247 drill holes totalling 32,342 m, of which 159 drill holes totalling 18,103 m were utilized for the Mineral Resource Estimate. A drill hole plan is shown in Appendix I.

The drillhole database contained a total of 18,666 Au assays of which 3,110 assays were used for the Mineral Resource Estimate.

All drillhole survey and assay values are expressed in metric units, with grid coordinates in the NAD 83, Zone 17N UTM system.

### **14.3 DATA VERIFICATION**

Verification of the Au assay database was performed by P&E against original laboratory electronically issued certificates from ALS group of laboratories. A total of approximately 52% of the assays were checked. Unchecked assays were due to laboratory certificates not being available. A few discrepancies were noted and corrected in the GEMS database.

P&E also validated the Mineral Resource database by checking for inconsistencies in 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, survey and missing interval and coordinate fields. Some minor errors were noted and corrected. P&E is of the opinion that the supplied database is suitable for a Mineral Resource Estimate.

## 14.4 DOMAIN INTERPRETATION

Three (3) mineralization wireframes were initially created by Orefinders, and provided to P&E which P&E subsequently reviewed and modified.

The wireframes were created from successive cross-sectional polylines on NNW (3400) facing vertical cross-sections with 25 m spacing. A 1.0 g/t Au cut-off and at least two consecutive samples or a 2.0 m minimum core length were utilized for the construction of the constraining mineralized wireframes. In some cases mineralization below the 1.0 g/t Au cut-off were included for the purpose of maintaining zonal continuity and the minimum constraining width. On each section, polyline interpretations were digitized from drill hole to drill hole but not typically extended more than 25 m into untested territory. The resulting Mineral Resource domains were used as constraining boundaries during the Mineral Resource estimation process for rock coding, statistical analysis and compositing limits. The 3D domains are presented in Appendix II.

Topography and overburden surfaces, and underground mine infrastructure (ramp and workings) were provided by Orefinders.

## 14.5 ROCK CODE DETERMINATION

As shown in Table 14.1, a unique rock code was assigned for each mineralized domain in the Mineral Resource model.

<b>Domain</b>	<b>Rock Code</b>	<b>Volume m<sup>3</sup></b>
East1	100	290,596
East2	200	316,106
East3	300	154,913
Air	0	
OVB	10	
Waste	99	
Voids	999	

## 14.6 GRADE CAPPING

The basic statistics of all constrained assays and sample lengths are presented in Table 14.2. Grade capping was investigated on the assays in the database within the constraining domains to ensure that the possible influence of erratic high values did not bias the database. Log-normal histograms of Au assays were generated for each mineralized zone and the selected resulting graphs are exhibited in Appendix III. The statistics of capped assays are summarized in Table 14.2 and the grade capping values are detailed in Table 14.3. The capped assays were subsequently utilized for compositing.

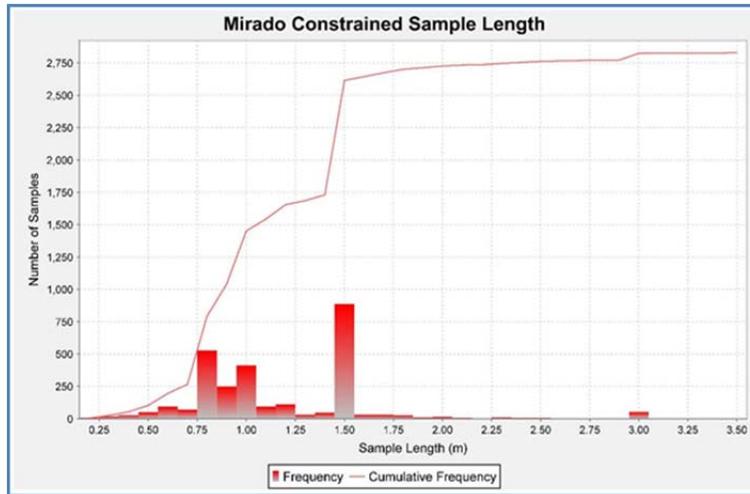
<b>Variable</b>	<b>Assay Au g/t</b>	<b>Capped Au g/t</b>	<b>Length (m)</b>
Number of samples	3,110	3,110	3,110
Minimum value	0.00	0.00	0.15
Maximum value	1,437.94	30.00	3.5
Mean	2.99	1.61	1.18
Median	0.31	0.31	1.00
Variance	948.46	16.53	0.23
Standard Deviation	30.80	4.07	0.48
Coefficient of Variation	10.32	2.53	0.40

<b>Domains</b>	<b>Total # of Assays</b>	<b>Capping Value Au (g/t)</b>	<b># of Capped Assays</b>	<b>Mean of Uncapped Assays</b>	<b>Mean of Capped Assays</b>	<b>CoV of Uncapped Assays</b>	<b>CoV of Capped Assays</b>	<b>Capping Percentage</b>
East1	1,237	30	16	4.55	2.05	10.22	2.31	98.7%
East2	1,196	25	11	2.10	1.24	6.80	2.72	99.1%
East3	677	25	7	1.70	1.45	3.85	2.58	99.0%

## 14.7 COMPOSITING

As shown in Figure 14.1, approximately 92% of the constrained sample lengths were less than 1.5 m in length, with an overall average of 1.18 m. In order to regularize the assay sampling intervals for grade interpolation, a 1.5 m compositing length was selected for the drill hole intervals that fell within the constraints of the above-mentioned Mineral Resource domains. The Au composites were calculated over 1.5 m lengths starting at the first point of intersection between assay data hole and hanging wall of the 3-D zonal constraint. The compositing process was halted upon exit from the footwall of the aforementioned constraint. Un-assayed intervals and below detection limit assays were set to 0.001 g/t. Any composites that were less than 0.5 m in length were discarded so as not to introduce any short sample bias in the interpolation process. The constrained composite data were extracted to XYZ point files for developing variograms and grade interpolation. The composite statistics are summarized in Table 14.4.

**Figure 14.1 Constrained Sample Length Distribution**



**TABLE 14.4  
COMPOSITE SUMMARY STATISTICS**

Variable	Au Uncapped Composites	Au Capped Composites
Number of samples	2,851	2,851
Minimum value	0.001	0.001
Maximum value	190.30	30.00
Mean	1.85	1.21
Median	0.25	0.25
Variance	95.78	7.85
Standard Deviation	9.79	2.80
Coefficient of Variation	5.29	2.31

## 14.8 SEMI-VARIOGRAPHY

A semi-variography study was performed as a guide to determining a grade interpolation search strategy. Omni, along strike, down dip and across dip semi-variograms were attempted for each domain using Au capped composites. Reasonable semi-variograms were developed, and selected semi-variograms are shown in Appendix IV.

Continuity ellipses based on the observed ranges were subsequently generated and used as the basis for estimation search ranges, distance weighting calculations and Mineral Resource classification criteria.

## 14.9 BULK DENSITY

Antoine Yassa, P.Geo. of P&E collected 14 samples during his site visit on May 4<sup>th</sup>, 2017. The samples were analyzed at AGAT Laboratories in Mississauga, and an average bulk density of 2.86 t/m<sup>3</sup> was attained with a variance between 2.74 to 2.98 t/m<sup>3</sup>. A uniform density of 2.86 t/m<sup>3</sup> was utilized for the Mineral Resource Estimate.

## 14.10 BLOCK MODELLING

The Mirado Mineral Resource Estimate block model was constructed using Geovia Gems V6.8 modelling software which is oriented with Y axis at 340° azimuth (rotated 20° counter clockwise). The block model origin and block size are tabulated in Table 14.5. The block model consists of separate model attributes for estimated Au grade, rock type, percent, density and Mineral Resource classification.

Direction	Origin	# of Blocks	Block Size (m)
X	587,115	102	5.0
Y	5,317,960	108	5.0
Z	310	30	5.0
Rotation	Counter clockwise 20°		

All blocks in the rock type block model were initially assigned a waste rock code of 99, corresponding to the surrounding country rocks. All mineralized domains were used to code all blocks within the rock type block model that contain a 1 % or greater volume within the constraining mineralized domains. These blocks were assigned their appropriate individual rock codes as indicated in Table 14.1. The overburden and topographic surfaces were subsequently utilized to assign rock codes of 10 and 0 corresponding to overburden and air respectively to all blocks 50 % or greater above those respective surfaces.

A volume percent block model was set up to accurately represent the volume and subsequent tonnage that was occupied by each block inside the constraining mineralized domains. As a result, the domain boundaries were properly represented by the percent model's ability to measure individual infinitely variable block inclusion percentages within each domain. The minimum coding percentage of the mineralized block was set to 1%. The volume and tonnage of historically mined out blocks were subtracted from that of mineralization blocks.

The Au grade blocks were interpolated with the Inverse Distance Cubed (1/d<sup>3</sup>) estimation method. Multiple passes were executed for the grade interpolation to progressively capture the sample points in order to avoid over-smoothing and preserve local grade variability. Search ranges were based on the semi-variograms and search directions which were aligned with the strike and dip directions of each domain accordingly. Grade blocks were interpolated using the parameters in Table 14.6.

Pass	Dip Range (m)	Strike Range (m)	Across Dip Range (m)	Max # of Samples per Hole	Min # Sample	Max # Samples
I	20	35	10	2	7	16
II	20	35	10	2	5	16
III	40	70	20	2	1	16

Selected cross-sections and plans of the Au grade blocks are presented in Appendix V.

## 14.11 MINERAL RESOURCE CLASSIFICATION

In P&E's opinion, the drilling, assaying and exploration work of the Mirado project supports this Mineral Resource Estimate and are sufficient to indicate a reasonable potential for economic extraction and thus qualify it as a Mineral Resource under the CIM definition standards. The Mineral Resources were classified as Indicated and Inferred based on the geological interpretation, semi-variogram performance and drill hole spacing. The Indicated Mineral Resources were defined for the blocks interpolated by the grade interpolation Pass I and II, which used at least 5 composites from a minimum of three holes; and Inferred Mineral Resources were categorized for all remaining unpopulated grade blocks within the mineralized domains. The classifications have been adjusted from the passes to reasonably reflect the distribution of each category. Selected classification block model cross-sections and plans are attached in Appendix VI.

## 14.12 AU CUT-OFF GRADE CALCULATION

The Mineral Resource Estimate was derived from applying Au grade cut-off values to the block model and reporting the resulting tonnes and grade for the potentially open pit mineable areas. The following parameters were used to calculate the Au cut-off grade which determines the potentially economic portions of the constrained mineralization.

### 14.12.1 Au Cut-off Grade Calculation

Au Price	US\$1,300/oz based on Dec 31/17 - 24 month trailing average
Au Process Recovery	95.0%
Exchange Rate	US\$0.76 = C\$1.00
Mining cost (per tonne mined)	C\$3.55/t
Processing cost (per tonne milled)	C\$25/t
G&A (per tonne milled)	C\$2/t
Haulage and Crushing cost	C\$8.40/t

Therefore, the Au cut-off grade for the open pit Mineral Resource Estimate is calculated as follows:

Mining, Processing and G&A costs = (C\$3.55 + C\$25 + C\$2+C\$8.40) = C\$38.95/tonne

$(C\$38.95) / (\$1,300/0.76/31.1035 \times 95\%) = 0.75 \text{ g/t}$ , Use 1.0 g/t Au for cut-off

### 14.12.2 Pit Optimization Parameters

The open pit Mineral Resource model was further investigated with a pit optimization and preliminary design to ensure a reasonable stripping ratio was applied and a reasonable assumption of potential economic extraction could be made (See pit shell in Appendix VII). The following parameters were utilized in the pit optimizations:

Au Price	US\$1,300/oz
Exchange Rate	US\$0.76 = C\$1.00
Au Recovery	95%
Mineralized Material Mining Cost	C\$3.55/tonne mined
Waste Rock Mining Cost	C\$3.25/tonne mined
Overburden Mining Cost	C\$3.00/tonne mined
Crushing & Haulage Cost	C\$8.40/tonne processed
Process Cost	C\$25/tonne processed
General/Administration	C\$2/tonne processed
Au Smelter Payable	99.8%
Pit Slopes	50 degrees

### 14.13 MINERAL RESOURCE ESTIMATE STATEMENT

The resulting Mineral Resource Estimate is tabulated in Table 14.7. P&E considers the mineralization of the Mirado Project to be potentially amenable to open pit extraction.

<b>TABLE 14.7</b>			
<b>MIRADO PIT CONSTRAINED MINERAL RESOURCE ESTIMATE AT 1.0 G/T</b>			
<b>AU CUT-OFF<sup>(1-5)</sup></b>			
<b>Category</b>	<b>Tonnage (kt)</b>	<b>Au (g/t)</b>	<b>Contained Au (koz)</b>
Indicated	559	2.61	46.9
Inferred	382	2.66	32.7

- (1) *Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability.*
- (2) *The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
- (3) *The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.*
- (4) *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.*
- (5) *Historic mined out area were removed from the model.*

Mineral Resource estimates are sensitive to the selection of a reporting Au cut-off value. The sensitivities to the Au cut-off grade for this Mineral Resource Estimate are demonstrated in Table 14.8.

<b>Category</b>	<b>Cut-off Au g/t</b>	<b>Tonnes</b>	<b>Au g/t</b>	<b>Contained Au (oz)</b>
Indicated	3.00	143,007	5.34	24,550
	2.50	186,179	4.74	28,361
	2.00	250,811	4.09	32,967
	1.75	302,127	3.71	36,058
	1.50	360,703	3.37	39,113
	1.40	388,903	3.23	40,429
	1.30	421,707	3.09	41,852
	1.20	460,474	2.93	43,407
	1.10	505,087	2.77	45,054
	1.00	558,719	2.61	46,869
	0.90	616,963	2.45	48,644
	0.80	676,626	2.31	50,275
	0.70	755,051	2.15	52,170
	0.60	835,982	2.00	53,855
	0.50	944,772	1.84	55,783
Inferred	3.00	101,323	4.93	16,062
	2.50	157,443	4.15	20,989
	2.00	208,419	3.68	24,675
	1.75	235,439	3.47	26,295
	1.50	281,699	3.17	28,727
	1.40	299,807	3.07	29,570
	1.30	319,269	2.96	30,412
	1.20	335,546	2.88	31,068
	1.10	359,749	2.76	31,962
	1.00	381,803	2.66	32,708
	0.90	403,457	2.57	33,366
	0.80	425,858	2.48	33,982
	0.70	448,684	2.39	34,529
	0.60	472,547	2.31	35,032
	0.50	503,149	2.20	35,574

#### **14.14 CONFIRMATION OF MINERAL RESOURCE ESTIMATE**

The block model was validated using a number of industry standard methods including visual and statistical methods.

Visual examination of composites and block grades on successive plans and sections was performed on-screen in order to confirm that the block model correctly reflects the distribution of composite grades. The review of grade estimation parameters included:

- Number of composites used for estimation;
- Number of drill holes used for estimation;
- Number of passes used to estimate grade;
- Mean distance to sample used;
- Mean value of the composites used.

Average grade of block model were compared with mean grade of composites at a zero Au cut-off grade are presented in Table 14.9.

<b>TABLE 14.9</b>		
<b>AVERAGE GRADE COMPARISON OF COMPOSITES WITH BLOCK MODEL</b>		
<b>Domain</b>	<b>Data Type</b>	<b>Au g/t</b>
East1	Composites	4.55
	Capped Composites	2.05
	Block Model ID3*	1.67
	Block Model NN**	1.64
East2	Composites	2.10
	Capped Composites	1.24
	Block Model ID3*	1.15
	Block Model NN**	1.16
East3	Composites	1.70
	Capped Composites	1.45
	Block Model ID3*	1.43
	Block Model NN**	1.48

\*block model grades were interpolated using Inverse Distance Cubed

\*\* block model grades were interpolated using Nearest Neighbour

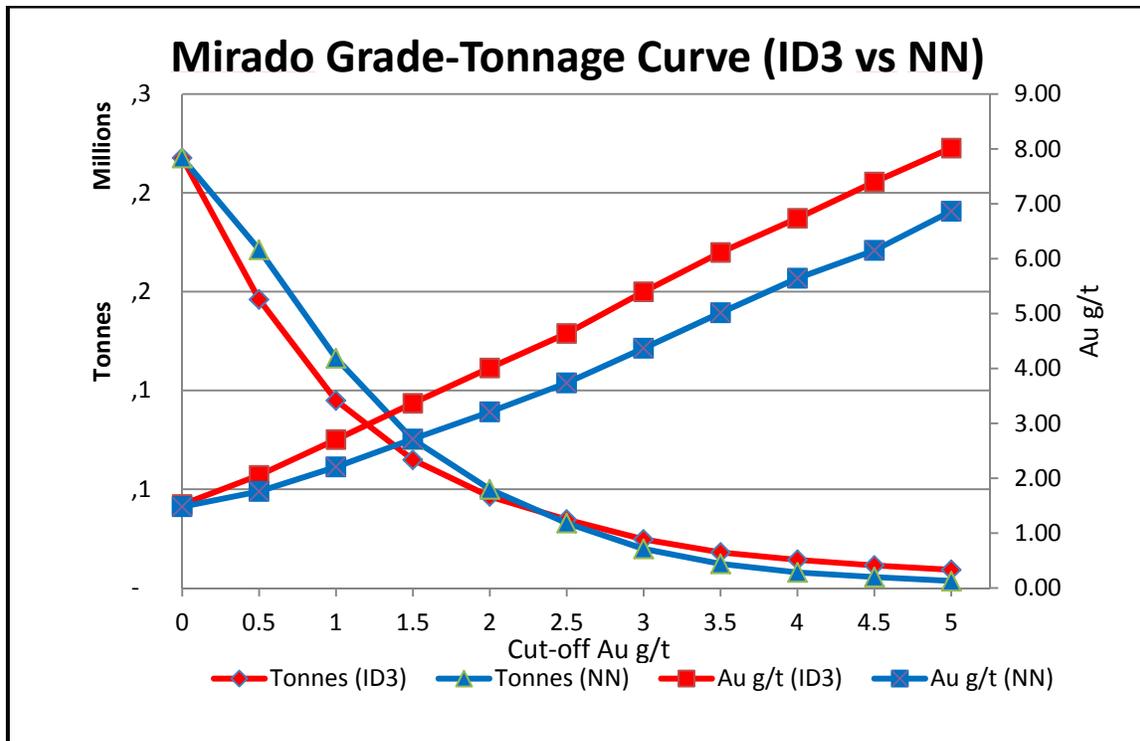
The comparison above shows the average grades of the block models to be somewhat lower than that of the composites used for grade estimation which is expected due to the smoothing that takes place with grade interpolation. P&E believes that the block model Au values will be more representative than the capped composites due to the block model's 3D spatial distribution characteristics.

A volumetric comparison was carried out with the block model volume versus the geometric calculated volume of the domain solids and the differences are detailed in Table 14.10.

<b>TABLE 14.10</b>	
<b>VOLUME COMPARISON OF BLOCK MODEL WITH GEOMETRIC SOLIDS</b>	
Geometric Volume of Wireframes	761,615 m <sup>3</sup>
Block Model Volume	761,145 m <sup>3</sup>
Difference %	0.06%

A comparison of the grade-tonnage curve of the Au grade model interpolated with Inverse Distance cubed (1/d<sup>3</sup>) and Nearest Neighbour (NN) on a global resource basis for all zones is presented in Figure 14.2.

Figure 14.2 Au Grade-Tonnage Curve for NN and ID3 Interpolation for All Zones



Au local trends of all zones were evaluated by comparing the ID3 and NN estimate against Au Composites and Capped Composites. As shown in Figure 14.3, 14.4 and 14.5, the Au grade interpolation with Inverse Distance Cubed and Nearest Neighbour agreed reasonably well.

Figure 14.3 Au Grade Swath Easting Plot

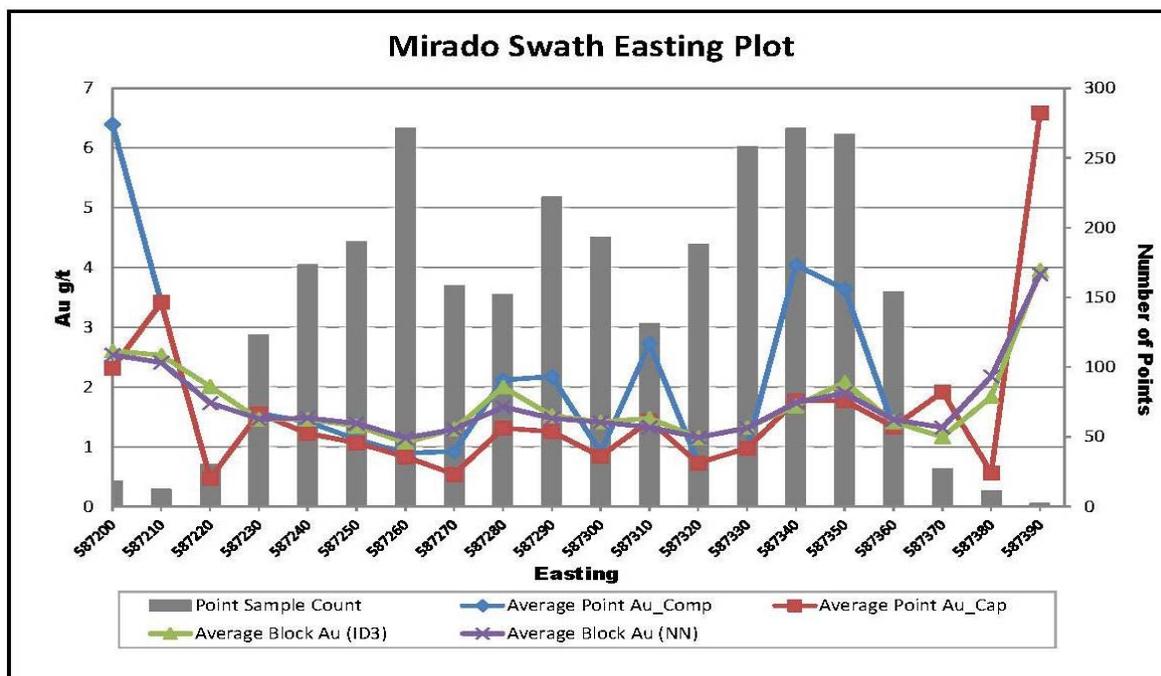


Figure 14.4 Au Grade Swath Northing Plot

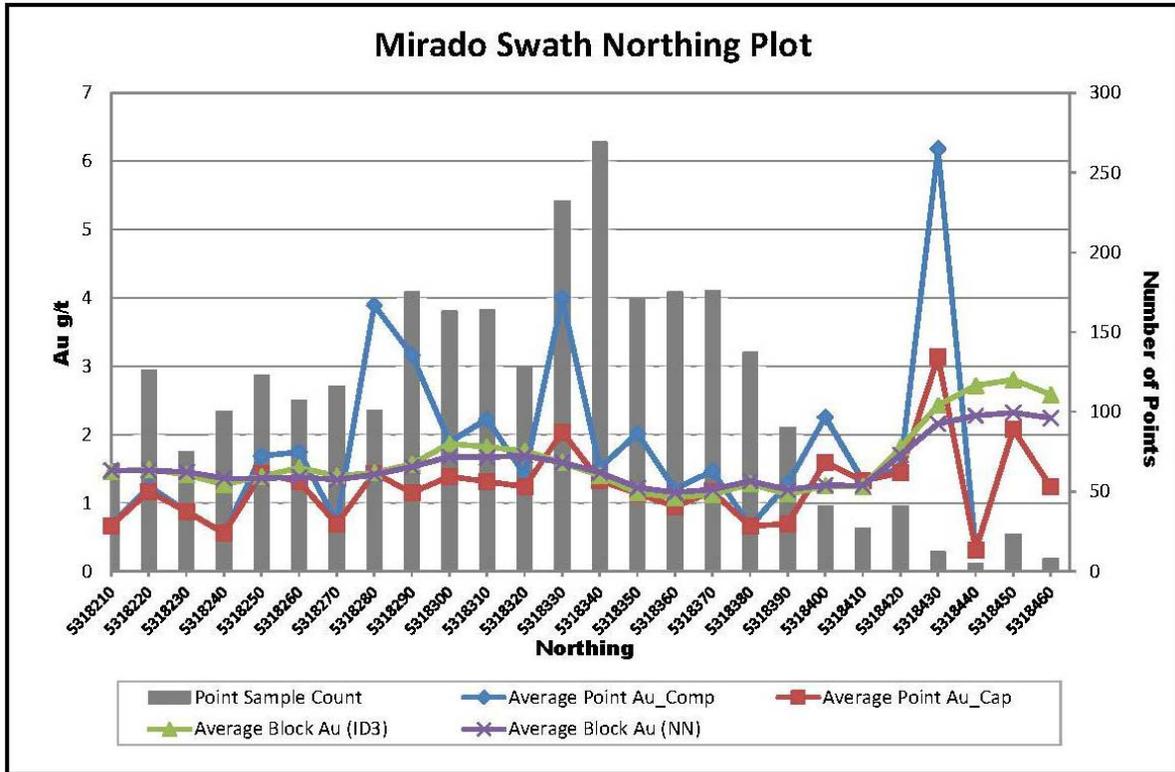
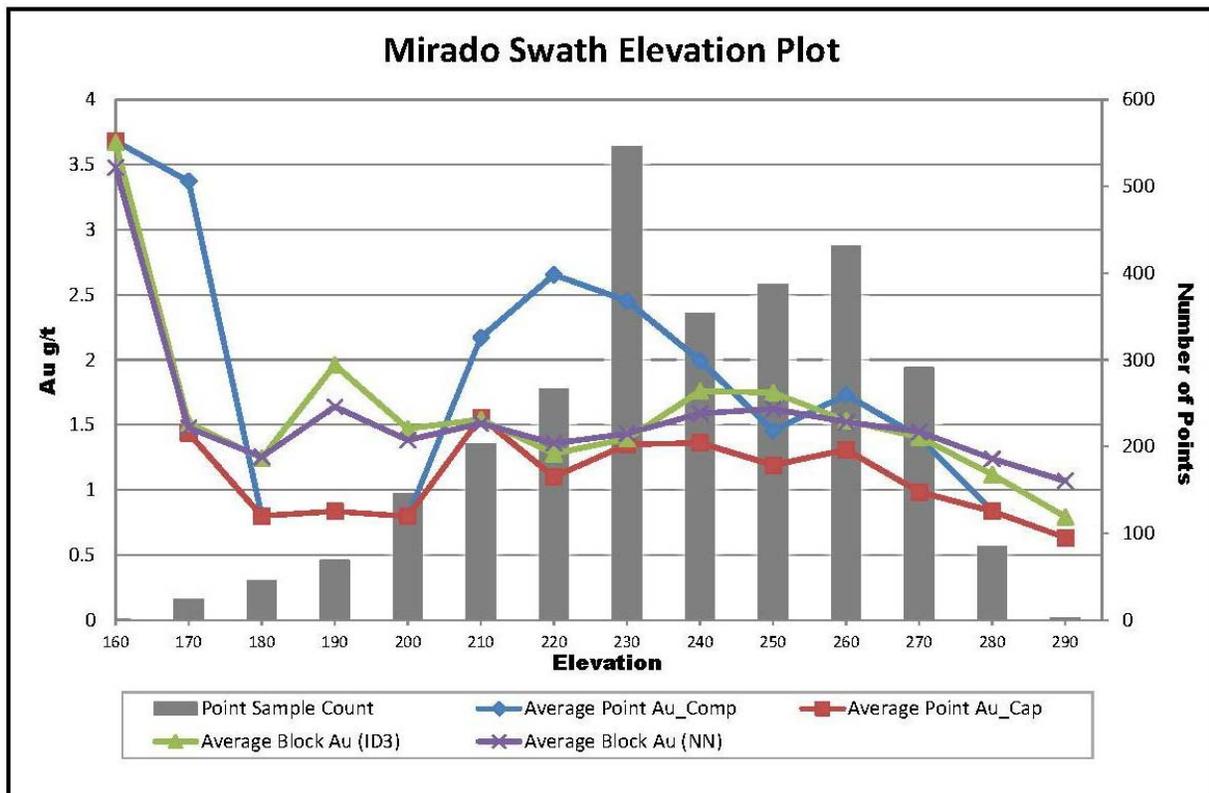


Figure 14.5 Au Grade Swath Elevation Plot



## **15.0 MINERAL RESERVE ESTIMATES**

There are no mineral reserves currently identified at the Mirado Project.

