P&E MINING CONSULTANTS INC.
Geologists and Mining Engineers

2 County Court Blvd., Suite 400
Brampton, Ontario, L6W 3W8

Tel: 905-595-0575
www.peconsulting.ca

TECHNICAL REPORT
ON THE
THIERRY COPPER-NICKEL (PGE) PROPERTY
PICKLE LAKE AREA
PATRICIA MINING DIVISION
NORTHWESTERN ONTARIO, CANADA

UTM NAD83 ZONE 15N 684,100 m E and 5,708,400 m N
LATITUDE 51°29’48” N and LONGITUDE 90°20’52” W

FOR
XXIX METAL CORP.

NI 43-101 & 43-101F1
TECHNICAL REPORT

FINAL

Eugene Puritch, P.Eng., FEC, CET
David Burga, P.Geo.

P&E Mining Consultants Inc.
Report 452

Effective Date: October 24, 2024
Signing Date: December 12, 2024

TABLE OF CONTENTS

LIST OF TABLES

List of Figures

1.0 SUMMARY

XXIX Metal Inc. (formerly QC Copper and Gold Inc.) retained P&E Mining Consultants Inc. ("P&E") to prepare an independent Technical Report (the "Report") on the Thierry Copper-Nickel (PGE) Property (the "Property" or "Project"). The Property encompasses the past-producing Thierry Deposit and the nearby K1-1 Deposit Mines and is situated 12 km west-northwest of the Community of Pickle Lake and 450 km northwest of City of Thunder Bay, in the Patricia Mining Division of northwestern Ontario, Canada.

1.1 PROPERTY LOCATION, MINERAL TENURE AND ACQUISITION

The Thierry Property is accessible by a 19 km all-weather road from Pickle Lake. The Property consists of 27 mining leases totalling 4,669 ha and 163 single cell mining claims and 16 boundary claims. The total combined Property area is 7,997 ha. All the mining leases and claims are in good standing as of the effective date of this Report.

It was announced on October 31, 2023, that Orecap Investment Corp. ("Orecap") had completed acquisition of a controlling interest in Cuprum Corp. ("Cuprum", formerly Pickle Lake Minerals Inc.), a private subsidiary company of Canadian Critical Metals Inc. ("CCMI"), which holds 100% interest in the Thierry Property. Orecap acquired the 45% interest in Cuprum for $1,350,000 in cash. CCMI will receive a total of 3,000,000 share purchase warrants of Cuprum. Additionally, Cuprum is required to make milestone payments to CCMI of $500,000 should the Mineral Resource at Thierry be increased to 100 million tonnes and (or) 1.0 billion lb of copper, and an additional $250,000 should the Mineral Resource at Thierry be increased to 150 million tonnes and (or) 1.5 billion lb of copper.

In October 2024, QC Copper and Gold Inc. ("QC Copper") announced a binding agreement to acquire Cuprum Corp. and its 100% owned Thierry Property in an all-share deal. Following TSXV and shareholder approval, the acquisition deal closed on December 9, 2024 and QC Copper changed its name to XXIX Metal Inc.

1.2 HISTORY

Gold was discovered at the Property in 1928. Intermittent gold mining operations were carried out over the years until 1966. Union Miniere Explorations and Mining Corporation ("UMEX") acquired the Project in 1969. UMEX completed exploration programs, discovered the Thierry Copper-Nickel Deposit, and carried out metallurgical testwork on recovery of copper and nickel. After a positive Feasibility Study, it was decided in 1974 to proceed with project development and mine production. The Thierry Mine operated from 1976 to 1982. Two open pits and an underground mine produced 5.3 Mt grading 1.13% Cu and 0.14% Ni. In total, the Mine produced concentrates containing 480.1 Mlb copper, 15.2 Mlb nickel, 17,500 oz platinum, 47,000 oz palladium, and 17,000 oz gold.

Further exploration was subsequently carried out by various firms, most notably Cadillac Ventures, Braveheart Resources, and Canadian Critical Metals Inc. In 2010, Cadillac Ventures ("Cadillac") acquired the Property, completed exploration drilling programs until 2012

(63 drill holes totalling at least 22,955 m), and issued Mineral Resource Estimates and a positive Preliminary Economic Assessment ("PEA") on the Project. Braveheart Resources ("Braveheart") acquired the Thierry Property in 2020. An updated Mineral Resource Estimate and positive PEA were completed in 2021. Braveheart subsequently became Canadian Critical Metals Inc. ("CCMI"), which completed a small drill program (six drill holes totalling 2,600 m) in summer 2023. It is the opinion of the Authors that sample preparation, security and analytical procedures for the Project drilling and sampling programs are adequate for use in this current Report. Based on the evaluation of the QA/QC programs undertaken by Cadillac and CCMI, the Authors conclude that the data are of suitable quality for use in this current Report.

Historical production records and metal recovery testwork completed between the 1970s and 2006, indicated that conventional crushing-grinding-flotation processes could produce a saleable copper concentrate with relatively high-grades of palladium, platinum and gold and low nickel. A nickel concentrate was also produced, but would probably be not saleable to a smelter. The anticipated metal performance would be:

- Copper concentrate: 30% Cu, <1% Ni, at 92% Cu and 50% PGE recoveries.
- Nickel concentrate: 8% Ni and 2% Cu, at 40% Ni recovery.

Concentrate tonnage and concentration ratios would depend on head grade. The PGE may not be payable.

1.3 GEOLOGY, MINERALIZATION AND DEPOSIT TYPE

The Thierry Cu-Ni mine is located in the Archean Pickle Lake Assemblage of the Uchi Subprovince in the western part of the Superior Province. The regional geology consists of an east-to-west trending of metavolcanic rocks, predominantly pillowed tholeiitic basalt flows with minor felsic volcanic and metasedimentary rocks, including iron formations, of the Pickle Crow Assemblage (>2860 Ma). The volcano-sedimentary sequence is intruded by mafic to ultramafic rocks that range in composition from gabbro to peridotite and by granitoid rocks. The regional metamorphic grade is middle greenschist facies, but mineral and chemical data indicate peak temperatures and pressures of ~600°C and 5.5 kbar in the thermal aureoles of the felsic-intermediate plutons. The rocks subsequently underwent dynamic (retrograde) metamorphism and related deformation that produced a major shear zone and a system of conjugate faults. Where mafic and ultramafic rocks were sheared, a mylonite was produced that consists of fragments of hornblende in a matrix of chlorite and biotite.

Historical exploration and drilling programs have shown that the Thierry Deposit mineralization occurs as sheet-like and lensoidal bodies in a major shear zone hosted within deformed and metamorphosed mafic and ultramafic units. The Deposit measures 1,280 m along strike, up to 30 m thick, and 760 m down-dip, and it is open at depth. Five main styles of Cu-Ni sulphide mineralization are recognized: 1) breccia mineralization (40%); 2) mylonite mineralization (58%); 3) bornite mineralization (~1%); 4) disseminated mineralization (~1%); and 5) supergene-altered or oxidized mineralization. The mylonite mineralization occurs in a chlorite-biotite (±amphibole) schist shear zone. The sulphide mineralization occurs mainly as stringers and veins (with quartz and carbonate) and as disseminations. The sulphide minerals are mainly chalcopyrite, pyrrhotite, pyrite and pentlandite with smaller amounts of bornite and cubanite. Violarite, mackinawite, millerite and other minor phases occur as alteration products of pentlandite. Platinum-group minerals present are merenskyite, moncheite and kotulskite.

Mafic-ultramafic intrusive complexes similar to those at Thierry contain sulphides with a Cu:Ni ratio of 2:l and a pyrrhotite:chalcopyrite ratio of 10:1. At the Thierry Deposit, the Cu:Ni ratio is 8:1 and the pyrrhotite:chalcopyrite ratio is 1:1. The elevated contents of Cu and chalcopyrite relative to Ni and Fe and pentlandite and pyrrhotite is attributed to the greater mobility of Cu in the presence of hydrothermal fluids during shear deformation and metamorphism.

The copper, nickel, and platinum-group metals at Thierry were concentrated originally as orthomagmatic sulphide deposits related to mafic-ultramafic intrusive rocks (gabbro, pyroxenite and peridotite). Subsequently, the metals were remobilized into the chlorite-biotite schist shear zone. The geometry of this hydrothermally-altered deformation corridor is of prime importance for exploration, because these rocks host the dominant breccia and mylonite styles of mineralization.

1.4 DATA VERIFICATION

Site visits to the Thierry Property were undertaken in 2005, 2010, 2011 and 2024 for independent sampling and data verification purposes. Based on the independent due diligence sampling of drill core and data verification results, the Authors conclude that the data are satisfactory for use in this current Report.

1.5 CONCLUSIONS AND RECOMMENDATIONS

The Thierry Property is a predominantly copper sulphide Property consisting of 27 mining leases totalling and 179 mining claims covering an area 7,997 ha in the Patricia Mining Division of northwestern Ontario. Magmatically formed and structurally hosted and associated copper-nickel (PGE) sulphides are currently defined in two historically mined deposits, Thierry and K1-1, on the Property. Several additional copper-nickel mineralized and gold mineralized occurrences are known on the Property.

The Property benefits significantly from excellent access and close proximity to the Community of Pickle Lake and the historical Patricia Gold Mining Camp. Mineral exploration and mining have been major components of the local economy. Access and weather conditions allow for exploration and development work to be conducted year-round.

Additional expenditures for data compilation and validation, drill core sampling and assaying, and geological mapping, modelling and interpretation are warranted to advance the Thierry Project. Specifically, the Authors recommend completion of the following tasks:

- Completing data compilation and verification work to validate the most recent historical Mineral Resource and identify new targets for expansion drilling. The drill hole database should be converted from Imperial to SI (metric) units. Level plans and diamond drill hole data could be utilized to generate detailed 3-D models of the

- Mineralized zones, the carbonate-biotite schist/mylonite, the ultramafic intrusive rocks and, if possible, the sedimentary rocks. These models would provide important constraints on the relative importance of structural controls on the current distribution of the sulphide mineralization;

- Performing 3-D inversions of IP/resistivity and electromagnetic geophysical survey data collected during the 2004 and 2011 exploration programs to identify new targets for drill testing. In addition, the possibility of downhole electromagnetic surveys should be considered, particularly for the most recent drilling, to detect the presence of off-hole conductors. The copper-rich nature of the known mineralization together with the presence of ultramafic rocks suggests potential for the presence of nickel-dominated sulphide mineralization nearby;

- Assaying of available samples from previous and historical drill holes where assaying was incomplete; and

- Adding drill core storage racks.

The estimated cost of the recommended work program is CAD$236,000 (Table 1.1), which includes 10% contingency (without applicable taxes). The recommended program should be completed in the next 6 to 12 months.

Table 1.1
Estimated Budget for Recommended 2025 Program

Activity	Number Units	Units	Unit Cost	Cost (CAD$)
Geological Compilation, Data Validation, Project Management	6	months	11,667	70,002
IP/Resistivity 3D Inversion				1,500
Magnetics 3-D Inversion				3,000
Collar Validation and Field Work	15	work days	500	7,500
Assaying	1,033	samples	82	84,706
Shipping to ALS Thunder Bay				1,000
Management Fee				11,931
Technical Support	15	work days	400	6,000
Core Racks	2	new core racks	1,200	2,400
Site Preparation for Core Racks				4,500
Travel, Camp, Meals				8,000
Report Update and Filing				14,000
Contingency (10%)				21,454
Total				**235,993**

2.0 INTRODUCTION AND TERMS OF REFERENCE

2.1 TERMS OF REFERENCE

P&E Mining Consultants Inc. ("P&E") was retained by QC Copper and Gold Inc. ("QC Copper" or the "Company") to prepare a Technical Report on the past-producing Thierry Copper-Nickel Mine Property (the "Thierry Property", the "Property" or the "Project"). On December 9, 2024, QC Copper announced a name change to XXIX Metal Corp. ("XXIX Metal"). The Thierry Property is located 12 km west of the Community of Pickle Lake and 450 km north of the City of Thunder Bay in northwestern Ontario, Canada.

This Technical Report (the "Report") was prepared pursuant to NI 43-101 regulations and guidelines by P&E Mining Consultants Inc., at the request of Mr. Stephen Stewart, CEO and Director of XXIX Metal, a public company incorporated under the laws of the Province of British Columbia. XXIX Metal is a reporting issuer and trades on the TSX Venture Exchange ("TSXV") with the symbol "XXIX". The Company has its corporate office located at:

Suite 1805
55 University Avenue
Toronto, Ontario
M5J 2H7

Telephone number: 416-644-1567
Fax number: 416-367-1954
Website: www.qccopper.com

In October 2024, QC Copper announced a binding agreement to acquire Cuprum and its 100% owned Thierry Property in an all share deal (for details of the transaction terms, see Section 4.3 of this Report). The Acquisition was approved by the TSXV and QC Copper shareholders, closed December 9, 2024 and QC Copper changed its name to XXIX Metal.

The purpose of this Report is to provide an independent, NI 43-101 Technical Report on the Thierry Property. This Report is prepared in accordance with the requirements of NI 43-101F1 of the Ontario Securities Commission ("OSC") and the Canadian Securities Administrators ("CSA"). This Report is considered current as of the effective date of October 24, 2024. There has been no material change to the Property between the effective date and the signature date of this Report.

The Authors of this Report (the "Authors") understand that it will support the public disclosure requirements of XXIX Metal and will be filed on SEDAR+ as required under NI 43-101 disclosure regulations.

2.2 SOURCES OF INFORMATION

2.2.1 Independent Site Visits

Mr. David Burga, P.Geo., an independent Qualified Person under the terms of NI 43-101, visited the Thierry and K1-1 Deposits on January 24, 2024 for the purpose of a site visit and completion of an independent verification sampling program. The results of the data verification sampling are presented in Section 12 of this Report.

Previously, Mr. Eugene Puritch, P.Eng., an independent Qualified Person under the terms of NI 43-101, conducted site visits to the Property on December 15, 2005, May 5, 2010 and again on June 2, 2011. Data verification drill core sampling programs were conducted as part of the on-site reviews. The results of that data verification sampling program are presented in Section 12 of this Report. Mr. Puritch has not returned to the site since that time.

2.2.2 Additional Information Sources

This Technical Report is based, in part, on internal Company technical reports, and maps, published government reports, Company letters and memoranda, and public information as listed in the "References" section (Section 27) at the conclusion of this Technical Report. The Authors have not conducted detailed land status evaluations, and has relied upon existing reports, public documents, and statements by previous owners regarding the Property tenure and status, third party agreements, and legal title to the Property. Additional details of this topic can be found in the public filings of Orecap and are available on SEDAR+ at www.sedarplus.ca.

This Report is prepared in accordance with the requirements of National Instrument 43-101 ("NI 43-101") and in compliance with Form NI 43-101F1 of the Ontario Securities Commission ("OSC") and the Canadian Securities Administrators ("CSA").

Table 2.1 presents the Authors and Co-authors of each section of this Report, who acting as Qualified Persons as defined by NI 43-101, take responsibility for those sections of the Report as outlined in Section 28 Certificates of Author.

Table 2.1 Qualified Persons Responsible for this Technical Report		
Qualified Person	**Contracted by**	**Sections of Technical Report**
Mr. Eugene Puritch, P.Eng., FEC, CET	P&E Mining Consultants Inc.	2, 3, 4, 5, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 and Co-author 1, 12, 25, 26, 27
Mr. David Burga, P.Geo.	P&E Mining Consultants Inc.	6, 7, 8, 9, 10, 11, and Co-Author 1, 12, 25, 26, 27

2.3 UNITS AND CURRENCY

Unless otherwise stated, all units used in this Report are metric. Base metal assays (Ni, Cu, Zn) are reported in percent (%), whereas gold, silver and platinum group precious metal assay values (Au, Ag, Pt, Pd) are reported in grams per tonne ("g/t") unless ounces per ton ("oz Au/T") are specifically stated. Canadian dollars (CAD$) are used throughout this Report unless the United States dollars (US$) are specifically stated otherwise. At the time of this Report, the rate of exchange between the US$ and the Canadian dollar is 1 US$ = 0.75 CAD$. Map grid coordinates are given in UTM NAD83 Zone 15U or as latitude and longitude.

2.4 GLOSSARY OF TERMS

Abbreviations of technical terms used throughout the text of this Report are listed in Table 2.2 and units of measurement are listed in Table 2.3.

Table 2.2 **Terminology and Abbreviations (NI 43-101)**	
Abbreviation	**Meaning**
Acquisition, the	QC Copper and Gold Inc., in October 2024, announced a binding agreement to acquire Cuprum Corp. and its 100% owned Thierry Property in an all-share deal. The deal closed December 9, 2024 and QC Copper and Gold Inc. changed its name to XXIX Metal Corp.
Au	gold
Auteco	Auteco Minerals Ltd.
Authors, the	the authors of this Technical Report
Bi	bismuth
Braveheart	Braveheart Resources Inc.
CAD$	Canadian Dollars
Cadillac	Cadillac Ventures Inc.
CALA	the Canadian Association for Laboratory Accreditation Inc.
CBS	Carbonate-biotite schist
CCMI	Canadian Critical Metals Inc.
CIM	Canadian Institute of Mining, Metallurgy, and Petroleum
Closing Date	closing date of the transactions for the Orecap acquisition of a controlling interest in Cuprum Corp., announced October 31, 2023
cm	centimetre(s)
CMC	Carboxymethyl cellulose
CNR	Canadian National Railway
Co	cobalt
Company, the	Cuprum Corp.
conc	concentrate
CRM	certified reference material
CSA	Canadian Securities Administrators
Cu	copper
CuEq	copper equivalent
Cuprum	Cuprum Corp.
DDH	diamond drill hole
$M	dollars, millions
EM	electromagnetic
Fe	iron
First Mining	First Mining Gold Corp.
ft	foot, feet
g	gram
g/t	grams per tonne
ha	hectare(s)
ICP	inductively coupled plasma
ICP-OES	inductively coupled plasma – optical emission spectrometry
ID	identification
ID^2	inverse distance squared

Table 2.2 **Terminology and Abbreviations (NI 43-101)**	
Abbreviation	**Meaning**
IP	induced polarization
IRR	internal rate of return
ISO	International Organization for Standardization
JVX	JVX Ltd.
k	thousand(s)
kg	kilograms(s)
km	kilometre(s)
kt	thousands of tonnes, kilotonnes
kW	kilowatt(s)
kWh	kilowatts per hour
Lakefield	Lakefield Research, Ontario now SGS
lb	pound (weight)
level	mine working level referring to the nominal elevation (m RL), e.g., 4285 level (mine workings at 4285 m RL)
M	million(s)
m	metre(s)
m^3	cubic metre(s)
m asl	metres above sea level
Ma	millions of years
Meeting, the	The special meeting of shareholders to approve the Acquisition
Mlb	millions of pounds
mm	millimetre
MOU	Memorandum of Understanding
MS	mass spectrometer
Mt	mega tonne or million tonnes
N	north
NAD	North American Datum
Newmont	Newmont Corporation
Ni	nickel
NI	National Instrument
Noranda	Noranda ore dressing laboratory of Noranda Mines, Québec or Noranda Mines
NPV	net present value
NSR	net smelter return
Orecap	Orecap Investment Corp.
OSC	Ontario Securities Commission
oz	ounce
oz/t	ounce per tonne
P&E	P&E Mining Consultants Inc.
Pd	palladium
PEA	Preliminary Economic Assessment

TABLE 2.2 TERMINOLOGY AND ABBREVIATIONS (NI 43-101)	
Abbreviation	**Meaning**
P.Eng.	Professional Engineer
P.Geo.	Professional Geoscientist
PGE	platinum group elements (herein collectively to mean Pt, Pd, Au, Ag)
PGM	platinum group metals
ppm	parts per million
Project, the	Thierry Copper-Nickel (PGE) Property, including the historic Thierry Mine and the K1-1 Deposit
Property, the	Thierry Copper-Nickel (PGE) Property, including the historic Thierry Mine and the K1-1 Deposit
Pt	platinum
QA/QC	quality assurance/quality control
QC	Quality Control
QC Copper	QC Copper and Gold Inc.
QMS	quality management system
Report, the	this Technical Report
Richview	Richview Resources Inc.
S	south
S	sulphur
Salman	Salman Mineral Research, Montreal
SCC	Standards Council of Canada
SEDAR	System for Electronic Document Analysis and Retrieval
t	metric tonne(s)
t/m^3	tonnes per cubic metre
Te	tellurium
Technical Report	this NI 43-101 Technical Report
Thierry Project	Thierry Mine Property, including the historical Thierry Mine and the K1-1 Deposit
TSX-V	Toronto Stock Exchange Venture Exchange
U of L	Louvain University, Belgium
UMEX	Union Miniere Exploration and Mining Inc. or Union Miniere Explorations and Mining Corporation
US$	United States dollar(s)
UTM	Universal Transverse Mercator grid system
VLF	very low frequency
WGM	Watts, Griffis and McOuat Limited
XPS	Xstrata Process Support
XXIX Metal	XXIX Metal Inc. (former QC Copper and Gold Inc.)
Zn	zinc

TABLE 2.3
UNIT MEASUREMENT ABBREVIATIONS

Abbreviation	Meaning	Abbreviation	Meaning
µm	microns, micrometre	m^3/d	cubic metre per day
$	dollar	m^3/h	cubic metre per hour
$/t	dollar per metric tonne	m^3/s	cubic metre per second
%	percent sign	m^3/y	cubic metre per year
% w/w	percent solid by weight	mØ	metre diameter
¢/kWh	cent per kilowatt hour	m/h	metre per hour
°	degree	m/s	metre per second
°C	degree Celsius	MHz	megahertz
cm	centimetre	Mt	million tonnes
d	day	Mtpy	million tonnes per year
ft	feet	min	minute
GWh	gigawatt hours	min/h	minute per hour
g/mL, g/ml, g.ml	grams per millilitre	mL	millilitre
g/t	grams per tonne	mm	millimetre
h	hour	Mt	million tonnes or megatonnes
ha	hectare	MV	medium voltage
hp	horsepower	MVA	mega volt-ampere
Hz	hertz	MW	megawatts
k	kilo, thousands	oz	ounce (troy)
kg	kilogram	Pa	pascal
kg/t	kilogram per metric tonne	pH	measure of acidity
kHz	kilohertz	ppb	part per billion
km	kilometre	ppm	part per million
kPa	kilopascal	s	second
kt	thousands of tonnes or kilotonnes	t or tonne	metric tonne
kV	kilovolt	tpd	metric tonne per day
kW	kilowatt	t/h	metric tonne per hour
kWh	kilowatt-hour	t/h/m	metric tonne per hour per metre
kWh/t	kilowatt-hour per metric tonne	t/h/m^2	metric tonne per hour per square metre
L	litre	t/m	metric tonne per month
L/s	litres per second	t/m^2	metric tonne per square metre
L/min, l/min	liters per minute	t/m^3	metric tonne per cubic metre
L/h/m^2, l/h/m^2, L/hr/m^2, l/hr/m^2	liters per hour per square metre	T	short ton
lb	pound(s)	tpy	metric tonnes per year
M	million	V	volt
m	metre	W	watt

Table 2.3 Unit Measurement Abbreviations			
Abbreviation	**Meaning**	**Abbreviation**	**Meaning**
m^2	square metre	wt%	weight percent
m^3	cubic metre	yr	year

3.0 RELIANCE ON OTHER EXPERTS

The Authors have assumed that all the information and technical documents listed in the References section (Section 27) of this Report are accurate and complete in all material aspects. Although the Authors have carefully reviewed all the available information presented, they cannot guarantee its accuracy and completeness. The Authors reserve the right, but will not be obligated to revise the Report and conclusions, if additional information becomes known to them subsequent to the effective date of this Report.