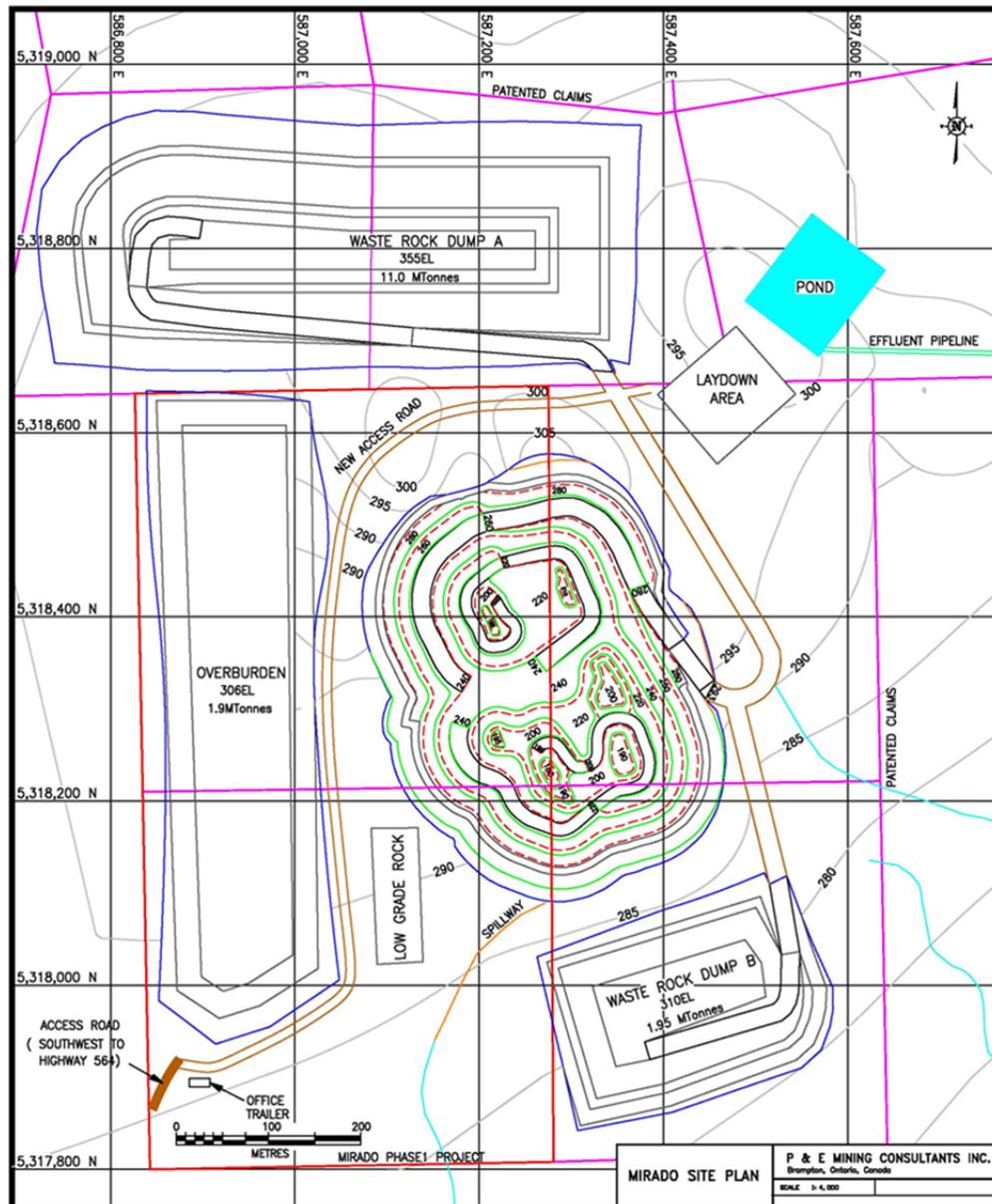
According to NI 43-101 guidelines, a Preliminary Economic Assessment is considered preliminary in nature and includes the use of Inferred Mineral Resources which are considered too speculative geologically to apply economic considerations that would enable them to be categorized as Mineral Reserves.

## 16.0 MINING METHODS

The PEA proposes a conventional truck and shovel open pit mining operation to extract the Mineral Resources at the Mirado Project.

The proposed site plan is illustrated in Figure 16.1. The conceptualized open pit is located at the center of the figure.

**Figure 16.1 Overall Mining Plan**



Some marginal material marginally sub-economic mineralized with gold grades near but below the cut-off grade, will be stockpiled separately for possible future processing.

P&E examined the Mineral Resource block model developed for the Mirado property and developed a series of optimized incremental pit shells on the Deposit for a selection of various gold prices. The optimization analysis included Indicated and Inferred Mineral Resources. For pit optimization, a base case gold price of US\$1,300/oz was used along with an inter-ramp pit slope of 45°. The Mineral Resources were compared in terms of gold ounces potentially produced and the related waste/overburden stripping ratios. Of special interest was the rate of increase (or decrease) of certain factors in these comparable pit shells, as the open pit shells went deeper.

Open pit mining will utilize conventional and well established open-pit mining practices, with successive drill and blast, load and haul cycles using a drill/loader/truck mining fleet. The overburden and waste rock material will be hauled to overburden and waste disposal areas near the pit. The run-of-mine (“ROM”) mineralization will be loaded into mining haul trucks by front end loaders and delivered to a primary crushing facility near the pit rim, or to a stockpile near the crusher. The size of the mineralized rocks will be reduced by the crusher to 100% passing 0.15 m.

From the primary crusher, the material will be delivered by highway transport truck to be delivered to the toll processing facility.

Since the life-of-mine (“LOM”) currently being contemplated is relatively short, the entire mining operation would be run on a contractor basis. The mining methods and production capacity have been chosen to match a projected ultimate process plant throughput rate of 1,000 tonnes per day (“tpd”). This total will be composed entirely of feed from the open pit mining operation. Open pit mining would proceed as successive pre-strip and hard rock mining operations, and follow the down dip trend of the mineralized deposit.

An open pit optimization was carried out in order to identify an optimal, conceptual open pit mining operation. A number of Lerchs-Grossmann pit shells were generated by varying the gold price. The base case scenario that was selected assumed a cut-off grade of 1.0 Au g/t, which corresponds to a gold price of US\$1,300 per oz, process plant feed and waste mining costs of \$3.55 and \$3.25 per tonne respectively, overburden mining costs of \$3.00 per tonne and process plant feed crushing hauling and processing costs of \$33.40 per tonne and G&A costs of \$2.00 per tonne. Hard rock pit slopes were assumed to be stable at a 50 degree inter-ramp slope. Reducing the cut-off lower than this 1.0 g/t Au grade effectively accelerated the incremental increase in the waste stripping ratio to undesirable levels.

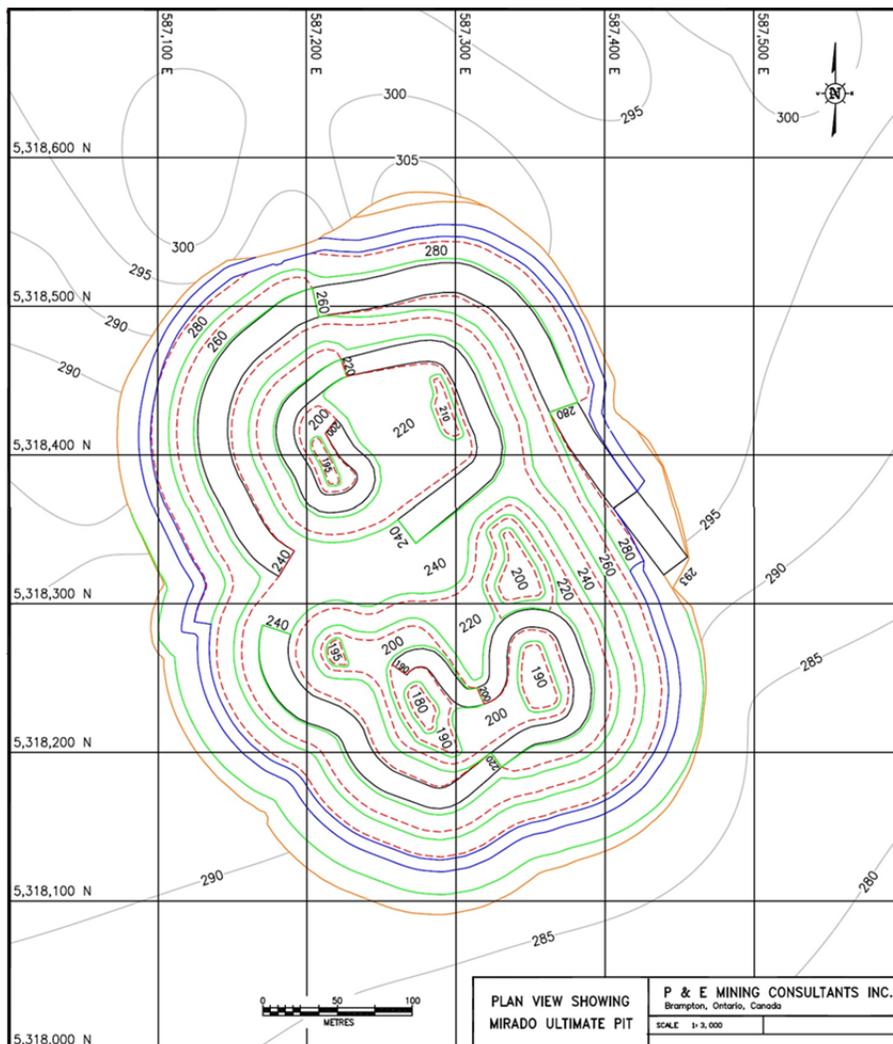
The open pit mining dilution was estimated to be 20%, at a grade of 0.65 Au g/t. Mineralized material extraction in the open pit mine is estimated to be 97%. A summary of open pit diluted and extracted resources considered for mining was determined, as well as associated overburden and waste rock removal. The open pit mining schedule is presented in Table 16.1.

<b>TABLE 16.1</b>					
<b>MINE PRODUCTION SCHEDULE</b>					
<b>Description</b>	<b>Mineralized Material Production ('000's of Tonnes)</b>				
	<b>Year -1</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Total</b>
Potential Mill Feed	0	350	350	296	996
Overburden	425	1,230	292	0	1,947
Waste	475	3,670	6,358	2,461	12,964
<b>Total Material from Open Pit</b>	<b>900</b>	<b>5,250</b>	<b>7,000</b>	<b>2,757</b>	<b>15,907</b>

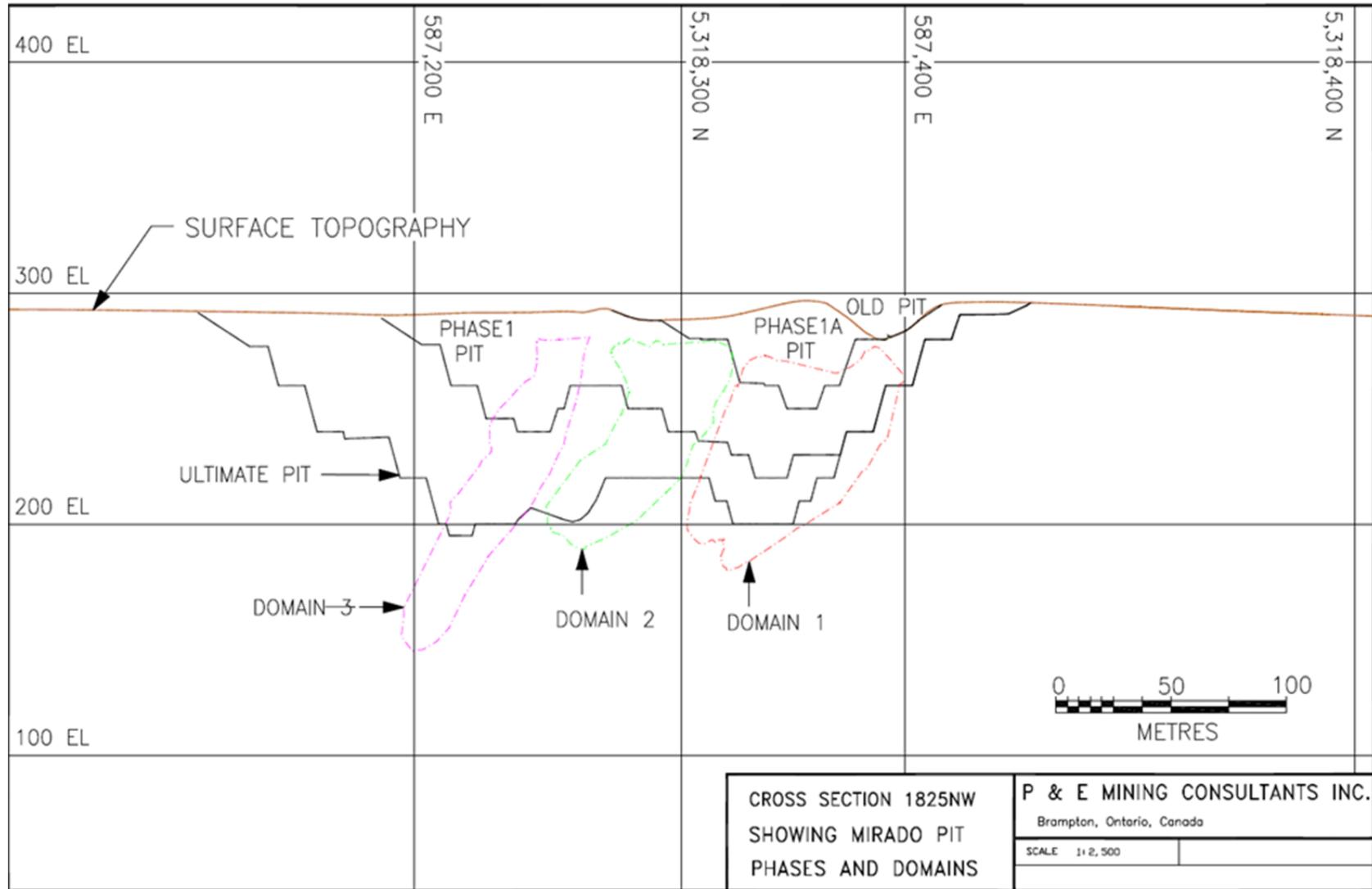
*Note:* Some values have been rounded. The totals are accurate summations of the columns and rows of data.

Figure 16.2 and Figure 16.3 show the open pit in plan and cross-section respectively. The ultimate pit would measure approximately 500 m long by 350 m wide and have an ultimate depth of approximately 100 m.

**Figure 16.2 Ultimate Open Pit Plan View**



**Figure 16.3 Ultimate Open Pit Cross Sectional View**



The mine would be operated on a contractor basis.

An initial pre-strip operation of approximately 900,000 tonnes of overburden and waste rock will be required before process plant feed production could commence. Stable inter-ramp slope angles on the order of 50 degrees have been utilized in the pit design. Clay materials encountered during stripping and mining will be hauled from the pit and used to cover and encapsulate the potentially acid producing (“PAG”) waste rock storage piles. The overburden and waste rock would be hauled to separate disposal areas and the process plant feed would be hauled to the primary crusher.

Orefinders will also provide the engineering control and grade control sampling and assaying during the hard rock mining phase. The key mining equipment provided by the contractor would likely include front end loaders and haulage trucks. Once hard rock mining operations commence, track mounted diesel powered drill rigs will be employed for blasthole drilling. The ancillary mobile equipment fleet provided by the contractor will likely include a road grader, a water/sander truck, bulldozers, and a fuel/lubrication truck. Field service vehicles and pick-up trucks will be provided by the Company and contractor, as required. The Company’s equipment would be maintained at the contractor’s shop by contractor maintenance personnel.

## 17.0 RECOVERY METHODS

The construction of an on-site processing facility would not be justified given the current estimates of the quantity of potential process plant feed that can be produced by the Project.

P&E is aware of several potential toll processing facilities within a moderate trucking distance, which may be amenable to accepting process plant feed from the Mirado property. Toll processing through one of the process plants in the area is contemplated.

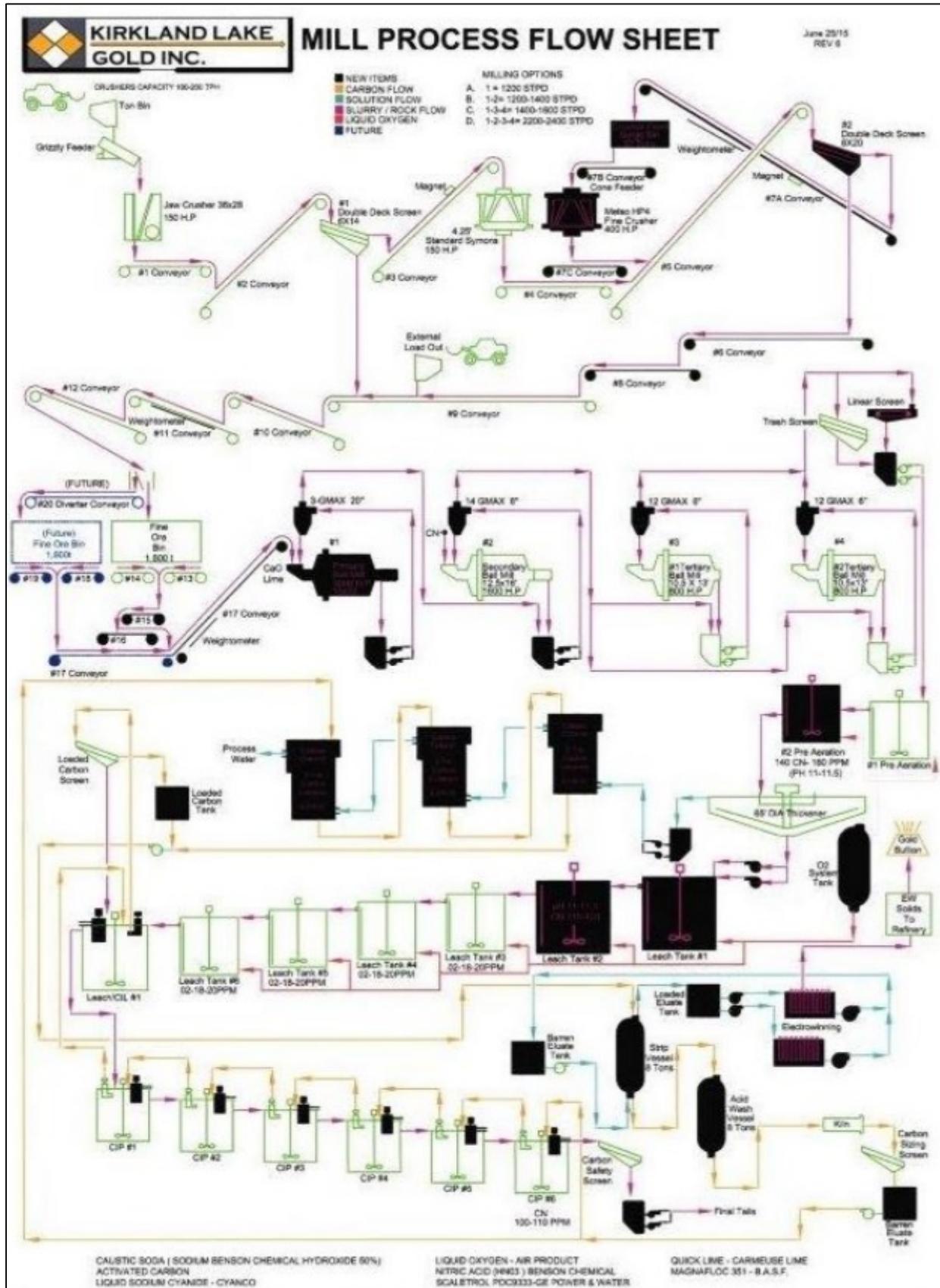
At the present time, toll processing at one of the process plants in the area is contemplated. It is assumed for the purpose of this report that a direct cyanidation plant with gold recovery from solution via activated carbon (as opposed to flotation followed by cyanidation of concentrate) will be selected. The primary unit operations will be:

- Crushing and grinding of ore, employing conventional crushing and grinding or semi-autogenous (SAG) grinding followed by ball milling and classification to produce a ground product for cyanidation. A thickener may precede the cyanidation circuit to allow operation at an elevated pulp density;
- Leaching, utilizing a train of agitated tanks to provide design leach retention time;
- Gold recovery from solution in a multi-tank circuit employing active carbon (CIP) to adsorb the gold. (One circuit option is to add carbon to the leach circuit which is then designated as a carbon in leach (CIL) circuit; and
- Stripping of gold from the carbon using an appropriate eluant at high temperature, followed by electrowinning of the gold and production of a doré product by smelting in a suitable furnace.

The closest ore processing facility is the operating Macassa Process Plant, which is operated by Kirkland Lake Gold Ltd. (“KLG”). This process plant employs the primary unit operations listed above. It is approximately 35 kilometres north of the Mirado Property.

Figure 17.1 illustrates the expected flow sheet for the Macassa Process Plant. This was extracted from a publicly available report prepared by KLG, titled “Macassa Property, Ontario, Canada. Updated NI 43-101 Technical Report” dated 30 March 2017.

Figure 17.1 Macassa Process Plant Process Flow Sheet



## 18.0 PROJECT INFRASTRUCTURE

The Mirado Property is accessible from Kirkland Lake via paved highways 66 and 112 to the well maintained gravel surface Highway 564 which continues to Boston Creek and then eastward to the Property along a 10 km gravel access road. The Ontario Northland Railway passes through Boston Creek, connecting to Kirkland Lake and south to North Bay, Ontario. The site has access to a variety of services and skilled labour in the Kirkland Lake District.

The Mirado Project is currently anticipated to operate for only approximately three years. For this reason, the operating plan for the Project will involve temporary equipment and facilities wherever possible. The mine will be operated by independent contract mining companies which will bring their own equipment and support facilities to site.

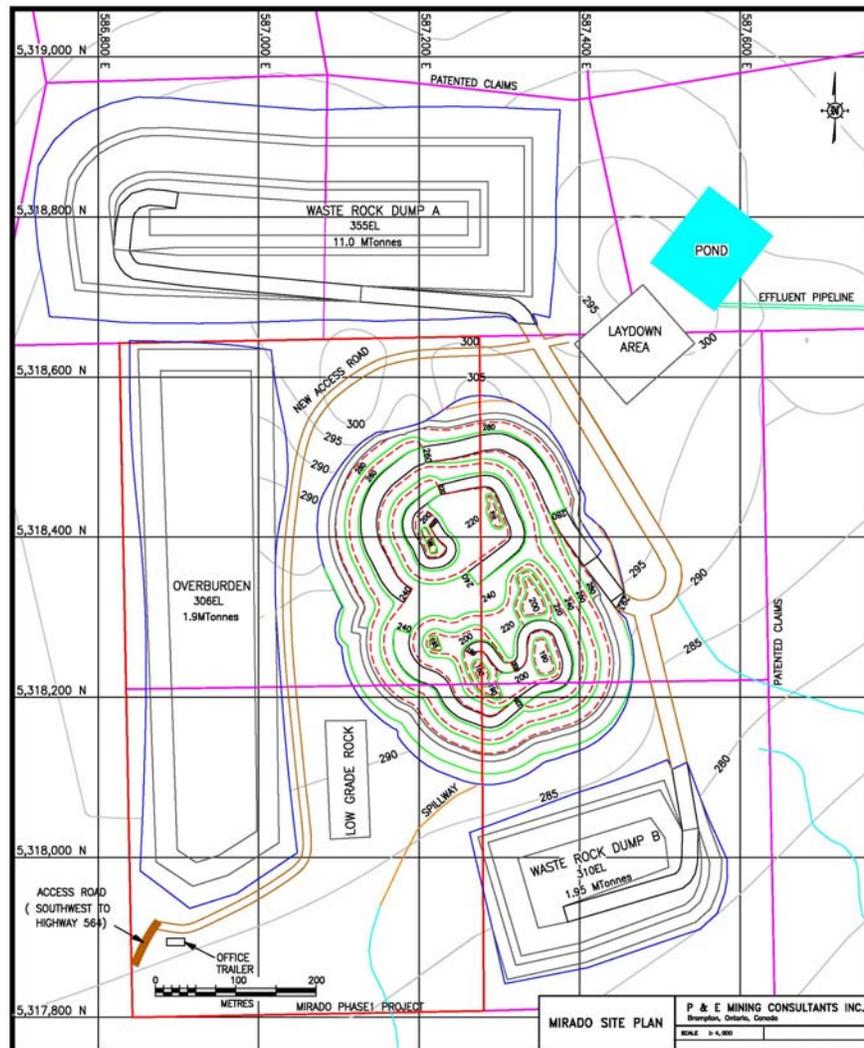
It is expected that all facilities will be provided in containers and be trailer-mounted.

The services and ancillary facilities required for the Project will include the following:

- Upgrade site access road;
- Site service roads;
- Offices and dry trailer facilities;
- Containerized diesel power generation unit and distribution network for lighting, pumps, and office/dry trailer facilities;
- A containerized warehouse facility;
- Contractor heavy equipment maintenance shop;
- Site water management;
- Portable restrooms;
- Fuel storage and dispensing; and
- Security, safety, and first aid facility trailers,

Figure 18.1 illustrates the locations of the open pit, rock storage areas and related infrastructure.

**Figure 18.1 Site Plan**



There is no existing infrastructure on the Project site that will be available for the mining operation.

The site access road will be upgraded to allow all-season, all-weather access to the site by highway transport trucks. The site will subsequently be cleared and leveled to allow for the construction of the required facilities. Waste rock storage areas will be constructed to the north and south of the proposed open pit. An overburden storage area will be established to the west of the pit. Potentially Acid Producing waste rock piles will be covered with clay bearing material from the overburden storage area. Some waste rock that contains marginally sub-economic mineralization, will be stored in a Low Grade Rock stockpile. A decision may be made at a later date to recover this material for processing.

It is currently envisaged that an area for company and contractor office and dry trailers will be located along the access road coming onto the Property. A parking area for personal and company vehicles will be located adjacent to the trailers. A small containerized power generation plant will be located near the office trailers with connections to the office trailers for lighting and support, as well as to the open pit for lighting and pumping operation.

A settling pond will be constructed to receive the water from the dewatering of the open pit.

A processing plant and related support infrastructure will not be constructed at Mirado, however, a crusher facility will be installed near the rim of the pit to size the run-of-mine material for transport by highway trucks.

## 19.0 MARKET STUDIES & CONTRACTS

It is anticipated that the production from the Mirado Project mining operations will be transported to a toll processing facility where it will be treated. The product of that process will be doré gold, which Orefinders will sell to one of the refineries located in Canada, after payment of the required toll processing fees.

Preliminary metallurgical studies suggest that doré gold produced will be of a specification comparable with that produced at other nearby operating mines.

There were no market studies completed or contracts in place in support of this Technical Report. Gold, like other precious metals, is priced according to the current spot prices on open markets, however, future gold prices must be envisaged to fully understand potential cash flows. For the purpose of this Technical Report, trailing average prices for gold were investigated as possible gold price indicators for future production. P&E also noted that spot gold prices have followed a rising trend through 2017 and into 2018.

A two year average of trailing gold prices to January 31, 2018 is approximately US\$1,262/oz. It is interesting to note that 2016 and 2017 each showed average yearly gold prices near this price. In 2016, gold prices rose and fell over the year between US\$1,097/oz and US\$1,341/oz. In 2017 however, a continually rising trend developed that saw prices rise consistently from US\$1,150/oz up to US\$1,318/oz as of the effective date of this report. The trend continued through January, with prices rising to approximately US\$1,350/oz (by January 26, 2018). Based on this purely conceptual analysis and considering the short life of the mining operation, it was decided to use a gold price of US\$1,300 as a reasonable estimate of what gold prices will be over the operating life of the Mirado Project.

## **20.0 ENVIRONMENTAL STUDIES, PERMITS, & SOCIAL OR COMMUNITY IMPACTS**

### **20.1 SUMMARY**

Orefinders initiated environmental baseline studies in 2013 to support the Stockpile Project and future project development. The focus of the previous environmental studies was to support the permitting process associated with the Stockpile Project, which was completed in 2016. The studies completed provided relevant information on the following baseline components:

- Climate;
- Air quality and noise;
- Land and resource use;
- Surface water quality and hydrology;
- Hydrogeology and groundwater quality;
- Aquatic environment;
- Terrestrial plant and animal life; and
- Geochemistry.

Additional environmental studies will be required to support the development of the Mirado Project. The associated permitting process and environmental studies are outlined in the following sections.

### **20.2 REGULATORY FRAMEWORK**

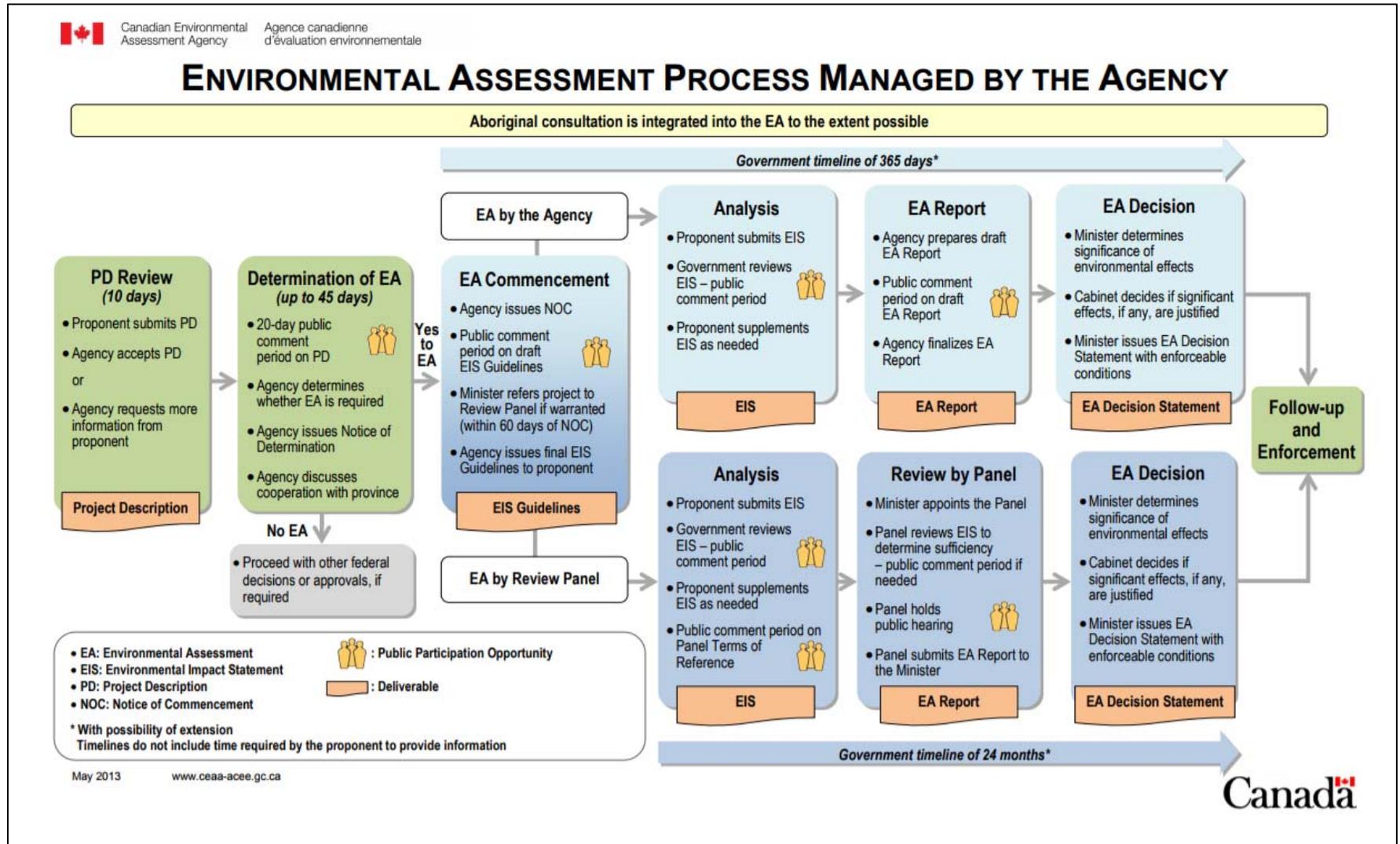
The construction, operation, and closure of the Project will require both federal and provincial regulatory approvals. The preliminary federal and provincial permitting processes are outlined in the following sections.

### **20.3 FEDERAL PERMITTING PROCESS**

The Project falls under the Regulations Designating Physical Activities (SOR/2012-147) of the Canadian Environmental Assessment Act, 2012 (“CEAA 2012”) Section 16(c): “The construction, operation, decommissioning and abandonment of a rare earth element mine or gold mine, other than a placer mine, with an ore production capacity of 600 t/d or more”.

As such, Orefinders will be required to submit a Project Description to the Canadian Environmental Assessment Agency (“CEA Agency”). The CEA Agency will review the Project Description and determine if a Federal Environmental Assessment (“EA”) is required. If an EA is required, the CEA Agency will issue Environmental Impact Statement (“EIS”) guidelines to Orefinders. The EIS guidelines will outline the scope of the EA required for the Project. The EIS process and approval timelines are illustrated in Figure 20.2.1.

Figure 20.1 Federal Environmental Assessment Process



A summary of the additional potential federal regulatory requirements for the Project are summarized in Table 20. 1.

<b>TABLE 20.1</b>			
<b>PRELIMINARY LIST OF POTENTIAL FEDERAL PERMITS AND APPROVALS</b>			
<b>Item</b>	<b>Applicable Act/Regulation</b>	<b>Responsible Agency</b>	<b>Description</b>
Species at Risk Agreement or Permit	Species at Risk Act	Environment Canada	Required if the Project will harm or disturb a listed species or a species' critical habitat
Migratory Birds	Migratory Birds Convention Act	Environment Canada	Protection and conservation of migratory birds and their nests.
Manufacturing, Storage, and Transportation of Explosives	Explosives Act	Natural Resources Canada	The explosives contractor will be required to hold any applicable permits.
Metal Mining Effluent Regulation	Fisheries Act	Environment Canada	Compliance – Environmental monitoring and reporting if discharges exceed a flow rate of 50 m3 per day

#### **20.4 PROVINCIAL PERMITTING PROCESS**

There are no specific provincial EA requirements for mining projects in Ontario; however, some of the activities related to the development of the Project, including some ancillary infrastructure components, may require approval under one or more provincial Class EAs related to provincial permitting or approval activities.

A list of the anticipated provincial permits and approvals are summarized in Table 20.2.

<b>TABLE 20.2</b>			
<b>PRELIMINARY LIST OF POTENTIAL PROVINCIAL PERMITS AND APPROVALS</b>			
<b>Permit/Approval</b>	<b>Applicable Act/Regulation</b>	<b>Responsible Agency</b>	<b>Description</b>
Industrial Sewage Works - Environmental Compliance Approval	Ontario Water Resources Act	Ministry of the Environment and Climate Change	Approval to construct sewage works for the treatment and discharge of water (effluent) to the environment
Permit to Take Water	Ontario Water Resources Act	Ministry of the Environment and Climate Change	Required for mine dewatering and the taking of surface water for domestic and/or industrial purposes (i.e., drilling) at rates greater than 50 000 litres per day.
Work Permits	Public Lands Act	Ministry of Natural Resources and Forestry	Approval for certain work activities on Crown land and shorelines of lakes and rivers (i.e., construction of pipeline and outfall in Misema and pump house and inlet)
Closure Plan	Mining Act	Ministry of Northern Development and Mines	To allow for mine development, operation, and rehabilitation
Work Permit/Approval	Lakes and Rivers Improvement Act	Ministry of Natural Resources and Forestry	Construction of dams and dykes for the settling pond. Further engineering design and consultation with MNR is required to determine if approval under the Lakes and Rivers Improvement Act will be required
Forest Resource Licence	Crown Forest Sustainability Act	Ministry of Natural	Harvesting of merchantable timber as necessary for the construction of the Project.

<b>TABLE 20.2</b>			
<b>PRELIMINARY LIST OF POTENTIAL PROVINCIAL PERMITS AND APPROVALS</b>			
<b>Permit/Approval</b>	<b>Applicable Act/Regulation</b>	<b>Responsible Agency</b>	<b>Description</b>
		Resources and Forestry	
Permit	Endangered Species Act	Ministry of Natural Resources and Forestry	Permit to authorize activities that are otherwise not allowed under the Endangered Species Act (e.g., harm or harass a species at risk or damage or destroy its habitat). Additional terrestrial studies are required to determine permitting requirements; however, it is believed that permitting can be avoided through mitigation and avoidance
Class Environmental Assessment	Mining Act/Public Lands Act	Ministry of Northern Development and Mines	Approval to obtain surface rights/easement to the shoreline of Misema River for construction of the effluent pipeline and outfall

## **20.5 SOCIAL OR COMMUNITY IMPACT**

### **20.5.1 Land and Resource Use**

Located to the east of Highway 11, the site is accessible via secondary Highways 624, 650, and 564. A travelled road provides access to the Project site which is also an Ontario Federation of Snowmobiling Clubs snowmobiling trail, Number 109.

The site is situated on private land formed by a group of 12 patented mining claims. The majority of the area surrounding the site is Crown land. The Ministry of Natural Resources and Forestry (“MNRF”) Crown Land Use Policy Atlas has designated the area surrounding the site as General Land Use Area (Policy ID G1858: Lower Misema River – Little Skeleton Creek) (MNRF, 2018). The area is situated within the Kirkland Lake District.

The area is sparsely inhabited but includes the small community of Boston Creek approximately 7.5 kilometres west of the Project. The predominant land use is Mineral Resource extraction and the mineral potential in the area is considered to be medium to high. The historic Adam’s Mine is located in close proximity to the Project (approximately 9 kilometres northwest). Forestry is a major activity in this area. (MNRF, 2018). Harvesting has occurred several times in the vicinity of the Project and Georgia Pacific harvested trees from the Project patented claims in 2014.

The primary land use in this area is to support Mineral Resource extraction activities. Recreational activities, such as, general cottage life, hiking, and fishing are considered as secondary uses in this area (MMRF, 2018).

The Project is located on a brownfield site that was previously disturbed by historical mining and mineral exploration activities. The site previously supported underground and surface mining as well as processing activities. Infrastructure remaining on site includes a small tailings area, building foundations, one open pit and a borrow pit filled with water, underground infrastructure, and material stockpiles (e.g., overburden, waste rock/low grade rock stockpiles).

### **20.5.2 Archaeology**

An archaeological assessment was not undertaken as part of the previous Stockpile Project. However, an archaeological assessment may be required prior to future Project development.

### **20.5.3 Aboriginal Engagement and Consultation**

Aboriginal engagement activities were completed for the Stockpile Project with the following communities: Wahgoshig First Nation, Timiskaming First Nation, Matachewan First Nation, and the Métis Nation of Ontario. These communities were identified by the MNDM as having Aboriginal rights and/or treaty rights potentially impacted by Orefinders proposed activities.

Orefinders signed a communications agreement with Timiskaming First Nation and was in the process of negotiating a Memorandum of Understanding with Matachewan First Nation when the Stockpile Project was in the permitting process.

### **20.5.4 Public Consultation**

As a part of the permitting process for the Stockpile Project, Orefinders consulted with local residents. Orefinders issued letters and conducted meetings with several Boston Creek residents (the closest residential area). Primary concerns from the Boston Creek residents included road safety and road maintenance. Additional stakeholders include the Town of Kirkland Lake, local land users, local government, and provincial ministries. Orefinders will continue to engage with these stakeholders.

An Open House was conducted by Orefinders for the Stockpile Project on 27 February 2014. It was not well attended with only 11 people including local residents and representatives of the following organizations: MNRF, Orefinders, Canada Post, Canadian Exploration Services Ltd., Northern News, and Polymet Laboratories.

Another public meeting was held in Kirkland Lake on 21 June 2016. This was also to provide information on the Stockpile Project. Approximately 12 people attended the meeting; the information was well received and there were no concerns raised.

## **20.6 Environmental Studies**

An overview of the environmental studies that were previously completed, and those that are required to support the development of the Project, are outlined below.

### **20.6.1 Climate**

An Onset HOBO U30 weather station was installed on the site on 10 November 2013 by SEI (SEI, 2016). The station measured air temperature, relative humidity, solar radiation, wind direction, wind speed, and rainfall at 10 minute intervals. Regional long-term climate data were also obtained from the Environment Canada Kirkland Lake Airport Climate Station (1971 to 2000 climate normal).

The onsite data was collected from November 2013 to July 2014. This data was summarized on a monthly basis and presented in the Mirado Stockpile Project Closure Plan (SEI, 2016).

Additional onsite weather data collection is not anticipated with the exception of precipitation, which can be recorded using a simple precipitation gauge.

## **20.6.2 Air Quality**

SEI completed air quality studies between December 2013 and December 2014. Results of the studies are presented in SEI (2016) and summarized below.

Sites were established within the Mirado property and the town of Boston Creek. The sites were monitored for total suspended solids (“TSP”) and metals, as well as, total dust fall, SO<sub>2</sub> and NO<sub>2</sub>. A background site was established and monitored for total dust fall. There were approximately 50 samples collected and analyzed at the Mirado and Boston Creek sites for TSP and metals. Total dust fall, SO<sub>2</sub>, and NO<sub>2</sub> data were collected monthly for a period of 12 months at Mirado, Boston Creek, and background sites to determine 30 day averages.

There were three exceedances of the TSP Ambient Air Quality Criteria (“AAQC”) at the Mirado site and four exceedances of the TSP AAQC at the Boston Creek site. There was one exceedance of the metals AAQC at the Boston Creek site but none at the Mirado site. All sites had dust fall concentrations below the AAQC except one: a sample from the Background site. The concentrations of SO<sub>2</sub> and NO<sub>2</sub> at the Mirado and Boston Creek sites were all consistently lower than 1 part per billion. These exceedances are considered insignificant and/or anomalous. No further air quality studies are anticipated to support the proposed Project.

## **20.6.3 Surface Water Quality and Hydrology**

SEI completed surface water quality and hydrology studies between October 2013 and October 2014. Results of the studies are presented in SEI (2016) and summarized below.

Surface water quality data was collected at 11 locations on a bi-monthly basis. The sampling locations included local creeks, rivers and tributaries, and the on-site pits. The rationale for the chosen locations was documented in the Stockpile Project Closure Plan (SEI, 2016). The samples were analyzed for the parameters in Ontario Regulation 240/00 (“O. Reg. 240/00”), Part 5, as well as cyanide speciation (free/total), field pH, dissolved oxygen, total ammonia, unionized ammonia, and temperature. Results were compared to Provincial Water Quality Objectives. The results indicated that the surface water is generally of good quality and consistent with other similar water bodies in northern Ontario.

Nearby Water Survey of Canada (“WSC”) gauging station (02JC008) was used to model the water quantity in the Misema River and nearby Mousseau Creek. Local streamflow monitoring was initiated in October 2013 at two hydrometric stations, one on the Misema River, which included a water level recording data-logger, and one on Mousseau Creek. Local streamflow measurements were used to confirm the modelled flows.

An assimilative capacity study will be required to support the Industrial Sewage Works Environmental Compliance Approval application. Surface water quality sampling, as well as some hydrology work should be resumed and continue until production commences (to support permitting activities), at which time the permits and approvals will dictate the operational and post-closure monitoring requirements.

Hydrogeology and Groundwater Quality

#### **20.6.4 Hydrogeology and Groundwater Quality Quaternary Geology**

As presented in SEI (2016), The Project area is mostly underlain by fine grained glaciolacustrine deposits consisting of clay, varved clay, and silt. These types of deposits are most prominent to the east and south of the Project. A thin veneer of drift (glacial till) covers most of the bedrock outcrops around the site and to the north and west of the site. The terrain around the Project and the associated low permeability glacial deposits typically result in perched water tables.

The grain size of the surficial material becomes larger to the northeast and the southeast of the Project site, east of the Misema River, and are associated with deltaic deposits, beach type deposits, and deposits associated with the Munro Esker.

The Munro Esker is a major regional glaciofluvial deposit that trends from northwest to southeast and likely constitutes a significant overburden aquifer. It is located on the eastern side of the Misema River and is unlikely to be hydraulically connected to groundwater systems on the western side of the Misema River near the Project site.

#### **Water Well Records**

Water well records within a 10 km radius of the Stockpile Project (588011 E, 5317305 N; UTM NAD83) were provided by the Ministry of the Environment and Climate Change. Five of the six water wells drilled within a 10 km radius of the Project were completed in bedrock formations. The water production from the wells in bedrock was relatively poor and generally had low recommended pumping rates. The static water levels in the wells were higher than the depth to bedrock. This suggests an upward hydraulic gradient that is likely due to the predominantly clay overburden acting as a confining layer (SEI, 2016).

#### **Local Hydrogeology and Groundwater Quality**

SEI completed a local hydrogeological and groundwater quality assessment in 2013 and presented the results in the Mirado Stockpile Project Closure Plan (SEI, 2016). The following is a summary of the key findings.

Monitoring wells were installed in October and November 2013 using a truck-mounted auger drilling rig. A total of 13 wells were installed at seven locations. Three of the wells were installed in bedrock, eight of the wells were installed in overburden, one of the wells was installed in the saturated zone of the tailings, and one well was established as a background well.

The groundwater quality sample results were compared to Soil, Ground Water and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition (“Table 2 Standards”) and Table 3 Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition (“Table 3 Standards”).

As expected, there were several exceedances of the Table 2 Standards in samples collected from an area of historical tailings. There were only three other samples that exceeded the Table 2 Standards. These exceedances were for dissolved cobalt the background well and one of the overburden monitoring wells. There were no exceedances of the Table 3 Standards.

The groundwater elevation in the wells completed in bedrock was measured to be 4 to 14 metres below ground surface (“mbgs”). The elevation of groundwater in the bedrock wells suggests a southerly flow direction with an approximate gradient of 0.05 metre per metre. The phreatic surface within the groundwater wells ranged from 16 to 34 metres above the elevation of the Misema River masl. The elevation of the water within the on-site pits was approximately 289 masl, which is consistent with the interpretation of the groundwater flow and gradient.

In general, the groundwater elevation within the overburden wells was within 4 mbgs. The direction of groundwater flow in the overburden materials varies from southeast to southwest towards the Misema River and Mousseau Creek. The groundwater elevations measured in the overburden wells suggest that there is a slight upward gradient and the groundwater in the bedrock discharges to the overburden materials in the area east and south of the pits. In the area north of the pits, there appears to be a downward groundwater gradient. The water in the pits does not appear to have an influence on the local groundwater elevations. The surface topography is likely the major influence on the elevation of groundwater in the overburden.

The development of a groundwater model including conducting pump tests may be required to support the Permit to Take Water application. Monitoring of these wells should continue until production commences (to support permitting activities), at which time permits and approvals will dictate the operational and post-closure monitoring requirements.

#### **20.6.5 Aquatic Environment**

Benthic invertebrates were sampled at three sites in the Misema River, two sites on Mousseau Creek, and one site in the South Pit, during October 2013. The samples were obtained and analyzed to determine the background benthic communities in the watercourses and to help characterize the existing conditions (SEI, 2016).

Additional benthic invertebrate community studies will be required to support future Environmental Effects Monitoring programs under the Metal Mining Effluent Regulations once the Project enters into commercial production.

Fish and fish habitat assessments were not undertaken as part of the Stockpile Project. Further studies will be required to assess fish and fish habitat with the planned Project development.

#### **20.6.6 Terrestrial Environment**

A terrestrial assessment was conducted by Azimuth Environmental Consulting Inc. to characterize and evaluate the existing Natural Heritage Features, provide baseline data, and to support any future permitting requirements (SEI, 2016).

The inventory included a review of existing data sources and field surveys. Prior to undertaking the field studies, an initial classification of habitats was undertaken using available aerial photo imagery. The habitat boundaries were validated in the field and adjusted as necessary. Vegetation community types were classified. Field surveys to define vegetation community types and plant species compositions were completed in June 2014.

The field work was also conducted to detect any federally or provincially designated species, notably Species at Risk, as identified by the Committee on the Status of Endangered Wildlife in Canada and by the Committee on the Status of Species at Risk in Ontario. Specific surveys for

Whip-poor-will were carried out in May and June 2014 to determine the habitat requirements of Whip-poor-will associated with the Stockpile Project.

None of the forested or wetland vegetation communities in the Stockpile Project area were considered provincially rare. Furthermore, no provincially or federally threatened or endangered plant species were observed within the Project Area.

Wildlife species were identified from direct observation and through interpretation of signs (i.e., tracks, scats, vocalizations, etc.) while conducting the field surveys. The mammals identified included: Moose, Beaver, Northern River Otter, Black Bear, Grey Wolf, Porcupine, Skunk, Raccoon, Red Fox, Eastern Chipmunk, Red Squirrel, Snowshoe Hare, and Muskrat. Five amphibian species were observed. Eight bird species were also observed during the onsite assessments, including the Common Nighthawk which is a Species at Risk. Common Nighthawk is also listed federally as Threatened. The Federal Species at Risk Act provides protection for both the individuals and their critical habitat on all lands.

Three species of bats were listed by the COSEWIC in 2012: Northern Myotis, Little Brown Myotis and Eastern Small Footed Myotis. All three species are listed as Endangered in Ontario. The mature forests located within the claim boundaries have potential to be maternity roosting sites for Little Brown Myotis and Northern Myotis. Surveys were not previously completed to confirm the presence of these two species of bats on site. Bat surveys will be necessary to provide appropriate information related to bat use in the proposed development areas.

Additional studies will be required to ensure that no changes to existing policies or habitat in the study area have occurred. Changes to policy, or the natural environment could result in shifts, removal, or addition of new Natural Heritage Features.

### **20.6.7 Geochemistry**

Previous geochemical studies were focused on determining the geochemical characteristics of the mineralized stockpiles and tailings materials. A composite of leach residues derived from metallurgical test work done on stockpiled mineralized rock samples was sampled for modified acid base accounting (“ABA”) and shake flask extraction (“SFE”). The modified acid base accounting results indicated the leach residues were classified as potentially acid generating (“PAG”). SFE testing on the leachate samples revealed they did not leach contaminants to deionized water at concentrations greater than the metal mining effluent regulations (“MMER”) criteria.

Three samples of tailings were also analysed for ABA and SFE. The ABA results indicated the tailings samples have a low potential for acid generation. The SFE results indicated there was one exceedance of the MMER daily concentration limit for zinc from one tailings sample.

Further geochemical characterization of the waste rock, low grade mineralized material, and tailings materials will be required to support future engineering design and permitting activities for the proposed development.

## **20.7 Preliminary Mine Closure Plan**

A previous Closure Plan was submitted and filed for the Stockpile Project in 2016 (SEI, 2016). The following presents the preliminary closure objectives and concepts for the Project.

A Closure Plan will be prepared for the Project and submitted to the MNMD in accordance with Ontario Regulation 240/00: Mine Development and Closure Under Part VII of the Act (“O. Reg. 240/00”). The scope of the Closure Plan will also include the rehabilitation of any remaining unrehabilitated historical mine hazards and features located within the Project patented claim boundaries.

Closure of the site will be completed in accordance with the O. Reg. 240/00 with the fundamental considerations being to ensure physical and chemical stability of the site in order to protect human health and the environment. Rehabilitation of the site will meet the requirements of the Mine Rehabilitation Code of Ontario (Schedule 1 of O. Reg. 240/00; (the “Code”). Progressive rehabilitation will be completed throughout the life of the Project whenever feasible. Progressive rehabilitation activities will focus on the rehabilitation of historical mine features and hazards, waste rock piles, and other inactive areas. Progressive rehabilitation reports will be filed in accordance with O. Reg. 240/00.

### **20.7.1 Rehabilitation Activities**

An overview of the rehabilitation activities that will be completed for the Project is provided below:

- Open pit;
  - Waste rock and overburden piles;
  - Transportation corridors and laydown areas;
  - Ancillary infrastructure;
  - Water impoundments; and
  - Historic mine hazards.
- Detailed descriptions of the rehabilitation requirements for the above project components are provided below.

#### **Open Pit**

The closure of the open pit will require the following activities:

- Assessment of pit wall stability in accordance with the Code;
- Construction of a boulder fence, or berm, around the north, east and west perimeters of the open pit in accordance with the Code;
- Decommissioning and removal of open pit dewatering infrastructure;
- Construction of a closure spillway; and
- Passive flooding of the open pit.

#### **Waste Rock, Low-Grade Mineralized Material, and Overburden Piles**

Any piles remaining at closure will be left in a stable condition, this may involve leaving the pile as constructed or re-contouring as necessary. If it is determined that the low-grade rock and waste rock materials are PAG, a low-permeability cover will be constructed to limit the

interaction of water with the underlying materials. The overall objective of the cover is to reduce the potential of acid rock drainage.

The lower permeability cover will be constructed using locally sourced clay and overburden materials that will be excavated and sorted as part of the pre-stripping activities for the expansion of the open pit. The cover will consist of two layers: a compacted 0.3 m thick clay layer and a 0.15 m thick layer of overburden. The cover will be hydroseeded upon completion to enhance physical stability and natural recolonization of self-sustaining species.

Any remaining overburden stockpile will be re-contoured and vegetated with native self-sustaining species.

### **Transportation Corridors and Laydown Areas**

Transportation corridors (haul and access roads) will be graded and scarified to promote natural revegetation. Access roads required for post-closure monitoring will be left as is and maintained to permit access.

Laydown areas will be scarified to promote natural recolonization of the disturbed areas by native self-sustaining species.

### **Ancillary Infrastructure**

Rehabilitation of ancillary infrastructure components involves the following:

- Decommissioning and removing buildings, equipment, and machinery for reuse, salvage, and/or disposal;
- Decommissioning and removing aboveground water pipelines; buried pipelines will be flushed, plugged, and left in place;
- Scarifying corridors and allowing them to naturally revegetate; portions of the corridor located near sensitive environments will be hydroseeded to enhance the physical stability; and
- Decommissioning and removing the water treatment plant and appurtenances once water quality meets discharge requirements without treatment.

### **Water Impoundments**

Water impoundment structures will be decommissioned once they are no longer required for water management. Berms and/or dams will be breached and re-contoured to restore natural drainage. The footprints of impoundment areas will be vegetated with native self-sustaining species.

### **Historic Mine Hazards**

Historic mining features and hazards will be rehabilitated in accordance with the Code including:

- Demolishing aboveground infrastructure (i.e., foundations);
- Rehabilitating the historical tailings area;
- Capping the historic shaft with a reinforced certified concrete cap, to prevent inadvertent access, in accordance with the code; and

- Assessing the stability of any remaining crown pillars, and if required, rehabilitating and certifying them in accordance with the code.

### **Monitoring and Reporting**

Following closure, physical, chemical, and biological monitoring of the site will be conducted to ensure that the site is chemically and physically stable. The monitoring programs will be designed and conducted in accordance with the Code. The following is a summary of the anticipated monitoring programs:

- Surface Water Quality Monitoring Program,
- Groundwater Quality Monitoring Program,
- Physical Stability Monitoring Program, and
- Biological Monitoring Program.

The monitoring programs will be conducted until the objectives are met; program objectives are defined in the Code. Reports will be submitted to the Minister in accordance with the Code.

## **21.0 CAPITAL & OPERATING COSTS**

The Mirado Project is envisaged as a potential gold mining operation with an operating life of approximately three years, following an initial preproduction period. The Project will involve successive pre-stripping of the surface mine and open pit mining, followed by mine closure.

Due to the length of the development period and the operating LOM, the Project is envisaged as a contract mining operation, with potential mine product hauled to a toll processing operation located elsewhere.

Orefinders will maintain a small office facility on-site to coordinate the work of the contractors who will be operating the mine.

The estimated capital and operating costs for the Project are described in this section.

All capital and operating costs are shown in Canadian dollars (“\$”), unless otherwise stated.

### **21.1 BASIS OF COST ESTIMATES**

The estimate was developed using pricing gathered from similar projects in Ontario and Northwestern Quebec and first principals.

#### **21.1.1 Indirect Costs**

Indirect costs have been developed using appropriate factors for this level of study and the current expectations of operating conditions. Freight and commissioning costs have been included in the direct and indirect assumptions.

#### **21.1.2 Spare Parts and Initial Fills**

This operation will not require a large amount of spare parts, nor are any spares considered to require long lead time for delivery. Spares are accounted for in the contracted unit rates. There are no initial fills included or required.

#### **21.1.3 EPCM Services**

Engineering, procurement, and construction management costs will be limited in size and have been factored into the estimated G&A costs.

#### **21.1.4 Freight**

Freight costs have been included in the contracted unit rates. All major equipment will be supplied by the Project contractors.

#### **21.1.5 Contingency**

Due to the small amount of plant and equipment required for the Project, a separate contingency allowance is not included. An allowance for contingency is included in the plant and equipment lump sum costs, where appropriate.

### 21.1.6 Estimate Accuracy

This estimate is considered to be accurate to within +/- 35%.

## 21.2 CAPITAL COSTS

The production period starts in Year 1 when the production of process plant feed commences. The pre-stripping of the surface mine site starts in Year -1.

Capital costs include the necessary preliminary and ongoing environmental monitoring, remediation and closure work, as well as the preparation of the surface infrastructure to facilitate open pit mining. Mining contractor costs related to mobilization/demobilization, and setup and teardown are also included in the Capital Costs.

The total capital cost of the Project is estimated to be approximately \$2.6 M. This includes approximately \$1.1 M in costs related to the closure of the mine (Table 21.1).

Description	Cost ('000's of \$)				
	Yr -1	Yr 1	Yr 2	Yr 3	Total
Environmental Baseline, Permitting	788				788
Project Engineering	100				100
Road Improvement	50				50
Infrastructure	100				100
Sustaining Capital	100	50	50	50	250
Closure Bond	1,130				1,130
Contractor Mobilization / Setup	100				100
Contractor Demobilization / Teardown				100	100
<b>Total Capital</b>	<b>2,368</b>	<b>50</b>	<b>50</b>	<b>150</b>	<b>2,618</b>

*Note:* Some values have been rounded. The totals are accurate summations of the columns and rows of data.

## 21.3 ENVIRONMENTAL REQUIREMENTS

The Mirado project is located on a brownfield site that has seen previous mining. Also, the quantity of PAG waste rock that will be removed from the pit requires that a significant allowance is included in the capital costs for environmental work and permitting. In addition, a significant Closure Bond is anticipated that must be set aside before work can commence and is included in the Capital Cost.

### 21.3.1 Infrastructure

The Mirado Property will require only some limited temporary infrastructure to support a potential contract mining operation. The Project site will require power for lighting, pumping and support. The site access road will need to be upgraded to accommodate highway transport trucks on an all season basis. Temporary trailers and containers will be provided on-site instead of permanent buildings. These will include a trailer for the Orefinders office and

telecommunication facilities and contract support crews. The Project will include a water settling pond to receive water from the open pit.

### **21.3.2 Sustaining Capital**

An allowance for sustaining capital has been included for maintaining and replacing equipment associated with the pumping and water decant system, power supply system and other support services.

### **21.3.3 Contractor Facilities and Development**

The costs related to the contractor's mobilization and setup of their temporary facilities, as well as the teardown and demobilization at the end of the Project is included in the Capital Cost summary. The unit costs used to develop these cost estimates were developed from the Authors experience with other mining operations in Ontario and Northwestern Quebec.

### **21.3.4 Closure**

Mine closure refers to the winding down and closure of operations on the property, decommissioning of all equipment and facilities and remediation and reclamation of the lands and watercourses according to local regulations and approved plans. A closure bond for the full estimated cost will likely be required before Project commencement. During operations, the site will be progressively rehabilitated with funds released from the Closure Bond.

### **21.3.5 Contract Mining Considerations**

The mining and site operating work will be carried out by contractors who will be on site for the overburden removal and open pit mining. These contractors will bring their own equipment and infrastructure to the Project site to carry out the work. This equipment and infrastructure will be effectively leased to mine owner as part of the unit costs for their contracted scope of work. Therefore, there will be no capital purchases for equipment required by the Company, nor any related salvage value after the completion of the work. Also, all costs related to employment of mining crews, etc., will be the responsibility of the contractor.

Contractor costs, with the exception of mobilization, setup, teardown and demobilization, are included in the operating costs of the Project.

### **21.3.6 Operating Costs**

The total operating costs of the Project LOM are estimated to be approximately \$87.5 M. A summary of the total operating costs of the Project are provided in Table 21.2

<b>TABLE 21.2</b>					
<b>OPERATING COST SUMMARY</b>					
<b>Description</b>	<b>Cost ('000's of \$)</b>				
	<b>Year -1</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Total</b>
Mineral Mining	0	1,243	1,243	1,052	3,537
Overburden Removal	1,274	3,691	876		5,841
Waste Rock Mining	1,545	11,926	20,664	7,998	42,132
Crushing		1,225	1,225	1,037	3,487
Haul to Mill		1,715	1,715	1,452	4,882
Toll Milling		8,750	8,750	7,407	24,907
G&A	701	701	701	593	2,694
<b>Total Operating Cost</b>	<b>3,519</b>	<b>29,250</b>	<b>35,173</b>	<b>19,538</b>	<b>87,480</b>

*Note:* Some values have been rounded. The totals are accurate summations of the columns and rows of data.

The summary of the unit operating costs for the Project is provided in Table 21.3.