Although selected copies of the tenure documents, operating licenses, permits, and work contracts were reviewed, an independent verification of land title and tenure was not performed. The Authors have not reviewed or verified the legality of any underlying agreement(s) that exist concerning the claims, leases and licenses or other agreement(s) between third parties. Information on tenure and permits was obtained from XXIX Metal. Selected information was verified by the Authors.

Copies of the tenure documents, operating licenses, permits, and work contracts were not reviewed. Information relating to tenure was reviewed on October 24, 2024 by means of the public information available on the Ontario government websites at: www.lioapplications.lrc.gov.on.ca/MLAS and www.geologyontario.mndm.gov.on.ca/ogesearth. The Authors have relied on this public information and tenure information from XXIX Metal and have not undertaken an independent detailed legal verification of title and ownership of the Thierry Property. The Authors have not verified the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties, but have relied on, and considers that it has a reasonable basis to rely on XXIX Metal to have conducted the proper legal due diligence.

The Authors have reviewed and interpreted the historical documentation of data and observations of past activities by previous claim holders and exploration personnel who operated in the vicinity of the Thierry Property area. The majority of this information is located within internal reports and memorandums of historical claim holders for this Property. The information concerning Adjacent Properties in Section 23 of this Technical Report is in the form of a published NI 43-101 Technical Report and information available at: www.lioapplications.lrc.gov.on.ca/MLAS and www.geologyontario.mndm.gov.on.ca/ogesearth. The list of information used to complete this Report is located herein under Section 27 References.

Draft copies of this Report have been reviewed for factual errors by XXIX Metal. Any changes made as a result of these reviews did not involve any alteration to the conclusions made. Hence, the statement and opinions expressed in this Report are given in good faith and in the belief that such statements and opinions are not false and misleading at the effective date of this Report.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 LOCATION

The Thierry Project is located 12 km west-northwest of the Community of Pickle Lake, which is situated 450 km north-northwest of the City of Thunder Bay, Ontario (Figure 4.1). The Property is covered mainly by NTS Map Sheets 52O08 and 52O09, and its geographical centre lies at approximately Latitude 51°29’48” N and Longitude 90°20’52” W, or in NAD83 Zone 15U at approximately 684,100 m E and 5,708,400 m N.

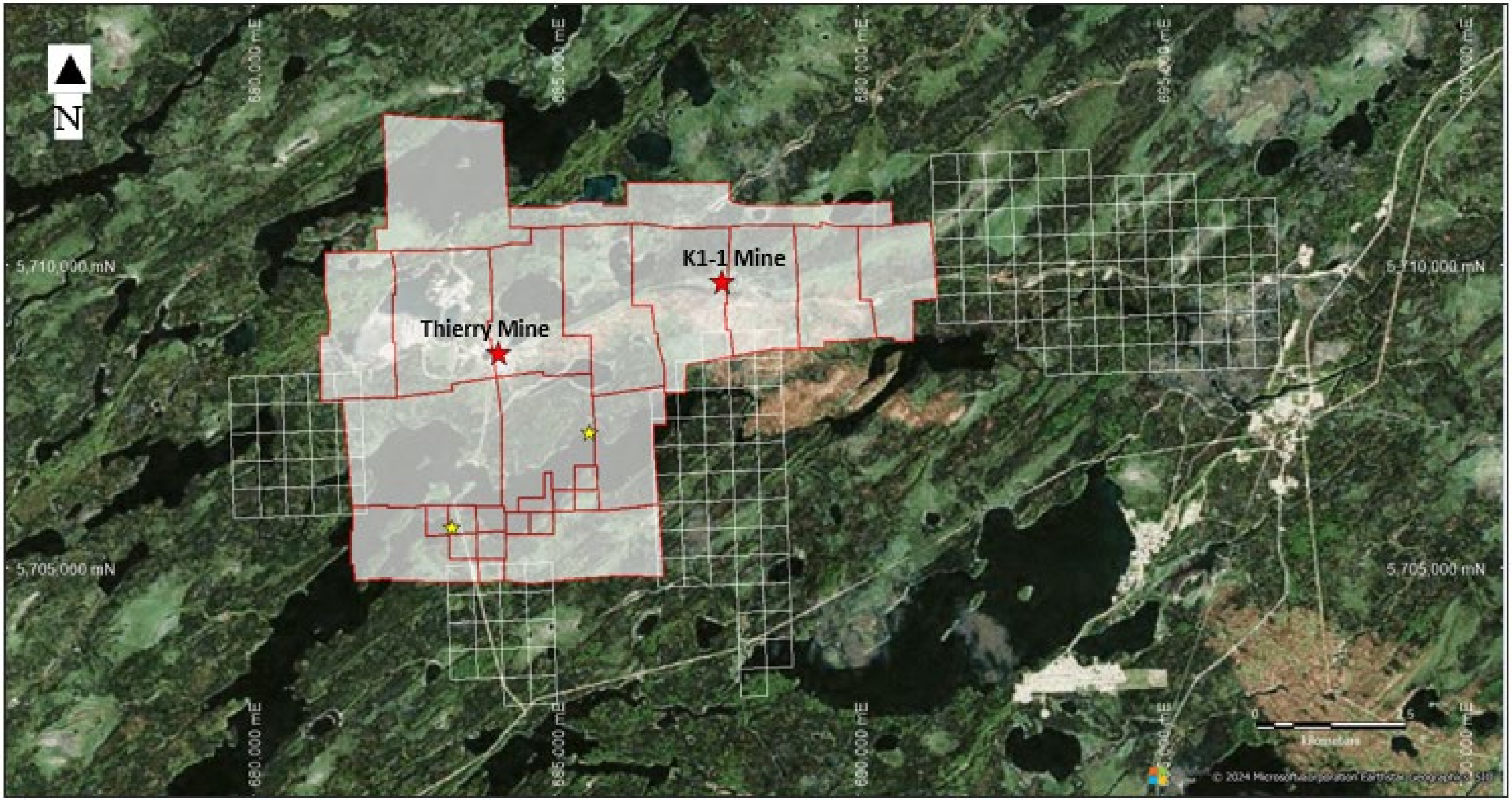
FIGURE 4.1 LOCATION MAP

Source: *Natural Resources Canada (2002)*

4.2 DESCRIPTION AND MINERAL TENURE

The Thierry Property consists of 27 mining leases and 179 mining claims (Figure 4.2). The mining leases cover a total area of 4.669 ha. Nine of the leases have mining rights and 18 have mining rights and surface rights (Table 4.1). The 179 mining claims are listed in Table 4.2, of which 163 are single cell claims and 16 are boundary claims. All of the claims are in good standing as of the effective date of this Report. However, $106,200 worth of assessment work is required to be filed annually to maintain their good standing. The total combined Property area is 7,997 ha. The mining leases and the claims are held 100% by Pickle Lake Minerals Inc. (a private subsidiary company of CCMI), which was the precursor company to Cuprum, as explained below.

Figure 4.2 Claim Map of the Thierry Property



Source: *P&E (January 2024)*
Notes: *Claims information effective October 24, 2024*
The 27 mining leases are shown in red outline and the 179 mining claims shown in grey outline.

TABLE 4.1
MINING LEASES OF THE THIERRY PROPERTY*

Lease ID	Claim/ Disposition ID	Tenure Type	Ownership (100%)	Tenure Rights	Area (ha)	Expiry Date	Status
LEA-109372	PA15462	Mining Lease	Cuprum Corp.	Mining and Surface Rights	15.03	20331030	active
LEA-109362	PA17490	Mining Lease	Cuprum Corp.	Mining Rights only	17.35	20331030	active
LEA-109369	PA20896	Mining Lease	Cuprum Corp.	Mining Rights only	19.88	20331030	active
LEA-109371	PA15461	Mining Lease	Cuprum Corp.	Mining and Surface Rights	13.40	20331030	active
LEA-109366	PA20891	Mining Lease	Cuprum Corp.	Mining Rights only	15.22	20331030	active
LEA-109370	PA21124	Mining Lease	Cuprum Corp.	Mining Rights only	19.41	20331030	active
LEA-109363	PA20880	Mining Lease	Cuprum Corp.	Mining Rights only	18.76	20331030	active
LEA-110054	CLM214	Mining Lease	Cuprum Corp.	Mining and Surface Rights	226.13	20420831	active
LEA-109373	PA15464	Mining Lease	Cuprum Corp.	Mining Rights only	13.01	20331030	active
LEA-108170	CLM320	Mining Lease	Cuprum Corp.	Mining Rights only	263.43	20281130	active
LEA-109365	PA20876	Mining Lease	Cuprum Corp.	Mining Rights only	19.67	20331030	active
LEA-109748	CLM193	Mining Lease	Cuprum Corp.	Mining and Surface Rights	285.23	20380830	active
LEA-109749	CLM194	Mining Lease	Cuprum Corp.	Mining and Surface Rights	374.22	20380830	active
LEA-109750	CLM195	Mining Lease	Cuprum Corp.	Mining and Surface Rights	373.58	20380830	active
LEA-109756	CLM192	Mining Lease	Cuprum Corp.	Mining and Surface Rights	448.89	20380830	active
LEA-109752	CLM197	Mining Lease	Cuprum Corp.	Mining and Surface Rights	192.38	20380830	active
LEA-109755	CLM200	Mining Lease	Cuprum Corp.	Mining and Surface Rights	266.52	20380830	active
LEA-109753	CLM198	Mining Lease	Cuprum Corp.	Mining and Surface Rights	291.86	20380830	active
LEA-109754	CLM199	Mining Lease	Cuprum Corp.	Mining and Surface Rights	201.64	20380830	active
LEA-109751	CLM196	Mining Lease	Cuprum Corp.	Mining and Surface Rights	485.89	20380830	active
LEA-109367	PA20894	Mining Lease	Cuprum Corp.	Mining Rights only	14.32	20331030	active
LEA-109368	PA20895	Mining Lease	Cuprum Corp.	Mining and Surface Rights	21.93	20331030	active
LEA-110051	CLM213	Mining Lease	Cuprum Corp.	Mining and Surface Rights	242.49	20420831	active
LEA-109364	PA20875	Mining Lease	Cuprum Corp.	Mining and Surface Rights	22.63	20331030	active

Table 4.1 Mining Leases of the Thierry Property*							
Lease ID	**Claim/ Disposition ID**	**Tenure Type**	**Ownership (100%)**	**Tenure Rights**	**Area (ha)**	**Expiry Date**	**Status**
LEA-110055	CLM215	Mining Lease	Cuprum Corp.	Mining and Surface Rights	198.68	20420831	active
LEA-110052	CLM212	Mining Lease	Cuprum Corp.	Mining and Surface Rights	341.50	20420831	active
LEA-110053	CLM211	Mining Lease	Cuprum Corp.	Mining and Surface Rights	266.18	20420831	active
Total		**27 Mining Leases**			**4,669.23**		

Source: *www.lioapplications.lrc.gov.on.ca/MLAS and www.geologyontario.mndm.gov.on.ca/ogesearth.*
Note: **Mining lease information effective October 24, 2024.*

Table 4.2 Mining Claims of the Thierry Mine Property* (8 pages)						
Claim ID	**Claim Type**	**Holder (100%)**	**Work Required (C$)**	**Issue Date**	**Due Date**	**Status**
132592	Boundary Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
146079	Boundary Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
162633	Boundary Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
168052	Boundary Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
202108	Boundary Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
202110	Boundary Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
213397	Boundary Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
222216	Boundary Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
225481	Boundary Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
241451	Boundary Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
249389	Boundary Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
276174	Boundary Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
295539	Boundary Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
308761	Boundary Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
315982	Boundary Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
330778	Boundary Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
105436	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
105437	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
106889	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
106890	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
107351	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
113758	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
113759	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active

Table 4.2 Mining Claims of the Thierry Mine Property* (8 pages)						
Claim ID	**Claim Type**	**Holder (100%)**	**Work Required (C$)**	**Issue Date**	**Due Date**	**Status**
113763	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
114109	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
126990	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
127398	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
127445	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
128684	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
132590	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
132591	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
132657	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
132658	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
132659	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
136385	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
137330	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
137331	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
138928	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
138929	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
138930	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
138931	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
139495	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
140670	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
144888	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
144889	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
144944	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
144945	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
144946	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
148700	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active

Table 4.2
Mining Claims of the Thierry Mine Property* (8 pages)

Claim ID	Claim Type	Holder (100%)	Work Required (C$)	Issue Date	Due Date	Status
151199	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
151200	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
153241	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
154678	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
160733	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
160734	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
166063	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
168053	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
168115	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
168116	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
169347	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
169846	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
173491	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
173492	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
173506	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
173507	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
173545	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
175336	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
181561	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
183313	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
183314	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
187802	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
187803	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
189002	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
189350	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
189351	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active

Table 4.2 Mining Claims of the Thierry Mine Property* (8 pages)						
Claim ID	**Claim Type**	**Holder (100%)**	**Work Required (C$)**	**Issue Date**	**Due Date**	**Status**
189352	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
189353	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
189354	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
190902	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
191430	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
191470	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
191471	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
196809	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
196813	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
197371	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
201183	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
203558	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
203576	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
203623	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
204823	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
204826	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
205398	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
207337	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
207338	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
209729	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
210166	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
210262	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
213372	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
219183	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
221924	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
221925	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active

Table 4.2 Mining Claims of the Thierry Mine Property* (8 pages)						
Claim ID	**Claim Type**	**Holder (100%)**	**Work Required (C$)**	**Issue Date**	**Due Date**	**Status**
225453	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
226627	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
226628	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
228767	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
232068	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
232069	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
232070	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
234086	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
234087	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
234088	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
234153	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
236417	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
236418	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
237666	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
238764	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
238765	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
239606	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
239607	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
239608	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
240133	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
240166	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-01-06	Active
242062	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
242063	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
247586	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
247648	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
247649	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active

Table 4.2
Mining Claims of the Thierry Mine Property* (8 pages)

Claim ID	Claim Type	Holder (100%)	Work Required (C$)	Issue Date	Due Date	Status
247650	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
250626	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
250627	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
255997	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
255998	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
256334	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
258184	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
261349	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
263334	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
263335	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
263353	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
263354	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
263423	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
263424	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
267799	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
270830	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
271403	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
271404	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
273317	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
274417	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
274418	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
283451	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
283455	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
283511	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
285146	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
286792	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active

Table 4.2 Mining Claims of the Thierry Mine Property* (8 pages)						
Claim ID	**Claim Type**	**Holder (100%)**	**Work Required (C$)**	**Issue Date**	**Due Date**	**Status**
288491	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
288492	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
291488	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
291489	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
293251	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
294736	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
294754	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
300659	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
301234	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
304411	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
307497	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
307498	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
308762	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
311724	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
314200	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
317984	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
321878	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
322689	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-09-07	Active
323882	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
324841	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
330782	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
331362	Single Cell Mining Claim	Cuprum Corp.	200	2018-04-10	2025-01-06	Active
331363	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
335093	Single Cell Mining Claim	Cuprum Corp.	800	2018-04-10	2025-09-07	Active
344803	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active
344804	Single Cell Mining Claim	Cuprum Corp.	400	2018-04-10	2025-01-06	Active

Table 4.2 Mining Claims of the Thierry Mine Property* (8 pages)						
Claim ID	**Claim Type**	**Holder (100%)**	**Work Required (C$)**	**Issue Date**	**Due Date**	**Status**
Total	**179 mining claims**		**106,200**			

Source: *www.lioapplications.lrc.gov.on.ca/MLAS and www.geologyontario.mndm.gov.on.ca/ogesearth.*
Note: **Mining claims information effective October 24, 2024*

4.3 THIERRY ACQUISITION AGREEMENTS

4.3.1 Orecap Acquisition of Cuprum

Orecap Investment Corp. ("Orecap") announced on October 31, 2023, that it had completed acquisition of a controlling interest in Cuprum Corp. (formerly Pickle Lake Minerals Inc.), a private subsidiary company of Canadian Critical Metals Inc. ("CCMI"), which holds 100% interest in the Thierry Property. Orecap acquired the 45% interest in Cuprum Corp. ("Cuprum") for $1,350,000. CCMI will receive 3,000,000 share purchase warrants of Cuprum with the following terms:

- 1,000,000 warrants with an exercise price of $0.10 per common share of Cuprum and exercisable for a period of one year from closing of the transaction ("Closing Date");
- 1,000,000 warrants with an exercise price of $0.15 per common share of Cuprum and exercisable for a period of two years from Closing Date; and
- 1,000,000 warrants with an exercise price of $0.20 per common share of Cuprum and exercisable for a period of three years from Closing Date.

Additionally, Cuprum is required to make milestone payments to CCMI of $500,000 should the Mineral Resource at Thierry be increased to ≥100 million tonnes and (or) ≥1.0 billion lb of copper and an additional $250,000 should the Mineral Resource at Thierry be increased to ≥150 million tonnes and (or) ≥1.5 billion lb of copper.

QC Copper, like Orecap, is also part of the Ore Group of Companies, had acquired a 10% interest in Cuprum for $300,000.

4.3.2 QC Copper and Gold Acquisition of Cuprum

QC Copper announced on October 1, 2024, that it had reached an agreement to acquire Cuprum and its 100% owned Thierry Copper-Nickel Project in an all-share deal. Pursuant to the terms of the share purchase agreement with the principal shareholders of Cuprum (which collectively owned 41.3% of Cuprum) and the offer to purchase that was issued to all the other shareholders of Cuprum, QC Copper was to issue 1.1538 common shares of QC Copper for every Cuprum common share, based on QC Copper's share price of $0.13. In total, QC Copper was to issue an aggregate of 82.76 million QC Copper Shares in connection with the Acquisition, to secure full ownership of Cuprum's assets, including the multi-billion-pound Thierry Copper Project.

This Acquisition was subject to approval from the TSXV and QC Copper's disinterested shareholders, with an annual general and special meeting of shareholders held in December 2024 (the "Meeting"). Full details of the Acquisition were included in the management information circular mailed to shareholders in connection with the Meeting. Following these approvals, the acquisition closed December 9, 2024.

Following the completion of the Acquisition, QC Copper changed its name to XXIX Metal Corp., with a new TSXV ticker symbol XXIX, which represents copper's atomic number, 29.

To the extent known, except for the milestone payments noted above, there are no royalties, payments, or other agreements and encumbrances to which the Property is subject.

4.4 ENVIRONMENTAL AND PERMITTING

Both the Thierry and K1-1 Deposits are considered to be advanced exploration stage projects, as development or pre-development programs are not currently being undertaken. The most recent work program conducted on the Thierry Property was the 2023 drilling program by CCMI. There are no known environmental liabilities to which the Property is subject.

4.4 FIRST NATION AND LOCAL COMMUNITY CONSULTATIONS

The Ontario government expresses assurances that the mineral rights in the province belong to the Crown. It is, however, a common course in mineral exploration to work with First Nations groups that have recognized territorial rights in the area. This work could take several steps with the first being a Memorandum of Understanding ("MOU") between the Company and the respective First Nations groups. At later stages of development, this MOU potentially forms the foundation of a full Benefits Agreement between the parties.

The Investment Agreement document between Orecap, Pickle Lake Minerals Inc. (now Cuprum) and CCMI states that there is no Indigenous Claim with respect to the Company or, to the knowledge of the Company, the Mining Claims or any related lands, that is pending or threatened by any Indigenous Group. Furthermore, the Company has satisfied any duty to consult or accommodate any Indigenous Groups. The Company is not a party to any Contract with, have made any written or verbal commitment, or have any written obligation to an Indigenous Group with respect to the Company, the Mining Claims, or any related lands.

Pickle Lake (population ~398; Census Canada, 2021) is the nearest main community in the area, with tourism, recreation and forestry as the main economic activities. The Thierry Project could have a major economic impact on the community, because mine access by the 19 km road would be from Pickle Lake. The community could also be a housing location for off-shift Thierry workers who may commute to Pickle Lake for work by air or road from larger communities, such as Winnipeg or Thunder Bay. Consultation would be undertaken with the local public and various stakeholders to agree on necessary community infrastructure upgrades and opportunities.

4.5 STATUS OF EXPLORATION EXPENDITURES

As of the effective date of this Report, the accumulated total exploration expenditures incurred within the 36-month period preceding the listing application were at least CAD$589,763. Of this total, CAD$328,466 were spent on the 2023 diamond drilling itself, CAD$212,788 on design and supervision of the 2023 drill program, and CAD$48,509 on assaying of selected 2023 drill core samples. These exploration data gathering activities are described in more detail in Section 6 of this Report.

4.6 RISKS TO ACCESS OR ABITILITY TO PERFORM WORK

To the extent known, and apart from the land encumbrances noted above, the Author is not aware of any other significant factors or risks that may affect access, title or right or ability to perform work on the Thierry Property.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 LOCATION AND ACCESS

The Thierry Property is accessible by 19 km all-weather road from the Community of Pickle Lake (Figure 5.1). The access road from Pickle Lake was completed by UMEX in 1972. The Township of Pickle Lake (population 398; Census Canada, 2021) is accessed by Provincial Highway No. 599, approximately 300 km north of the Town of Ignace on the Trans-Canada Highway No. 17. There is a local airport situated 1.3 km southwest of Pickle Lake, with flights to Thunder Bay and Sioux Lookout. The Canadian National Railway ("CNR") passes through the Town of Savant Lake, ~170 km southwest of Pickle Lake.

5.2 CLIMATE, PHYSIOGRAPHY AND WILDLIFE

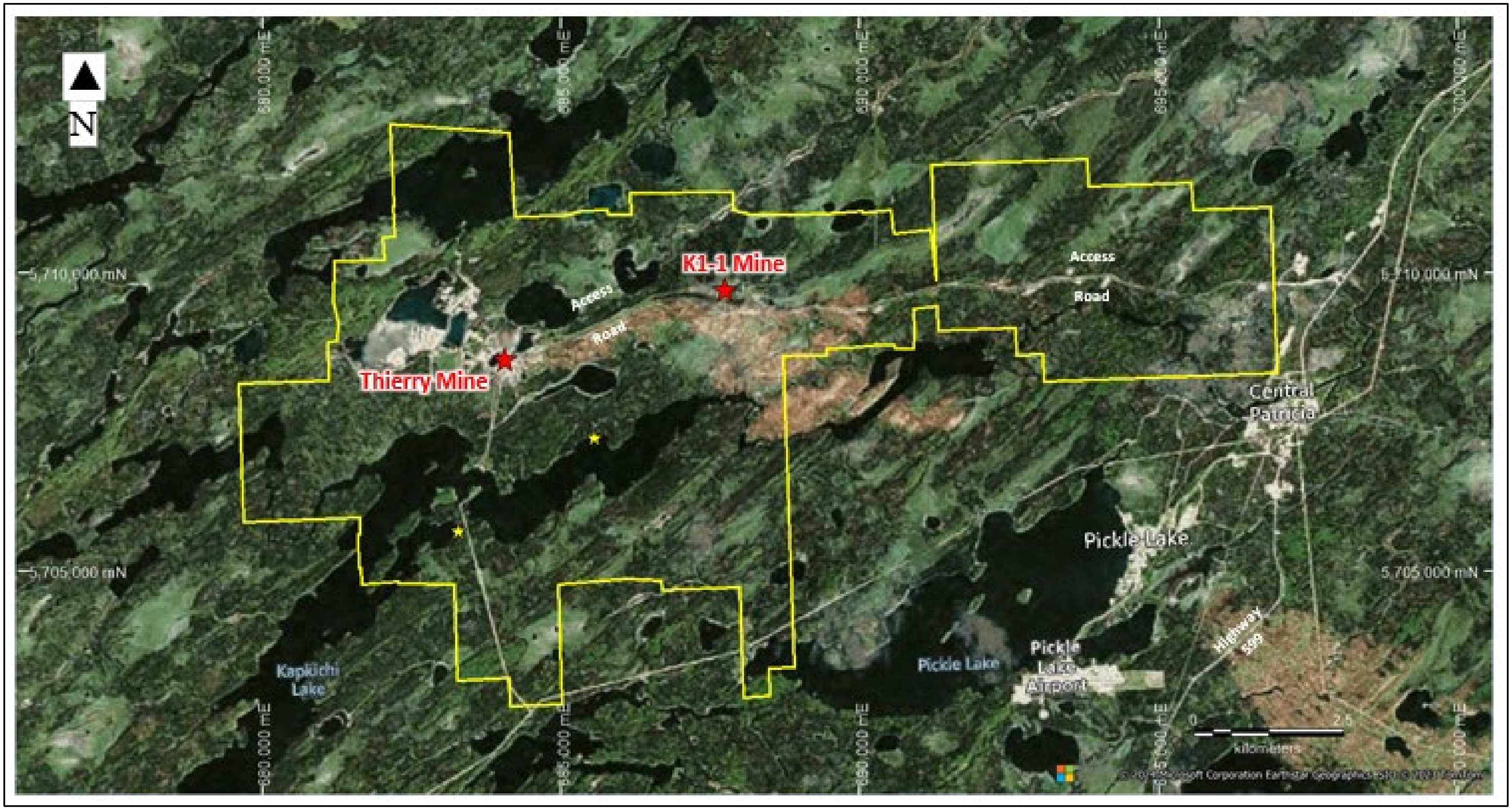
The climate is typical of northern areas within the Canadian Shield, with long cold winters and short warm to hot summers. Temperatures range from -30°C in the winter to 30°C in the summer. The average annual rainfall is 48 cm and annual snowfall is 263 cm. The climate is suitable for exploration year-round, particularly diamond drilling. Other non-geological/geochemical work can be undertaken at any time of the year, except for limited access during the 4-week "Spring Break-up" period, when most gravel roads are not suitable for driving and load restrictions on the paved highways are in place.

The Pickle Lake area is characterized by a gentle topography of flat-lying areas, gently rolling hills <35 m in height, and lakes, creeks and swamps in the intervening valleys. Elevations range from 360 m to 390 m above sea level ("m asl"). The Property is located within the Arctic Watershed and all local streams eventually drain into the Albany River, which drains northeasterly into James Bay. Glacial overburden typically varies from 20 to 50 m thick. Vegetation consists of black and white spruce and minor balsam poplar. Animal life includes black bear, wolves, moose, rabbits, various migratory birds and various species of fish, including lake trout, pike and pickerel.

5.3 INFRASTRUCTURE

General mining-related infrastructure in the Pickle Lake area is adequate to support a moderate size mining operation, with an available workforce and amenities such as power, paved roads, airport, housing, hospital and a school. Pickle Lake supported a mining and processing operation at the UMEX Thierry Deposit between 1976 and 1982, and the Placer Dome Dona Lake mining operation between 1989 and 1993. The local airport is located ~2.5 km south of Pickle Lake.

FIGURE 5.1 ACCESS TO THE THIERRY PROPERTY FROM PICKLE LAKE



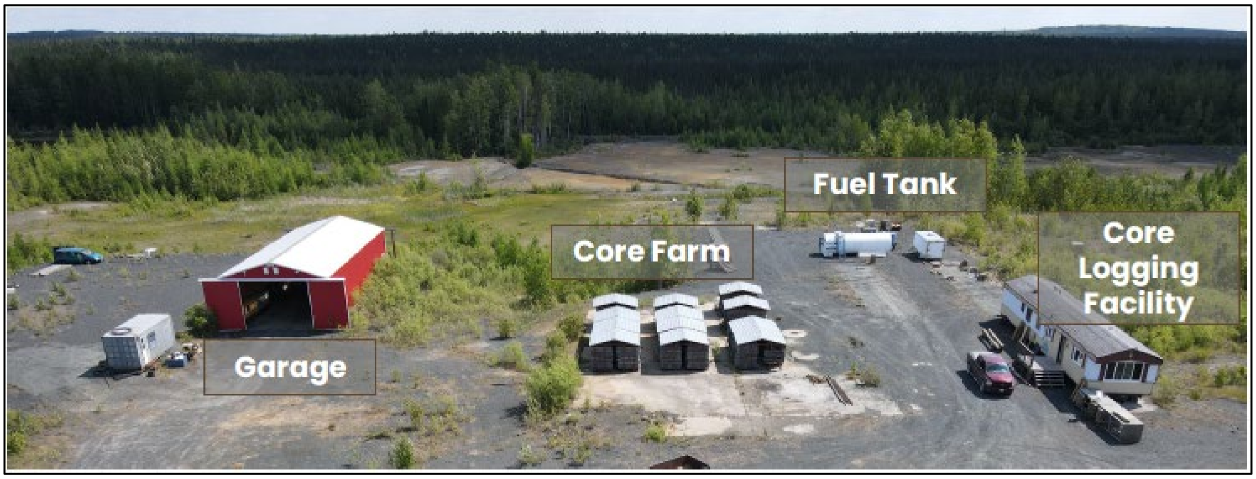
Source: *P&E (January 2024)*
Note: *Thierry Property outlined in yellow.*

The Property is the site of the historical underground Thierry Mine and two open pits (now flooded), a process plant site, a tailings pond (~235 ha) and a freshwater pond (~40 ha) with associated containment structures, and waste rock and low-grade rock stockpiles (Figure 5.2). The mining and processing operation was active from 1976 to 1982. The surface buildings have been removed and the waste rock piles reclaimed. A de-energized power transmission line extended from the Ear Falls-Central Patricia power line and crosses the Kawinigans River at Kapkichi Lake near the location of the historical mine and process plant site. Current site infrastructure at Thierry includes a garage, drill core storage facility, fuel tank and drill core logging facility (Figure 5.3).

FIGURE 5.2 HISTORICAL THIERRY MINE SITE

Source: *modified by P&E (January 2024) after Google Earth (2020) and P&E (2021)*
Notes: *blue arrow points to historical tailings facility; red arrows point to two historical open pits (flooded).*

FIGURE 5.3 THIERRY SITE INFRASTRUCTURE



Source: *Cuprum Corporate Presentation (February 2024)*

6.0 HISTORY

This Report section presents material that is historical in nature and, therefore, much of the terminology used may not be in keeping with modern or current usage. In particular, mineral resource and mineral reserve classifications and related terms may not be considered appropriate or acceptable under NI 43-101, CIM best practices, and current industry standards. However, the context of the source material has been maintained to ensure historical accuracy and the reader is cautioned not to rely on historical information out of context.

In view of when the mineral resources were estimated and the differences in metal prices and operating costs at the time compared to present day, the Company is not treating the historical resources as current Mineral Resources or Mineral Reserves. The historical data are considered important as a conceptual indication of the potential size and grade of the mineral deposits in the area, and these data are relevant to proposed and future exploration efforts.

6.1 HISTORICAL OVERVIEW

A summary of the historical exploration and development activities in the Thierry Property area is provided in Table 6.1. For detailed historical accounts of the Pickle Lake region in general, and of the Thierry Property area in particular, the reader is referred to Curtis (2001), P&E (2006 and 2012), and in other reports listed in Section 27 of this Report.

TABLE 6.1
THIERRY PROJECT – SUMMARY OF HISTORICAL EXPLORATION AND DEVELOPMENT ACTIVITIES

Year	Company	Exploration
1928-1929		Gold was discovered along the banks of the Kawinogans River. Technological advances, mainly air transport, made the area accessible and mining began in 1929. Pickle Lake, being the closest lake to the two new gold mines, became the transportation centre of the area (www.picklelake.ca).
1934-1951	Pickle Crow Gold Mines	The Pickle Crow Gold Mine operated from 1934 to 1951 producing 2,969,720 tonnes of mineralized material grading 15.4 g/t Au (Klein and Day, 1994).
1935-1966	Central Patricia Gold Mines Limited	The Central Patricia Gold Mine, which operated from 1935 to 1966, produced 1,520,000 tonnes of mineralized material at a grade of 12.5 g/t Au, (Klein and Day, 1994; Fyon *et al*., 1992).
1946-1950	Central Patricia Gold Mines Limited	Central Patricia Gold Mines Limited completed drilling programs from 1946 to 1950 on several gabbro hosted copper-nickel prospects in the Kapkichi Lake area.
1946-1947	Albany River, Crowshore Patricia, and Norpic Gold Mines	Albany River Gold Mines sunk a shaft and extracted mineralization, but did not go into commercial production. In 1946, Pickle Crow took over the assets and liabilities of this company. Crowshore Patricia Gold Mines was situated ~3 miles east of Pickle Crow. This company sunk a shaft to

TABLE 6.1
THIERRY PROJECT – SUMMARY OF HISTORICAL EXPLORATION AND DEVELOPMENT ACTIVITIES

Year	Company	Exploration
		550 ft deep. It closed in 1947. Norpic Gold Mines, situated north of Pickle Crow, completed extensive drilling on their property. Dona Lake Gold Mines took an option on this property in 1979 and completed additional diamond drilling.
1956-1966	Kapkichi Nickel Mines Limited	Kapkichi Nickel Mines Limited continued completed geophysical surveys and diamond drilling between 1956 and 1958. Gold mining activity in the Pickle Lake Area ceased by 1966.
1969	UMEX Inc.	On January 1, 1969, Union Miniere Explorations and Mining Corporation ("UMEX") signed a joint-venture agreement with Kapkichi Nickel Mines regarding 12 claims and a one-mile surrounding zone (the "Kapkichi Property"). McPhar Geophysics of Toronto completed ground magnetometer and EM surveys on the agreement area. The actual claims covering the Thierry Deposit were optioned UMEX from Kapkichi Nickel Mines in 1969. In 1969, UMEX completed ground magnetometer and geological mapping surveys on the Kapkichi Property. Follow-up drilling led to the discovery of low-grade copper and nickel mineralization in mafic and ultramafic rocks underlying Kapkichi Lake. Additional drilling in the immediate area by UMEX outlined 4 principal areas with copper-nickel mineralization: the K1-1, K2-1 (later renamed Thierry), G and J anomalies.
1970	UMEX Inc.	Preliminary metallurgical testwork on the Thierry mineralization indicated a much more favourable metallurgical response than the nearby K1-1, K1-2, K2-1, J and G Deposits. In September 1970, the first hole drilled outside the Kapkichi Property area, on the K2-1 anomaly intersected 20 feet of sulphides in biotite and chlorite schist containing 1.24% copper and 0.14% nickel. This was the discovery drill hole of the Thierry Deposit. Following the discovery drill hole, the Thierry Deposit was drilled off on a grid of cross-sections 200 ft apart. In total, 77 drill holes totalling 45,000 ft were completed. The mineralization is now known to cover 4,000 ft in length

TABLE 6.1
THIERRY PROJECT – SUMMARY OF HISTORICAL EXPLORATION AND DEVELOPMENT ACTIVITIES

Year	Company	Exploration
		and to have a vertical depth of at least 2,500 ft. The Deposit was still open at depth.
1971-1976	UMEX Inc.	UMEX awarded Kilborn Engineering a contract to prepare a preliminary Feasibility Study of the Thierry Deposit and to assume the project engineering tasks. The decision to proceed with development of the Deposit was made in 1974.
1976-1982	UMEX Inc.	The Thierry Deposit initially produced from two open pits followed by an underground mine. A total of 52,000 ft (15,850 m) of underground diamond drilling was completed to delineate mineralization. Historical UMEX records indicate production of approximately 5.8 million tons of mineralized material with an average grade of 1.13% Cu and 0.14% Ni, between October 1976 and April 1982 (Novak and Mlot, 2004). Initially only a copper concentrate was produced; by 1981 a small amount of nickel concentrate was produced. Later in the mine life, PGEs were also recovered, as follows: 17,500 troy ounces Pt; 47,000 troy ounces Pd; 17,000 troy ounces Au, and 900,000 troy ounces Ag. The average grades of PGEs reported by UMEX were 0.005 oz/t Au, 0.004 oz/t Pt, and 0.020 oz/t Ag (Gurgurewicz-Luck, 1988). In 1981, UMEX began test mining a large low-grade zone of disseminated copper-nickel mineralization at the K1-1 anomaly.
1987-1989	UMEX Inc.	UMEX staff geologist, D. Unger, implemented re-sampling and assaying of selected diamond drill holes. The PGE studies undertaken between 1987 and 1988 revealed that higher grade nickel-copper zones were coincident with anomalous PGE. An airborne geophysical survey (EM/Resistivity/ Magnetometer/VLF) was flown by DIGHEM in 1988 over the Kibler Lake Stock.
1990-1995	Etruscan Resources Inc.	Etruscan purchased the Property in 1990 with a view to placing it into production.

Table 6.1 **Thierry Project – Summary of Historical Exploration and Development Activities**		
Year	**Company**	**Exploration**
		In 1991, Watts, Griffis and McOuat Limited ("WGM") prepared an economic analysis for the reactivation of the Thierry operation.
2000-2003	PGM Ventures Inc.	In 2002, PGM Ventures completed 25 drill holes totalling 8,952 m to test mineralization at the Thierry Deposit (11 of 25 drill holes) and at other targets on the Property. JVX completed a Time-Domain EM and magnetometer Survey over the Property.
2004-2005	Richview Resources Inc.	Richview conducted a multi-phased drill program to explore the Thierry Deposit and other target areas of the Thierry Project during the period October 2004 to March 2005.
2006	Richview Resources Inc.	An NI 43-101 Mineral Resource Estimate with an effective date of February 1, 2006, was completed by P&E Mining Consultants Inc., and Billiken Management Services Inc. The Mineral Resource consisted of 4,623,000 tonnes of Measured & Indicated Mineral Resources at average grades of 1.81% Cu and 0.20% Ni and of 4,366,000 tonnes of Inferred Mineral Resource at average grades of 1.71% Cu & 0.18% Ni.
2007	Richview Resources Inc.	Richview commenced its summer validation and exploration program on May 9, 2007. A 45,900 ft (14,000 m) drilling program was competed. Surface drilling around the K1-1 open pit area to confirm and validate the historical drilling was completed. A compilation of all mine data was completed. A 3-km corridor of unexplored ground between the Thierry Mine and the K1-1 Deposit was cleared of overburden.
2008	Richview Resources Inc.	Richview committed to an ongoing relationship with the First Nations regarding the company's exploration activities and the Thierry Deposit. A summer work program consisting of excavation, geological mapping, prospecting and geochemical sampling was completed by October 2008. Richview completed its 45,900 ft (14,000 m) deep drill hole program. A Mobile Metal Ion ("MMI") geochemical survey of the Thierry Project was completed.
2010	Cadillac Ventures Inc.	The amalgamation of Cadillac Ventures Inc. and Richview Resources Inc. ("Richview"), pursuant to a three-cornered agreement became effective on Jan 15, 2010.

TABLE 6.1 THIERRY PROJECT – SUMMARY OF HISTORICAL EXPLORATION AND DEVELOPMENT ACTIVITIES		
Year	**Company**	**Exploration**
		Cadillac assumed 100% control of the Thierry Project and conducted drill exploration programs during the period 2010 to 2012.
2020	Braveheart Resources Inc.	Braveheart acquired the Thierry Project from Cadillac Ventures Inc. A 2% net smelter return ("NSR") royalty was retained by Cadillac.
2021	Braveheart Resources Inc.	Braveheart Purchases the 2% NSR royalty from Cadillac for 2.5 million common shares
2023	Canadian Critical Metals Inc.	In July, CCMI completed six diamond drill holes totalling 2,600 m in the K-1 Deposit area

The previous exploration efforts were rewarded in 1971 with the discovery by UMEX of the Thierry Deposit (Sage and Breaks, 1982). The mineralized rocks were not exposed at surface, because the area is covered by an average of 4.5 m of glacial till and fluvial materials. The discovery was made by diamond drill testing of magnetic anomalies, some of which coincided with a significant conductive electromagnetic response.

More recent drilling programs were completed by Cadillac Ventures Inc. ("Cadillac") between 2010 and 2012. The most recent drill program was completed by CCMI in 2023.

In October 2023, Canadian Critical Metals Inc. (formerly Braveheart) completed sale of its controlling interest in its subsidiary company Pickle Lake Minerals Inc. which held 100% interest in the Thiery Property, to Orecap. On closing of the deal, Pickle Lake Minerals Inc. was renamed Cuprum Corp.

6.2 2010 TO 2012 DRILL PROGRAMS - CADILLAC

Summaries of the historical drilling completed by Cadillac in 2010, 2011 and 2012 at the Thierry and K-1 Deposits are provided below.

6.2.1 2010 and 2012 Thierry Drill Programs

Cadillac completed three drill holes in 2010 and 12 drill holes in 2011 on the Thierry Deposit.

In 2010, Cadillac completed three drill holes totalling 3,330 m (10,926 ft) of drilling, on the Thierry Deposit with the intention of testing for continuation of the 2010 P&E Thierry Deposit block model at depth. All three holes intersected mineralization and aided in closing a void in the model where there was no drilling. A table of significant intersections is presented in Table 6.2.

Table 6.2 2010 Thierry Drilling Program - Significant Intercepts and Assay Results							
Drill Hole ID	**Azimuth (°)**	**Dip (°)**	**From (ft)**	**To (ft)**	**Length (ft)**	**Cu (%)**	**Ni (%)**
CV-10-06B	180	-80	3,486.48	3,503.75	17.27	1.043	0.047
including	180	-80	3,491.48	3,503.75	12.27	1.26	0.065
including	180	-80	3,496.48	3,500.72	4.24	2.21	0.147
CV-10-06B	180	-80	3,654.92	3,657.82	2.90	1.82	0.056
CV-10-06B	170	-80	3,710.63	3,715.68	5.05	1.24	0.047
CV-10-01	170	-80	3,290.40	3,309.17	18.77	1.064	0.184
including	170	-80	3,290.40	3,305.40	15.00	1.191	0.196
CV-10-01	170	-80	3,338.17	3,368.64	30.47	0.336	0.081
including	170	-80	3,338.17	3,343.17	5.00	0.558	0.128
including	170	-80	3,366.14	3,368.64	2.50	1.310	0.079
CV-10-01	170	-80	3,378.64	3,388.13	9.49	0.574	0.285
including	170	-80	3,384.66	3,388.13	3.47	0.617	0.592
CV-10-04	172.5	-82	3,811.21	3,820.87	9.66	0.80	0.140
including	172.5	-82	3,815.14	3,817.94	2.80	1.52	0.233
CV-10-04	172.5	-82	3,835.57	3,857.55	21.98	2.02	0.120
including	172.5	-82	3,835.57	3,840.57	5.00	3.38	0.119
CV-10-04	172.5	-82	3,996.06	4,001.29	5.23	1.49	0.090

In 2011, Cadillac completed 12 drill holes on the Thierry Deposit. Three drill holes, CV-11-02, CV-11-03 and CV-11-04, were the last deep holes drilled into the same void at depth as the 2010 drill holes. The six deep drill holes, from 2010 and 2011, totalled 6,817 m (22,367 ft) of drilling.

Three drill holes, CV-11-08 to CV-11-10 were completed to extend the mineralization to the west of the known Deposit along strike, as part of the 2011 shallow drilling program. Additionally, six drill holes, CV-11-11 to CV-11-16, were completed to extend the strike length of the Thierry Deposit to the east, also as part of the 2011 shallow drilling program. A list of significant intersections is presented in Table 6.3.

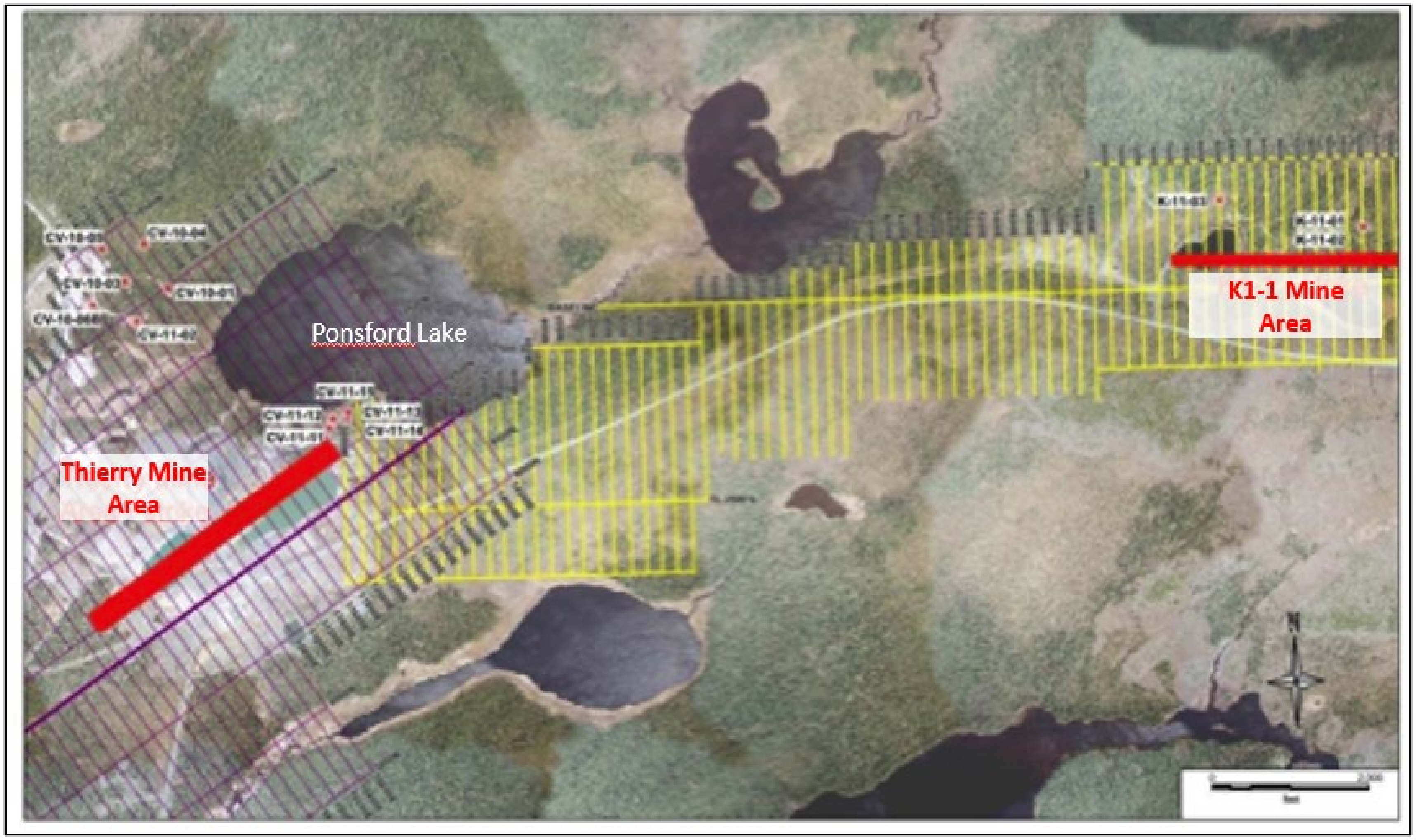
Table 6.3 2011 Thierry Drilling Program - Significant Intercepts and Assay Results							
Drill Hole ID	**Azimuth (°)**	**Dip (°)**	**From (ft)**	**To (ft)**	**Length (ft)**	**Cu (%)**	**Ni (%)**
CV-11-02	170	-80	3,025.10	3,038.10	13.00	0.98	-----
including	170	-80	3,028.40	3,038.10	9.70	1.11	-----
CV-11-03	170.8	-80	3,405.20	3,436.60	33.40	1.42	-----
including	170.8	-80	3,411.20	3,426.30	15.10	1.70	-----
including	170.8	-80	3,418.10	3,426.30	8.20	2.12	-----
CV-11-03	170.8	-80	3,418.10	3,426.30	8.20	2.12	-----