<b>TABLE 21.3</b>		
<b>UNIT OPERATING COSTS</b>		
<b>Description</b>	<b>Cost \$</b>	<b>Units</b>
Mineral Mining	3.55	per tonne of Process Plant Feed
Overburden Removal	3.00	per tonne of Overburden
Waste Rock Mining	3.25	per tonne of Open Pit Waste
Crushing	3.50	per tonne of Process Plant Feed
Haul to Process Plant	4.90	per tonne of Process plant Feed
Toll Processing	25.00	per tonne of Process Plant Feed
G&A	2.00	per tonne of Process Plant Feed

### **21.3.7 Open Pit Overburden Removal**

In order to expose the mineralized material for mining, a total of approximately 2.0 million tonnes of overburden are required to be removed in a pre-stripping operation and either stored nearby the open pit area or used to cover PAG waste rock piles. Based on comparisons with other similar projects that have dealt with removing similar amounts of this type of material, an all-in cost estimate of \$3.00 per tonne has been estimated. This work would be carried out by a contractor specialized in this type of earth movement.

This work has been included in the Operating Costs of the Project.

### **21.3.8 Open Pit Mining**

Mineralized rock and waste rock mining from the open pit after pre-stripping is expected to be in the order of \$3.55 and 3.25 per tonne mined, respectively. Waste rock will be transported out of the pit to a waste rock disposal area. Process plant feed will be transported to a temporary storage area near the crusher.

### **21.3.9 Process Plant Feed Crushing**

All material destined to be trucked to the external toll processing facility, will be first crushed to a size that can be loaded and transported effectively by highway trucks. It is expected that a maximum size passing 0.15 m will be required. It is estimated that crushing to this size by an external contractor will cost in the order of \$3.50 per tonne. This operation may be contracted to a company that has this type of equipment available or wishes to purchase this equipment for this project.

Efforts to work with the mining contractor in designing its blasts to minimize the crushing costs are recommended.

## **21.4 PROCESS PLANT FEED HAULAGE TO THE TOLL PROCESS PLANT**

As of the effective date of this report, a toll process plant that will take the mineralized material production from Mirado has not been identified and engaged. However, for the purposes of this study, the Macassa Process Plant near Kirkland Lake was selected for estimating purposes. A trucking cost of \$0.14 per tonne-kilometre hauled per tonne hauled was estimated based on the Authors experience with contracted rock haulage companies. The haul distance to the Macassa Process Plant is approximately 35 kilometres, therefore the estimated haulage cost would be approximately \$4.90 per tonne.

### **21.4.1 Toll Processing**

As of the effective date of this report, a toll process facility that will take the mineralized material production from Mirado has not been identified and engaged. However, for the purposes of this study, a milling cost of \$25.00 per tonne of process plant feed has been utilized. This cost is based P&E's understanding of the attributes of the mineralized material, the expected throughput rates and the process flow sheet of one potential toll processing operation (the Macassa Process Plant).

## **21.5 GENERAL AND ADMINISTRATION**

The Mirado Project will be a fully contracted operation. As such, it will require some company involvement in contract administration and geological control of operations.

During the initial pre-stripping operation, the contractor will be supported by a small Orefinders team who will administer the contract.

As the bedrock and mineralized material is accessed and a hard rock open pit operation commences, the Orefinders team will be expanded to include a geologist who will direct the mining process and an engineer who will provide planning and surveying support to the mining operation.

For the purposes of this exercise, G&A costs during preproduction and production were considered to be the same. The total G&A cost is expected to be approximately \$700,000 per year, or \$2.00 per tonne of process plant feed produced during operations.

A summary of the total G&A costs by year is provided in Table 21.4

**TABLE 21.4  
YEARLY G&A COSTS**

<b>Description</b>	<b>\$/Year</b>
General Manager	195,000
Geology/Sampler	130,000
Mine Planner/Engineer	130,000
Non-Enviro Consulting	5,000
Courier & Postage	500
Fuel - Heat	28,000
Insurance	5,000
Bank Charges	1,000
Legal Fees	2,000
Office Supplies	2,000
Road Maintenance	30,000
Repair & Maintenance	5,000
Telephone & Internet	5,000
Fuel - Gas for Light Vehicles	5,000
Environ Consulting	100,000
Enviro Equipment, Flocculent	55,000
Accounting Fees	2,000
<b>Total</b>	<b>700,500</b>

## 22.0 ECONOMIC ANALYSIS

This Report is considered by P&E to meet the requirements of a Technical Report as defined in Canadian NI 43-101 regulations.

This PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the PEA will be realized. There is no guarantee that Orefinders will be successful in obtaining any or all of the requisite consents, permits or approvals, regulatory or otherwise for the Project to be placed into production.

P&E prepared an economic evaluation of the Project as described in the PEA, based on a pre-tax financial model which then had the required tax implications applied to provide a potential post-tax financial model. The basis of this evaluation and the results are presented in this section.

### 22.1 ECONOMIC CRITERIA

#### 22.1.1 Physicals

Mine Life:

Pre-production 1 year

Production Mining

Years 1 to 3 (for a total of 2.8 years)

Production Rate

1,000 tpd or 350,000 tpy. Production will temporarily be suspended for two weeks each year for a yearly contractor break.

Total Production:

Total Potential Process Plant Feed: 996 kt at an average diluted grade of 2.33 Au g/t

Total Contained Gold 74,743 ounces gold

Metallurgical Parameters:

Process Recovery 95% gold

Total Payable Metal: 99.5%

Total Payable Gold 70,651 ounces

#### 22.1.2 Revenue

The commodity produced on site is a gold bearing crushed process plant feed material and subsequent to an off-site toll processing and recovery process, gold doré. Orefinders will be paid once the doré has been delivered to an off-site refinery for further processing. The gold price used in this PEA is US\$1,300/oz Au (see Section 19).

The US\$/C\$ exchange rate used in the PEA is US\$0.76 = C\$1.00.

Net revenue from Gold: \$120.9 million

### **22.1.3 Costs**

**Operating Costs:**

Total Average Cost: \$88 per tonne mill feed (includes pre-stripping costs of \$M5.8)

Cash Cost of Production C\$1,238/oz gold

Capital Costs \$2.6 million (excludes pre-stripping costs of \$M5.8)

These capital and operating costs include the cost of all open pit overburden stripping; open pit waste and mineral extraction; contractor invoice costs and contract administration; surface infrastructure costs; process plant feed preparation and delivery to the toll process plant, process plant treatment and environmental considerations including mine closure.

### **22.1.4 Base Case Operating Cash Flow**

A base case pre-tax operating cash flow model has been developed for the Project. This model does not include allowances for financing costs, insurance and overhead costs related to a corporate office.

A cash flow summary is presented in Table 22.1. All costs are in 4th quarter 2017 Canadian dollars (unless otherwise indicated) with no allowance for inflation over the life of the Project.

**TABLE 22.1**  
**BASE CASE PROJECTED CASH FLOW SUMMARY (UNDISCOUNTED)**

Table 22.1						
Orefinders Resources - Mirado Project: Projected Cash Flow Summary						
Description	Year	-1	1	2	3	Total
<b>Potential Mine Production</b>						
Diluted Mineral Resources	Tonnes		350,000	350,000	296,268	996,268
Mineral Grade	Au g/t		2.26	2.41	2.33	2.33
Overburden	Tonnes	424,763	1,230,420	291,875	0	1,947,058
Waste	Tonnes	475,237	3,669,580	6,358,125	2,460,797	12,963,739
Total Material from Open Pit	Tonnes	900,000	5,250,000	7,000,000	2,757,066	15,907,066
Strip Ratio (Overburden & Waste/Ore Tonnes)		-	14:1	19:1	8:1	14:1
<b>Potential Revenue ('000's of \$)</b>						
Gold Contained in Mineral Production	Oz		25,437	27,099	22,206	74,743
Metallurgical Recovery	95.0%		95.0%	95.0%	95.0%	-
Recovered Gold	Oz		24,165	25,744	21,096	71,006
Refinery Gold Payable	99.5%		99.5%	99.5%	99.5%	-
Payable Gold at Refinery	Oz		24,044	25,616	20,990	70,651
Gold Price in US\$/Oz	1,300		1,300	1,300	1,300	-
US\$:Cdn Exchange Rate	0.76		0.76	0.76	0.76	-
Equivalent Gold Price in Cdn\$	1,711		\$1,711	\$1,711	\$1,711	-
<b>Total Revenue</b>	<b>000's of \$</b>		<b>\$41,129</b>	<b>\$43,816</b>	<b>\$35,905</b>	<b>\$120,850</b>
<b>Operating Costs ('000's of \$)</b>						
Mineral Mining	\$3.55	\$0	\$1,243	\$1,243	\$1,052	\$3,537
Overburden Removal	\$3.00	\$1,274	\$3,691	\$876	\$0	\$5,841
Waste Rock Mining	\$3.25	\$1,545	\$11,926	\$20,664	\$7,998	\$42,132
Crushing	\$3.50	\$0	\$1,225	\$1,225	\$1,037	\$3,487
Haul to Mill	\$4.90	\$0	\$1,715	\$1,715	\$1,452	\$4,882
Toll Milling	\$25.00	\$0	\$8,750	\$8,750	\$7,407	\$24,907
G&A	\$2.00	\$701	\$701	\$701	\$593	\$2,694
<b>Total Operating Cost</b>	<b>000's of \$</b>	<b>\$3,519</b>	<b>\$29,250</b>	<b>\$35,173</b>	<b>\$19,538</b>	<b>\$87,480</b>
<b>Capital Expenditures ('000's of \$)</b>						
Environmental Baseline, Permitting	000's of \$	\$788				\$788
Project Engineering	000's of \$	\$100				\$100
Road Improvement	000's of \$	\$50				\$50
Infrastructure	000's of \$	\$100				\$100
Sustaining Capital	000's of \$	\$100	\$50	\$50	\$50	\$250
Closure Bond	000's of \$	\$1,130				\$1,130
Contractor Mobilization / Setup	000's of \$	\$100				\$100
Contractor Demobilization / Teardown	000's of \$				\$100	\$100
<b>Total Capital</b>	<b>000's of \$</b>	<b>\$2,368</b>	<b>\$50</b>	<b>\$50</b>	<b>\$150</b>	<b>\$2,618</b>
Operating Margin	000's of \$	-\$5,887	\$11,828	\$8,594	\$16,217	\$30,752
<b>Tax Pool Calculations</b>						
Opening Balance - (Canadian Exploration Expense/Losses Carried Forward)	000's of \$	\$5,296	\$5,296	\$0	\$0	
Opening Balance - (Canadian Development Expense)	000's of \$	\$7,631	\$7,631	\$5,342	\$3,739	
Additions	000's of \$	\$2,368	\$50	\$50	\$150	
Removals (CEE & LCF: deductible at 100%/year)	000's of \$	\$0	\$5,296	\$0	\$0	
Removals (CDE: deductible at 30%/year)	000's of \$	\$0	\$2,289	\$1,602	\$1,122	
Closing Balance (CEE & LCF)	000's of \$	\$5,296	\$0	\$0	\$0	
Closing Balance (CDE)	000's of \$	\$7,631	\$5,342	\$3,739	\$2,617	
Income after CEE and LCF Deductions	000's of \$	-\$5,887	\$4,243	\$6,991	\$15,095	
<b>Total Taxes</b>	26.50%	\$0	\$1,124	\$1,853	\$4,000	\$6,977
<b>Cashflow after Taxes</b>	<b>000's of \$</b>	<b>-\$5,887</b>	<b>\$10,704</b>	<b>\$6,741</b>	<b>\$12,217</b>	<b>\$23,774</b>
Accumulated Net Cash Flow	000's of \$	-\$5,887	\$4,816	\$11,558	\$23,774	

*Note: Some values have been rounded. The totals are accurate summations of the columns and rows of data.*

### 22.1.5 Base Case Cash Flow Analysis

The following post-tax operating cash flow analysis was performed:

- Net Present Value (“NPV”) at 0%, 5% and 10% discount rates;
- Internal Rate of Return (“IRR”); and
- Payback Period (from the start of process plant feed production)

The summary of the results of the cash flow analysis is presented in Table 22.2.

<b>Description</b>		<b>Value</b>	<b>Units</b>
Internal Rate of Return		158	%
Post-tax NPV at a Discount Rate of	0%	23.8	\$M
	5%	20.5	\$M
	10%	17.7	\$M
Project Payback Period		7	Months

In calculating IRR and DCF values, all costs and revenues occur at the middle of each operating year.

It is estimated that the Project would generate a net post-tax cash flow of \$23.8 million over the LOM. This corresponds to a post-tax IRR of 158% and a post-tax NPV of \$20.5 million, at a 5% discount rate. On this basis, the Project would have a payback period of 7 months from the start of production of process plant feed.

Note: This PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized. There is no guarantee that Orefinders will be successful in obtaining any or all of the requisite consents, permits or approvals, regulatory or otherwise for the Project to be placed into production.

## 22.2 TAX CONSIDERATIONS

The cash flows developed for the Project have included consideration for the estimated taxes payable, adjusted appropriately to account for certain pre-existing tax pools that Orefinders has indicated are available for the Project. These tax considerations are described below.

### 22.2.1 Available Tax Pools

Income for Canadian Federal Corporate Tax is calculated as Earnings before Interest, Depreciation and Amortization (“EBITDA”) less:

- Canadian Development Expense (“CDE”);
- Canadian Exploration Expense (“CEE”); and
- Any Losses Carried Forward (“LCF”)

CDE includes:

- The acquisition costs of Canadian resource properties; and
- The cost of mine shafts and main haulage ways or similar work incurred after coming into commercial production.

These costs are accumulated in a pool called the Cumulative Canadian Development Expense (“CCDE”). A corporation may deduct up to 30% of the unclaimed balance in the CCDE pool at the end of each year.

It is understood that as of October 31, 2016, the total available CCDE was \$7,630,825. These expenditures are assumed to be deductible at 30% per year.

CEE consists of virtually all Canadian exploration and pre-production development expenses, including those incurred:

- To determine the existence, location, extent or quality of a Mineral Resource in Canada, including prospecting, rotary, diamond, percussion or other drilling, geological, geophysical or geochemical surveys, and trenching, test pits and preliminary sampling; or
- Before the start of production, to bring a new mine in Canada into commercial production, including the expense of clearing, removing overburden and stripping.

These costs are accumulated in a pool called Cumulative Canadian Exploration Expense (“CCEE”).

A taxpayer may deduct the full amount of its CCEE, to the extent of its income from any source. Any balance not deducted currently is carried forward indefinitely for deduction in future years.

It is understood that as of October 31, 2016, the total available CCEE was \$2,687,460. These expenditures are assumed to be deductible at 100%.

LCF may be carried forward up to 20 years. There is no limit on the amount that can be deducted per year to eliminate taxable income. As at October 31, 2016, Orefinders is understood to have had \$2,608,595 in available non-capital carried-forward losses.

Whereas these totals do not include the fiscal 2017 (or later) expenditures, for the purposes of the PEA, this amount was considered to be available to reduce taxes at the Project.

The envisaged Mirado Project will have a relatively short operating life. As a consequence, the Company will have a significant CCEE at the end of the Project life. P&E has assumed that this pool will be an asset to Orefinders and that it could be used in another parallel project that might be developed by the Company. However, the potential value has not been included in the cash flow calculation.

The full tax rate for the Project will be 26.5%.

## 22.2.2 Sensitivity Analysis

A financial sensitivity analysis was conducted on the base case after tax cash flow NPV. The price of gold was adjusted upwards and downwards between US\$1,375/oz and US\$1,175/oz in US\$25/oz increments. The taxes payable were recalculated in each case. The adjusted values are listed in Table 22.3.

<b>Gold Price (US\$/oz)</b>	<b>Total Cash Flow</b>	
	<b>Undiscounted Pre-Tax (\$M)</b>	<b>Discounted (5%) Post-Tax (\$M)</b>
1,375	37.7	25.0
1,350	35.4	23.5
1,325	33.1	22.0
<b>1,300</b>	<b>30.8</b>	<b>20.5</b>
1,275	28.4	19.0
1,250	26.1	17.4
1,225	23.8	15.9
1,200	21.5	14.4
1,175	19.1	12.9

Most of the pre-production expenses are included as operating expenses in the PEA. As such, the sensitivity to variations in the operating costs for the Project, will approximately mirror the results of variations in the gold price revenue listed in Table 22.3.

## 23.0 ADJACENT PROPERTIES

There are no adjacent properties that are relevant to the exploration of the Mirado Gold Deposit, however, the past-producing Adams Iron Mine is located in Boston Township, 8.5 km northwest of the Mirado Deposit and approximately 2.5 km from the northwest corner of the property.

The past-producing Adams Mine is hosted in well-banded chert and magnetite of the Boston Township iron formation. Chert layers occur as fine laminae to massive beds several cm thick. Magnetite layers average just over 1 cm. Most of the horizons of iron-formation are 30 to 45 m thick but locally exceed 60 m to a maximum of 180 m due to folding. The largest mineralized zone was the South pit that measured 900 m by up to 180 m wide. Boston Township Iron Range is about 10 km long.

The Adams mine produced a total of 26,816,000 tons of fluxed iron pellets from 101,902,000 tons of ore, giving an average grade represented of about 26% iron. In 1954 Jones & Laughlin Steel Corporation acquired a mining option on the site and continued an exploration program and brought the property to lease. From 1957-1962 continued exploration results warranted the announcement in 1962 to bring to production. In 1964 the first shipment of pellets left the mine bound for Pennsylvania. In 1971 the mine was purchased by Dofasco and pellets were then sent to Hamilton. The mine was closed in 1991.

## 24.0 OTHER RELEVANT DATA & INFORMATION

### 24.1 PROJECT RISK ASSESSMENT

Violent and catastrophic events caused by forces of nature, or by man, which could not have been prevented or avoided by foresight or prudence are notable risks to the anticipated project outcome. Similarly, risks related to uncertainties in metal price projections, uncertainties in projected unit costs of equipment and consumables, the availability of personnel to operate the mine, the availability of financial resources for construction and other industry risks, are also notable concerns. Whereas these issues may be quantifiable to some extent, they are only itemized here as a matter of record.

P&E also notes that whereas mining typically involves exposure to falling rocks, large moving mobile equipment, moving equipment parts, etc., the Mirado Project carries no unusual risks in terms of health and safety. The topography, rock conditions and climate of the Project location are considered unproblematic and conventional mining and processing techniques will be employed with adequate training of the employees.

Additionally, the Project is located in an easily accessible part of the province of Ontario which is in close proximity to a major highway but most of the construction and operating activities will be not be visible to passers-by. There are no permanent residences in the immediate area of the Project, however, subject to further study in this area, it is expected that these associated risks to the Project will be minimal. Some specific and significant risks related to failing to achieve the desired outcomes for the Mirado Project are described in Table 24.1. The risks identified therein are not the complete list of risks. They include only unusual risks related to technical issues.

<b>Risk</b>	<b>Explanation/Potential Impact</b>	<b>Possible Risk Mitigation</b>
Gold Price	Any decrease in gold price would have negative implications on the results of the PEA.	The PEA used a projected price based on recent prices and price trends to estimate a gold price to use as part of the study. Gold prices typically vary upwards or downwards on multi-year cycles.
Water Inflow into Pit	Actual water inflow rates to the area have not been confirmed. Should inflow rates be significantly higher than expected for any reason, then this would increase total operating cost and negatively impact project economics.	Investigations into water inflow rates will determine the extent of any potential problems encountered. Additional mitigation strategies, if required, could include drawdown wells around the pit. Water management will form an important part of the open pit development.
Mineral Resource Confidence	This PEA is based upon Indicated Mineral Resources which are only an estimate of the quantity and grade of the mineralized material. If these estimates are inaccurate, then this may impact the economics of a future mining operation	These estimates are of sufficient confidence to support a Preliminary Feasibility Study which can serve as the basis for major development decisions. Additional infill drilling prior to or during mining will

**TABLE 24.1  
PROJECT RISK ASSESSMENT**

<b>Risk</b>	<b>Explanation/Potential Impact</b>	<b>Possible Risk Mitigation</b>
		upgrade the confidence level of the contained Mineral Resources.
Dilution	Higher than expected dilution could have a significant impact on project economics.	Open pit mining operations will need to employ accurate drilling and blasting practices, in order to minimize dilution. A grade control plan should be developed as part of more detailed studies.
Metallurgical Recoveries*	Process recovery estimates are based on limited metallurgical data and analysis. If actual recoveries are lower than estimated at the selected toll process plant, this would reduce revenue per tonne of process plant feed and adversely affect overall project economics.	Preliminary testing has suggested that recoveries could be in the range of 95%. Additional sampling and test work should be conducted, once the toll process plant is selected.
Toll Processing Arrangements*	The PEA has made some assumptions of what the terms of a toll processing agreement would include. A toll processing cost of \$25.00 per tonne of mill feed has been assumed with a 99.8% payable factor. If the cost of processing is higher than assumed, then this would have an effect on project economics.	Commence formal discussions with potential toll process plants in order to confirm the toll processing contract terms.
Capital and Operating Costs	Higher capital and/or operating costs will affect the Project economics.	In the next stage of study, confirm contract costs with more detailed scopes of work and more detailed contractors cost estimates. Investigate potential cost-reduction measures.
Geotechnical Risk	Geotechnical issues with the stability of the foundation of both waste rock and overburden piles.	Carry out a full geotechnical investigation at the location of both piles
Environmental Permitting	If the permitting timeline is longer than expected, then the additional cost and delay in production will adversely affect project economics.	Investigate the impact of using a production rate to <600tpd to reduce the requirements of the Project pursuant to CEAA 2012
Environmental Issues	If any conditions arise where it appears that the environment will be unexpectedly affected during the Project construction and operation or post-closure, then the permitting process may be extended and the overall cost of the Project may be increased. These conditions may include, but are not limited to issues with the location of the waste rock piles over a water body which could be a fish habitat; metal leaching from waste rock; and adverse impacts on the surrounding wet	Characterize the water bodies that may be affected by disturbances caused by the Project and relocate facilities, as required; Continue the laboratory tests to confirm the geochemical stability of the waste rock; Complete additional studies to better understand the existing hydrogeological and hydrological conditions

**TABLE 24.1**  
**PROJECT RISK ASSESSMENT**

<b>Risk</b>	<b>Explanation/Potential Impact</b>	<b>Possible Risk Mitigation</b>
	lands due to mine dewatering. If the conditions give rise to the requirement that certain federal processes are implemented in the permitting, this may have an impact on the overall schedule.	

*\* The descriptions and preliminary designs for the Mirado PEA were based in part on the industry experience of the Authors of the relevant sections of this report. No actual sample material was produced or tested on a metallurgical bench scale. Higher level metallurgical test work will be required to confirm or modify the projections made herein. Contamination of products with deleterious elements/by-products will affect the value of the product. Higher reagent consumption or lower recoveries of gold can possibly occur. Detailed and advanced metallurgical test work and/or pilot plant work will be required to verify the assumptions made in this PEA.*

## **24.2 CONCLUSION**

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

## 25.0 INTERPRETATION & CONCLUSIONS

P&E concludes that the Mirado Project has economic potential as an open pit mining operation, with an as-yet unidentified external toll processing plant processing mineralized material to produce gold doré.

A Mineral Resource Estimate for the Property is tabulated in Table 25.1. P&E considers the mineralization of the Mirado Project to be potentially amenable to open pit extraction.

<b>TABLE 25.1</b>			
<b>MIRADO PIT CONSTRAINED MINERAL RESOURCE</b>			
<b>ESTIMATE AT 1.0 G/T AU CUT-OFF <sup>(1-5)</sup></b>			
<b>Category</b>	<b>Tonnage (kt)</b>	<b>Au (g/t)</b>	<b>Contained Au (koz)</b>
Indicated	559	2.61	46.9
Inferred	382	2.66	32.7

- (1) *Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability.*
- (2) *The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
- (3) *The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.*
- (4) *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.*
- (5) *Historic mined out area were removed from the model.*

P&E Mining Consultants Inc. also offers the following interpretation and conclusions:

- This report is considered by P&E Mining Consultants Inc. to meet the requirements of a Technical Report as defined in Canadian NI 43-101 regulations. The economic analysis contained in this Technical Report is based on Indicated and Inferred Mineral Resources. The Mineral Resources in this PEA were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions;
- There is no guarantee that Orefinders will be successful in obtaining any or all of the requisite consents, permits or approvals, regulatory or otherwise for the Mirado Project development or that the Property will be placed into production;
- The Project was evaluated on a post-tax cash flow basis and generates an undiscounted net after-tax cash flow of \$23.8 million. This results in a post-tax Internal Rate of Return (IRR) of 158.0% and a post-tax Net Present Value (NPV) of \$20.5 million when using a 5% discount rate. In the base case scenario, the Project has a payback period of 7 months from the start of mill feed production;
- The total average cost of production is estimated to be \$88 per tonne of process plant feed (including pre-stripping costs of \$M5.8). This converts to a cash cost of production of approximately C\$1,238/oz gold;
- Capital costs are estimated to reach \$2.6 million over the LOM (excluding pre-stripping costs of \$5.8M);

- P&E has assumed that the open pit operation would utilize front end loaders and 50 tonne capacity haul trucks and would dispose of waste rock and overburden in designated storage areas near the open pit. This approach would be expected to reduce haulage requirements and open pit operating costs. This approach may be need to be modified in future technical studies as the mine planning and the pit development sequence and bench plans are detailed;
- The post-tax base case NPV is sensitive to gold metal prices;
- Some aspects of the Project may be modified as additional environmental technical information is obtained, especially in the areas of site remediation requirements and water;
- Additional environmental studies will be required to support the current development plans of the Project. Orefinders will be required to submit a Project Description to the CEA Agency. The CEA Agency will review the Project Description and determine if a Federal Environmental Assessment is required. If this is required, the CEA Agency will issue EIS guidelines to Orefinders. The EIS guidelines will outline the scope of the EA required for the Project. Additional potential federal regulatory requirements for the Project may be required; and
- A Closure Plan will be required for the Project and this will need to be submitted to the MNDM in accordance with Ontario Regulation 240/00: Mine Development and Closure under Part VII of the Act (“O. Reg. 240/00”). Following closure, physical, chemical, and biological monitoring of the site will need to be conducted to ensure that the site is chemically and physically stable.

## 26.0 RECOMMENDATIONS

P&E recommends that Orefinders advance the Project with efforts in the following areas:

- Engagement of a suitable toll processing plant to accept the Mirado mine production;
- Exploration drilling to extend Mineral Resources;
- Geological and mineralogical studies and geotechnical test work to advance the technical aspects of the Project toward Pre-Feasibility requirements;
- Continuation of the environmental study programs including aquatic, terrestrial, hydrology, and groundwater to provide data to provide data for the permitting;
- Start the permitting process with the federal agency to verify whether the Project is subject to an EIA;
- Continue First Nation and stakeholder consultation;
- It is especially recommended that Orefinders advance the Mirado Project to a Pre-Feasibility Study. Attention should be given to involving potential mining contractors in the process design and costing, with special consideration given to haul truck cycle times, haul truck requirements, haul road layouts/maintaining access to active workplaces, environmental aspects, safety, mine operating costs and mine scheduling;
- It is recommended that Orefinders characterize the geochemical properties (acid generation/acid consuming and metal leaching potential) of the geologic materials that are likely to be mined or exposed; and
- It is also recommended that Orefinders complete their analysis of the overburden and surface water conditions and determine if the results affect the results generated by this PEA.

## 27.0 REFERENCES

Abraham, E.M., 1951: Geology of McElroy and Part of Boston Townships; Ontario Department of mines, Annual Report 59, 66p., accompanied by map 1950-3.

Ayer, J.A., Thurston, P.C., Bateman, R., Dubé, B., Gibson, H.L., Hamilton, M.A., Hathway, B., Hocker, S.M., Houlé, M.G., Hudak, G., Ispolatov, V.O., Lafrance, B., Leshner, C.M., MacDonald, P.J., Péloquin, S.A., Piercey, S.J., Reed, L.E. and Thompson, P.H. 2005. Overview of the results from the Greenstone Architecture Project: Discover Abitibi Initiative; Ontario Geological Survey, Open File Report 6154, 146p.

Baker J. M., 1962. Report on Property in McElroy and Catharine Townships, District of Temiskaming, Ontario, for Mirado Nickel Mines Ltd. Internal report.

Bourne, D.A., 1985. Report on the Cathroy Larder Gold Property, McElroy and Catharine Townships, Kirkland Lake Area, Ontario for Golden Shield Resources Ltd. Internal report.

Meyer, G., Cosec, M, Grabowski, G.P.B., Guindon, D.L., Chaleoux, E.C., and Charette, M., 2000: Report of Activities 1999, Resident Geologist Program, Kirkland Lake Regional Resident Geologist Report: Kirkland Lake and Sudbury Districts; Ontario Geological Survey, Open File Report 6007, 88p.

Reddick J., Lavigne J., 2012. Technical Report on the Mirado and MZ Properties, Ontario. Internal report prepared for Orefinders Resources Inc. by Reddick Consulting Inc., signed July 2012.

Robert, F., Poulsen, K.H., Cassidy, K.F., Hodgson, C.J., 2005. Gold Metallogeny of the Superior and Yilgarn Cratons, in Economic Geology 100<sup>th</sup> Anniversary Volume, 1001-1034.

Weiershäuser, L., and El-Rassi, D. 2013, Mineral Resource Evaluation, Technical Report for the Mirado Gold Project, Ontario, prepared by SRK Consulting (Canada) Inc., dated December 13, 2013.