TABLE 6.3 2011 THIERRY DRILLING PROGRAM - SIGNIFICANT INTERCEPTS AND ASSAY RESULTS							
Drill Hole ID	**Azimuth (°)**	**Dip (°)**	**From (ft)**	**To (ft)**	**Length (ft)**	**Cu (%)**	**Ni (%)**
CV-11-05	170	-80	3,878.30	3,883.50	5.20	1.76	0.158
CV-11-05	170	-80	3,883.50	3,887.40	3.90	3.38	0.156
CV-11-05	170	-80	3,887.40	3,890.40	3.00	1.72	0.120
CV-11-05	170	-80	3,890.40	3,892.40	2.00	0.02	0.004
CV-11-05	170	-80	3,892.40	3,897.70	5.30	0.98	0.148
CV-11-05	170	-80	3,897.70	3,899.70	2.00	0.85	0.590
CV-11-08	172	-85	1,159.00	1,176.00	17.00	0.74	-----
including	172	-85	1,170.00	1,173.80	3.80	1.08	-----
CV11-09	172	-85	726.90	742.50	15.60	1.25	-----
including	172	-85	726.90	735.15	8.25	1.30	-----
including	172	-85	740.00	742.50	2.50	1.71	-----
CV-11-10	172	-85	705.00	710.40	5.40	0.64	-----
CV-11-11	172	-70	573.20	595.60	22.40	0.77	-----
including	172	-70	580.00	590.00	10.00	1.17	-----
CV-11-12	136	-70	633.50	654.50	16.00	0.59	-----
including	136	-70	633.50	645.00	6.50	0.88	-----
CV-11-13	136	-70	630.30	636.10	5.80	1.23	-----
CV-11-14	136	-70	563.00	575.00	12.00	0.29	-----
CV-11-15	136	-70	625.00	631.50	6.50	0.59	-----
including	136	-70	629.00	631.50	2.50	0.81	-----
CV-11-16	144	-50	557.00	570.00	13.00	0.63	-----
including	144	-50	565.50	570.00	4.50	0.81	-----

6.2.2 2011 and 2012 K1-1 Drill Programs

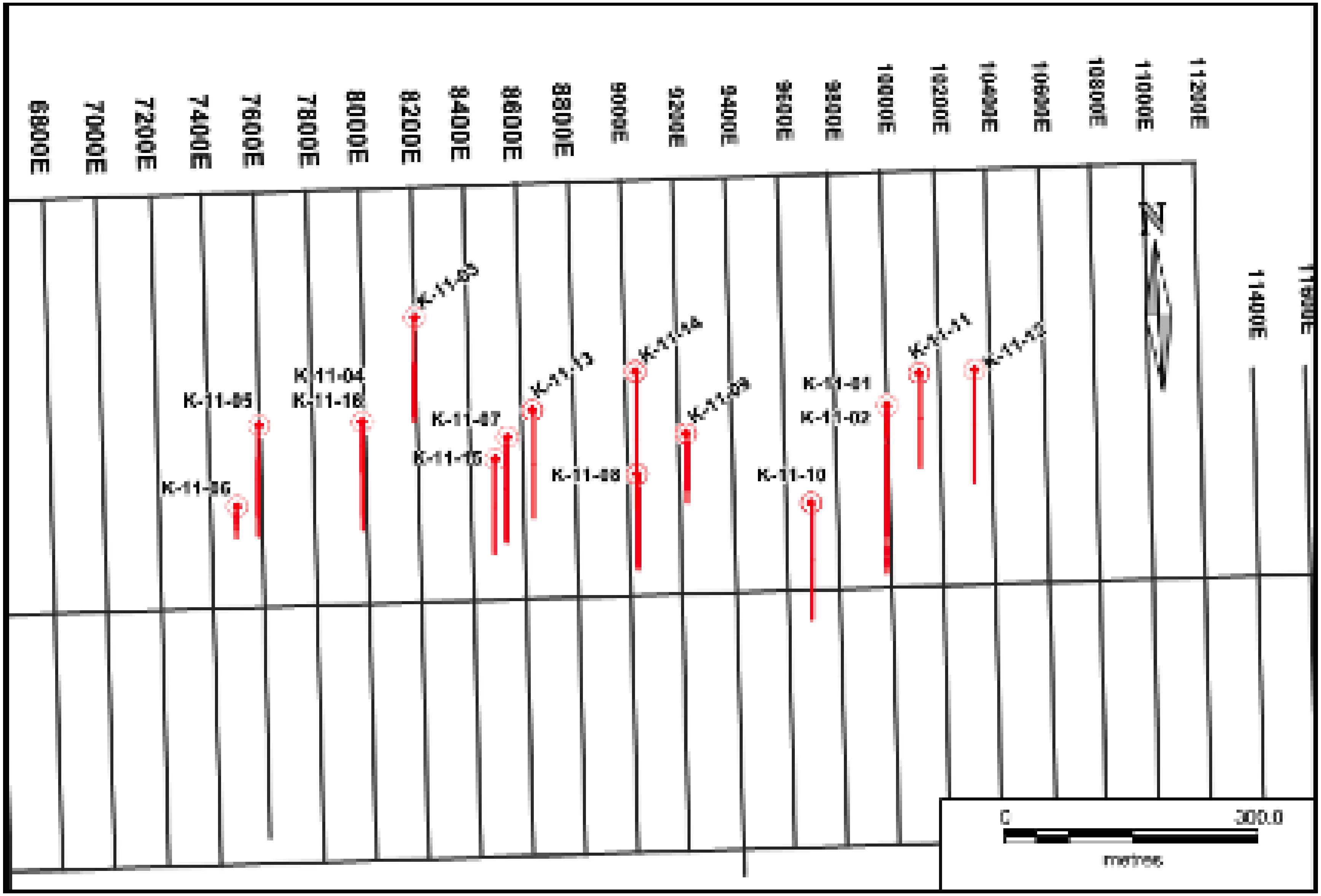
The K1-1 Deposit area is located approximately three km east of the Thierry Deposit as shown in Figure 6.1, which also shows an interpretation of the strike extent for each of these Deposits. In February and March 2011, Cadillac completed three shallow drill holes on the K1-1 Deposit (drill holes K-11-01 to K-11-03) designed to confirm results obtained previously by UMEX and other previous operators. Drill hole K-11-01 was drilled at eastern limit of the K1-1 mineralization, drill hole K-11-02 was drilled to undercut K-11-01 at the same location, and drill hole K-11-03 was completed at the western end of the K1-1 mineralization. Based on the positive results of the initial three drill holes, an additional 13 drill holes were completed on the K1-1 Deposit in June 2011. The March-June program involved completion of 16 drill holes totalling 3,802 m (12,475 ft). A summary of the significant 2011 intersections is presented in Table 6.4 and the 2011 drill hole locations are presented in Figure 6.2.

FIGURE 6.1 DRILL HOLE LOCATIONS FOR 2011 K1-1 DRILL PROGRAM



Source: *www.cadillacventures.com (2012)*
Note: *The thick red lines represent the approximate surface projection of the Thierry and K1-1 Mine Deposits.*

FIGURE 6.2 PLAN VIEW OF DRILL HOLE LOCATIONS FOR 2011 K1-1 DRILL PROGRAM



Source: *www.cadillacventures.com (2012)*

TABLE 6.4
2011 K1-1 DRILLING PROGRAM - SIGNIFICANT INTERCEPTS AND ASSAY RESULTS

Drill Hole ID	Azimuth (°)	Dip (°)	From (ft)	To (ft)	Length (ft)	Cu (%)	Ni (%)
K-11-01	180	-50	348.00	381.50	33.50	0.41	0.10
K-11-01	180	-50	400.00	475.00	75.00	0.30	0.06
K-11-01	180	-50	500.00	510.00	10.00	0.65	0.09
K-11-01	180	-50	525.00	615.00	90.00	0.58	0.08
including	180	-50	555.00	585.00	30.00	0.92	0.12
K-11-01	180	-50	620.00	793.50	173.50	0.27	0.05
K-11-01	180	-50	925.00	970.00	45.00	0.31	0.09
K-11-02	180	-80	485.00	615.00	130.00	0.35	0.08
K-11-02	180	-80	639.75	648.75	9.00	0.46	0.04
K-11-03	180	-80	530.00	1,112.00	582.00	0.39	0.11
K-11-04	180	-50	150.00	580.00	430.00	0.36	0.10
including	180	-50	207.00	316.00	108.60	0.55	0.09
including	180	-50	235.00	270.00	35.00	0.84	0.09
K-11-05	180	-50	215.00	560.00	345.00	0.18	0.06
including	180	-50	290.00	310.00	20.00	0.27	0.06
including	180	-50	340.00	355.00	15.00	0.26	0.10
including	180	-50	365.00	440.00	75.00	0.26	0.08
including	180	-50	480.00	545.00	65.00	0.26	0.08
K-11-06	180	-70	35.50	280.00	138.55	0.28	0.06
including	180	-70	115.00	120.00	5.00	1.04	0.17
K-11-07	180	-50	45.00	270.00	225.00	0.16	0.08
including	180	-50	55.00	120.00	65.00	0.26	0.09
K-11-07	180	-50	274.50	635.00	360.50	0.27	0.13
including	180	-50	520.00	615.00	95.00	0.50	0.26
including	180	-50	546.50	550.00	3.50	1.12	0.40
including	180	-50	550.00	555.00	5.00	0.78	0.23
including	180	-50	555.00	560.00	5.00	0.65	0.63
including	180	-50	560.00	565.00	5.00	0.43	0.64
including	180	-50	565.00	570.00	5.00	0.75	0.25
including	180	-50	570.00	575.00	5.00	0.27	0.14
including	180	-50	575.00	580.00	5.00	0.68	0.32
including	180	-50	580.00	585.00	5.00	0.49	0.16
including	180	-50	585.00	590.00	5.00	0.49	0.48
including	180	-50	590.00	595.00	5.00	0.55	0.46
including	180	-50	595.00	598.50	4.50	0.71	0.42

TABLE 6.4
2011 K1-1 DRILLING PROGRAM - SIGNIFICANT INTERCEPTS AND ASSAY RESULTS

Drill Hole ID	Azimuth (°)	Dip (°)	From (ft)	To (ft)	Length (ft)	Cu (%)	Ni (%)
K-11-08	180	-60	110.00	720.00	610.00	0.27	0.11
including	180	-60	110.00	205.00	95.00	0.39	0.11
including	180	-60	155.00	200.00	45.00	0.46	0.12
including	180	-60	340.00	405.00	65.00	0.34	0.10
including	180	-60	435.00	535.00	100.00	0.32	0.10
including	180	-60	571.10	660.00	88.90	0.30	0.09
including	180	-60	675.00	710.00	35.00	0.34	0.09
K-11-08	180	-60	150.00	335.00	185.00	0.24	0.14
including	180	-60	195.30	280.00	84.75	0.20	0.15
including	180	-60	215.00	245.00	30.00	0.19	0.17
K-11-09	180	-60	120.00	464.00	344.00	0.35	0.08
including	180	-60	120.00	180.00	60.00	0.44	0.08
including	180	-60	135.00	175.00	40.00	0.53	0.083
including	180	-60	230.00	340.00	110.00	0.38	0.09
including	180	-60	385.00	464.00	79.00	0.37	0.082
including	180	-60	280.00	340.00	60.00	0.40	0.100
including	180	-60	300.00	320.00	20.00	0.55	0.108
K-11-10	180	-50	18.60	535.00	516.40	0.33	0.06
including	180	-50	130.00	190.00	60.00	0.41	0.07
including	180	-50	210.00	265.00	55.00	0.52	0.08
including	180	-50	320.00	350.00	30.00	0.42	0.07
including	180	-50	385.00	470.00	85.00	0.39	0.09
including	180	-50	495.00	535.00	40.00	0.51	0.10
including	180	-50	550.00	570.00	20.00	0.43	0.11
including	180	-50	643.50	685.00	41.50	0.34	0.10
K-11-11	180	-70	590.00	673.90	83.90	0.26	0.06
including	180	-70	645.00	673.90	28.90	0.33	0.10
K-11-11	180	-70	820.00	845.00	25.00	0.42	0.13
K-11-11	180	-70	900.00	965.00	65.00	0.35	0.09
including	180	-70	915.00	965.00	50.00	0.39	0.10
K-11-11	180	-70	992.30	1,055.00	62.70	0.31	0.07
including	180	-70	992.30	1,030.00	37.70	0.35	0.08
K-11-12	180	-65	570.00	955.00	385.00	0.24	0.07
including	180	-65	696.20	765.00	68.80	0.35	0.08
including	180	-65	790.00	800.00	10.00	0.39	0.07
including	180	-65	860.00	875.00	15.00	0.31	0.11

TABLE 6.4 2011 K1-1 DRILLING PROGRAM - SIGNIFICANT INTERCEPTS AND ASSAY RESULTS							
Drill Hole ID	**Azimuth (°)**	**Dip (°)**	**From (ft)**	**To (ft)**	**Length (ft)**	**Cu (%)**	**Ni (%)**
K-11-13	180	-60	139.00	150.00	11.00	0.37	0.09
K-11-13	180	-60	227.00	245.00	18.00	0.31	0.11
K-11-13	180	-60	415.00	440.00	25.00	0.30	0.13
K-11-13	180	-60	565.00	610.90	45.90	0.36	0.13
including	180	-60	595.00	610.90	15.90	0.52	0.18
K-11-14	180	-60	260.00	502.50	242.50	0.25	0.10
including	180	-60	300.00	465.00	165.00	0.30	0.11
including	180	-60	395.00	425.00	30.00	0.37	0.11
K-11-15	180	-50	190.00	305.00	115.00	0.28	0.11
including	180	-50	285.00	305.00	20.00	0.36	0.11
K-11-15	180	-50	340.00	490.00	150.00	0.24	0.09
K-11-16	180	-70	210.00	570.00	360.00	0.27	0.11
including	180	-70	230.00	275.00	45.00	0.39	0.17
including	180	-70	310.00	405.00	95.00	0.34	0.12
including	180	-70	355.00	405.00	50.00	0.40	0.07
including	180	-70	450.00	490.00	40.00	0.37	0.09
including	180	-70	545.00	555.00	10.00	0.39	0.13
Total 16 holes							

In 2012, a second phase of drilling consisting of 6,406 m (21,018 ft) was completed in 26 drill holes and targeted the K1-1 open pit area. The program was designed to address gaps within the pit shell area and to test for extensions along strike and at depth. A list of significant intersections is presented in Table 6.5 and the drill hole locations are presented in Figure 6.3.

.

Table 6.5
2012 K1-1 Drilling Program - Significant Intercepts and Assay Results

Drill Hole ID	Azimuth (°)	Dip (°)	From (ft)	To (ft)	Length (ft)	Cu (%)	Ni (%)
K-11-17	180	-50	335	345	10	0.41	0.10
K-11-17	180	-50	418.6	440	21.4	0.31	0.10
K-11-17	180	-50	480	605	125	0.35	0.10
Including	180	-50	480	510	30	0.34	0.10
Including	180	-50	545	570	25	0.42	0.11
K-11-17	180	-50	645	660	15	0.42	0.07
K-11-18	180	-50	60	205	145	0.32	0.08
Including	180	-50	125	205	80	0.42	0.12
Including	180	-50	125	140	15	0.56	0.12
K-11-19	180	-45	341.8	429.3	87.5	0.55	0.01
Including	180	-45	341.8	410	68.2	0.60	0.10
Including	180	-45	341.8	374.5	32.7	0.72	0.12
K-11-20	180	-45	290	320	30	0.32	0.60
K-11-20	180	-45	340	345	5	0.72	0.10
K-11-20	180	-45	530	585	55	0.32	0.07
K-11-21	180	-45	190	320	110	0.63	0.09
Including	180	-45	190	275	85	0.71	0.10
Including	180	-45	200	225	25	0.97	0.15
K-11-21	180	-45	377.5	485	107.5	0.33	0.07
Including	180	-45	377.5	465	87.5	0.36	0.08
Including	180	-45	410	465	55	0.37	0.09
K-11-22	180	-50	330	400	70	0.48	0.08
Including	180	-50	330	375	45	0.54	0.09
K-11-22	180	-50	420	430	10	0.42	0.10
K-11-22	180	-50	450	465	15	0.53	0.12
K-11-22	180	-50	490	560	70	0.34	0.08
Including	180	-50	540	550	20	0.46	0.10
K-11-22	180	-50	580	600	20	0.34	0.08
K-11-22	180	-50	640	650	10	0.50	0.70
K-11-23	180	-50	475	535	60	0.51	0.06
Including	180	-50	475	495	20	0.74	0.07
Including	180	-50	515	535	20	0.60	0.07
K-11-24	180	-55	550	790	240	0.31	0.08
Including	180	-55	550	570	20	0.46	0.10

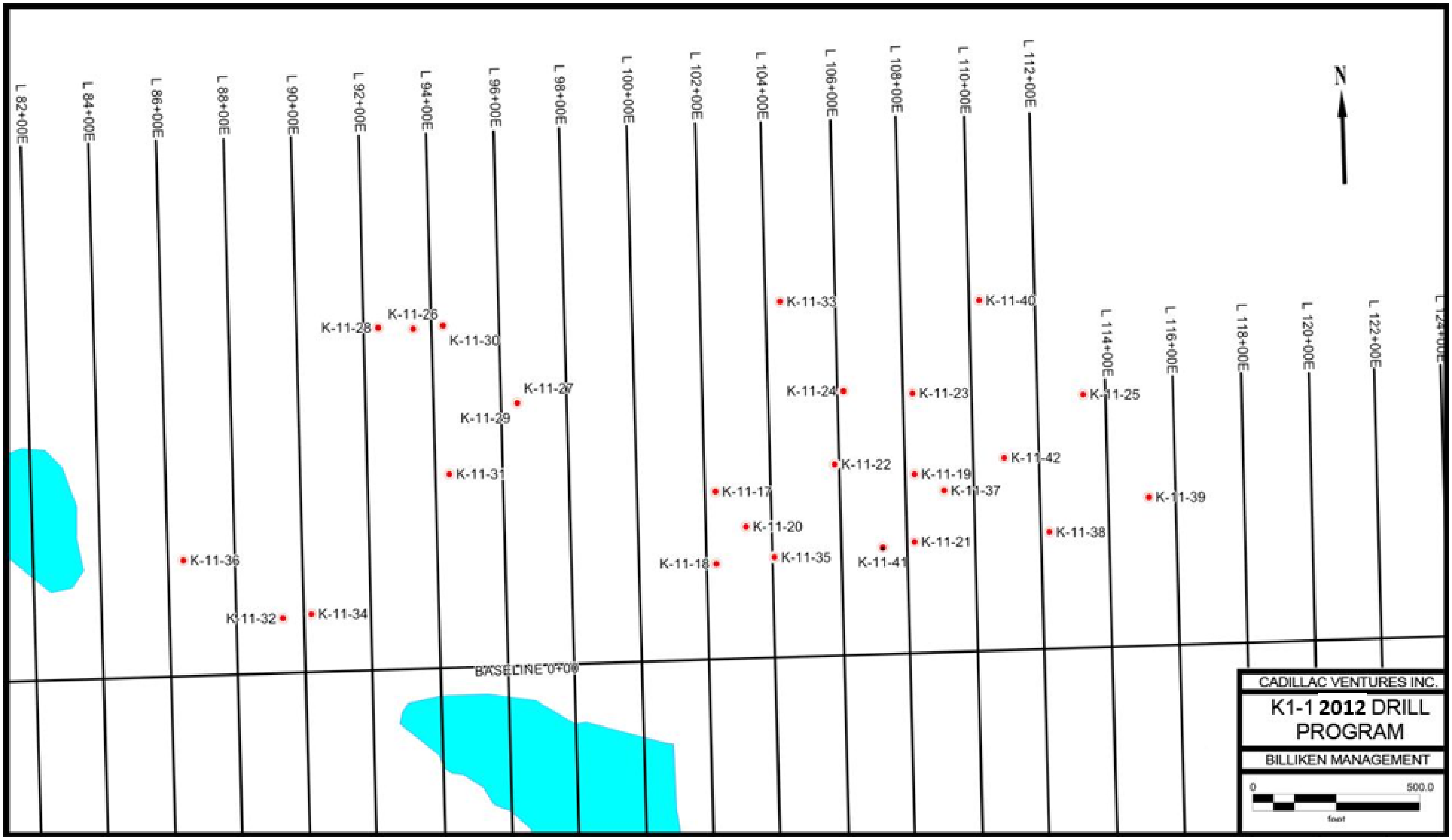
TABLE 6.5 2012 K1-1 DRILLING PROGRAM - SIGNIFICANT INTERCEPTS AND ASSAY RESULTS							
Drill Hole ID	**Azimuth (°)**	**Dip (°)**	**From (ft)**	**To (ft)**	**Length (ft)**	**Cu (%)**	**Ni (%)**
Including	180	-55	590	610	20	0.49	0.11
K-11-25	180	-60	520	770	250	0.34	0.08
Including	180	-60	520	555	35	0.42	0.07
Including	180	-60	690	770	80	0.42	0.08
Including	180	-60	735	760	25	0.62	0.09
K-11-26	180	-50	518.75	1,325	806.25	0.37	0.09
Including	180	-50	1,010	1,220	210	0.42	0.11
Including	180	-50	630	660	30	0.31	0.07
K-11-27	180	-60	415	1,005	585	0.34	0.06
Including	180	-60	415	535	120	0.65	0.08
Including	180	-60	995	1,005	10	0.48	0.07
K-11-28	180	-50	495	1,320	825	0.40	0.10
Including	180	-50	720	925	205	0.52	0.10
Including	180	-50	1,010	1,015	5	1.33	0.10
K-11-29	180	-55	395	520	125	0.31	0.05
Including	180	-55	395	420	25	0.42	0.06
Including	180	-55	440	470	30	0.35	0.05
K-11-29	180	-55	845	885	40	0.44	0.02
K-11-29	180	-55	1,010	1,020	10	0.55	0.12
K-11-30	180	-50	515	550	35	0.33	0.05
K-11-30	180	-50	675	967.7	292.7	0.36	0.08
Including	180	-50	715	755	40	0.42	0.08
Including	180	-50	835	935	100	0.41	0.10
K-11-30	180	-50	1,015	1,045	30	0.46	0.11
K-11-30	180	-50	1,140	1,170	30	0.36	0.09
K-11-31	180	-55	165	180	15	0.58	0.10
K-11-31	180	-55	285	655	370	0.37	0.10
Including	180	-55	325	420	95	0.48	0.09
Including	180	-55	625	645	20	0.35	0.12
K-11-31	180	-55	690	780	90	0.41	0.11
K-11-31	180	-55	825	850	25	0.38	0.11
K-11-32	180	-50	278	325	47	0.33	0.12
K-11-32	180	-50	390	410	20	0.38	0.11
K-11-33	180	-50	240	380	140	0.29	0.07
Including	180	-50	265	295	30	0.42	0.07
Including	180	-50	340	380	40	0.33	0.07

TABLE 6.5 2012 K1-1 DRILLING PROGRAM - SIGNIFICANT INTERCEPTS AND ASSAY RESULTS							
Drill Hole ID	**Azimuth (°)**	**Dip (°)**	**From (ft)**	**To (ft)**	**Length (ft)**	**Cu (%)**	**Ni (%)**
K-11-33	180	-50	555	575	20	0.38	0.09
K-11-34	180	-50	140	195	55	0.34	0.11
K-11-34	180	-50	345	370	20	0.38	0.09
K-11-35	180	-50	44	45.33	1.33	0.92	2.13
K-11-35	180	-50	95	130	35	0.34	0.06
K-11-35	180	-50	255	260	5	0.99	0.12
K-11-35	180	-50	280	300	20	0.43	0.09
K-11-35	180	-50	365	375	10	0.40	0.10
K-11-35	180	-50	425	440	15	0.39	0.14
K-11-36	180	-65	35	40	5	0.97	0.15
K-11-36	180	-65	70	135	65	0.36	0.10
Including	180	-65	110	135	25	0.41	0.13
K-11-36	180	-65	160	180	20	0.31	0.08
K-11-36	180	-65	243.3	245.3	2	0.12	2.00
K-11-36	180	-65	445	455	10	0.34	0.16
K-11-37	180	-50	270	285	15	0.38	0.05
K-11-37	180	-50	310	390	80	0.33	0.06
Including	180	-50	335	350	15	0.64	0.10
K-11-37	180	-50	515	565	50	0.36	0.07
Including	180	-50	515	535	20	0.43	0.08
K-11-38	180	-50	105	125	20	0.34	0.05
and	180	-50	140	150	10	0.40	0.07
and	180	-50	245	325	80	0.46	0.11
Including	180	-50	245	295	50	0.50	0.11
K-11-39	180	-50	165	185	20	0.35	0.05
K-11-40	180	-50	425	435	10	0.35	0.05
and	180	-50	460	470	10	0.57	0.07
and	180	-50	525	565	40	0.58	0.14
and	180	-50	615	620	5	0.66	0.09
and	180	-50	640	650	10	0.65	0.08
K-11-41	180	-45	105	115	10	0.38	0.06
K-11-41	180	-45	175	185	10	0.50	0.11
K-11-41	180	-45	210	235	25	0.41	0.11
K-11-41	180	-45	285	320	35	0.53	0.08
K-11-41	180	-45	340	510	150	0.36	0.08
Including	180	-45	425	450	25	0.45	0.11

TABLE 6.5
2012 K1-1 DRILLING PROGRAM - SIGNIFICANT INTERCEPTS AND ASSAY RESULTS

Drill Hole ID	Azimuth (°)	Dip (°)	From (ft)	To (ft)	Length (ft)	Cu (%)	Ni (%)
K-11-42	180	-50	245	250	5	0.70	0.06
K-11-42	180	-50	295	315	20	0.43	0.05
K-11-42	180	-50	550	575	25	0.36	0.07
Total 26 drill holes							

FIGURE 6.3 2012 DRILL HOLE LOCATIONS



Source: *Cadillac (2012)*

6.2.3 2010 to 2012 Core Recovery and Sampling

Drill core recovery was >99% in all sections sampled, which allowed all samples to be truly representative of the encountered mineralization. Factors that could materially impact the accuracy and reliability of the samples were not identified. Rock types and geological controls were described in detail in the drill logs, as were samples and true widths, where known.

6.2.4 Sample Preparation, Analyses and Security

All the sulphidic zones deemed to have potential for hosting precious or base metals were sampled. Exactly 1.5 m of drill core was sampled on either side of every mineralized zone. Drill core was cut in half, with one-half stored in drill core boxes on site and the other half cut in half again. This quarter drill core was sampled (other ¼ for duplicate).

Drill core sample lengths ranged from 0.3 to 1.5 m. The drill core was cut on-site by contract labourers under the supervision of the Brian H. Newton, P.Geo who was directly responsible for all aspects of sample collection, on-site sample preparation and subsequent shipping to the assay laboratory. When cut, the remaining drill core was stored on-site in clearly labelled wooden drill core boxes placed on metal drill core racks.

Each individual drill core sample was packaged in a labelled plastic bag with matching sample tags, placed in rice bags, and secured with duct tape and flagged. Samples were transported by bonded carrier to Activation Laboratories in Thunder Bay, Ontario. Samples were prepared and assayed using Fire Assay ICP-OES. Samples which assayed >1% Cu were reprocessed using total digestion with an ICP finish.

Activation Laboratories is an independent, internationally recognized minerals testing laboratory operating in 10 countries. The laboratory in Thunder Bay has also been accredited to ISO 17025 standards for specific laboratory procedures by the Standards Council of Canada ("SCC").

It is the Author's opinion that there are no drilling, sampling, security or recovery factors that could materially impact the accuracy and reliability of the results, and the procedures were satisfactory and suitable for use in this Report.

Sample pulps and rejects from the 2011 and 2012 drill programs have been discarded.

6.2.5 Cadillac Ventures QA/QC Review

For the winter 2011 diamond drill program that consisted of 26 drill holes, Cadillac essentially maintained the same Quality Assurance/Quality Control ("QA/QC" or "QC") program as had been initiated for the previous drilling with only a few minor changes. Certified reference materials ("CRM") were purchased from CDN Resource Labs in Langley, BC and from Analytical Solutions Ltd. in Toronto, ON, who are distributors of the OREAS CRM from Australia.

Cadillac's QC program included the insertion of one blank, one CRM and (provision for) one pulp duplicate approximately every 20 to 24 samples. The CRMs monitored Cu, Ni, Au, Pd, and Pt.

6.2.5.1 Performance of CRMs

There was a total of 126 CRMs inserted with the 26 drill holes. All values were graphed and compared to the warning limit of ±2 standard deviations from the mean of the between lab round robin characterization values. Assay values were also compared to a tolerance limit of ±3 standard deviations. For copper, there was an unacceptable level of failures, all exceeding +3 standard deviations from the mean. Drill hole samples bracketing the estimated Cu cut-off grade of 0.25%, (from 0.20% to 0.30%) that were associated with failed CRMs were re-run for Cu. All values re-run were lower in value that the original values, and the re-run values were imported into the master database. Cadillac inserted eight CRMs with these batches, and all were within the warning limits.

Accuracy for the other metals was acceptable.

6.2.5.2 Performance of Pulp Duplicates

A total of 68 pulp duplicate pairs were analysed as part of the QC program.

Simple scatter graphs were prepared for each element for each duplicate type. At the pulp duplicate level, all metals apart from Au demonstrated excellent precision. There was imprecision demonstrated by the Au pulp duplicates, with a scatter higher than desired. An investigation will be conducted to try to determine the reasons for the imprecision.

6.2.5.3 Performance of Blank Material

Cadillac used a blank material obtained from sterile historical drill core for a total of 72 data points for each of the elements. For Ag, 100% of the values were <3 times detection limit. For Pt, 100%, apart from a single value, were <3 times detection limit. For Au, approximately 50% of the values exceeded 3 times detection limit; however, the average was 0.003 g/t Au. For Pd, the values were approximately 3 times detection limit with an average of 0.006 g/t Pd and one high value of 0.15 g/t Pd. The high Pd value was examined and found to be the result of sample misallocation.

The copper and nickel data points were 100% above the set threshold of three times detection limit. Copper had an average value of 0.01% and two high values of 0.05 and 0.06%. Nickel had an average value of 0.004% and a high value of 0.02%. The values as reported in the blanks are low and have no impact on the scope of this Report. It is recommended, however, that a certified, completely sterile blank material be used for future analysis.

6.2.5.4 Conclusion

Based on the evaluation of the QA/QC programs undertaken by Cadillac, the Author concludes that the data are of suitable quality for use in this current Report.

6.3 2023 DRILLING BY CANADIAN CRITICAL METALS

6.3.1 Drill Program Results

In July 2023, Canadian Critical Metals completed six diamond drill holes (CCM-23-51 to CCM-23-56) totalling 2,600 m in the K1-1 Deposit area. The 2023 summer drilling program was designed to focus on expanding the K1-1 Deposit, a large tonnage, near-surface deposit located 3 km east of the Thierry Mine. The drill hole collar locations are represented in Figure 6.4. Assay highlights of the drill program are as follows:

- Drill hole CCM-23-51 intersected **106 m of 0.539% copper equivalent ("CuEq")** mineralization (including 23.2 m of 0.875% CuEq mineralization) within continuous sulphide mineralization that started near-surface and extended 248 m downhole, grading 0.438% CuEq; and

- Drill hole CCM-23-52 intersected **31.2 m of 0.677% CuEq mineralization and 22.8 m of 0.670% CuEq mineralization** within continuous sulphide mineralization that started at surface and continued for 243.9 m downhole, grading at 0.382% CuEq.

The drill holes were completed at -45° dip to intersect mineralized lenses dipping 50° to the north, thereby returning intercepts of approximate true thickness. The assay highlights are listed in Table 6.6.

FIGURE 6.4 2023 DRILL HOLE COLLAR LOCATIONS

Source: *Canadian Critical Metals press release dated July 24, 2023*

TABLE 6.6 ASSAY HIGHLIGHTS OF 2023 DRILLING AT K1-1 DEPOSIT								
Drill Hole ID	**From (m)**	**To (m)**	**Length (m)**	**Cu (%)**	**Ni (%)**	**Pd (g/t)**	**Pt (g/t)**	**CuEq (%)***
CCM-23-51	5.2	253.0	247.8	0.253	0.054	0.086	0.034	0.438
including	5.2	111.5	106.3	0.336	0.057	0.104	0.040	0.539
including	88.4	111.5	23.2	0.510	0.106	0.175	0.066	0.875
including	158.1	175.4	17.3	0.350	0.092	0.131	0.048	0.655
CCM-23-52	10.2	253.0	243.9	0.232	0.039	0.093	0.031	0.382
including	170.5	201.7	31.2	0.430	0.063	0.157	0.053	0.677
including	216.2	239.0	22.8	0.375	0.084	0.149	0.054	0.670

Source: *Canadian Critical Metals press release dated September 20, 2023*
Note: ** Copper Equivalent (CuEq) for drill intersections was calculated based on US$ 3.75/lb Cu, US$ 9.25/lb Ni, US$ 1,190/oz Pd and US$ 910/oz Pt with 100% metallurgical recoveries for all metals. Assays were not capped. The formula used for the CuEq calculation is: CuEq = Cu % + (Ni grade X Ni Price) / (Cu Price) + ((Pd grade) X (Pd price / 31)) / (Cu price X 22) + ((Pt grade) X (Pt price/31)) / (Cu price X 22).*

6.3.2 2023 Sampling, Security and Analysis

The entire length of the drill hole was sampled. Generally, samples were between 1.0 to 1.5 m in length, but were sometimes shorter to prevent crossing lithologies or to get more information around a particular structure or mineralized zone. The drill core was split on-site by contract labourers under the supervision of the Brian H. Newton, P.Geo., who was directly responsible for all aspects of sample collection, on-site sample preparation, and subsequent shipping to the assay laboratory. When split, the remaining drill core was stored on-site in clearly labelled wooden core boxes placed in metal drill core racks.

Each individual sample was packaged in a labelled plastic bag with matching sample tags, placed in rice bags, and secured with duct tape and flagged. Samples were transported by bonded carrier to ALS Laboratories in Thunder Bay, Ontario. Samples were prepared in Thunder Bay, and subsequently shipped to Vancouver for final analysis. Samples were prepared and assayed for platinum, palladium and gold using Fire Assay with ICP-MS finish. Copper, nickel, zinc and other elements were analysed by Aqua Regia digestion with ICP-MS finish. A 30 g sample size was used.

At the time of this Report, only samples from drill holes CCM-23-51, CCM-23-52 and part of CCM-23-53 had been submitted for analysis. Samples from the bottom of drill hole CCM-23-53 and all samples from drill holes CCM-23-53 through CCM-23-57 are being stored in a secure facility in Pickle Lake.

ALS Laboratories is an independent, internationally recognized minerals testing laboratory with more than 350 offices operating in over 70 countries. ALS Canada is certified by the Canadian Association for Laboratory Accreditation Inc (CALA). The laboratories in Thunder Bay and Vancouver have also been accredited to ISO 17025:2017 standards for specific laboratory procedures by the CALA.

It is the Author's opinion that there are no drilling, sampling, security or recovery factors that could materially impact the accuracy and reliability of the results, and the procedures are satisfactory and suitable for use in this Report.

Sample pulps from the 2023 summer drill program are stored at ALS' storage facility.

6.3.3 CCMI QA/QC REVIEW

6.3.3.1 Performance of CRMS

A total of four CRMs were inserted with three drill holes. All values were below the warning limit of ±2 standard deviations from the mean of the between lab round robin characterization values for Au, Cu, Ni, Pd and Pt.

6.3.3.2 Performance of Coarse Rejects

A total of 21 coarse reject pairs were analysed as part of the QC program.

Simple scatter graphs were prepared for each element for each duplicate type. At the coarse reject level, all metals apart from Au demonstrated excellent precision. There was imprecision demonstrated on the Au coarse reject, which can be attributable to the nature of gold mineralization.

6.3.3.3 Performance of Field Duplicates

A total of 21 field duplicate pairs were analysed as part of the QC program. Simple scatter graphs were prepared for each element of each duplicate type. At the field duplicate level, all metals apart from Au demonstrated excellent precision. There was imprecision demonstrated on the Au pulp duplicates, with a scatter higher than desired.

6.3.3.4 Performance of Blank Material

CCMI used a blank material obtained from sterile historical drill core for a total of 21 data points for each of the elements. All the Au, Pt, Pd values were <3 times detection limit. For Pt, 100%, apart from one value, were <3 times detection limit.

The copper and nickel data points were 100% above the set threshold of three times detection limit. Copper had an average value of 13.8 ppm with a high value of 32.8 ppm. Nickel had an average value of 4.6 ppm and a high value of 8.6 ppm. The values as reported in the blanks are low and have no impact on the purpose of this Report. It is recommended, however, that a completely sterile and certified blank material be acquired for future analysis.

6.3.3.5 Conclusion

Based on the evaluation of the QA/QC programs undertaken by CCMI, the Author concludes that the data are of suitable quality for use in this current Report.

6.4 HISTORICAL RESOURCE ESTIMATES

A Qualified Person has not done sufficient work to classify the historical resource estimates as current Mineral Resources or Mineral Reserves. Cuprum is not treating the historical resource estimates as current Mineral Resources or Mineral Reserves.

The historical Mineral Resource Estimates prepared for the Thierry Deposit are listed in Table 6.7.

TABLE 6.7
HISTORICAL MINERAL RESOURCE/RESERVE ESTIMATES – THIERRY DEPOSIT

Company	Date	Reserves (t)	Resources (t)	Cu (%)	Ni (%)	Category
UMEX	1974	13,500,000		1.62	0.18	Mining start-up in-situ mineral reserve estimate
UMEX	1989	7,000,000		1.88	0.23	Drill indicated in-situ mineral reserve to 2,500 ft
WGM	1991		2,700,000	1.65	--	Diluted Measured mineral resource to 1,800 ft
WGM	1991	3,000,000		1.78	0.25	Probable mineral reserves to 1,800 ft

Source: *Novak and Mlot (2004)*

In addition to the Thierry Deposit, UMEX exploration identified three additional mineralized zones on the Property: G, J, and K1-1. Limited exploration drilling was completed that allowed UMEX to report in-situ mineral resources for these Zones, as summarized in Table 6.8.

TABLE 6.8
HISTORICAL MINERAL RESOURCES FOR K1-1 AND J & G ZONES

Drill Indicated, Undiluted, In-Situ Mineral Reserves

Deposit	Historical Mineral Resource Parameters	Tons	Cu (%)	Ni (%)	Remarks
K1-1	Surface to level 1,000 ft	75,000,000	0.38	0.11	UMEX 1973, 1981
J&G Zones	Surface to level 600 ft	44,700,000	0.40	0.11	UMEX 1974, 1981
J&G Zones	Surface to level 1,000 ft	55,000,000	0.40	0.11	UMEX 1974, 1981

6.5 RECENT MINERAL RESOURCE ESTIMATES

A Qualified Person has not done sufficient work to classify the recent historical Mineral Resource Estimates as current Mineral Resources or Mineral Reserves. Cuprum is not treating the recent historical Mineral Resource estimates as current Mineral Resources or Mineral Reserves.

Drill hole data from the 2004-2005 drill programs, along with results from all previous drilling programs, were incorporated into an initial Mineral Resource Estimate completed by P&E in 2006, as shown in Table 6.9.

Table 6.9 **2006 P&E Mineral Resource Estimate at 1.3% Cu Cut-off Grade (1-2)**					
Classification	**Tons (T)**	**Cu (%)**	**Ni (%)**	**Cu (Mlb)**	**Ni (Mlb)**
Measured	17,000	1.71	0.25	0.6	0.1
Indicated	4,606,000	1.81	0.20	166.7	18.4
Measured & Indicated	**4,623,000**	**1.81**	**0.20**	**167.3**	**18.5**
Inferred	4,366,000	1.71	0.18	149.3	15.7

Notes:

1) *Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
2) *The quantity and grade reported in this Inferred Mineral Resource estimation are conceptual in nature and there has been insufficient exploration to define an Indicated Mineral Resource on the Property and it is uncertain if further exploration will result in discovery of an Indicated or Measured Mineral Resource on the Property.*

The 2006 Mineral Resource Estimate was superseded by the updated Mineral Resource Estimate by P&E (2010).

In 2010, an updated P&E Mineral Resource Estimate was prepared by P&E using additional data generated by completing 21 drill holes in 2007 and 2008 by Richview, and the drilling used in previous NI 43-101 Mineral Resource Estimates. The 2010 P&E updated Mineral Resource Estimate for the Thierry Deposit is shown in Table 6.10. At NSR cut-off value of $46/t, the updated Indicated Mineral Resource was 6,228,000 tonnes grading 1.92% Cu and 0.20% Ni and the updated Inferred Mineral Resource was 8,379,000 tonnes grading 1.79% Cu and 0.16% Ni.

Table 6.10 **2010 P&E Updated Mineral Resource Estimate** **at $46/Tonne NSR Cut-off (1-3)**							
Classification	**Tonnes (t)**	**Cu (%)**	**Ni (%)**	**Au (g/t)**	**Pt (g/t)**	**Pd (g/t)**	**Ag (g/t)**
Measured	2,221,000	1.90	0.21	0.13	0.13	0.41	7.7
Indicated	4,007,000	1.93	0.20	0.14	0.14	0.41	7.1
Measured & Indicated	**6,228,000**	**1.92**	**0.20**	**0.14**	**0.14**	**0.41**	**7.3**
Inferred	8,379,000	1.79	0.16	0.18	0.12	0.35	9.6

Notes:

1) *Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
2) *The quantity and grade of reported Inferred Mineral Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Mineral Resources as an Indicated or Measured*

Mineral Resource and it is uncertain if further exploration will result in upgrading them to the Indicated or Measured Mineral Resource classification.

3) *The Mineral Resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council December 11, 2005.*

The 2010 Mineral Resource Estimate was superseded by the updated Mineral Resource Estimate by P&E (2011).

In 2011, P&E prepared an initial Mineral Resource Estimate on the K1-1 and updated the Mineral Resource Estimate of the Thierry Mine Deposit. This information is presented in Table 6.11.

TABLE 6.6
OCTOBER 2011 P&E INFERRED MINERAL RESOURCE ESTIMATE FOR K1-1 AT $15/TONNE NSR CUT-OFF (1-8)

NSR Cut-off	Tonnes (Mt)	Cu (%)	Ni (%)	Au (g/t)	Pt (g/t)	Pd (g/t)	Ag (g/t)
$15/tonne	19.897	0.42	0.10	0.03	0.05	0.15	2.0

Notes:

1) *Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
2) *The quantity and grade of reported Inferred Mineral Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Mineral Resources as an Indicated or Measured Mineral Resource and it is uncertain if further exploration will result in upgrading them to an Indicated or Measured Mineral Resource classification.*
3) *The Mineral Resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.*
4) *The July 31, 2011 two-year trailing average US metal prices used in this estimate were $3.57/lb Cu, $9.98/lb Ni, $23.87/oz Ag, $1,258/oz Au, $1,605/oz Pt and $557/oz Pd. The US Exchange rate was 0.98.*
5) *Overall payable metal (process recovery x smelter payable) in the NSR calculation were 84% Cu, 13% Ni and 37% for Ag, Au, Pt & Pd.*
6) *Mineral Resources were determined within a Whittle pit shell with 50-degree slopes utilizing mining costs of $2.00/t for mineralized material and waste rock, and $1.50/t for overburden.*
7) *Costs used to determine the C$15/t NSR Mineral Resource cut-off value were processing at $12/t and G&A $3.00/t.*
8) *The K1-1 Mineral Resource Estimate was undertaken by Antoine Yassa, P.Geo., and Eugene Puritch, P.Eng., of P&E Mining Consultants Inc.*

The 2011 Mineral Resource Estimate was superseded by the updated Mineral Resource Estimate by P&E (2012).

In 2012, P&E prepared a PEA on the Thierry Project, which included Updated Mineral Resource Estimates on the Thierry and K1-1 Deposits, with an effective date of May 15, 2012. This Updated Mineral Resource Estimates are summarized in Tables 6.12 and 6.13below.