Story Environmental Inc. (SEI), 2016. Orefinders Resources Inc. Mirado Phase 1 Project [Stockpile Project] Closure Plan. Reissued August 2016

Ministry of Natural Resources and Forestry (MNRF), 2018. Crown Land Use Policy Atlas. Available online from: <https://www.ontario.ca/page/crown-land-use-policy-atlas>

## 28.0 CERTIFICATES

### CERTIFICATE OF QUALIFIED PERSON

**EUGENE J. PURITCH, P. ENG., FEC, CET**

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, Updated Mineral Resource Estimate and Preliminary Economic Assessment of The Mirado Gold Project, Boston, Catherine and McElroy Townships, Larder Lake Mining Division, Ontario”.
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, Geoscientists Newfoundland & Labrador (License No. 5998), Association of Professional Engineers and Geoscientists Saskatchewan (License No. 16216), Ontario Association of Certified Engineering Technicians and Technologists (License No. 45252) the Professional Engineers of Ontario (License No. 100014010) and Association of Professional Engineers and Geoscientists of British Columbia (License No. 42912). I am also a member of the National 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 have visited the Property that is the subject of this Technical Report on November 26, 2016.
5. I am responsible for co-authoring Sections 1, 14, 16, 21, 22, 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 effective date of this Technical Report, 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: January 8, 2018

Signed Date: February 28, 2018

***{SIGNED AND SEALED}***

*[Eugene Puritch]*

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Eugene J. Puritch, P.Eng., FEC, CET

## CERTIFICATE OF QUALIFIED PERSON

### RICHARD SUTCLIFFE, Ph.D., P. GEO.

I, Richard Sutcliffe, Ph.D., P. Geo., residing at 100 Broadleaf Crescent, Ancaster, Ontario, do hereby certify that:

1. I am an independent geological consultant and Sr. Geological Advisor, P&E Mining Consultants Inc.
2. This certificate applies to the technical report titled “Technical Report, Updated Mineral Resource Estimate and Preliminary Economic Assessment of The Mirado Gold Project, Boston, Catherine and McElroy Townships, Larder Lake Mining Division, Ontario”.
3. I am a graduate of the University of Toronto with a Bachelor of Science degree in Geology (1977). In addition, I have a Master of Science in Geology (1980) from University of Toronto and a Ph.D. in Geology (1986) from the University of Western Ontario. I have worked as a geologist for a total of 36 years since obtaining my M.Sc. degree. I am a geological consultant currently licensed by the Association of Professional Geoscientists of Ontario (License No 852).

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:

- Precambrian Geologist, Ontario Geological Survey ..... 1980-1989
- Senior Research Geologist, Ontario Geological Survey ..... 1989-1991
- Associate Professor of Geology, University of Western Ontario..... 1990-1992
- President and CEO, URSA Major Minerals Inc..... 1992-2012
- President and CEO, Patricia Mining Corp..... 1998-2008
- President and CEO, Auriga Gold Corp. .... 2010-2012
- Consulting Geologist..... 1992-Present

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring Sections 4 to 10 and co-authoring Sections 1, 2, 3, 23, 25 and 26 of this 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 Property that is the subject of this Technical Report.
8. I have read NI 43-101 and Form 43-101F1 and this Technical Report has been prepared in compliance therewith.
9. As of the effective date of this Technical Report, 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: January 8, 2018

Signed Date: February 28, 2018

**{SIGNED AND SEALED}**

[Richard Sutcliffe]

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Richard H. Sutcliffe, Ph.D., P. Geo.

## CERTIFICATE OF QUALIFIED PERSON

**YUNGANG WU, P.GEO.**

I, Yungang Wu, P. Geo., residing at 3246 Preserve Drive, Oakville, ON, L6M 0X3, do hereby certify that:

1. I am an independent consulting geologist contracted by P&E Mining Consultants Inc.
2. This certificate applies to the technical report titled “Technical Report, Updated Mineral Resource Estimate and Preliminary Economic Assessment of The Mirado Gold Project, Boston, Catherine and McElroy Townships, Larder Lake Mining Division, Ontario”.
3. I am a graduate of Jilin University, China with a Master Degree in Mineral Deposits (1992). I am a geological consultant and a registered practising member of the Association of Professional Geoscientist of Ontario (Registration No. 1681). I am also a member of the Ontario Prospectors Association.

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 as follows:

- Geologist –Geology and Mineral Bureau, Liaoning Province, China.....1992-1993
- Senior Geologist – Committee of Mineral Resources and Reserves of Liaoning, China...1993-1998
- VP – Institute of Mineral Resources and Land Planning, Liaoning, China.....1998-2001
- Project Geologist–Exploration Division, De Beers Canada.....2003-2009
- Mine Geologist – Victor Diamond Mine, De Beers Canada.....2009-2011
- Resource Geologist– Coffey Mining Canada.....2011-2012
- Consulting Geologist.....2013-Present

4. I have not visited the property that is the subject of this Technical Report.
5. I am responsible for co-authoring Sections 1, 14, 25 and 26 of the 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 had no prior involvement with the Property 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 effective date of this Technical Report, 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: January 8, 2018

Signed Date: February 28, 2018

***{SIGNED AND SEALED}***

*[Yungang Wu]*

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Yungang Wu, P.Geo.

## CERTIFICATE OF QUALIFIED PERSON

**ALFRED S. HAYDEN, P. ENG**

I, Alfred S. Hayden, P. Eng., residing at 284 Rushbrook Drive, Ontario, L3X 2C9, do hereby certify that:

1. I am currently President of:  
EHA Engineering Ltd.,  
Consulting Metallurgical Engineers  
Box 2711, Postal Stn. B.  
Richmond Hill, Ontario, L4E 1A7
2. This certificate applies to the technical report titled “Technical Report, Updated Mineral Resource Estimate and Preliminary Economic Assessment of The Mirado Gold Project, Boston, Catherine and McElroy Townships, Larder Lake Mining Division, Ontario”.
3. I graduated from the University of British Columbia, Vancouver, B.C. in 1967 with a Bachelor of Applied Science in Metallurgical Engineering. I am a member of the Canadian Institute of Mining, Metallurgy and Petroleum and a Professional Engineer and Designated Consulting Engineer registered with Professional Engineers Ontario. I have worked as a metallurgical engineer for over 40 years since my graduation from university.

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.

4. I have not visited the Property that is the subject of this Technical Report.
5. I am responsible for authoring of Section 13 and 17 and co-authoring Sections 1, 21, 25 and 26 of this 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 Property 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 effective date of this Technical Report, 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: January 8, 2018

Signed Date: February 28, 2018

***{SIGNED AND SEALED}***

*[Alfred Hayden]*

---

Alfred S. Hayden, P.Eng.

## CERTIFICATE OF QUALIFIED PERSON

### KIRK RODGERS, P.ENG.

I, Kirk H. Rodgers, P. Eng., residing at 146 Royal Beech Drive, Wasaga Beach, Ontario, do hereby certify that:

1. I am an independent mining consultant, contracted as Vice President, Engineering by P&E Mining Consultants Inc.
2. This certificate applies to the Technical Report titled “Technical Report, Updated Mineral Resource Estimate and Preliminary Economic Assessment of The Mirado Gold Project, Boston, Catherine and McElroy Townships, Larder Lake Mining Division, Ontario.”
3. I am a graduate of The Haileybury School of Mines, with a Technologist Diploma in Mining. I subsequently attended the mining engineering programs at Laurentian University and Queen’s University for a total of two years. I have met the Professional Engineers of Ontario Academic Requirement Committee’s Examination requirement for Bachelor’s Degree in Engineering Equivalency. I have been licensed by the Professional Engineers of Ontario (License No. 39427505), from 1986 to the present. 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.

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

- Underground Hard Rock Miner, Denison Mines, Elliot Lake Ontario..... 1977-1979
  - Mine Planner, Cost Estimator, J.S Redpath Ltd., North Bay Ontario ..... 1981-1987
  - Chief Engineer, Placer Dome Dona Lake Mine, Pickle Lake Ontario ..... 1987-1988
  - Project Coordinator, Mine Captain, Falconbridge Kidd Creek Mine, Timmins, Ontario ..... 1988-1990
  - Manager of Contract Development, Dynatec Mining, Richmond Hill, Ontario..... 1990-1992
  - General Manager, Moran Mining and Tunnelling, Sudbury, Ontario ..... 1992-1993
  - Independent Mining Engineer ..... 1993
  - Project Manager - Mining, Micon International, Toronto, Ontario ..... 1994 - 2004
  - Principal, Senior Consultant, Golder Associates, Toronto, Ontario..... 2004 – 2010
  - Independent Consultant, VP Engineering, P&E Mining Consultants Inc, Brampton Ontario 2011 – Present
4. I am responsible for authoring Sections 15, 18, 19 and 24 and co-authoring Sections 1, 2, 3, 16, 21, 22, 25 and 26 of this Technical Report.
  5. I have not visited the Property that is the subject of this 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 Property 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 effective date of this Technical Report, 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: January 8, 2018

Signed Date: February 28, 2018

***{SIGNED AND SEALED}***  
***{Kirk Rodgers}***

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Kirk Rodgers, P.Eng.

## CERTIFICATE OF QUALIFIED PERSON

**ANTOINE R. YASSA, P.GEO.**

I, Antoine R. Yassa, P.Geo. residing at 3602 Rang des Cavaliers Rouyn-Noranda, Qc. J0Z 1Y2, 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, Updated Mineral Resource Estimate and Preliminary Economic Assessment of The Mirado Gold Project, Boston, Catherine and McElroy Townships, Larder Lake Mining Division, Ontario.”
3. I am a graduate of Ottawa University at Ottawa, Ontario with a B.Sc (HONS) in Geological Sciences (1977) with more than 33 years of experience as a geologist. I am a geological consultant currently licensed by the Order of Geologists of Québec (License No 224) and by the Association of Professional Geoscientist of Ontario (License No 1890);

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:

- Minex Geologist (Val d’Or), 3D Modeling (Timmins), Placer Dome 1993-1995
- Database Manager, Senior Geologist, West Africa, PDX, 1996-1998
- Senior Geologist, Database Manager, McWatters Mine 1998-2000
- Database Manager, Gemcom modeling and Resources Evaluation (Kiena Mine) 2001-2003
- Database Manager and Resources Evaluation at Julietta Mine, Bema Gold Corp. 2003-2006
- Consulting Geologist 2006-present

4. I visited the Property that is the subject of this Technical Report on November 23, 2016.
5. I am responsible for co-authoring Sections 1, 12, 14, 25 and 26 of this 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 Property 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 effective date of this Technical Report, 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: January 8, 2018

Signing Date: February 28, 2018

***{SIGNED AND SEALED}***

*[Antoine R. Yassa]*

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Antoine R. Yassa, P.Geo.

# 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, Updated Mineral Resource Estimate and Preliminary Economic Assessment of The Mirado Gold Project, Boston, Catherine and McElroy Townships, Larder Lake Mining Division, Ontario.”
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 12 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) and Professional Engineers and Geoscientists Newfoundland & Labrador (License No. 08399). 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 Inc.....2004
- 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 11 and co-authoring Sections 1, 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 had no prior involvement with the Property 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 effective date of this Technical Report, 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: January 9, 2018  
Signed Date: February 28, 2018

**{SIGNED AND SEALED}**  
*[Jarita Barry]*

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Jarita Barry, P.Geo.

## CERTIFICATE OF QUALIFIED PERSON

**MARIA STORY, P. ENG.**

I, Maria Story, P. Eng., residing at 770 Lakeshore Rd., Haileybury, Ontario, P0J 1K0, do hereby certify that:

1. I am the President of Story Environmental Inc.
2. This certificate applies to the technical report titled “Technical Report, Updated Mineral Resource Estimate and Preliminary Economic Assessment of the Mirado Gold Project, Boston, Catherine and McElroy Townships, Larder Lake Mining Division, Ontario
3. I am a graduate of the University of Toronto located in Toronto, Ontario, Canada at which I earned my Bachelor of Applied Science Degree in Chemical Engineering with Environmental/Biochemical Engineering Option in 1990. I have practiced my profession continuously since graduation. I am licensed by the Professional Engineers of Ontario (License No.90341611).

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 summarized career experience is as follows:

- Process/Environmental Engineer – ICI Canada Inc. .... 1990-1994
- Project Manager – ICI Canada Inc. Environmental Department. .... 1994-1996
- Environmental Engineer – TetrES Consultants Inc. .... 1996
- President - Story Environmental Inc. .... 1996 to present

4. I have visited the Property that is the subject of this Technical Report on numerous occasions between 2013 and 2016 with the last visit on June, 15, 2016.
5. I am responsible for authoring Section 20 and co-authoring Sections 1, 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 had prior involvement with the Property that is the subject of this Technical Report in that my firm and I have completed environmental baseline studies, provided consultation and permitting support, and authored non NI 43-101 reports as follows:
  - Mirado Phase 1 Project Closure Plan. Prepared for Orefinders Resources Inc. July 2016,
  - Project Definition for Mirado Phase I Project Catharine Township, Ontario. Prepared for Orefinders Resources Inc., April 2016, and
  - Mirado Project Phase 1 Closure Plan, Removal of Stock Piled, Ore Public Information Session Report, Prepared for Orefinders Resources Inc., March 2014.
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 effective date of this Technical Report, 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: January 8, 2018

Signed Date: February 28, 2018

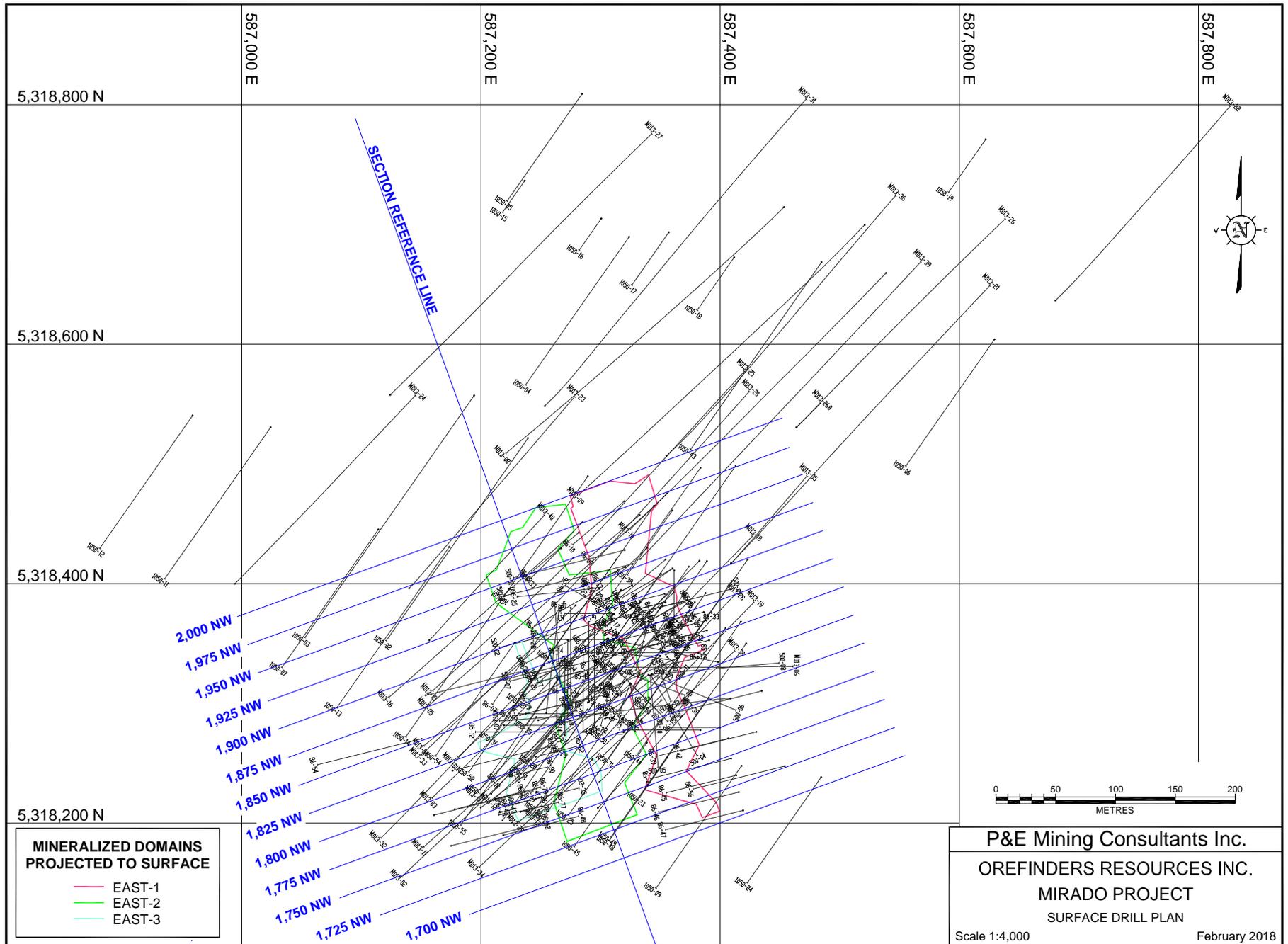
***{SIGNED AND SEALED}***

*[Maria Story]*

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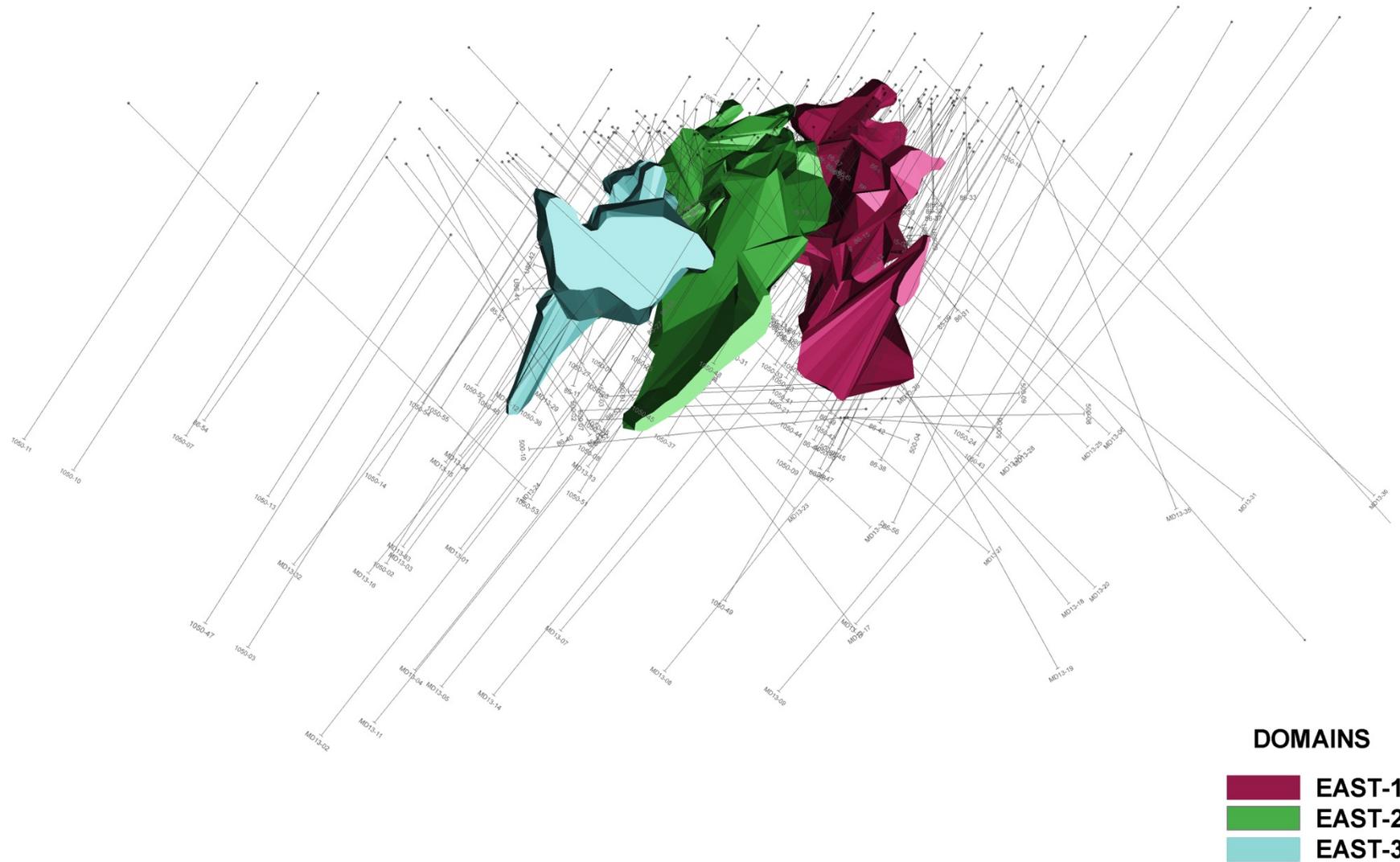
Maria Story, P. Eng.

## **APPENDIX I. SURFACE DRILL HOLE PLAN**

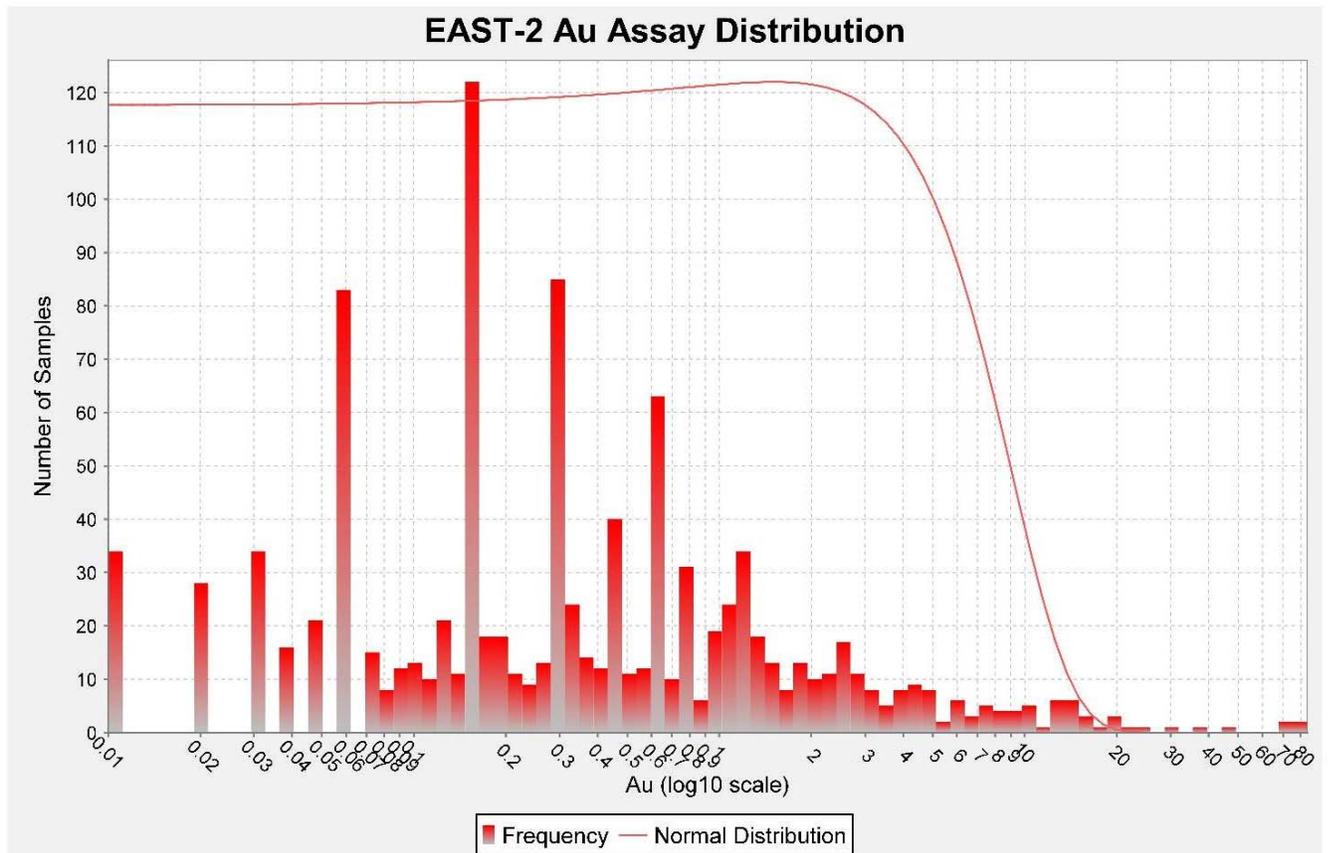
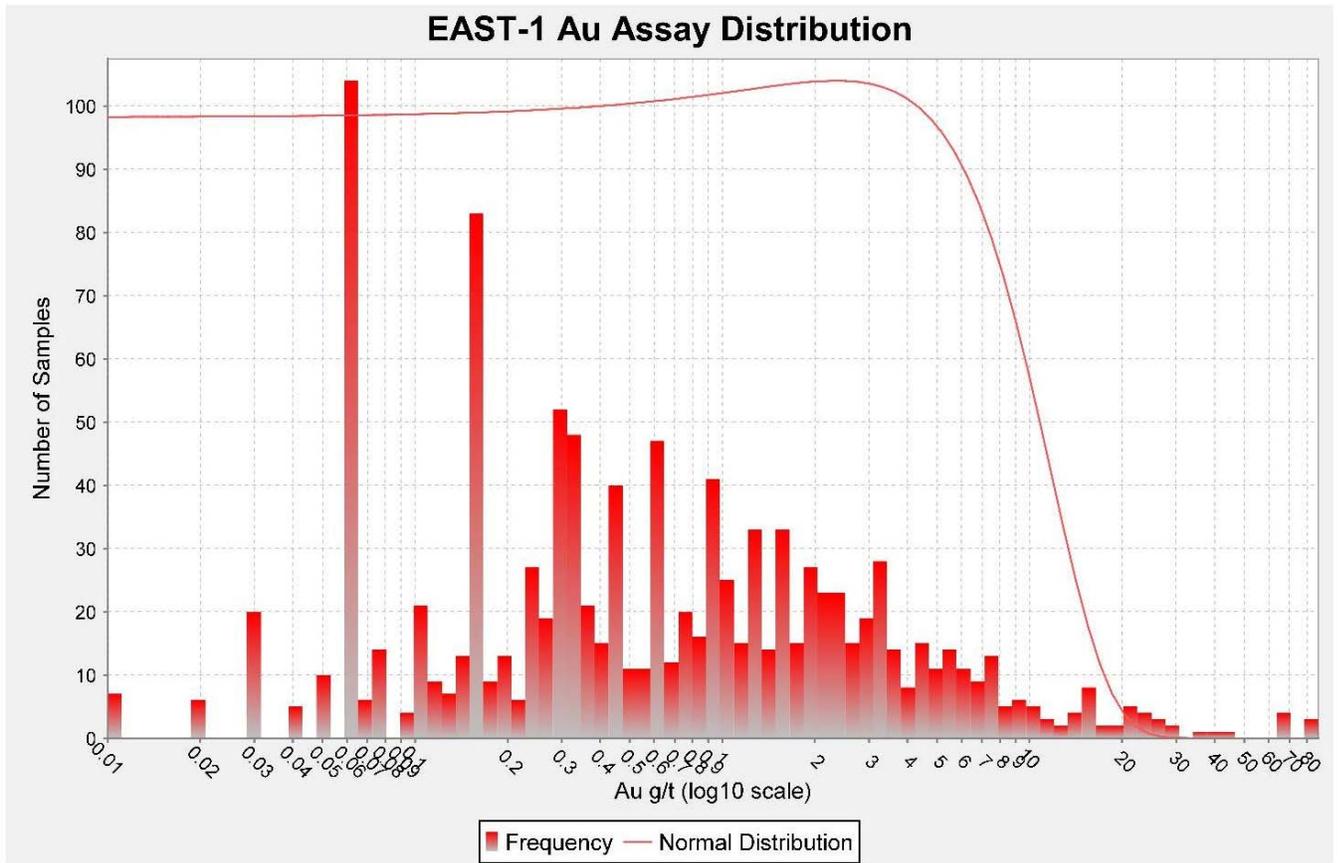