TABLE 6.7 MAY 2012 P&E THIERRY MINERAL RESOURCE ESTIMATE AT $41/TONNE NSR CUT-OFF (1-6)							
Classification	**Tonnes**	**Cu (%)**	**Ni (%)**	**Au (g/t)**	**Pt (g/t)**	**Pd (g/t)**	**Ag (g/t)**
Measured	3,233,000	1.65	0.19	0.03	0.03	0.09	4.6
Indicated	5,582,000	1.66	0.19	0.05	0.05	0.14	3.8
Measured + Indicated	**8,815,000**	**1.66**	**0.19**	**0.05**	**0.04**	**0.13**	**4.0**
Inferred	14,922,000	1.64	0.16	0.10	0.07	0.21	6.4

Notes:

1) *Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
2) *The quantity and grade of reported Inferred Mineral Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Mineral Resources as an Indicated or Measured Mineral Resource and it is uncertain if further exploration will result in upgrading them to the Indicated or Measured Mineral Resource classification.*
3) *The Mineral Resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.*
4) *The January 31, 2012 two-year trailing average US metal prices used in this estimate were $3.72/lb Cu, $10.15/lb Ni, $28.18/oz Ag, $1,419/oz Au, $1,663/oz Pt and $639/oz Pd. The US Exchange rate was 0.99.*
5) *Overall payable metal (process recovery x smelter payable) in the NSR calculation were 84% Cu, 13% Ni and 37% for Ag, Au, Pt & Pd.*
6) *Costs used to determine the $41/tonne NSR cut-off value are as follows: mining $30/tonne, processing $9.50/tonne and G&A $1.50/tonne.*

TABLE 6.13 MAY 2012 P&E UPDATED K1-1 INFERRED MINERAL RESOURCE ESTIMATE AT $11/TONNE NSR CUT-OFF (1-8)							
NSR Cut-off	**Tonnes (Mt)**	**Cu (%)**	**Ni (%)**	**Au (g/t)**	**Pt (g/t)**	**Pd (g/t)**	**Ag (g/t)**
$11/tonne	53.614	0.38	0.10	0.03	0.05	0.14	1.83

Notes:

1) *Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
2) *The quantity and grade of reported Inferred Mineral Resources in this estimation are uncertain in nature and there has been insufficient exploration to define these Inferred Mineral Resources as an Indicated or Measured Mineral Resource and it is uncertain if further exploration will result in upgrading them to the Indicated or Measured Mineral Resource classification.*
3) *The Mineral Resources were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.*
4) *The January 31, 2012 two-year trailing average US metal prices used in this estimate were $3.72/lb Cu, $10.15/lb Ni, $28.18/oz Ag, $1,419/oz Au, $1,663/oz Pt and $639/oz Pd. The Canadian$/US$ Exchange rate was 0.99.*
5) *Overall payable metal (process recovery x smelter payable) in the NSR calculation were 84% Cu, 13% Ni and 37% for Ag, Au, Pt & Pd.*

6) *Mineral Resources were determined within a Whittle pit shell with 50-degree slopes utilizing mining costs of C$1.85/tonne for mineralized material and waste rock, and $1.65/tonne for overburden.*
7) *Costs used to determine the $11/tonne NSR Mineral Resource cut-off value were processing at $9.50/tonne and G&A $1.50/tonne.*
8) *The K1-1 Mineral Resource Estimate was prepared by Eugene Puritch, P.Eng. of P&E Mining Consultants Inc.*

The 2012 PEA and Updated Mineral Resource Estimates were superseded by the 2021 PEA and Updated Mineral Resource Estimates for Thierry and K1-1 (P&E, 2021). The 2021 Updated Mineral Resource Estimates, which are the most recent, are summarized in Tables 6.14 and 6.15

TABLE 6.14
2021 THIERRY MINERAL RESOURCE ESTIMATE AT $60/TONNE NSR CUT-OFF (1-6)

Classification	Tonnes	Cu (%)	Ni (%)	Au (g/t)	Pt (g/t)	Pd (g/t)	Ag (g/t)
Measured	3,233,000	1.65	0.19	0.03	0.03	0.09	4.6
Indicated	5,582,000	1.66	0.19	0.05	0.05	0.14	3.8
Measured + Indicated	**8,815,000**	**1.66**	**0.19**	**0.05**	**0.04**	**0.13**	**4.0**
Inferred	14,922,000	1.64	0.16	0.10	0.07	0.21	6.4

Notes:
1) *Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.*
2) *The Inferred Mineral Resource in this estimate has a lower level of confidence that that applied to the 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.*
3) *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 (2014) and Best Practices (2019) prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council.*
4) *The December 31, 2020 two-year trailing average US metal prices used in this estimate were $3.75/lb Cu, $6.25/lb Ni, $18.5/oz Ag, $1,600/oz Au, $900/oz Pt and $1,600/oz Pd. The CAD$:US$ exchange rate was 0.75.*
5) *Overall payable metal (process recovery x smelter payable) in the NSR calculation were 86% Cu, 33% Ni and 25% for Ag, Au, Pt & Pd.*
6) *Costs used to determine the $60/t NSR cut-off value are as follows: mining $40/t, processing $15/t and G&A $5/t.*

TABLE 6.15
2021 K1-1 PIT CONSTRAINED INFERRED MINERAL RESOURCE ESTIMATE (1-9)

Cut-off NSR ($/t)	Tonnes (kt)	Cu (%)	Ni (%)	Au (g/t)	Pt (g/t)	Pd (g/t)	Ag (g/t)
$12	53,614	0.38	0.10	0.03	0.05	0.14	1.8

Notes:
1) *CIM Definitions (2014) and Best Practices (2019) were followed for Mineral Resources.*
2) *Mineral Resources are estimated by conventional 3-D block modelling based on wireframing at a $12/tonne NSR cut-off value and ID^2 grade interpolation.*

3) *Metal prices for the estimate are: US$3.75/lb Cu, US$6.25/lb Ni, US$900/oz Pt, US$1,600/oz Pd, US$1,600/oz Au, US$18.50/oz Ag, based on Dec 31/2020 two-year trailing averages.*
4) *A uniform bulk density of 3.12 t/m³ has been applied for volume to tonnes conversion.*
5) *The Inferred Mineral Resource in this estimate has a lower level of confidence that 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.*
6) *Classification of Inferred Resources is based on wide drill hole spacing, lack of collar and down surveys for UMEX and 2002 series drilling and the lack of Au, Ag, Pt and Pd assays for more than 50% the sample data in the Mineral Resource. Regression based on available assays was used to generate PGE/PM values for the Mineral Resource Estimate.*
7) *The Mineral Resource Estimate was determined within a constraining pit shell with 50-degree slopes utilizing mining costs of $2.50/tonne for mineralized material, $2.50/tonne for waste rock, and $2.00/tonne for overburden. The pit constrained Mineral Resource is estimated below surface to a depth of 268 m.*
8) *Costs used to determine the $12/tonne NSR Mineral Resource cut-off value were processing at $10/tonne and G&A at $2.00/tonne.*
9) *Overall payable metal in the NSR calculation were 86% Cu, 33% Ni and 25% for Ag, Au, Pt & Pd.*

6.6 HISTORICAL METALLURGICAL TESTING

Mineral processing and metallurgical testwork of mineralized material from the Thierry Deposit and its satellite deposits were conducted in late-1970s and in the early 1980s. In 2005 and 2006, limited metallurgical testwork was conducted by SGS Lakefield on three composites from a 2004 drill program.

The following sections summarize the historical flotation testwork undertaken on material from the Thierry Deposits.

6.6.1 Pre-2005 Metallurgical Testwork

Testing on the Thierry Deposit included various metallurgical tests and mineralogical investigations. The following laboratories were involved:

- Louvain University, Belgium (U of L);
- Lakefield Research, Ontario (Lakefield – now SGS);
- Salman Mineral Research, Montreal (Salman);
- CANMET, Energy Mines and Resources, Ottawa;
- Noranda Laboratory, Noranda Québec (Noranda); and
- UMEX Thierry process plant and consultants for hydrometallurgical treatment of bulk copper-nickel concentrates.

Lakefield conducted metallurgical tests (bench scale rougher-cleaner, locked cycle and pilot plant) needed to develop the Thierry flow sheet.

The initial tests performed by Lakefield were designed to evaluate the feasibility of producing separate smelter-acceptable copper and nickel concentrates. However, it was quickly concluded in March 1972 that a separate marketable nickel concentrate would be challenging. This was due to the low nickel content in mineralized rock, only about half present as recoverable pentlandite, with the remainder being present as extremely fine-grained pentlandite, nickeliferous pyrrhotite, and as nickeliferous silicates. Also, due to smelter restrictions, the focus was directed in producing a high-quality copper concentrate.

Subsequent tests suggested that a substantial proportion of the nickel reported to the copper concentrate. This was remediated by Lakefield by applying a fine grind to rougher copper-nickel concentrates. Follow-up tests to produce a marketable bulk copper-nickel concentrate in addition to a copper concentrate were unsuccessful.

In April 1973, Lakefield conducted a pilot scale test on a bulk sample with the intention to produce a copper and a bulk copper-nickel concentrate from mineralized rock coming from cross-cuts at Levels 600 and 1,600 of the Thierry Mine, which were under development.

The following results were obtained:

- **Copper in concentrate:** from 15 to 24% Cu at recoveries from 83 to 94%.
- **Nickel in concentrate**: from 1.4 to 2.5% Ni at recoveries from 29 to 68%.

It was concluded that the Thierry concentrator would be designed to produce a simple copper concentrate that met smelter criteria (Noranda, QC).

Salman initiated metallurgical tests on Thierry mineralized rock samples in 1973, with the targets of maximizing copper grade and recovery. Salman's metallurgical tests conclusively confirmed Lakefield's results of high-grade, high recovery of copper, but similar to Lakefield, Salman was unable to produce a smelter-acceptable nickel concentrate.

The metallurgical laboratory at U of L carried out limited testing on the Thierry mineralized rock and concluded that the production of a high-grade copper concentrate with high metallurgical recovery was achievable. U of L did not attempt to produce a separate nickel concentrate. Detailed assays and mineralogical studies showed that (in the samples received) more than 50% of the nickel was present as violarite ($Fe^{2+}Ni_2^{3+}S_4$), the balance being present as pentlandite and in solid solution with pyrrhotite.

Noranda carried out flotation tests and a mineralogical study on a 0.23 t (500 lb) Thierry mineralized rock sample in February 1974. Good copper grade and recoveries were achieved, but nickel recoveries were low:

- **Copper in concentrate:** 28.90% grade at 90.6% recovery.
- **Nickel in concentrate:** 0.54% grade at 8.6% recovery.

When copper recovery was pushed up to 96%, nickel reporting to the copper concentrate significantly increased. This was interpreted as being the result of a substantial amount of nickel in a small fraction of the chalcopyrite. Noranda suggested that much of the nickel was associated with copper in the form of nickeliferous chalcopyrite. The report concluded that a copper-nickel concentrate assaying between 3 and 5% nickel might be achieved by flotation, even in combination with magnetic separation. An 8% combined copper-nickel concentrate was suggested, that could be obtained by recycling the copper cleaner tailings. In 1980, Lakefield performed several flotation tests on samples from the Thierry Deposit, and a blend (1:1) of both Thierry and the nearby K1-1

(Kapkichi) Deposit samples. The Thierry samples responded to the flotation tests as anticipated with good concentrate grade and recovery rates: 27.1% copper and 0.25% nickel grade with recoveries of 86.4 and 6.6%, respectively. As in the previous tests, nickel recoveries of up to ~65% were achieved in the rougher concentrates. However, nickel recoveries were only 5 to 30% in the copper cleaner concentrates.

Testwork by UMEX in 1980-81 in the Thierry process plant laboratory and in the process plant showed that a nickel concentrate could be floated from first or second copper cleaner tails. Two test results from the UMEX laboratory testwork reported a 5.9% and a 12.0% Ni grade in concentrate derived from copper first cleaner tails, with respective nickel recoveries of 70.0% and 61.5%. The laboratory work also indicated a 7.6 to 18.4% nickel grade in concentrate derived from second cleaner tails was achievable, with a nickel recovery ranging from 46.8 to 82.5%.

Process plant testwork based on treatment of copper first cleaner tails for Thierry indicated:

- 1.94 Ni to 10.61% Ni concentrate grade at recoveries of 9.9 to 42.0%.

The lower recoveries in both cases are isolated instances and may be anomalous.

There was some in-plant data where the relationship between Ni recovery and grade was not clear due to possible circuit instability. However, based on the available data, the metallurgical recovery versus metal grade relationship is summarized in Table 6.16.

TABLE 6.16
METALLURGICAL RECOVERY VERSUS GRADE

Feed (%)		Copper Concentrate (%)				Nickel Concentrate (%)			
Cu	Ni	Cu	Ni	Cu Recovery	Ni Recovery	Cu	Ni	Cu Recovery	Ni Recovery
1.20	0.10	26.0	0.5	91.6	15.0	2.0	6.0	1.4	50.0

6.6.2 Metallurgical Testwork 2005-2006

6.6.2.1 Summary

A limited program of metallurgical testwork by SGS Lakefield in late 2005 and early 2006 was undertaken on crushed assay reject samples and on drill core. The study consisted of a grindability (Bond) index measurement, and bench scale flotation testwork including a single locked cycle test. The flotation behaviour of the composites tested was generally comparable to earlier work in that a good copper concentrate could be obtained. However, a nickel or copper-nickel concentrate containing nickel at a saleable grade was not achieved.

The flowsheet evaluated by locked cycle testing involved flotation of a bulk copper-nickel rougher concentrate followed by regrinding and flotation of a copper concentrate containing minor nickel. The cleaner tailings from copper cleaner flotation was designated as a “copper-nickel cleaner feed” and contained ~3% each of copper and nickel. Cleaning of such a product to produce a copper-nickel concentrate was reported to be difficult and a single attempt on the cycle test material was unsuccessful. The small amount of cleaner tailings sample possibly contributed to the lack of success.

The locked cycle test conducted on the drill core composite returned a copper concentrate containing 30.9% copper representing a copper recovery of 90.6%, with 10.48 g/t combined PGE plus gold.

6.6.2.2 Samples

Four composites from the Thierry Deposit were created from crushed reject drill hole samples to provide a Master Composite and three sub-composites distinguished by copper grade. A single drill core composite sample was made and freezer-stored to minimize oxidation prior to testing. The analyses on the various composites are summarized in Table 6.17.

TABLE 6.8
ANALYSIS RESULTS FOR COMPOSITE SAMPLES

Element	Analytical Technique	Low	Medium	High	Master	Drill Core
Cu (%)	XRF	0.69	1.12	2.00	1.33	1.90
Ni (%)		0.12	0.22	0.23	0.18	0.26
Pt (g/t)	Fire Assay	0.13	0.21	0.20	0.17	0.26
Pd (g/t)		0.56	0.59	0.88	0.69	0.83
Au (g/t)		0.07	0.12	0.19	0.24	0.18
Ag (g/t)		4.7	8.0	13.0	8.5	
Al (g/t)	ICP-Scan	56,000	43,000	44,000	50,000	
As (g/t)		<30	<30	<30	<30	
Ba (g/t)		170	190	160	160	
Be (g/t)		0.96	1.2	1.8	1.2	
Bi (g/t)		<20	<20	<20	<20	
Ca (g/t)		48,000	32,000	35,000	40,000	
Cd (g/t)		<3	<3	<3	<3	
Co (g/t)		130	210	220	180	
Cr (g/t)		140	95	72	100	
Cu (g/t)		6,900	11,000	21,000	12,000	
Fe (g/t)		14,000	160,000	170,000	150,000	
K (g/t)		8,000	10,000	8,800	10,000	
Li (g/t)		13	14	14	14	
Mg (g/t)		60,000	64,000	64,000	64,000	
Mn (g/t)		1,800	2,100	1,900	1,900	
Mo (g/t)		<5	<5	<5	<5	
Na (g/t)		19,000	14,000	16,000	16,000	
Ni (g/t)		1,300	2,200	2,400	1,800	

TABLE 6.8
ANALYSIS RESULTS FOR COMPOSITE SAMPLES

Element	Analytical Technique	Low	Medium	High	Master	Drill Core
P (g/t)		273	368	279	298	
Pb (g/t)		<30	<30	<30	<30	
Sb (g/t)		<10	<10	<10	<10	
Se (g/t)		<30	<30	<30	<30	
Sn (g/t)		<20	<20	<20	<20	
Sr (g/t)		300	250	230	270	
Ti (g/t)		3,200	3,000	2,400	3,000	
Tl (g/t)		<30	<30	<30	<30	
V (g/t)		120	90	77	94	
Y (g/t)		8	6.5	5.6	6.3	
Zn (g/t)		140	170	170	150	
S (%)	Leco	2.24	3.55	4.62	3.31	3.93
$S^{=}$ (%)		1.81	3.01	3.88	2.74	
SO_4 (%)		<0.4	0.4	0.4	0.4	
S^{o} (%)		<0.5	<0.5	<0.5	<0.5	
as Ni^t (%)	Bromine-Methanol Ni Sulphide	0.075	0.13	0.14	0.11	
%Ni as NiS		62.5	59.1	60.9	61.1	

Source: *P&E (2021)*
Note: *Ni^t = total nickel*

6.6.2.3 Grinding

A single Bond ball mill work index test was performed on the drill core sample. The grinding index was determined to be 15.9 kWh/tonne (at 150 mesh), indicating moderately hard material.

6.6.2.4 Flotation

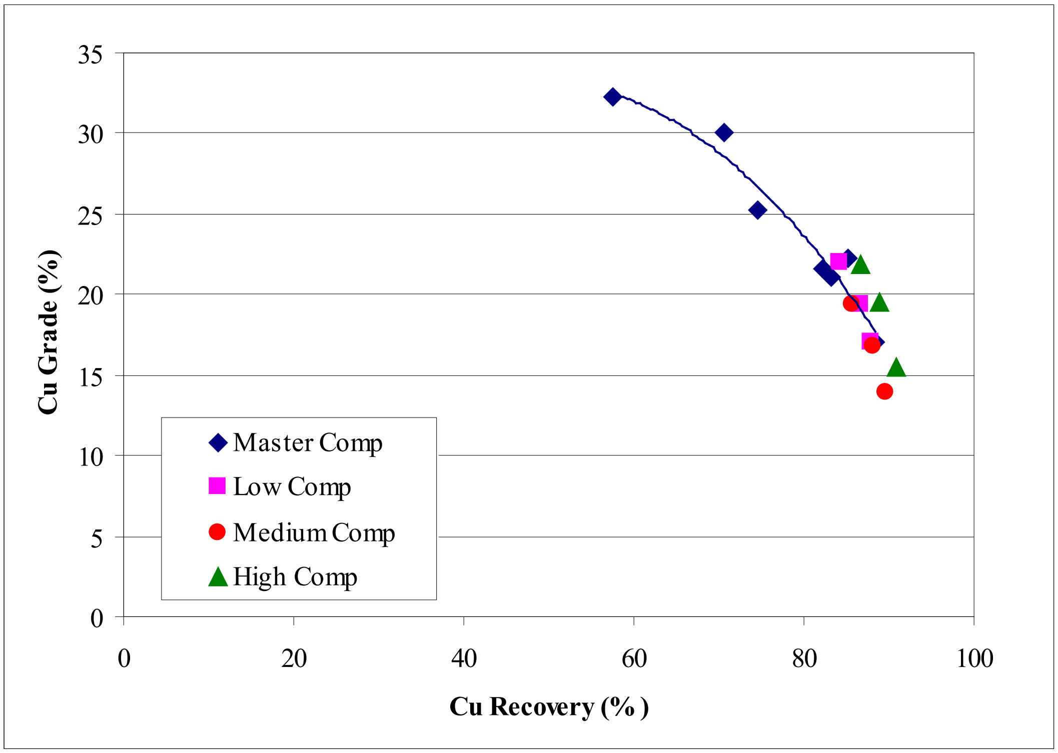
Preliminary work was conducted on the Master Composite ("MC"), followed by variability testing on the sub-composites and confirmatory work on the DC composite.

Bulk rougher flotation tests on the Master Composite indicated that a simple reagent scheme was appropriate for the copper flotation. Testing of the effect of grind indicated improved copper flotation as the grind was increased from a K_{80} of 125 to 67 µm. A grind of 90 µm was selected for selected testwork to minimize the effect of overgrinding of nickel mineralization. Grind had little effect on the slow flotation rate of copper that continued after 20 minutes.

Several cleaner flotation tests were conducted on the Master Composite sample, using conditions selected from the rougher tests; principally a grind of 90 µm. Bulk rougher concentrate cleaning was followed by copper-nickel separation at an elevated pH and testing of the use of carboxymethyl cellulose ("CMC") as a gangue depressant. Regrinding of the rougher concentrate was found to be necessary to obtain saleable copper grades and a grind of approximately 27 µm was used. A copper grade of 30% at a recovery of 70% was achieved in one test.

Variability testing showed little apparent difference in performance among the sub-composites as shown in Figure 6.5. The copper grade-recovery relationship was indicated to be independent of head grade.

FIGURE 6.5 COPPER RECOVERY VERSUS HEAD GRADE

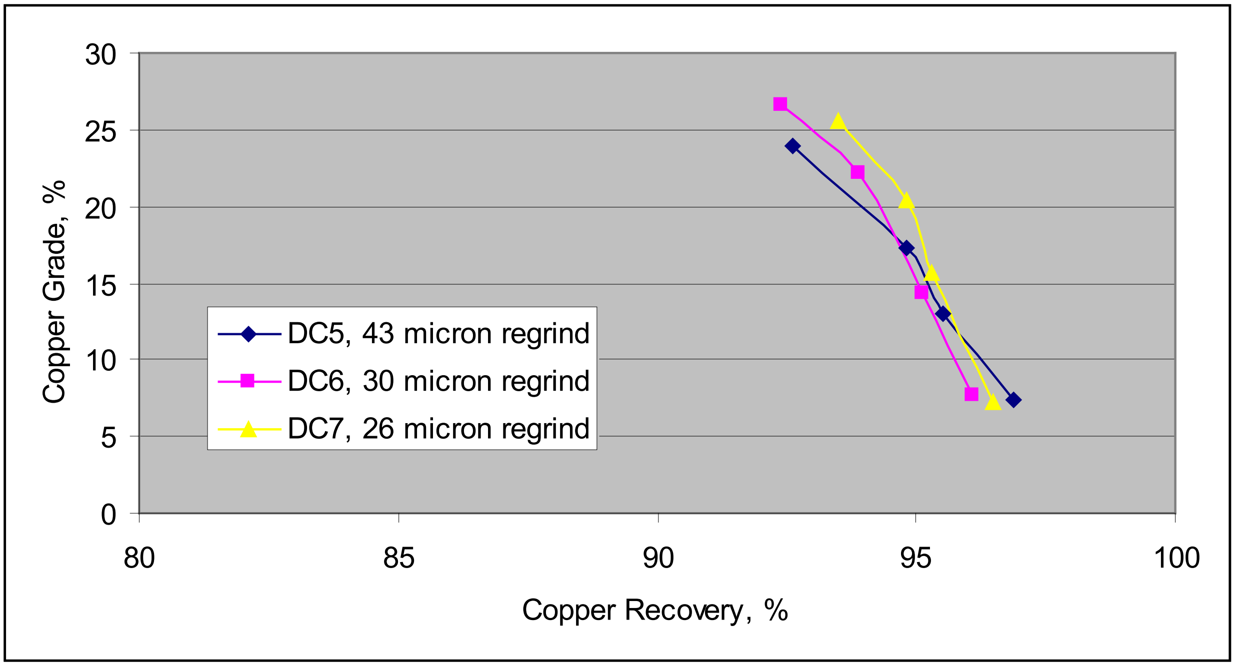


Source: *SGS (2006)*

Rougher flotation test results on the drill core sample were similar to those obtained on the Master Composite sample, although the grade-recovery relationship was improved indicating that the drill core may have been less oxidized in storage. Variations in grinds of 105 and 149 µm had minimal effect on grade-recovery.

Cleaner tests were conducted rougher grind size of 105 µm and regrind sizes ranging from 26 to 43 µm. As shown in Figure 6.6, the results show a significantly positive effect of grind of the rougher concentrate.

FIGURE 6.6 CLEANER GRADE-RECOVERY RELATION TO GRIND SIZE OF ROUGHER CONCENTRATE



Source: *SGS (2006)*

A single locked cycle test was completed on the drill core. The circuit design allowed for the production of a Cu-Ni concentrate, however, a low mass of material recovered as Cu-Ni feed allowed for only a single attempt to produce Ni concentrate. This test was not successful. The cycle test produced a high-grade copper concentrate (30.9% Cu) at a copper recovery of 90.1%. The cycle test results are generally consistent with the cleaner test results and with earlier metallurgical work on the Thierry mineralization.

The locked cycle test yielded PGE metallurgical recoveries of 44.5% for Pt, 56.0% for Pd and 47.1% for Au, at concentrations of 1.71, 7.51, and 1.26 g/t, respectively, in the copper concentrate. Nickel was maintained at <0.5%.

6.6.3 2008 Xstrata Process Support Metallurgical Review 2008

Xstrata Process Support ("XPS") completed a review of mineral processing and metallurgical testwork on the Thierry Deposit. The objective of their review was to assess the quality of the mineralogical and metallurgical work completed to 2008. Recommendations for future work were also made and are outlined below.

The documents reviewed covered both the Thierry Project and Kapkichi Lake area for the period between 1970 and 2007. In total, 10 reports on the Thierry Project and surrounding area were reviewed (Anderson, 2007; Curtis, 2001; Goodman, 2004; Lascelles and Fleming, 2006; MacLellan, 1980; Patterson, 1980; Patterson and Watkins, 1984; P&E, 2006; UMEX 1970 and 1982). Based on their conclusions, Xstrata Process Support made the following five recommendations:

1. The Thierry Deposit should be considered primarily as a copper deposit with credits obtained for minor Pt, Pd, Ag and Au content in copper concentrate. Nickel concentrate production was challenging, with both grades and recoveries being poor;

2. An economic evaluation and Mineral Resource Estimate on the Property is completed including payable metals Cu, Pt, Pd, Au and Ag, but without nickel. A decision to proceed with more testwork should be made when it is clear whether the economics of a Cu-Ag-Au (PGE) deposit are positive;

3. If the economics are favourable for a copper (PGE) deposit, XPS recommend a full mineralized rock characterization study using spatially representative and fresh drill core samples. This study would involve QEMSCAN and microprobe analysis to quantify the minerals present, payable metal deportments and association of the PGE. This would be valuable information that would assist the mineral processing team to develop a robust flowsheet that maximizes the profitability of the Thierry Deposit;

4. For all future testwork, a more rigorous sampling procedure should be implemented, where the composite to be tested is representative of the population to be investigated in terms of average grade, grade distribution, lithology and space; and

5. For all future testwork, effort should be made to prevent oxidation of drill core. The amount of oxidation in old versus new drill core should be assessed to appropriately design a protocol that can limit oxidation in drill core from the current program. Drill core that oxidizes easily may require special handling protocols (e.g., frozen or nitrogen purge).