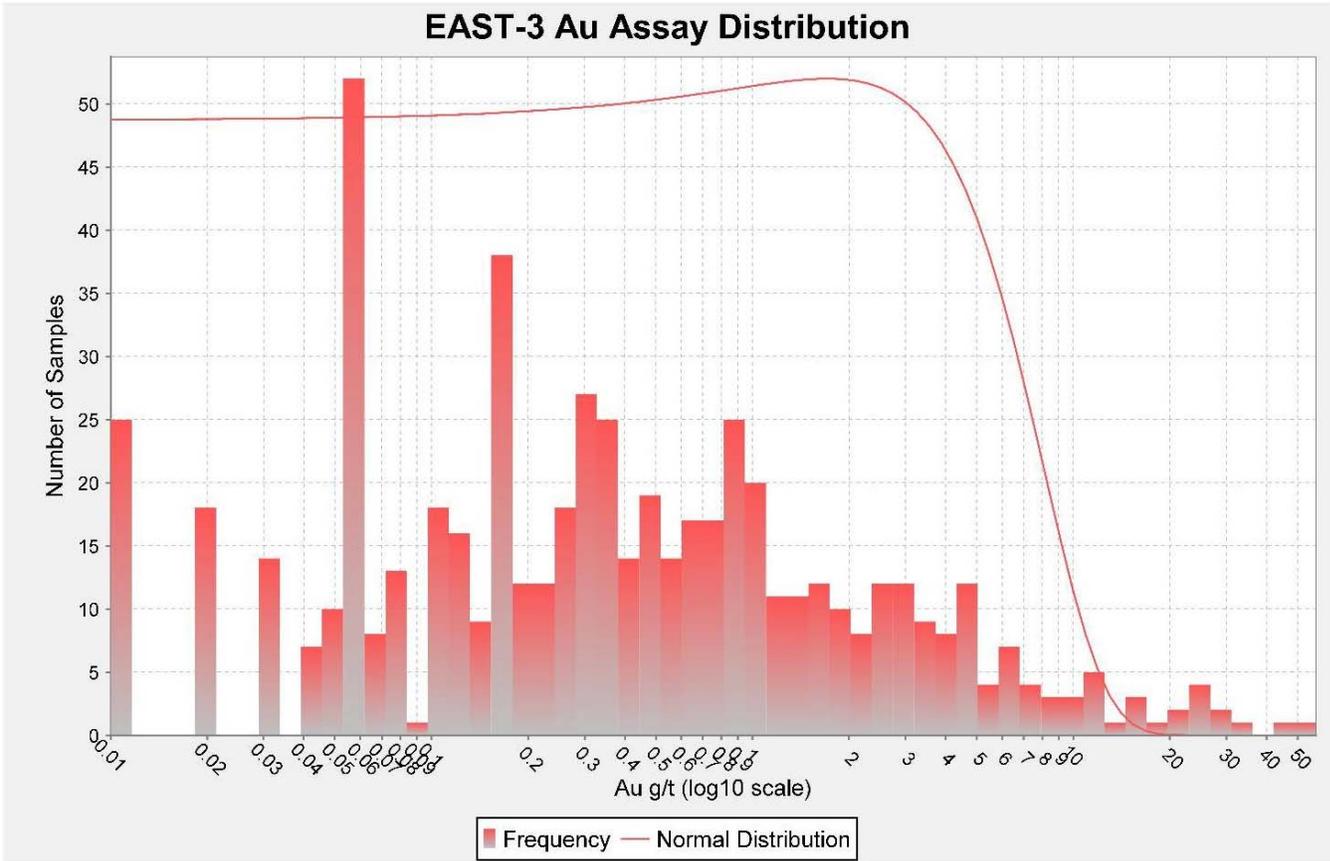
## APPENDIX II. 3D DOMAINS

# MIRADO PROJECT 3D DOMAINS

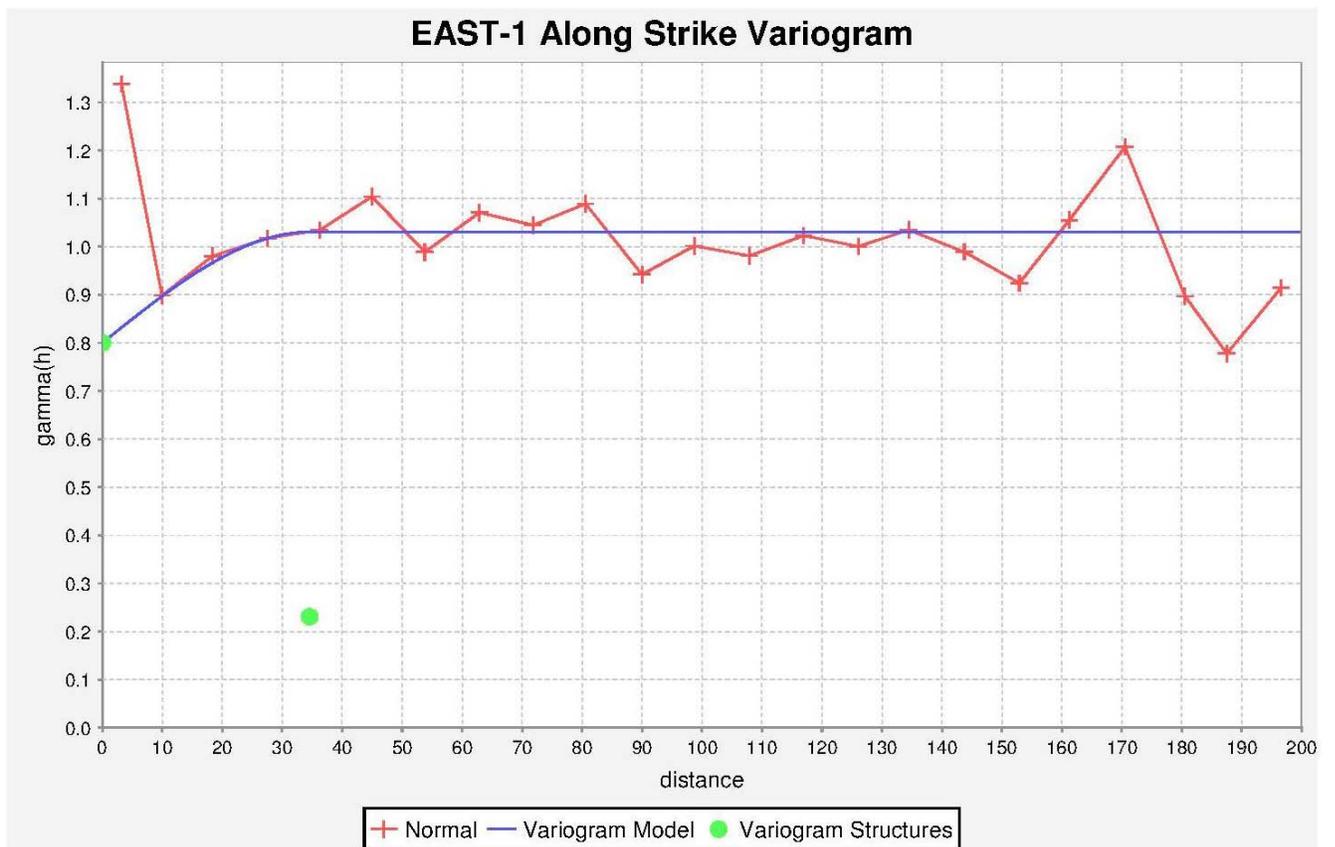
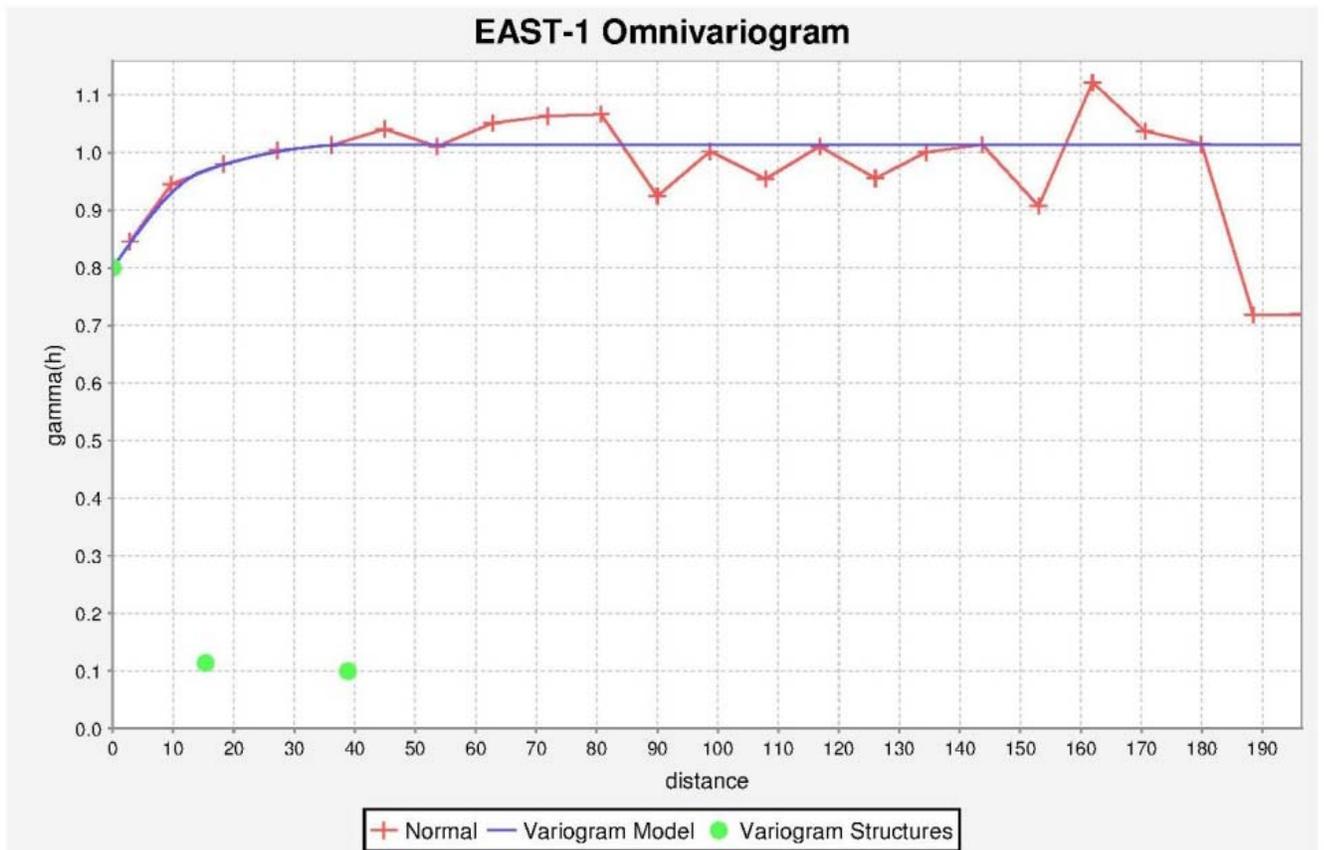