6.6.4 Metallurgical Performance Estimates

The following assumptions were used to estimate metallurgical performance in a revived Thierry process plant (P&E, 2021):

- A conventional crushing-grinding-flotation process was assumed;

- Two mineral concentrates would be produced: 1) high-grade copper concentrate; and 2) a moderate grade nickel-copper (based on success in former Thierry process plant tests;

- The copper concentrate would be marketed to a conventional copper smelter, whereas the nickel-copper concentrate would be marketed to a pyrometallurgical smelter or to a hydrometallurgical facility;

- New metallurgical tests would be completed on fresh drill core using best up-to-date grinding and flotation technology to maximize concentration performance and copper-nickel separation. Improved metallurgical results would be confirmed; and

- Hydrometallurgical testing of a bulk Cu-Ni-PGE concentrate (e.g. PLATSOL™, Polymet type process) could be considered later.

The anticipated metallurgical performance would be:

- Copper concentrate: 30% Cu, <1% Ni, @ 92% Cu and 50% PGE recoveries; and
- Nickel concentrate: 8% Ni and 2% Cu, 40% Ni recovery.

Concentrate tonnage and concentration ratios would depend on head grade.

The anticipated concentrate production is summarized in Table 6.18.

TABLE 6.18
ESTIMATED CONCENTRATION PERFORMANCE

Average Heads		Copper Concentrate		Nickel Concentrate	
Element/ Tonnes	**Grade**	**Grade**	**Recovery (%)**	**Grade**	**Recovery (%)**
Cu (%)	1.462	30.0	92	2.0	1
Ni (%)	0.160	0.54	15	8.0	40
Au (g/t)	0.069	0.77	50	0.26	3
Pt (g/t)	0.052	0.58	50	0.19	3
Pd (g/t)	0.144	1.61	50	0.54	3
Ag (g/t)	5.07	57.0	50	19.0	3
Tonnes/year	**1.4 M**		**62,700**		**11,200**

The PGE may be non-payable. The PGE grades of the 2021 Mineral Resource Estimate were significantly lower than the SGS test composites (Table 6.17).

6.7 2012 AND 2021 PRELIMINARY ECONOMIC ASSSESSMENTS

P&E prepared PEAs on the Thierry and K1-1 Cu-Ni (PGE) Deposits in June 2012 (P&E, 2012) and in January 2021 (P&E, 2021).

The 2012 PEA was based on the Mineral Resource Estimate with an effective date of May 15, 2012 (see Tables 6.11 and 6.12 above), underground mining the Thierry Deposit; and open pit mining the K1-1 Deposit. The PEA concluded that on a pre-tax cash flow basis, a net undiscounted cash flow of $881.1 M was estimated. This resulted in a pre-tax Internal Rate of Return (“IRR”) of 19.0% and a pre-tax Net Present Value (“NPV”) of $379.9M at a 6% discount rate. The Project had a payback period of four years from start of commercial production. The average life-of-mine cash cost was estimated at CAD$1.76/lb copper, net of nickel and by-product credits, at an average operating cost of $27.48 per tonne processed. This PEA was superseded by the 2021 PEA (P&E, 2021).

The 2021 PEA by P&E (2021) was based on a Mineral Resource Estimate with an effective date of January 21, 2021 (see Tables 6.13 and 6.14 above). The PEA was based on underground mining of the Thierry Deposit. The Project was evaluated on an after-tax cash flow basis, which generates a net undiscounted cash flow estimated at $549.1 M. This resulted in an after-tax IRR of 18.9% and an after-tax NPV of $240.4 M when using a 6% discount rate. In the base case scenario, the Project had a payback period of 3.2 years from start of commercial production. The average life-of-mine cash cost was US$1.08/lb copper, net of nickel and by-product credits, at an average operating cost of $58.41/t processed. The average life-of-mine all-in sustaining cost ("AISC") was estimated at US$1.98/lb copper, net of nickel and by-product credits.

The PEAs referred to above are historical in nature. Cuprum has not conducted any economic analyses of the Project and is using the conclusions of the historical PEAs only as an indication of the potential performance of the Thierry Project.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

The Thierry and K1-1 Deposits occur along the northwest margin of the Archean Pickle Lake Greenstone Belt, in the Uchi Subprovince of the northwestern Superior Province, Canadian Shield (Young *et al*., 2006) (Figure 7.1). The Thierry Property is underlain by a 1.5 km wide belt of metavolcanic rocks that thicken to the southwest. The metavolcanic sequence is intruded by the Pickle Lake and Tarp Lake felsic-intermediate plutons. The metavolcanic sequence has been regionally metamorphosed under mid-greenschist facies conditions and structurally modified by four distinct tectonic events, the most significant of which was a late deformation and dynamic (retrograde) metamorphic event that produced a major shear zone ("mylonite") in the vicinity of the Thierry Deposit (Figure 7.2). Peak metamorphic conditions increased to mid-amphibolite facies in the contact aureoles of the major plutons.

7.2 LOCAL GEOLOGY

7.2.1 Rock Units and Types

The Thierry Deposit sequence consists of metamorphosed gabbro and ultramafic rocks hosted by sequences of massive to pillowed tholeiitic basalt flows (Patterson, 1980; Patterson and Watkinson, 1984a). The intrusions have been described as amphibolite, peridotite and metagabbro. The temperature and pressure conditions of metamorphism, as determined from garnet-biotite, calcite dolomite and magnetite-ilmenite geothermometers, peaked in the range of 600° to 650°C and 6.5 to 7 kbar in the contact aureoles of the felsic-intermediate plutons. Granitoid-metavolcanic contacts generally display cataclastic features and texturally some of these rocks approach a protomylonite (Sage and Breaks, 1982).

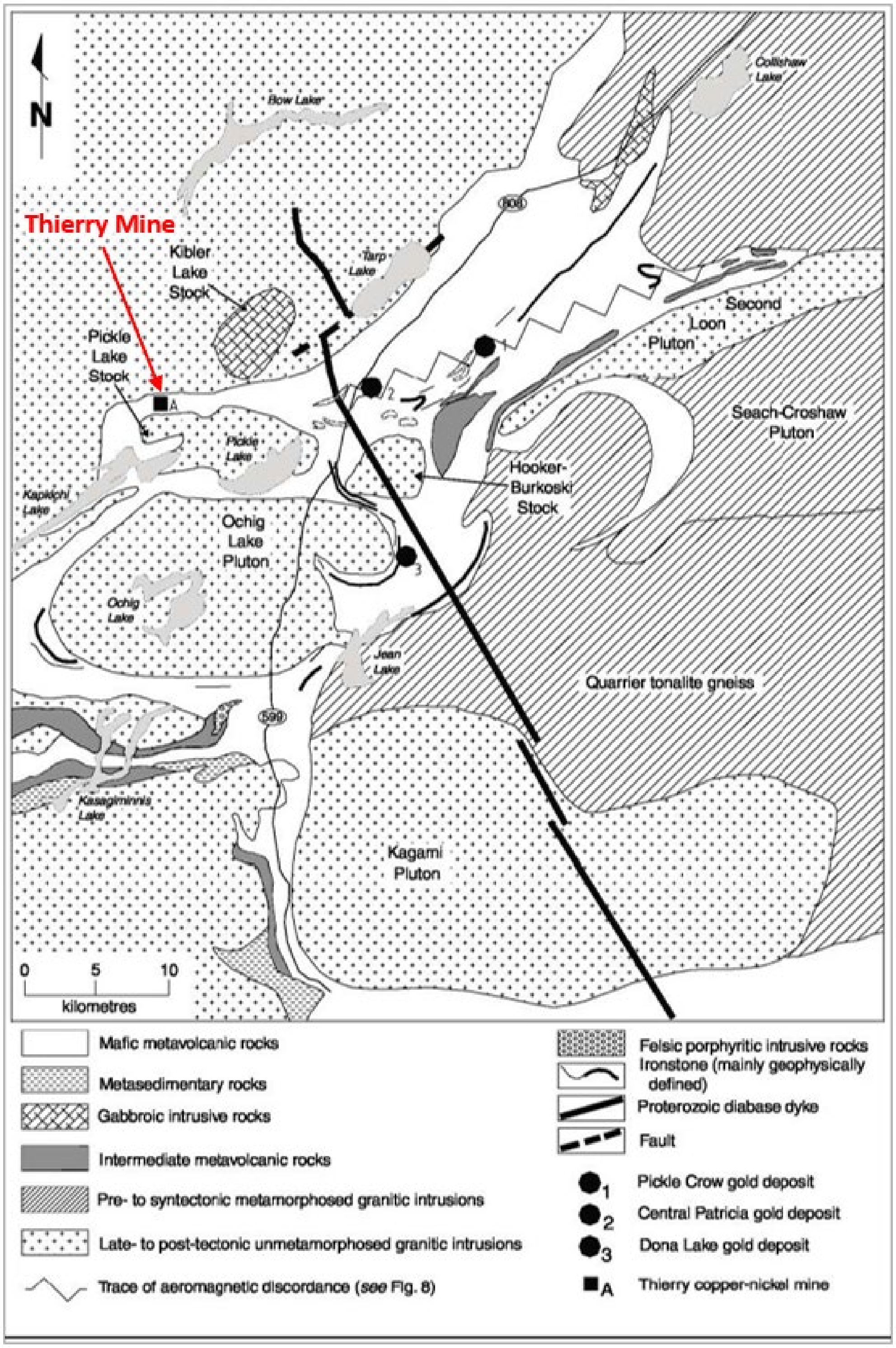
The pillow basalt flows around the historical Thierry Deposit open pits are highly deformed and flattened. Relatively undeformed, flat-lying amphibolite pillows have been observed along the southeast shore of Kapkichi Lake, near the Kapkichi Lake gold showing. The metavolcanics are moderately to strongly foliated and altered to epidote. The area of the Thiery Deposit is covered by glacial till and fluvial materials that average 4.5 m in thickness.

Interlayered with the mafic rocks of the Thierry Deposit sequence is a chert-magnetite iron formation of variable thickness that can be traced for at least a kilometre west and southwest of the Thierry Mine, where it appears to be truncated by a northwest-trending sinistral fault. The chert-magnetite zones in drill core were first observed by Gurgurewicz-Luck (1988) when re-logging it for a 1987 study, and subsequently by Mullen (1988) when re-logging historical drill holes for UMEX's PGE program in 1988. According to Mullen (1988), the iron formation horizon may have a focus of the main shearing event that preferentially allowed the intrusion of the host mafic-ultramafic bodies at Thierry.

According to Mullen (1988), the siliceous metasedimentary rocks and cherty iron formation observed in drill holes west of the Thierry Mine are probably not the strike extension of the main iron formation horizon west of the West Pit, but represent another sedimentary horizon.

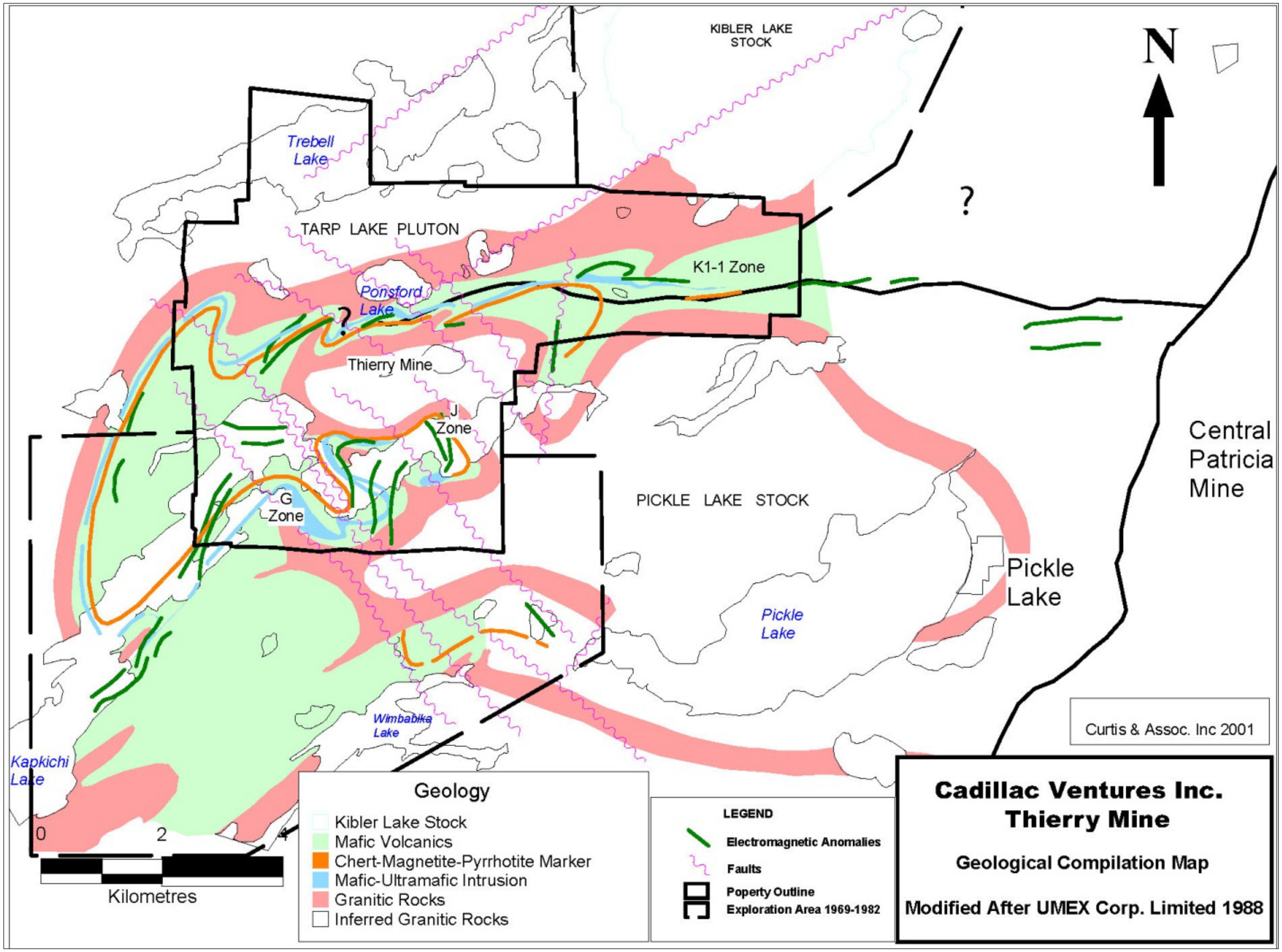
Iron formations under Kapkichi Lake and encountered farther south in drill hole K-92 are probably the on-strike extension of the "Mine Iron Formation". Magnetite-rich mafic intrusions similar to mafic-ultramafic bodies at Thierry underlie Kapkichi Lake.

FIGURE 7.1 REGIONAL GEOLOGICAL SETTING OF THE THIERRY MINE IN THE PICKLE LAKE GREENSTONE BELT



Source: *modified by P&E (January 2024), after P&E (2021)*

FIGURE 7.2 PROPERTY AREA GEOLOGY



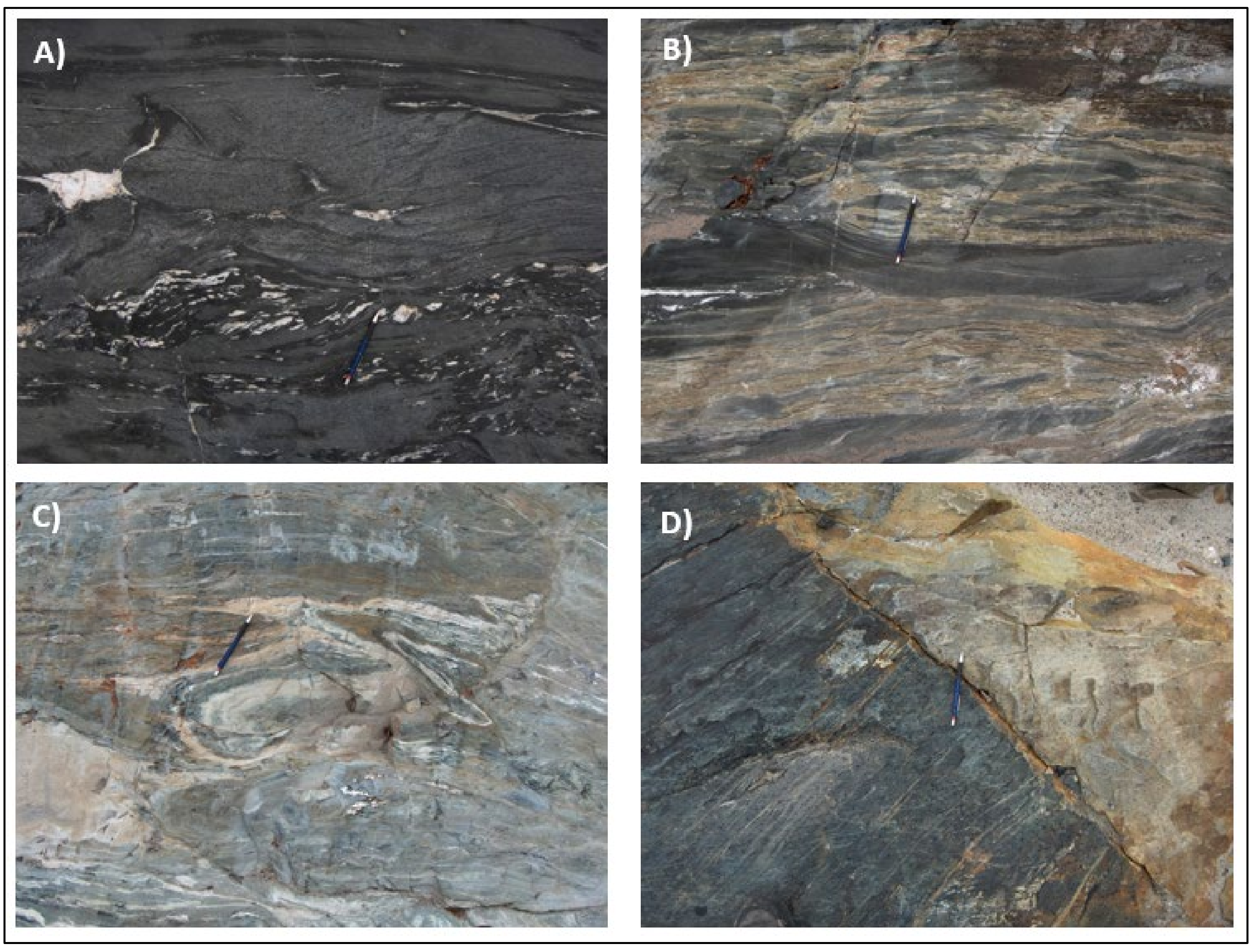
Source: *Cadillac (2012)*

7.2.2 Structural Geology

According to Anderson (2007), there is evidence for at least three generations of ductile deformation fabric related to folding at Thierry. An early penetrative planar fabric (regional S1) that trends northeasterly to easterly is defined by foliated chlorite and amphibole and a variably developed tectonite layering, dubbed fold generation F1. This early fabric is overprinted by open to tight, symmetric to Z-asymmetric folds that trend northeast and dip steeply to the northwest, which was ascribed to fold generation F2. These folds are, in turn, transected by a finely-spaced crenulation cleavage that dips subvertically and trends east-northeast, which represents fold generation F3. The significance of these three generations of ductile fold-related deformation to the regional deformation history of Young *et al.* (2006) remains to be determined.

The finite strain appears to be considerably lower in the footwall compared to the hanging wall of the Thierry Deposit. The hanging wall rocks consist mainly of variably tectonized mafic volcanics. The tectonite fabric in these rocks consists of planar fabric and linear fabric elements. The planar fabric element dips steeply to the north-northwest or northwest, and is defined by flattened pillows and clasts, transposed veins and primary layering, and foliated chlorite and amphibole (e.g., Figure 7.3A-D).

FIGURE 7.3 PLANAR FABRIC ELEMENTS IN THE HANGING WALL OF THE THIERRY DEPOSIT

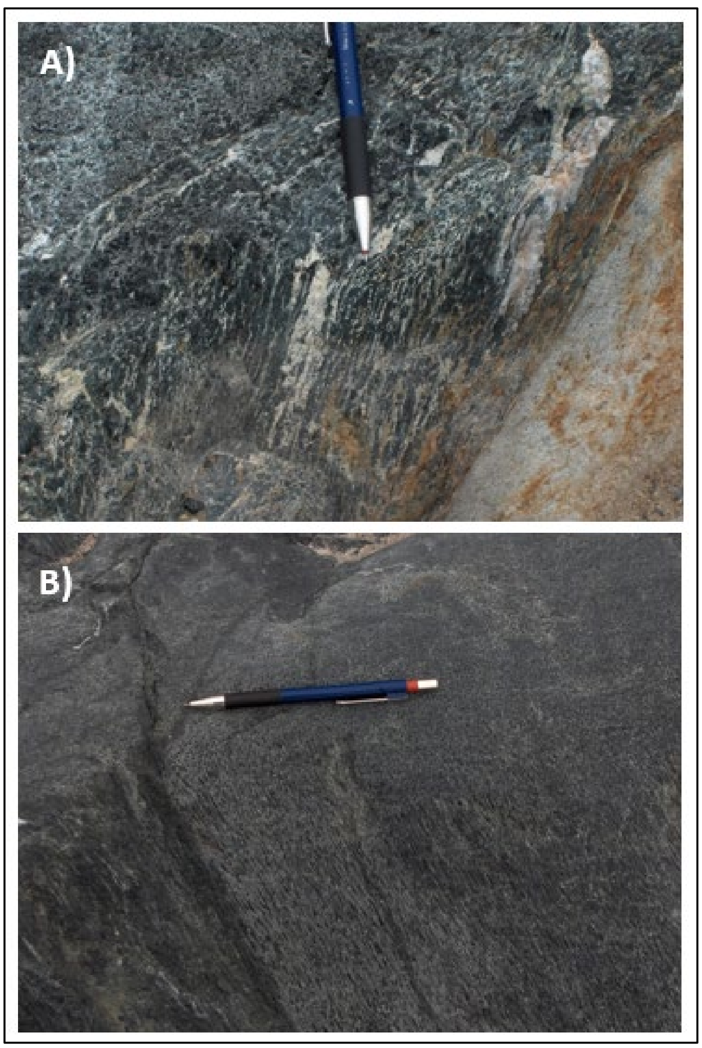


Source: *Anderson (2007)*

***Figure 7.3 Description**: **A)** Strongly tectonized mafic pillowed flow (top) and flow-breccia (bottom) on the northwest flank of the East pit (pencil indicates north). Asymmetric fabrics and quartz boudins indicate dextral shear. **B)** Strongly epidotized and tectonized mafic flow-breccia on the northwest flank of the East pit (pencil indicates north). Epidote alteration in this outcrop could be either primary (i.e., sub-seafloor hydrothermal) or secondary. Crude stratification in this outcrop dips moderately to the northwest. **C)** Well-layered, asymmetrically-folded, mafic-intermediate tectonite, possibly derived from stratified volcaniclastic or epiclastic rocks. Northwest flank of the East pit (pencil indicates north). **D)** Strongly tectonized mafic pillowed flow cross-cut by weakly deformed, late-tectonic felsic dyke (light brown, upper right). Northwest flank of the East pit (pencil points north).*

The linear fabric element in the hanging wall rocks is defined by aligned hornblende porphyroblasts, rare quartz ribbons and, in the mafic intrusions, aligned aggregates of amphibole and chlorite that likely represent pseudomorphic replacements after primary pyroxene phenocrysts (Figure 7.4A). Some of these rocks approach being L-tectonites (i.e., tectonite in which the linear fabric element predominates over the planar fabric element; Figure 7.4B). On the northwest margin of the East Pit, the L-fabric plunges steeply the north. On the east flank of the East Pit, the L-fabric plunges moderately to the northwest.