## APPENDIX III. LOG NORMAL HISTOGRAMS

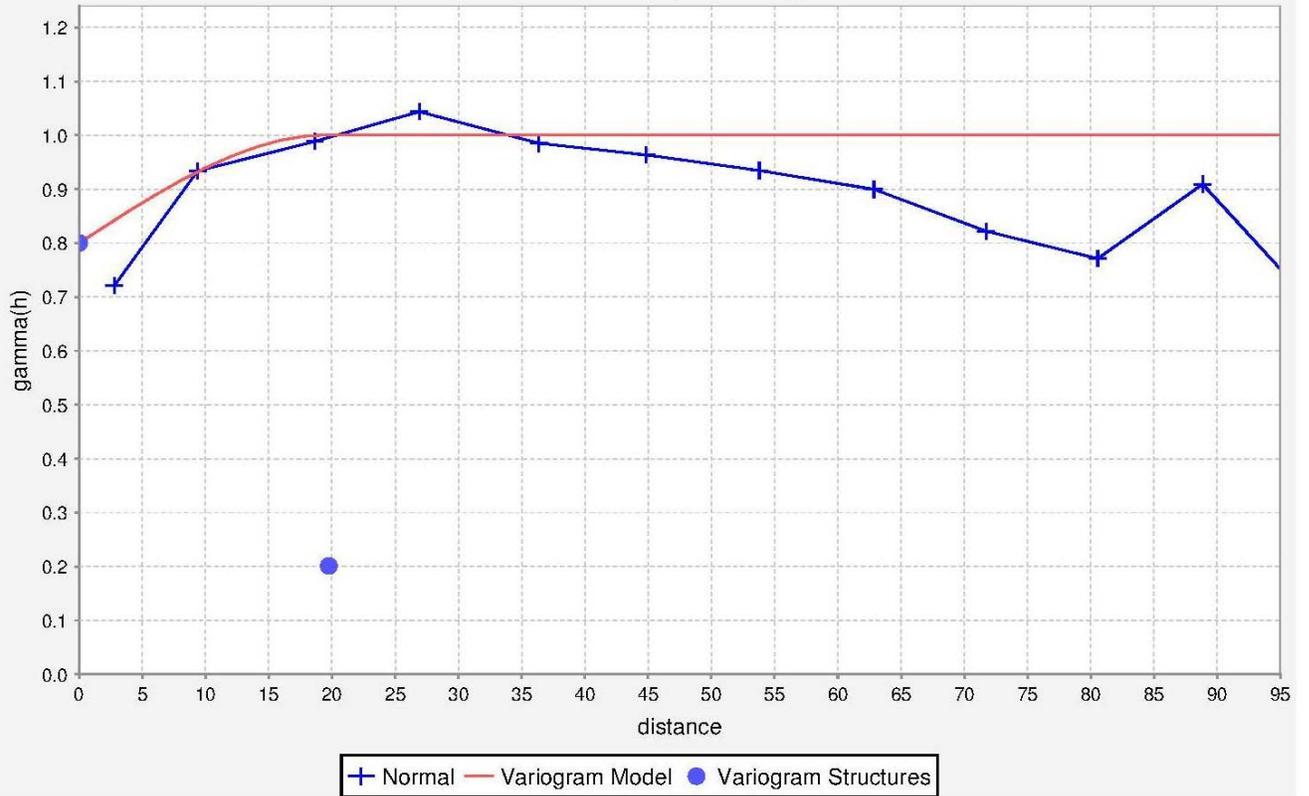




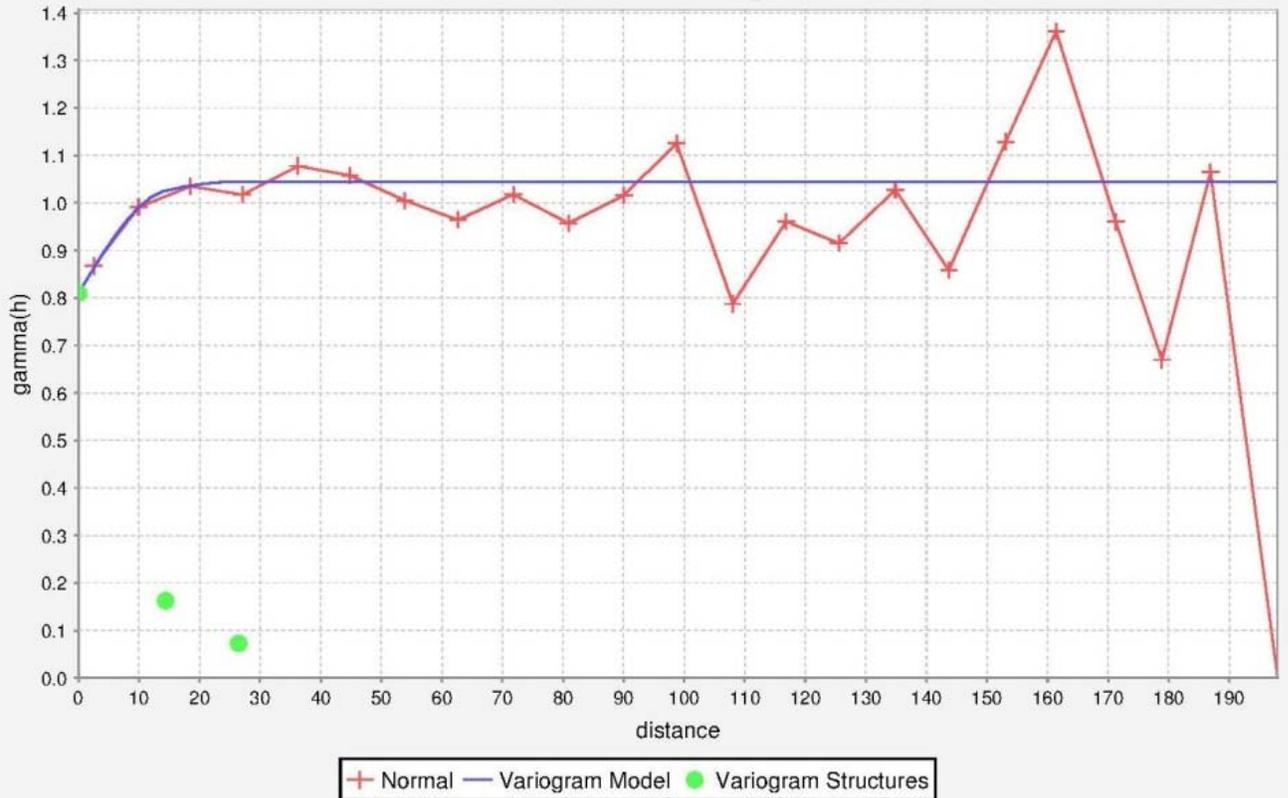
## APPENDIX IV. VARIOGRAMS



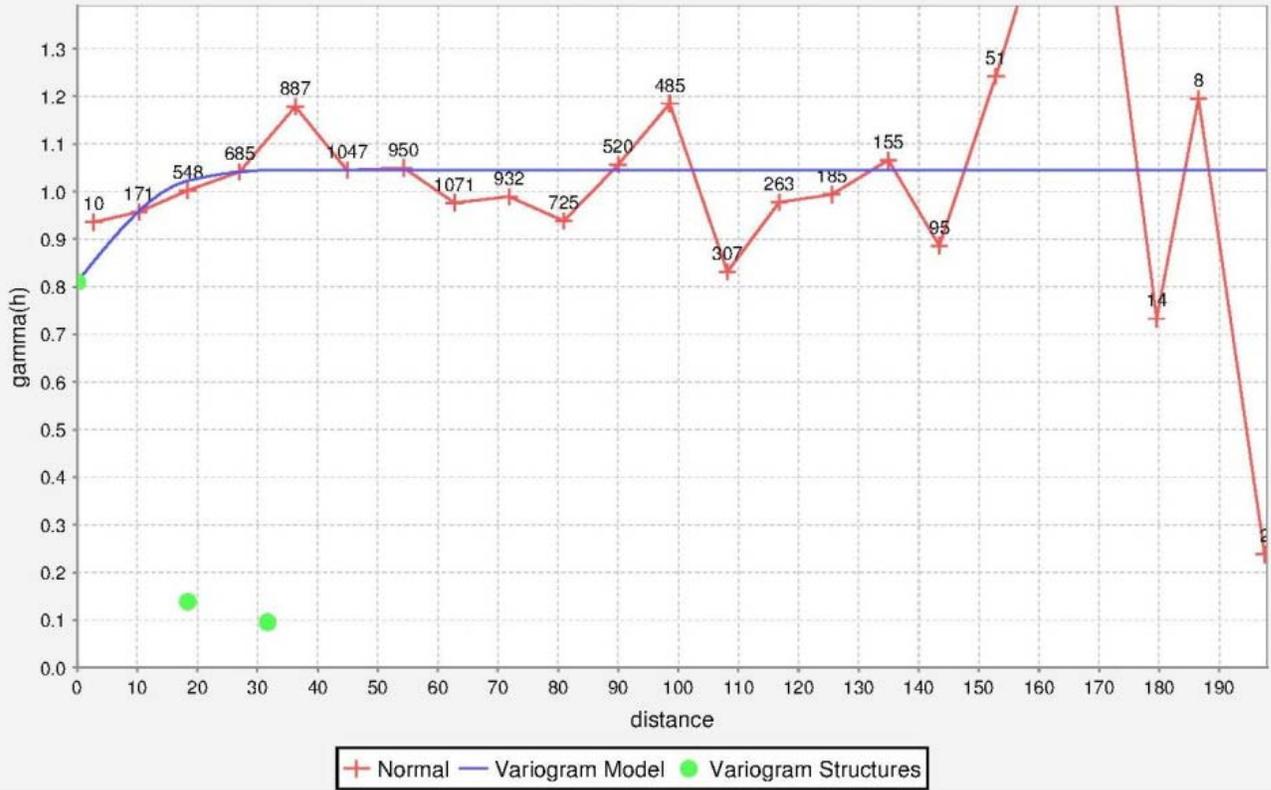
**EAST-1 Down Dip Variogram**



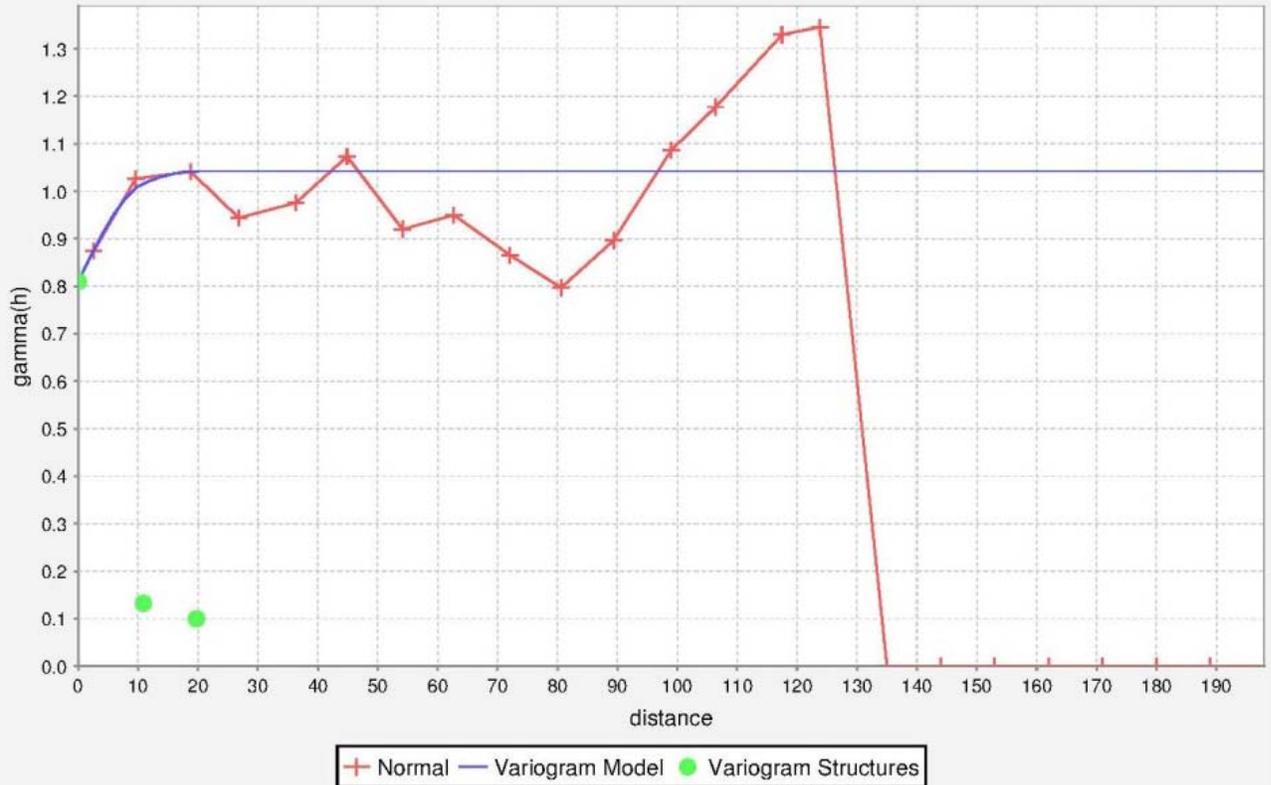
**EAST-2 OmniVariogram**



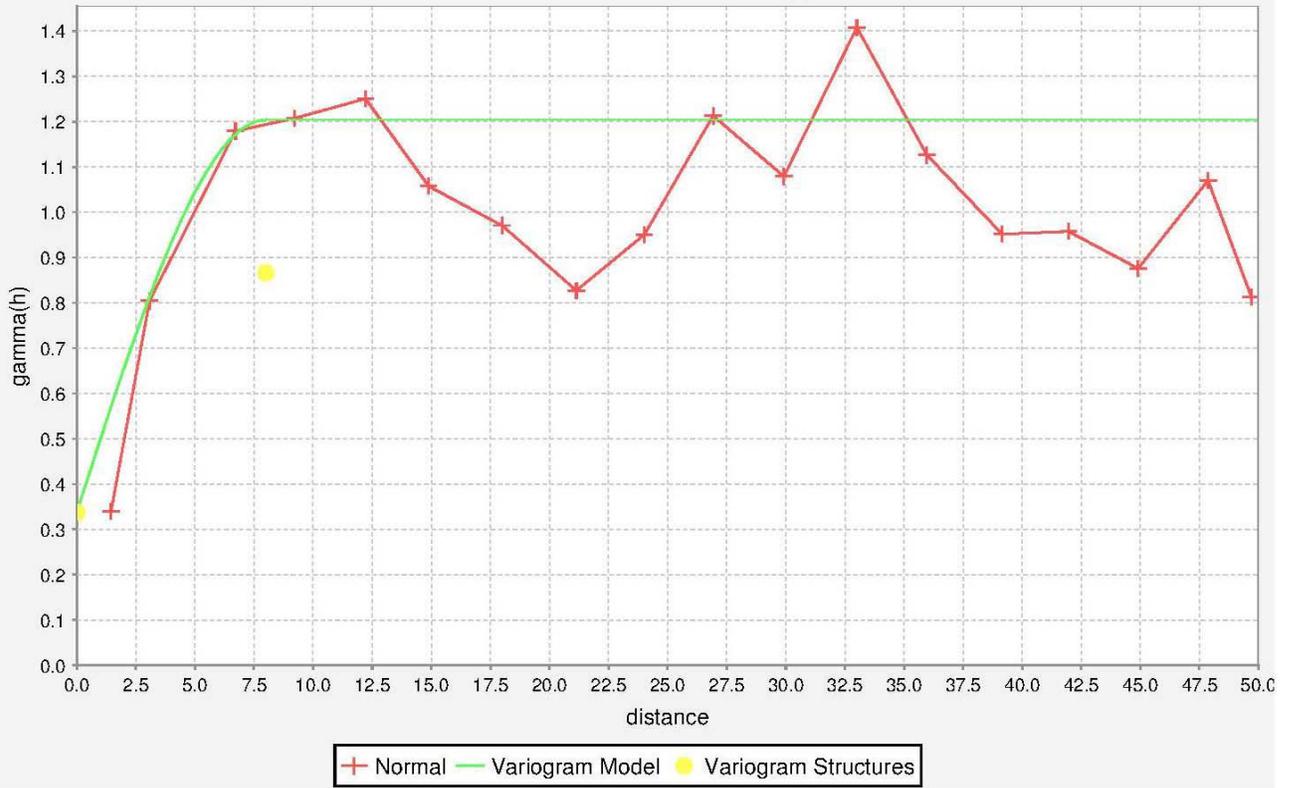
### EAST-2 Along Strike Variogram



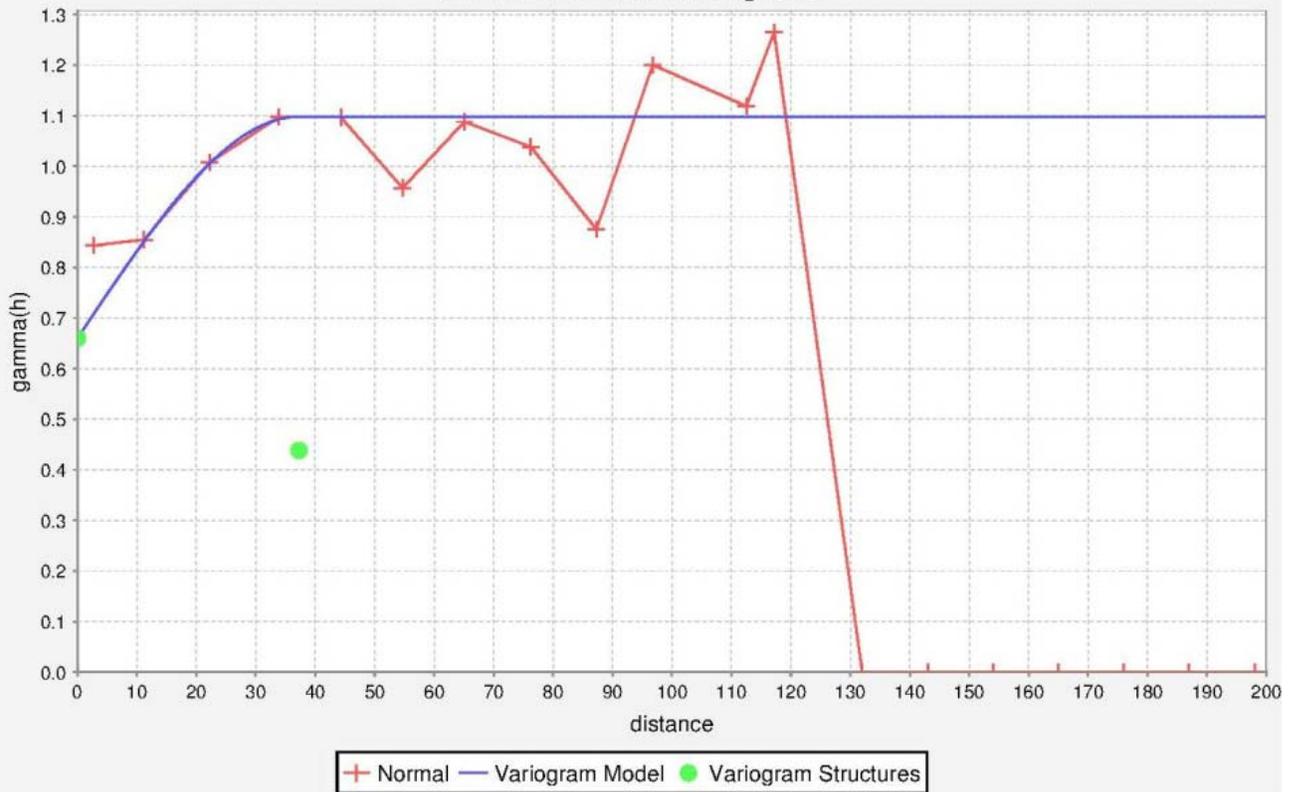
### EAST-2 Down Dip Variogram



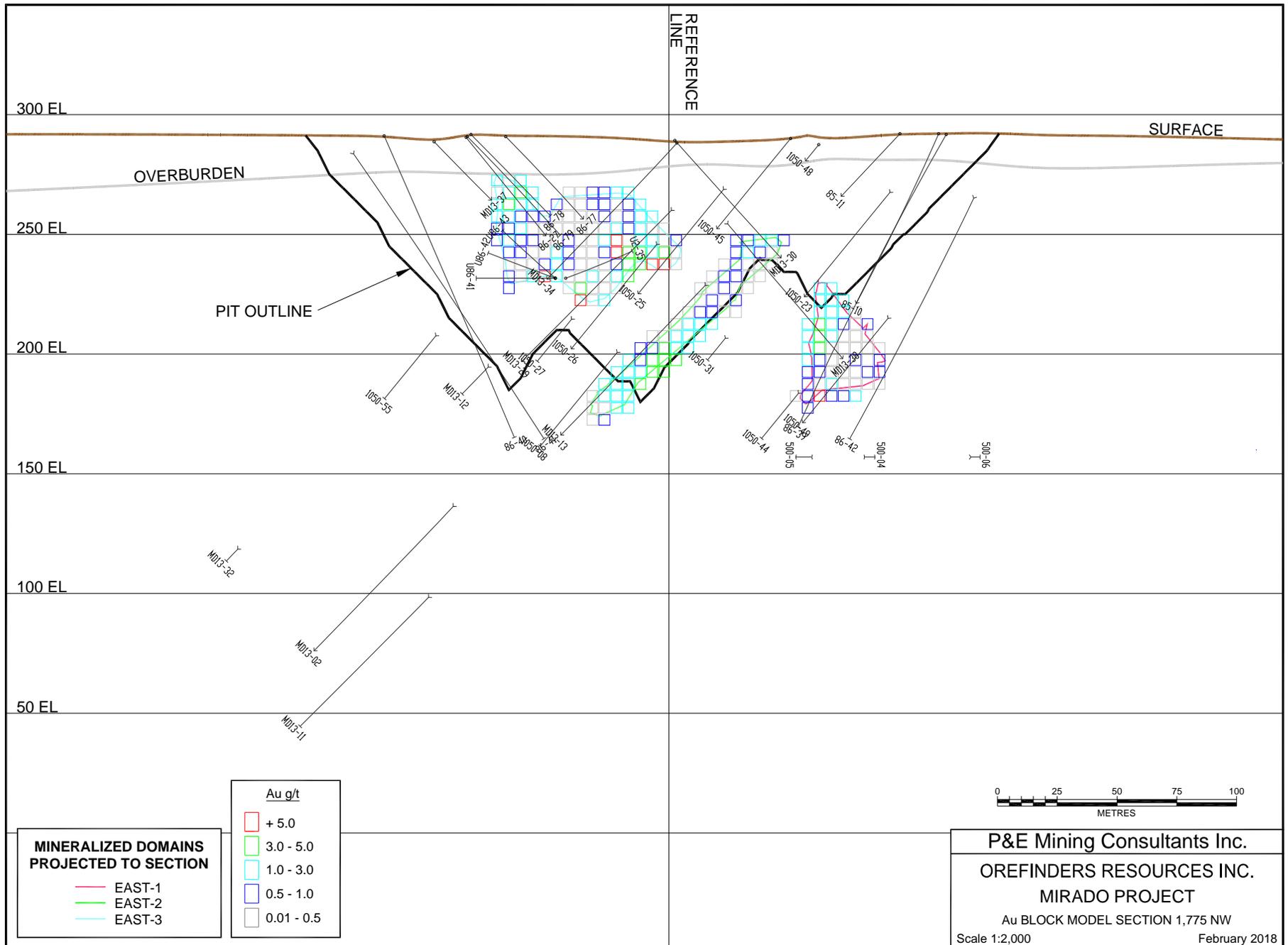
### EAST-2 Across Dip Variogram

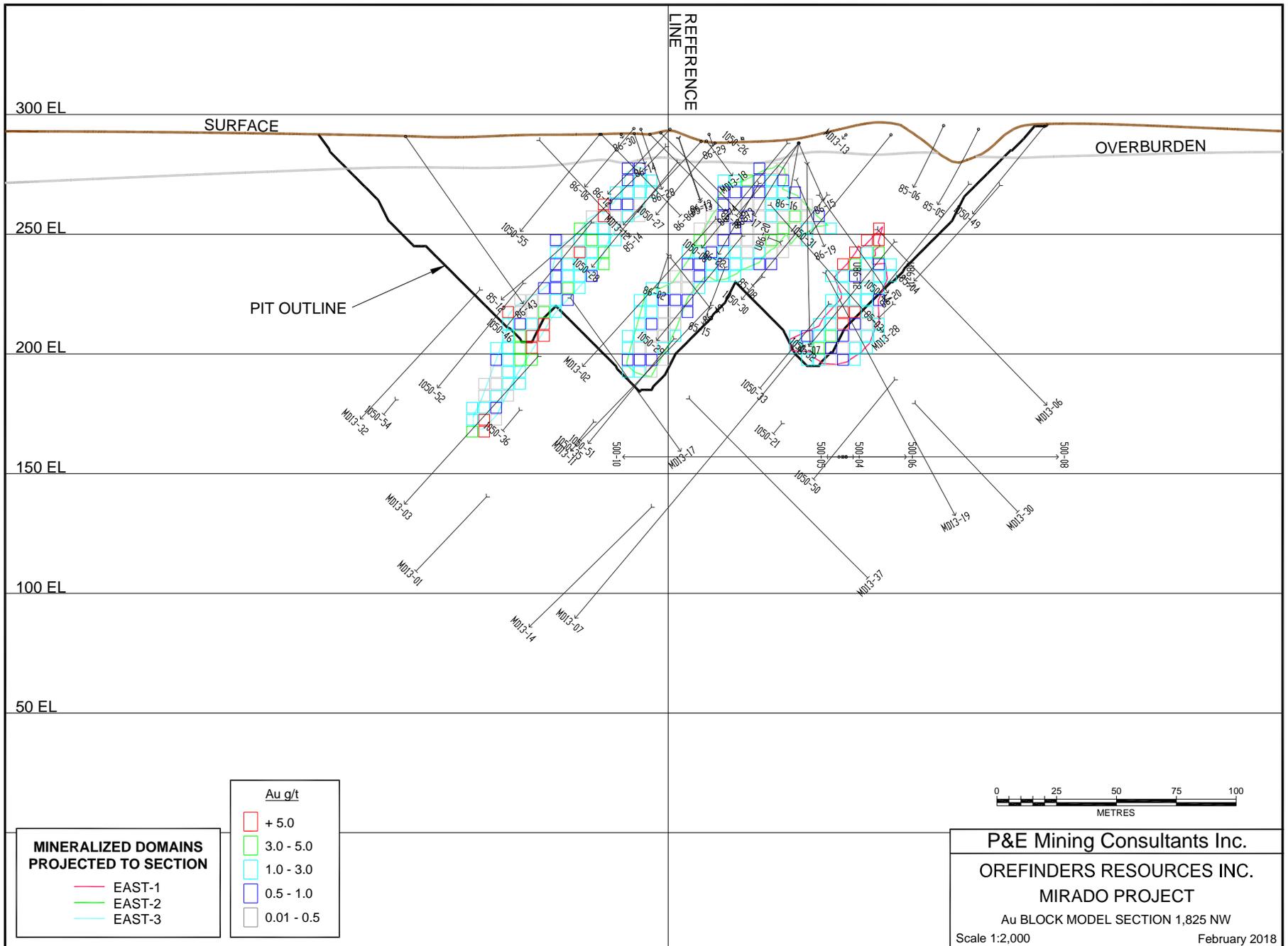


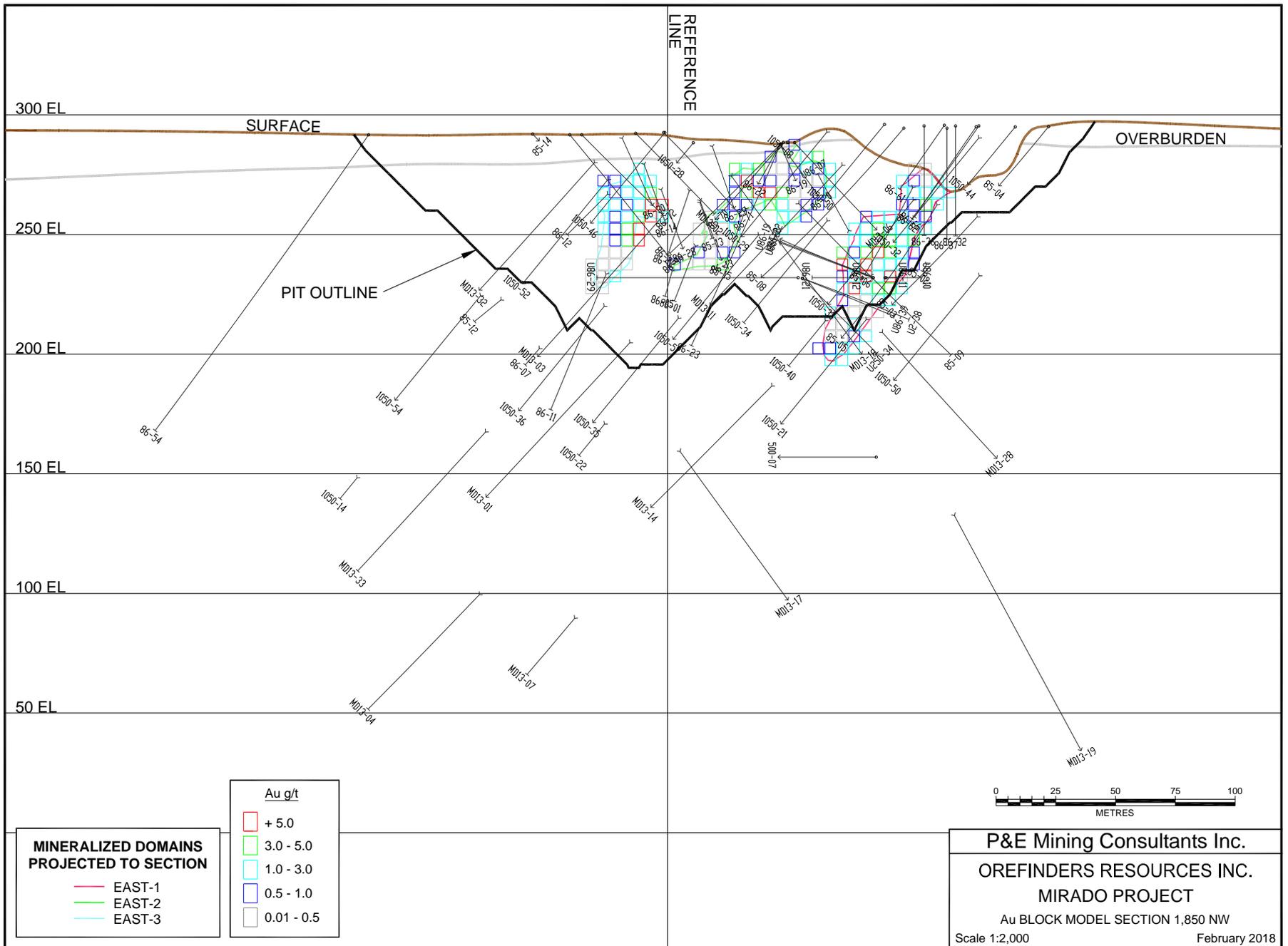
### EAST-3 OmniVariogram

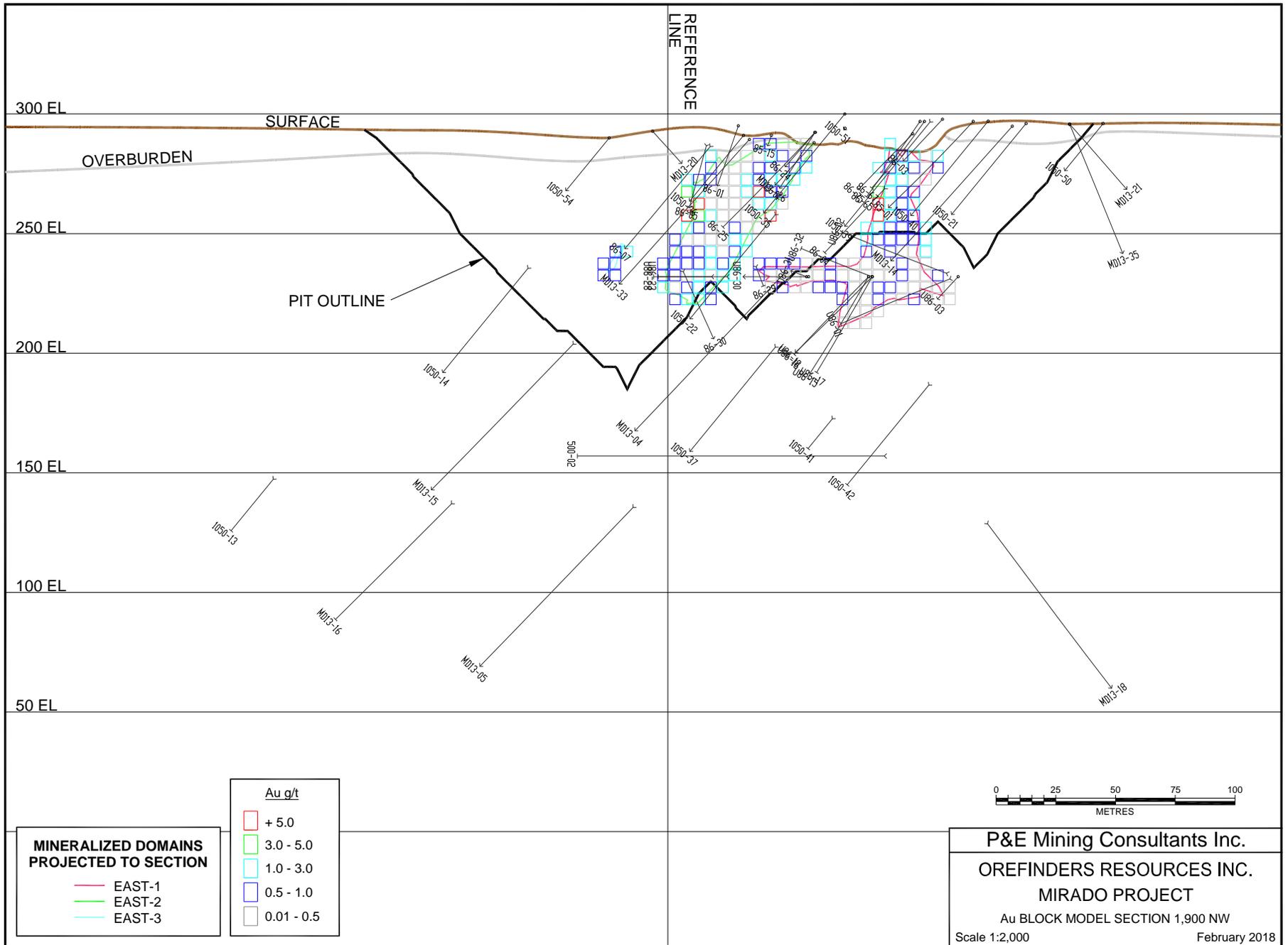


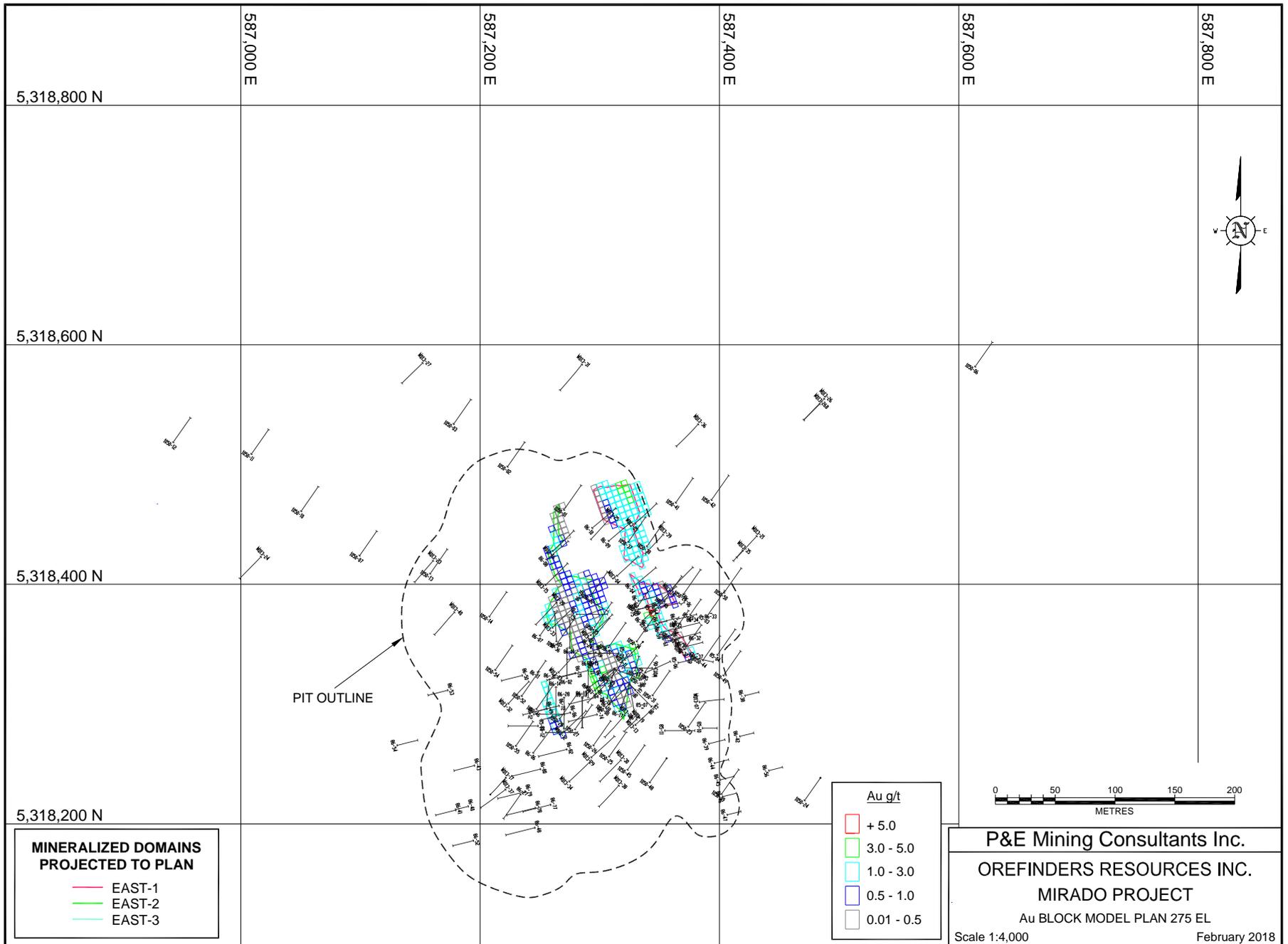
## APPENDIX V. AU BLOCK MODEL CROSS SECTIONS AND PLANS

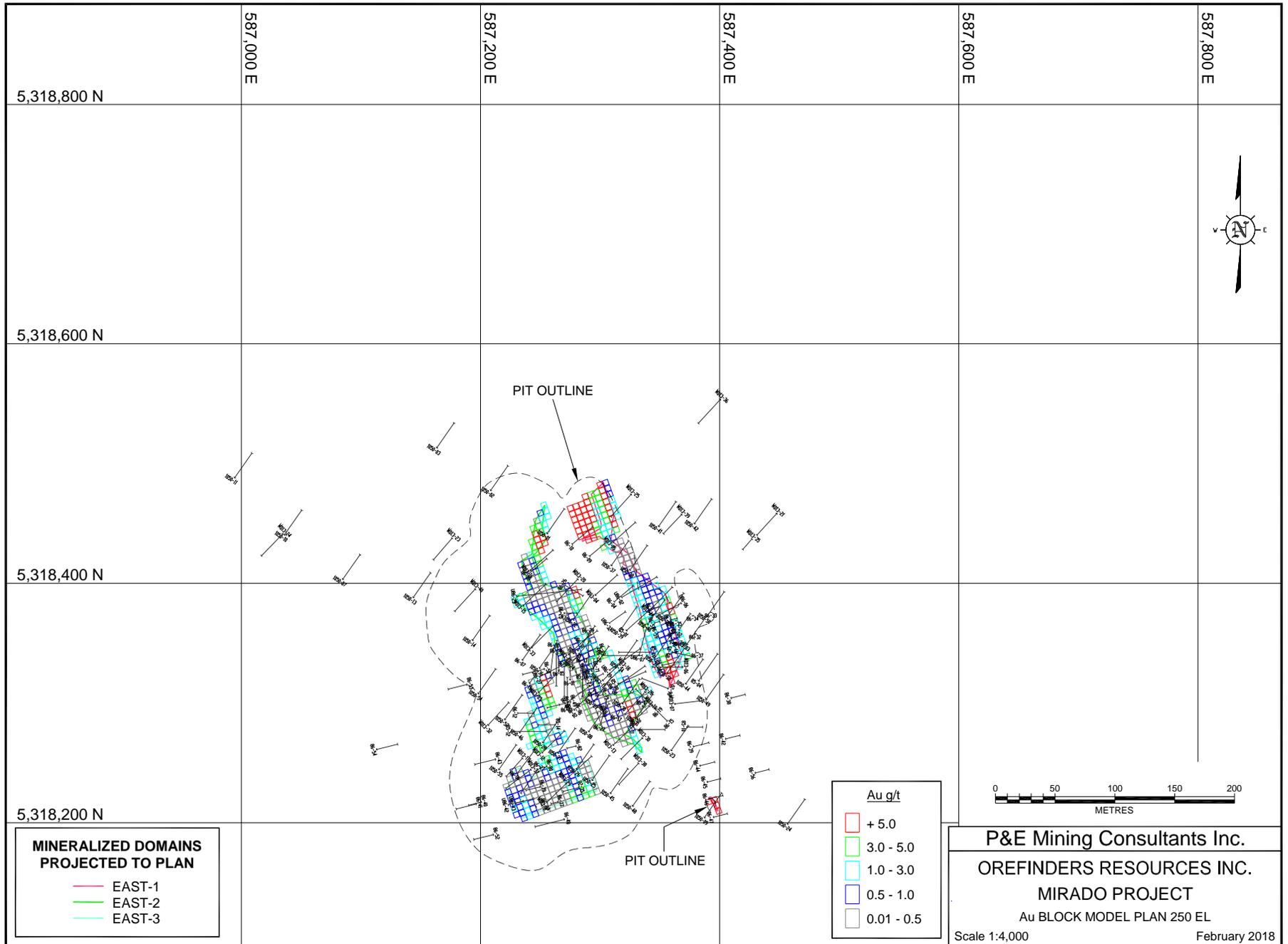


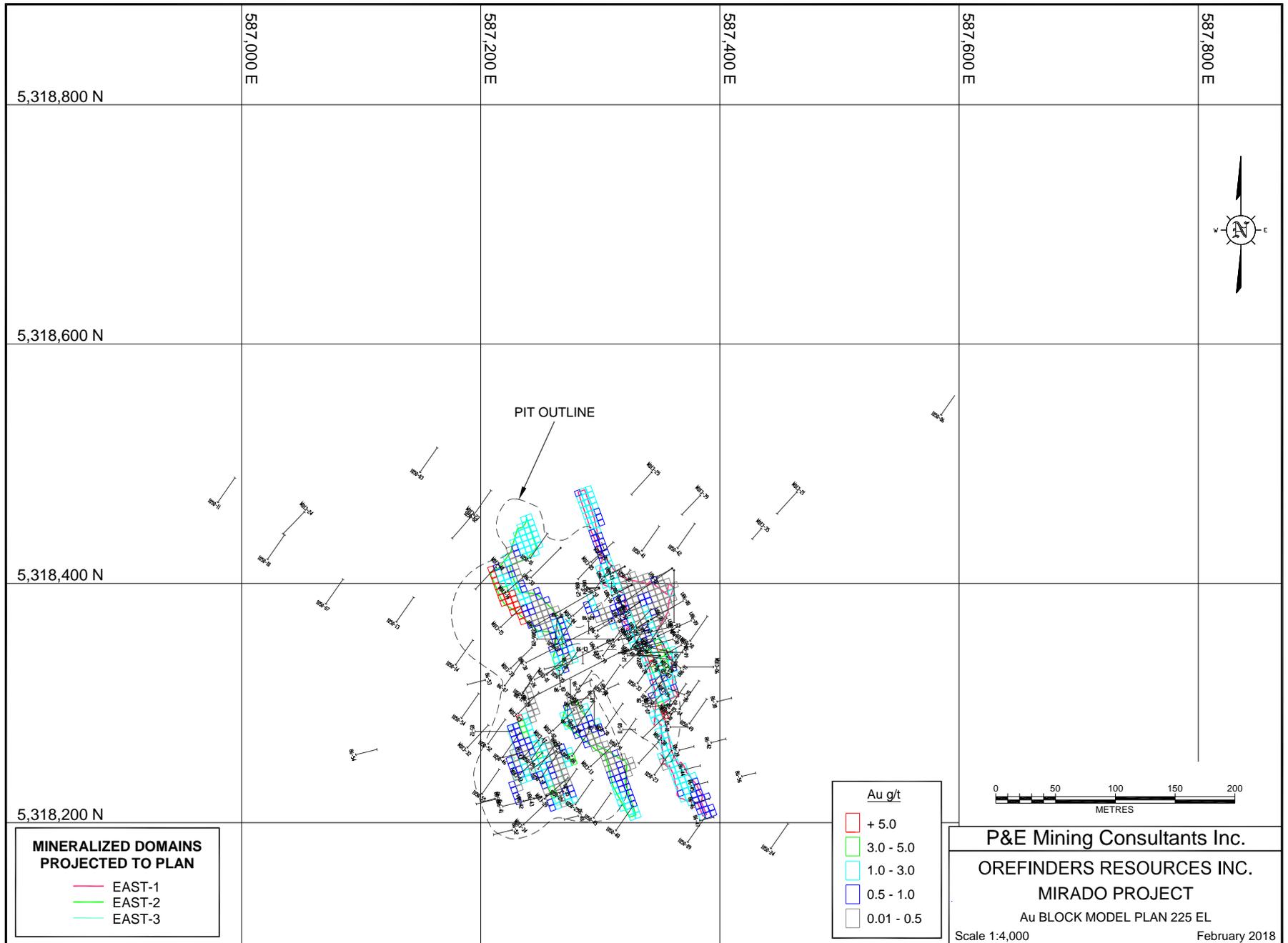


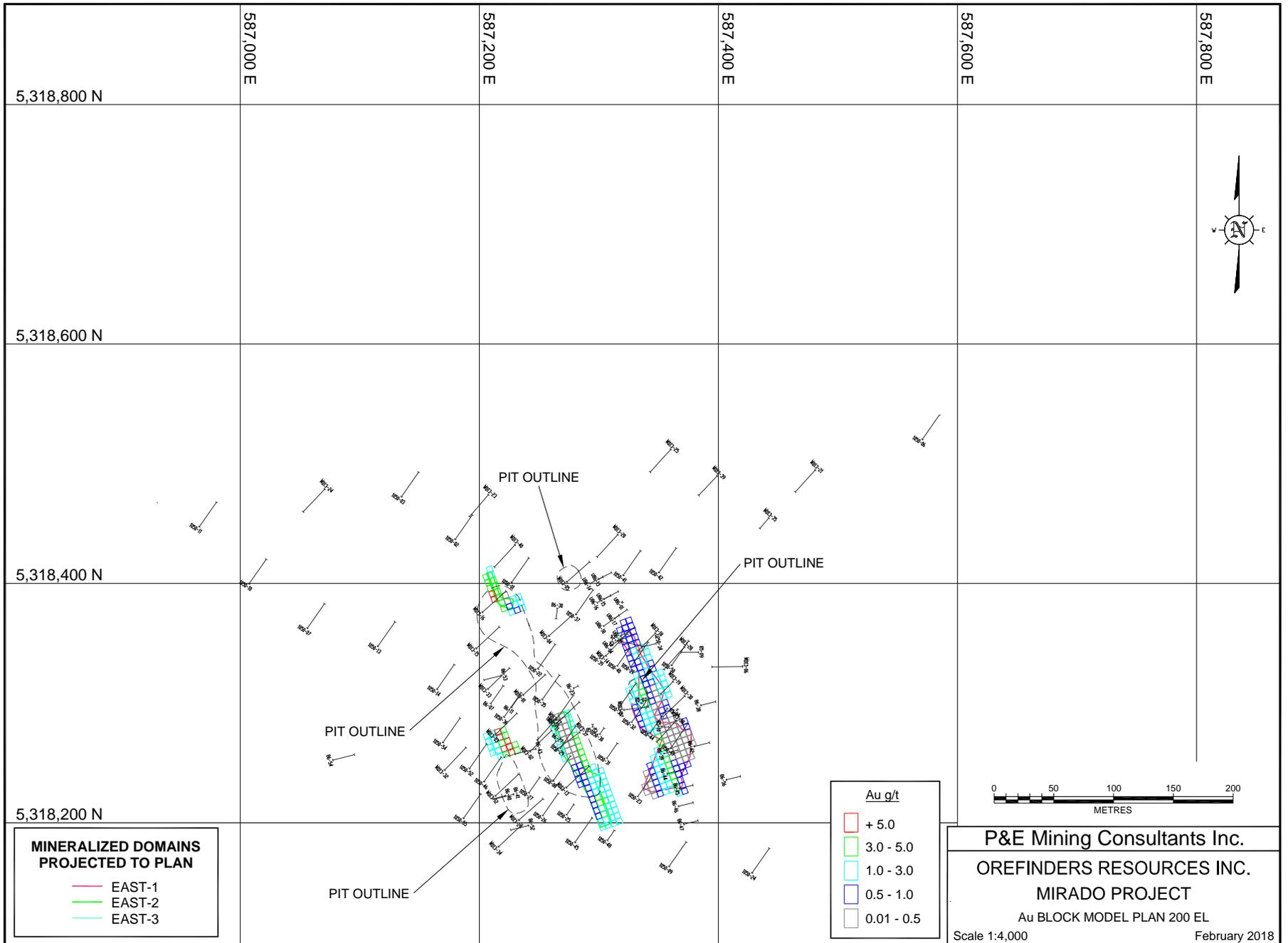




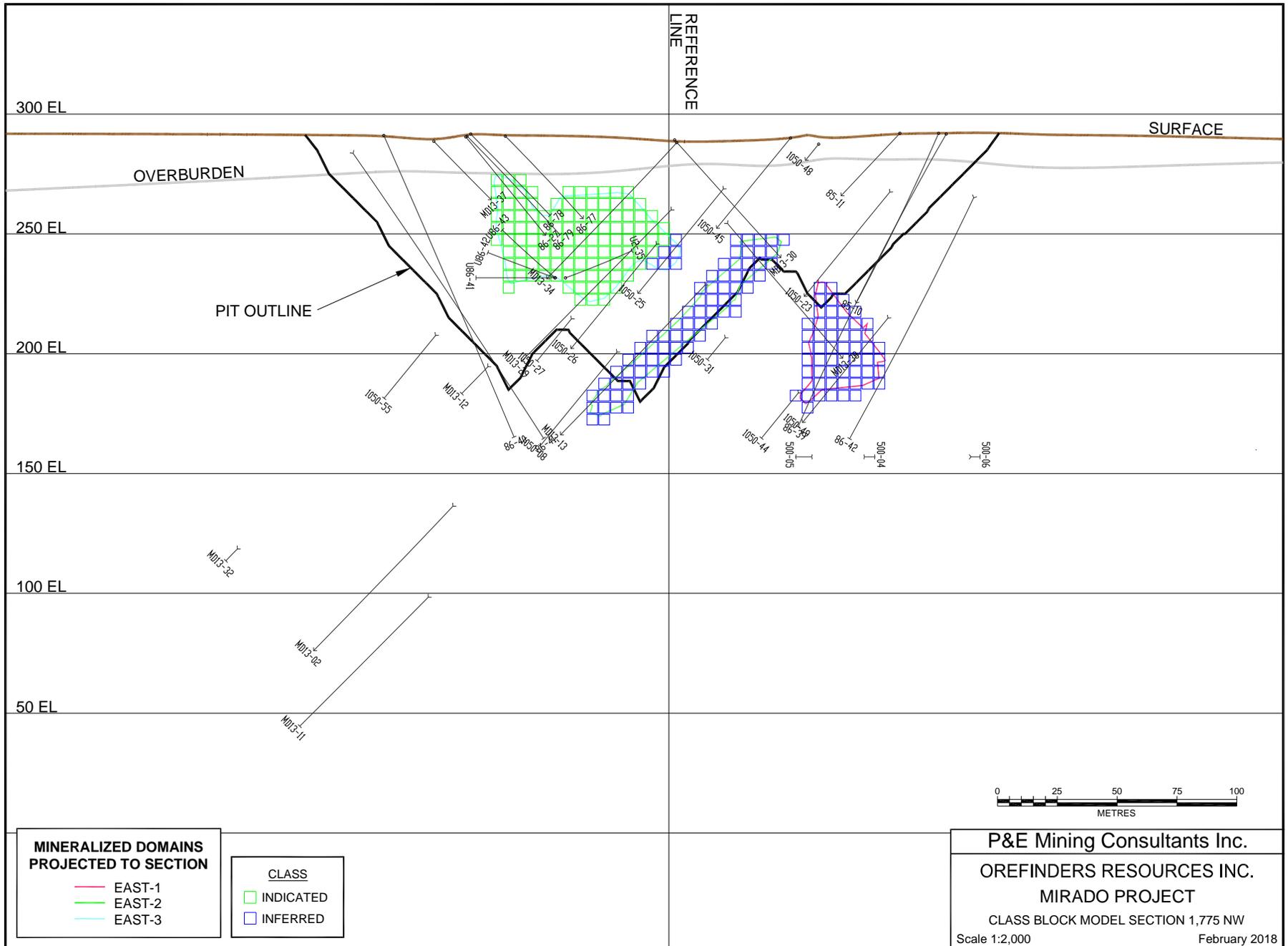


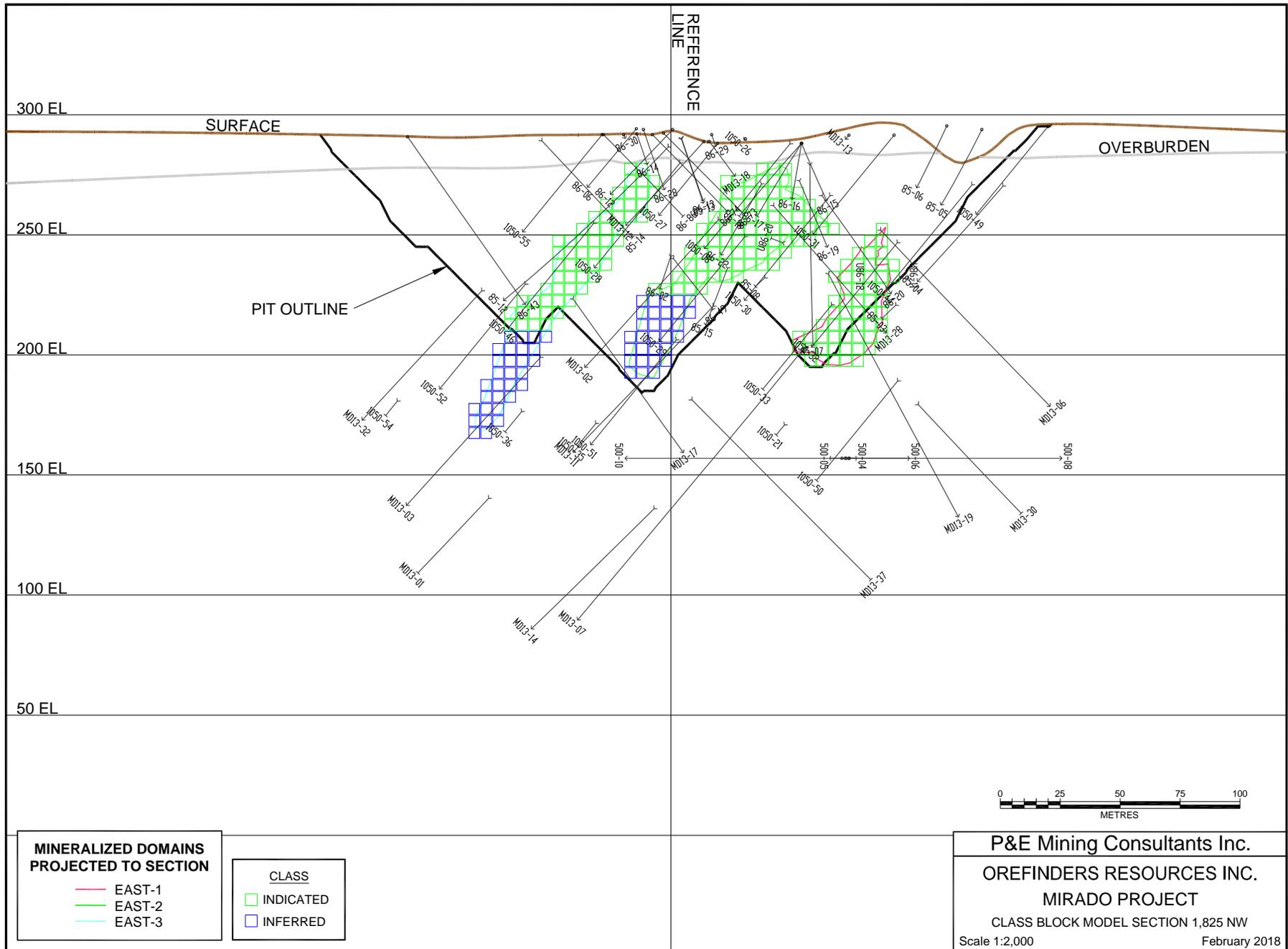


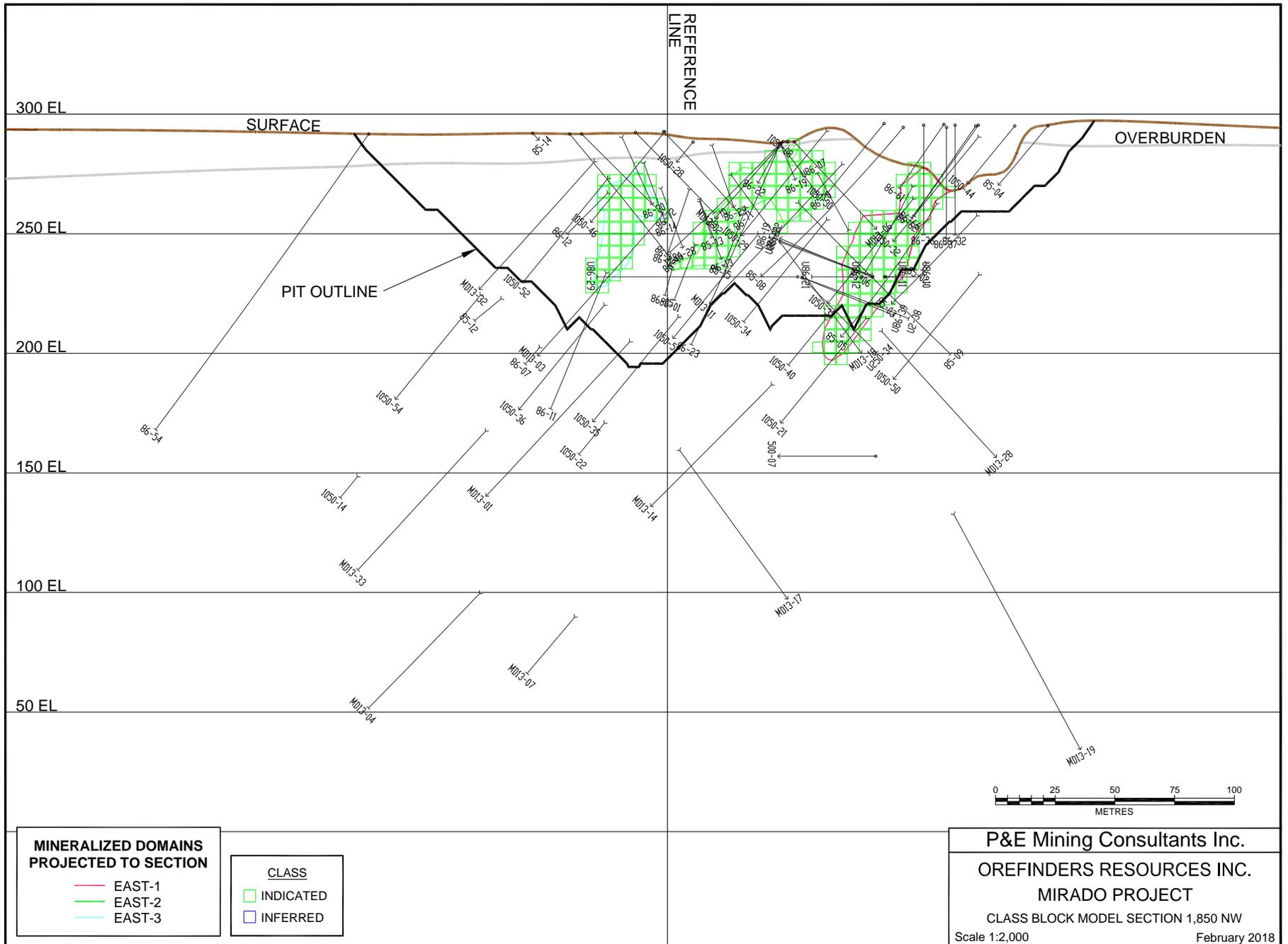


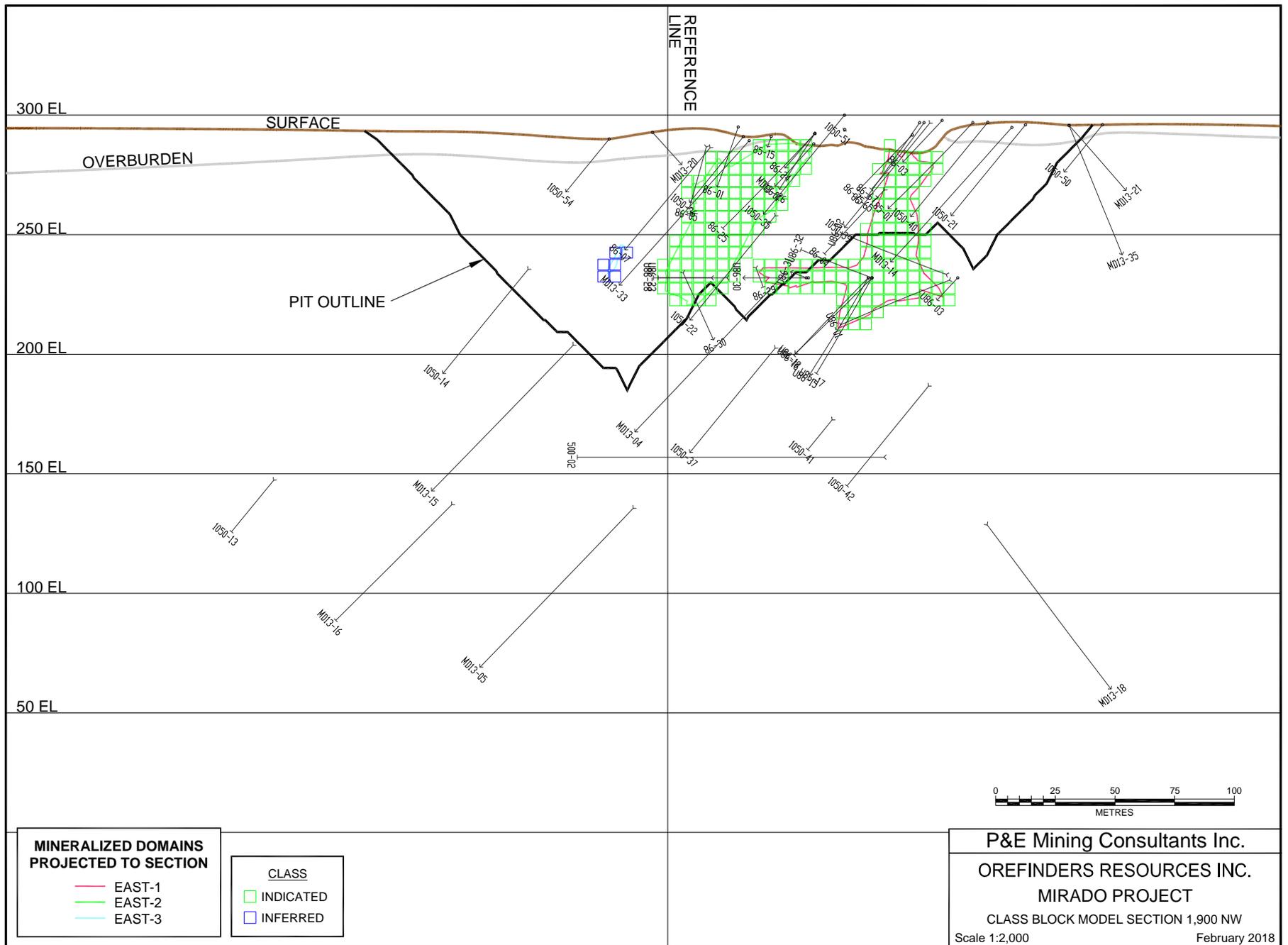


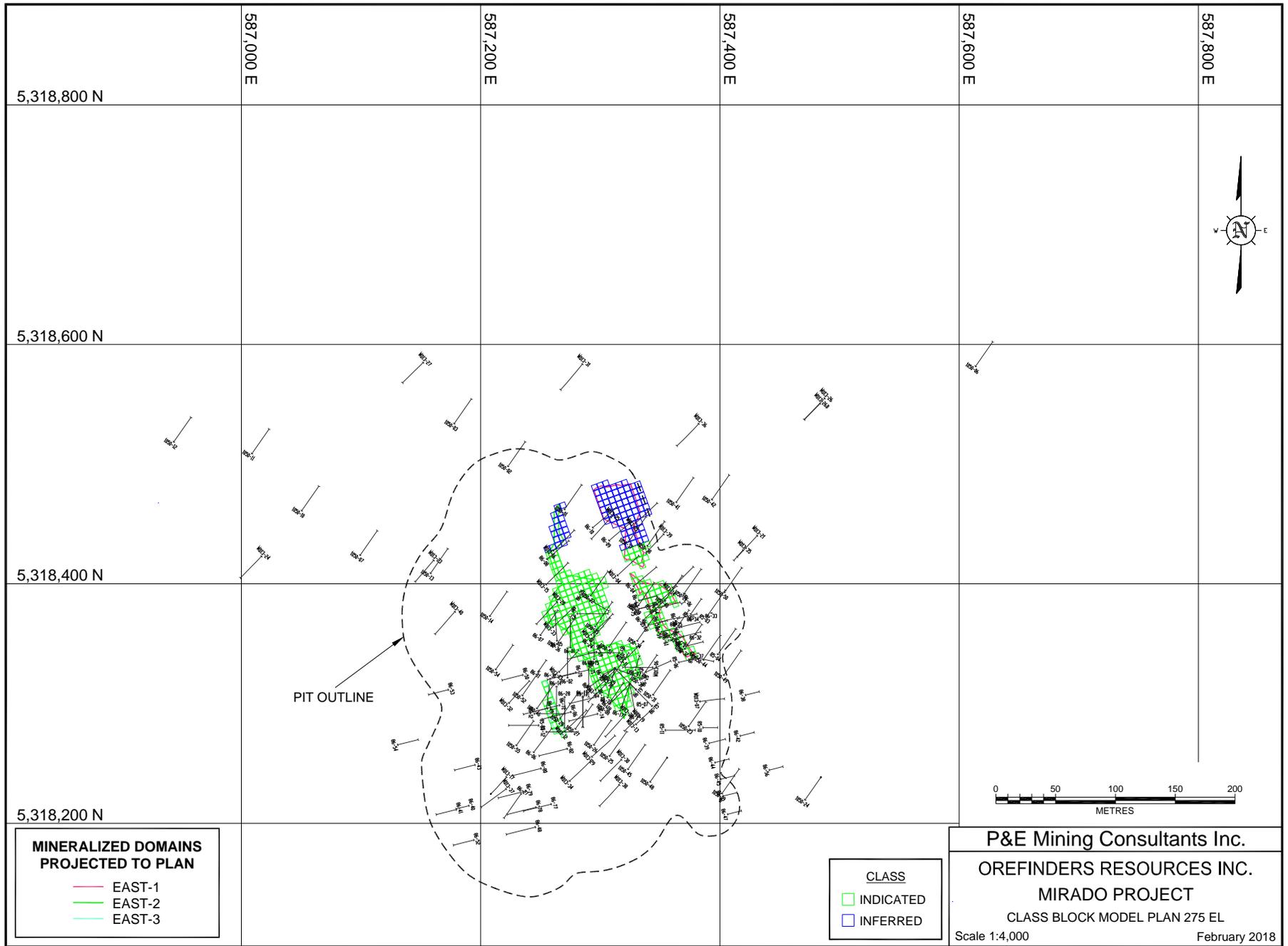
# APPENDIX VI. CLASSIFICATION BLOCK MODEL CROSS SECTIONS AND PLANS

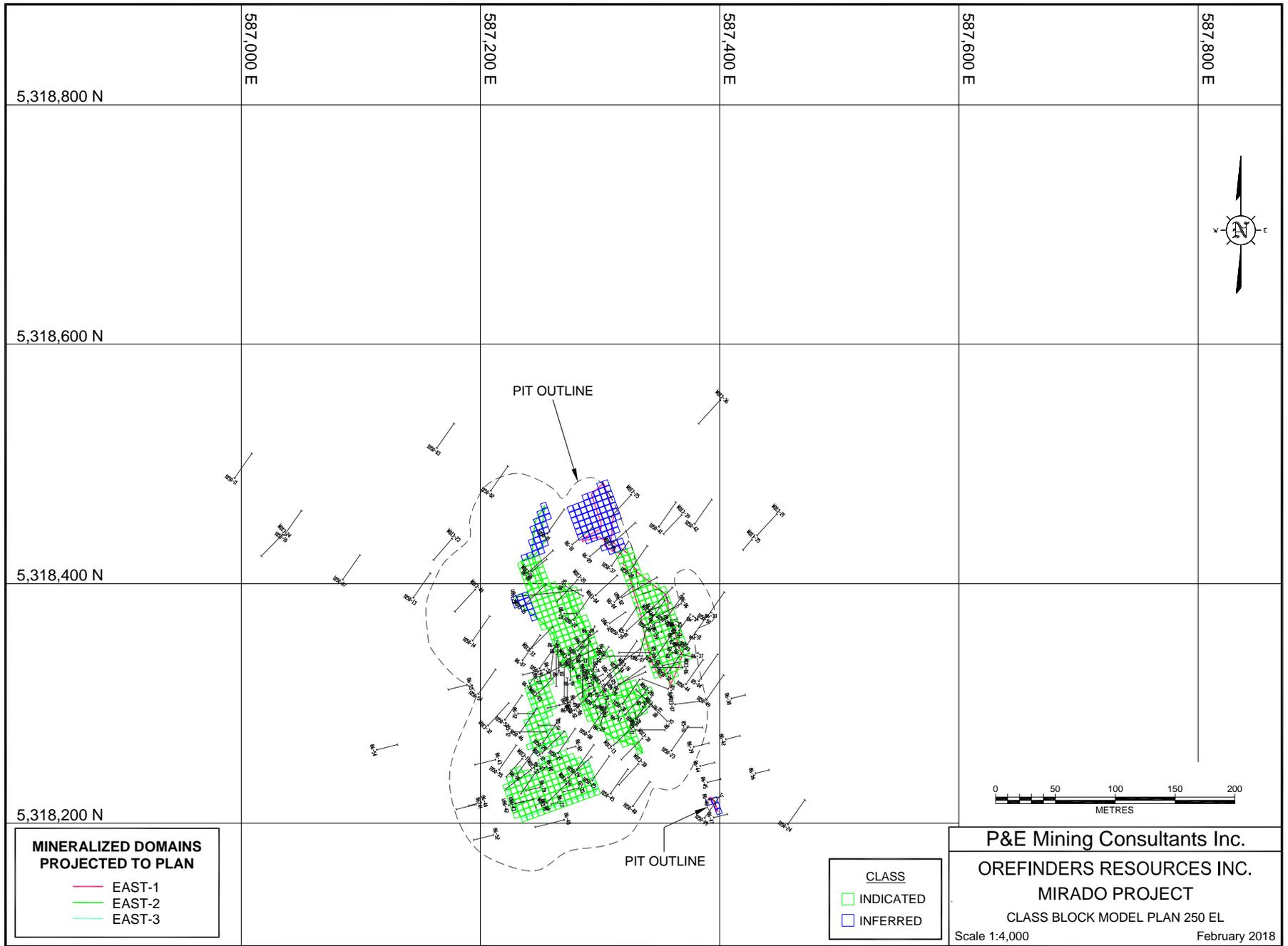


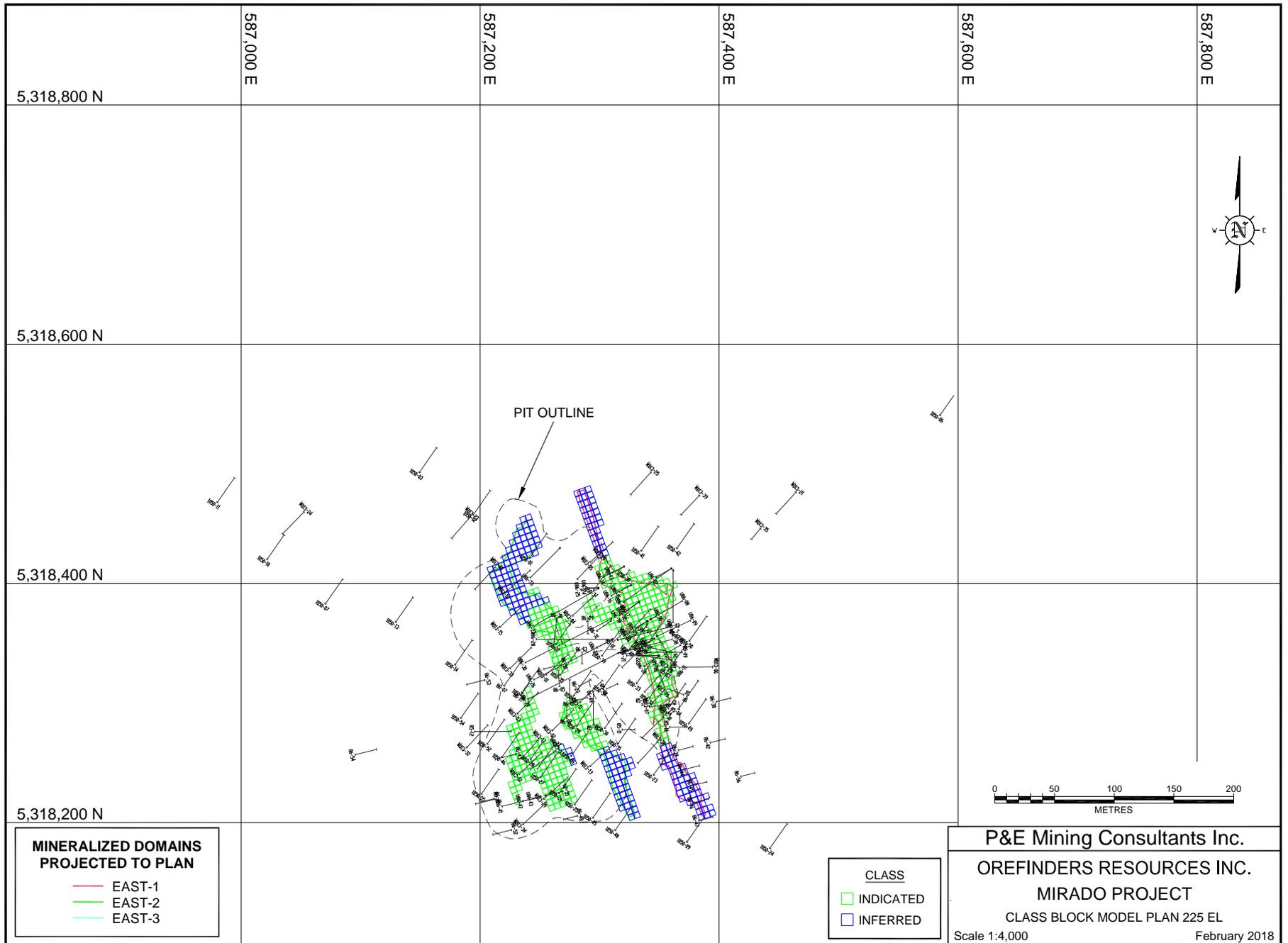


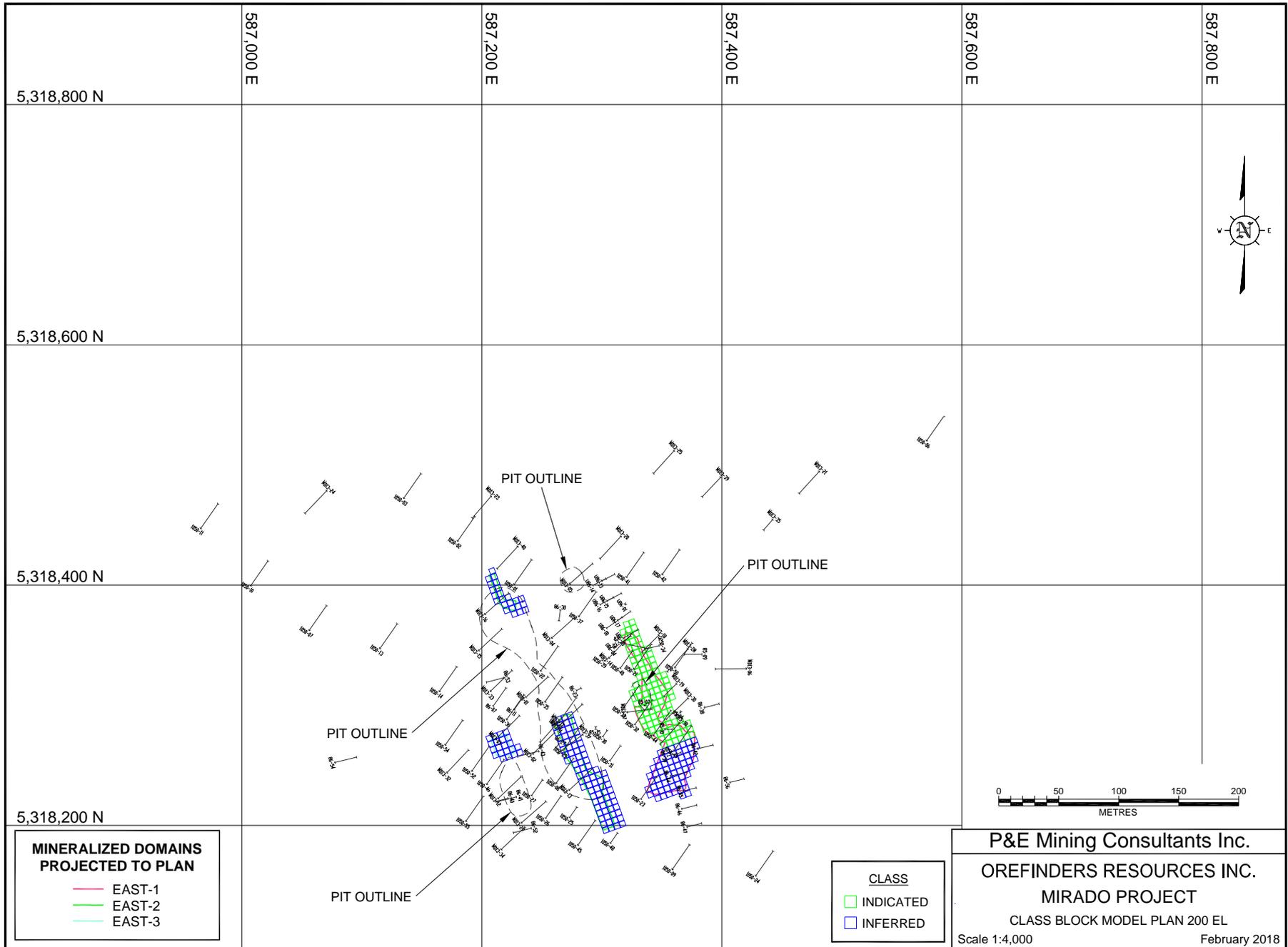












**MINERALIZED DOMAINS  
PROJECTED TO PLAN**

- EAST-1
- EAST-2
- EAST-3

**CLASS**

- INDICATED
- INFERRED

**P&E Mining Consultants Inc.**

**OREFINDERS RESOURCES INC.**

**MIRADO PROJECT**

CLASS BLOCK MODEL PLAN 200 EL

Scale 1:4,000

February 2018

## **APPENDIX VII. OPTIMIZED PIT SHELL**

# MIRADO PROJECT - OPTIMIZED PIT SHELL



## DOMAINS

- EAST-1
- EAST-2
- EAST-3