FIGURE 7.4 LINEAR FABRIC ELEMENTS IN THE HANGING WALL OF THE THIERRY DEPOSIT



***Source:** Anderson (2007)*

***Figure 7.4 Description**: **A)** Penetrative linear shape-fabric in medium to coarse-grained leucocratic gabbro on the northwest flank of the East pit (pencil indicates north). Lineation plunges steeply north. Note that the L-fabric is overprinted by a discrete ductile shear zone developed along the contact of a cross-cutting, late-tectonic felsic dyke (light brown, lower right). **B)** Penetrative linear shape-fabric in medium-grained mesocratic gabbro on the eastern flank of the East pit (pencil indicates north). Lineation plunges moderately to the northwest in this location.*

To the north (hanging wall) of the mineralized zone, sills and lenses of granite become abundant (Verbeek et al., 1972). Some of the large granite bands show cataclastic textures, and are locally converted to a crushed foliated rock resembling a mylonite.

Observations by Stott and Brown (1986) of the sense of displacement in the host rocks indicate that the Thierry Deposit occurs in the strain aureole around the Pickle Lake Stock (2,740 Ma) (see Figure 7.2 above) (Stott, 1996).

7.3 DEPOSIT GEOLOGY

The main components of the Deposits' geology are the metamorphosed mafic and ultramafic rocks and a chlorite-biotite schist/mylonite unit. The descriptions below are summarized mainly from Patterson and Watkinson (1984a and 1984b), Goodman (2004), and Anderson (2007).

7.3.1 Mafic and Ultramafic Rocks

The mafic to ultramafic rocks that host the Thierry Deposit consist of 75% metagabbro, 20% mafic metagrabbo, and 5% talc-carbonate schist. The metagabbro and mafic metagabbro are texturally and chemically gradational, as shown by underground mapping, petrography and whole-rock compositions along the 312 cross-cut. The metagabbro is composed of 50 to 80% amphibole and 20 to 50% plagioclase. This unit grades to a mafic metagabbro containing 0 to 20% plagioclase and 80 to l00% hornblende. The hornblende, commonly with exsolved actinolite, has developed by metamorphism of clinopyroxene and plagioclase (An_{60}). These rocks are generally schistose and lineated.

Talc-carbonate schist occurs as blocks adjacent to the mylonitic rocks. A direct petrological relationship with the gabbro is not apparent due to deformation. Rare samples contain massive lenses composed of olivine pseudomorphs partly altered to a mixture of talc and serpentine. Carbonate in the schist is a mixture of dolomite and magnesite (Patterson and Watkinson, 1984a). An olivine-tremolite-chlorite rock, composed of coarse lath-shaped olivine crystals up to 3 cm long in a matrix of tremolite, occurs rarely in association with the talc-carbonate schist.

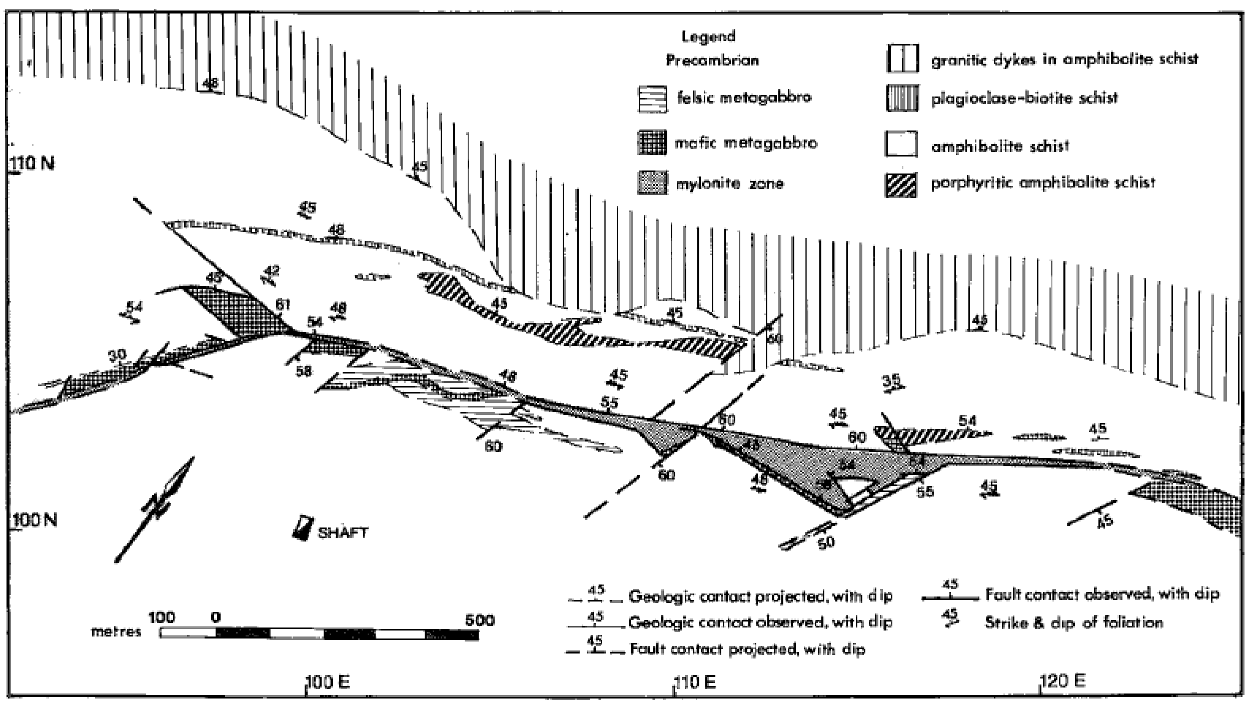
Within the context of the folding model outlined above, Anderson (2007) suggests that it might be reasonable to infer that the penetrative, steeply-plunging, linear shape-fabric observed in outcrop at the Thierry Mine is a D1 generation structure associated with development of isoclinal, doubly-plunging, F1 folds cored by the Pickle Lake Pluton. Sheath-like, isoclinal folds in the mafic-intermediate tectonite on the northwest margin of the East Pit may also correspond to D1. Anderson (2007) also infers that the ubiquitous dextral asymmetrical fabrics and Z-asymmetrical folds in the mafic tectonites are associated with the Z-asymmetrical F2 folds on a macroscopic scale. The relationship between the F3 open cross-folds and the Riedel-type network of brittle-ductile faults and shear-fractures remains unconstrained.

7.3.2 Chlorite-Biotite Schist/Mylonite Zone

The mafic-ultramafic rocks that host the mineralization are highly deformed in shear zones and have been classified texturally as phyllonitic mylonite, chlorite-biotite schist (Patterson and Watkinson, 1984a). A structural corridor, referred to as the chlorite-biotite shear zone or phyllonitic blastomylonite ("mylonite"), is defined by zones of mylonitic host rocks that enclose almost all of the defined sulphide mineralization. The mylonite zone has been traced for 6 km, and extends from east of the K1-1 Pit to approximately 1 km west of the West Pit, where it appears to be truncated by a northwest-southeast trending sinistral fault.

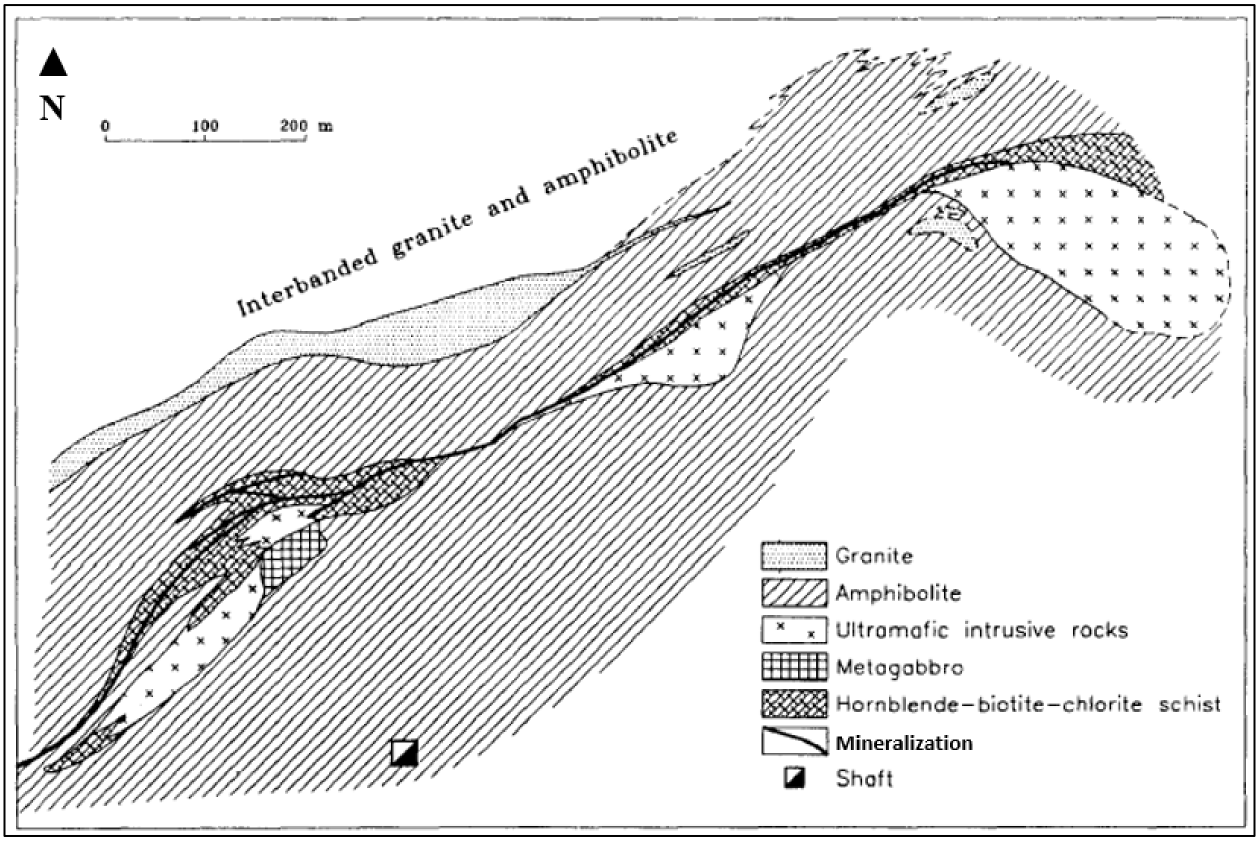
The mylonite occurs in a shear zone that pinches and swells from 2 to 100 m in thickness (Figures 7.5 to 7.7). A strong positive relationship exists between the amounts of biotite and of sulphides in the mylonite. The mylonite commonly includes fragments of relatively undeformed metagabbro, amphibolite schist, diorite, and quartz vein. In hand specimens, the mylonite is dark grey, well foliated and fine-grained. It is intensely jointed, with the joint surfaces coated with dark chlorite and sheared sulphides. The mylonite is commonly layered, with white felsic layers, epidote layers, and quartz veins from 1 mm to 5 cm thick. The layering is complexly folded with fine-scale interference patterns. Part of the mylonite is brecciated, and fragments of mylonitized material are enclosed in a very fine-grained matrix of chlorite and sulphides. The fragments lack preferred orientation and are variably rounded, bent, fractured and stretched along the foliation. The surrounding matrix exhibits pressure shadows.

FIGURE 7.5 GEOLOGICAL MAP OF THE 100 LEVEL OF THE THIERRY UNDERGROUND MINE*



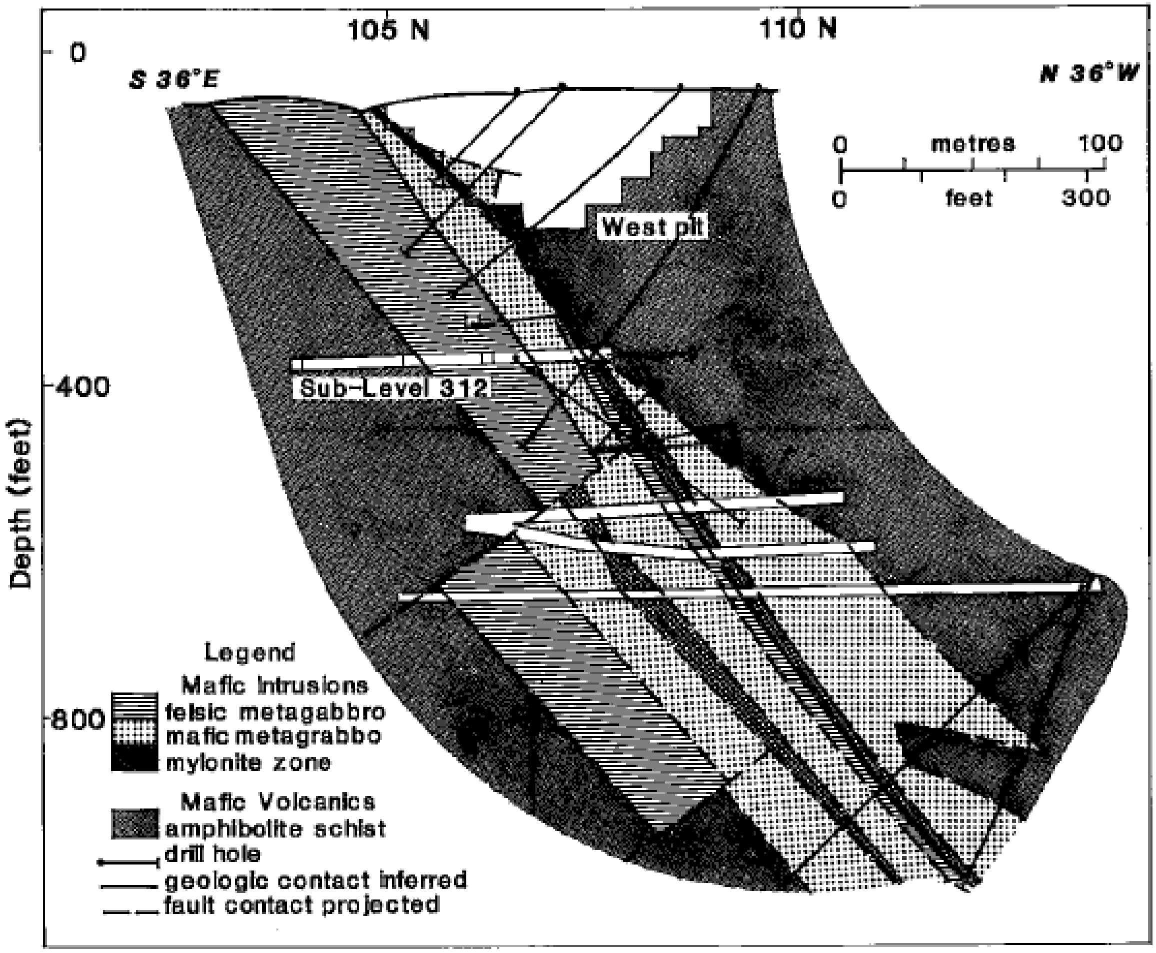
Source: *Patterson and Watkinson (1984a)*
Note: ** The source does not specify whether the 100 Level is at 100 feet or metres below surface.*

FIGURE 7.6 RESTRICTION OF MINERALIZATION TO THE HORNBLENDE-BIOTITE-CHLORITE SCHIST AT THIERRY



Source: *Modified by P&E (February 2024) from Stott (1996), Sage and Breaks (1982) and Verbeek et al. (1972)*
Figure 7.6 Description: *A geological level plan for the 150 m level of the historical Thierry Mine (units indicated on page 128 and in Figure 14 of Sage and Breaks, 1982) showing the mineralization restricted largely to the hornblende-biotite-chlorite schist, a shear zone in the mafic-ultramafic sill. Note that the copper-nickel sulphide mineralization is represented by the dark lines shown within the hornblende-biotite-chlorite schist unit.*

FIGURE 7.7 GEOLOGICAL CROSS-SECTION 101E OF THE HISTORICAL THIERRY MINE*



Source: *Patterson and Watkinson (1984a)*
Note: **View looking southwest.*

The layering of the mylonite results from variation in the relative proportions of fragments and of chlorite and biotite in the matrix. Some of the quartz-rich layers are mylonitized. Individual quartz grains are strained and recrystallized, and occur in a matrix of very fine-grained quartz. Many of the amphibolite fragments are composed of dark-green hornblende at the core and colorless actinolite at the rim.

There is a complete gradation between the mylonite and mafic metagabbro. Amphibole in the mafic metagabbro is deformed, bent and fractured, with biotite and chlorite occurring between the fragments. As the amount of deformation increases, the amount of biotite and chlorite increases, the size of the amphibole fragments decreases, and the number of layers increases. Accessory minerals present are fluorite, barite, titanite, epidote and carbonate.

The Mylonite Zone is offset by east-west and north-northeast to northeast trending fault zones. The shear structure dips 48° to 55° to the north-northwest. The angle of dip increases to 70° in the eastern part of the mineralized rock. Felsic intrusions and gabbro occur as lens shaped bodies and narrow dykes 5 cm to 3 m thick.

Examination of historical UMEX mine plans and sections indicated strong structural control on the geometry of the mineralized zones (Goodman, 2004). As a result, mineralization is recognized to occur in a pinching and swelling manner. In this model, thicker and higher-grade mineralization is predicted to be associated with steeply-dipping and (or) right-stepping portions of shear zone segments.

7.4 MINERALIZATION

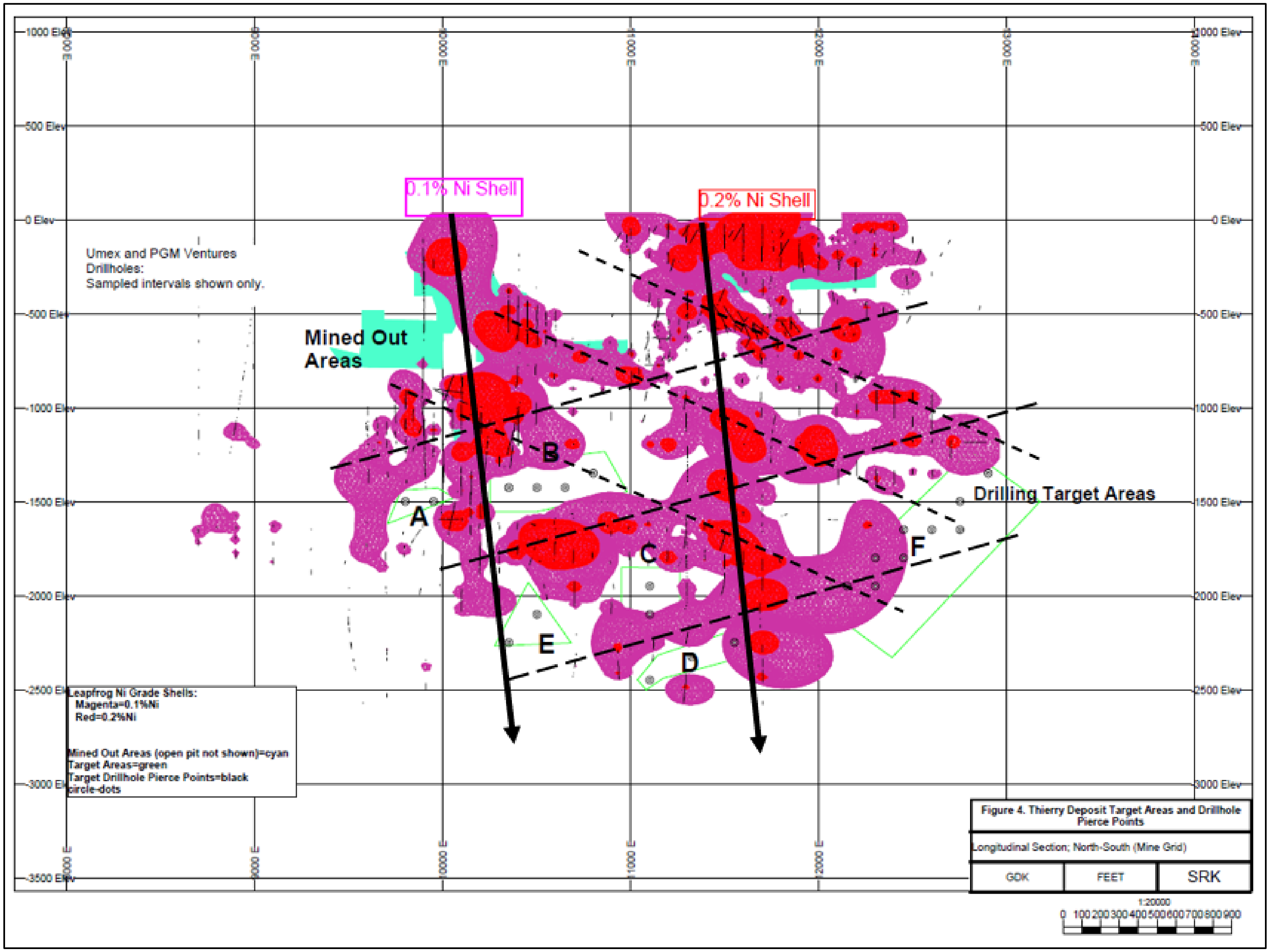
The main mineralized zone of the Thierry Deposit consists of a near-continuous, sheet-like body of sulphide mineralization that has been traced in drilling and underground exposures for 1,280 m along strike, up to 30 m across strike (thick), and 760 m down-dip (Anderson, 2007). The Thierry Deposit strikes east-west and dips moderately to steeply to the north (P&E, 2021). Two other mineralized zones, the hanging wall zone and the footwall zone, are much shorter and parallel the main mineralized zone. The K1-1 Deposit, 3 km to the east of Thierry, has been traced in drilling for 1,380 m roughly east-west along strike and to a depth of 450 m below surface (P&E, 2021). This Deposit consists of approximately seven en-echelon stacked lenses that dip approximately 55° north.

Despite the relatively simple geometry, the Ni grade shell models of the Thierry Deposit indicate several distinct plunge components to the Thierry Deposit (Keller, 2005; Anderson, 2007) (Figure 7.8). The primary plunge component is defined by two prominent mineralized shoots that plunge steeply in the plane of the Deposit. These intersect bedrock surface at the locations of the West and East Pits. Two secondary plunge components are defined by three roughly equally-spaced, mineralized shoots that plunge shallowly west-southwest and east-northeast in the plane of the Thierry Deposit. The main mineralized zone appears to be open to expansion by drilling at depth.

Overall, the main sulphide minerals, listed in approximate order of decreasing abundance, are pyrrhotite, chalcopyrite, pyrite and pentlandite (Patterson and Watkinson, 1984a). Cubanite, bornite, magnetite and minor ilmenite have also been identified. Violarite and mackinawite occur as alteration products of pentlandite (Patterson and Watkinson, 1984b). Outside the main sulphide mineralized zone, chalcopyrite and bornite occur as stringers and finely dissemination sulphides. Bornite is commonly associated with carbonate and quartz veins. Oxidized mineralization contains violarite, millerite and bornite (Patterson and Watkinson, 1984b).

The main features of the Cu-Ni sulphide mineralization and of the platinum metal mineralization are summarized below.

FIGURE 7.8 ISOMETRIC LONGITUDINAL PROJECTION VIEW OF THE THIERRY DEPOSIT SHOWING INTERPRETED PLUNGE DIRECTIONS*



Source: *Modified by P&E (February 2024), after Keller (2005) and Anderson (2007)*
Note: ** View looking northwards.*

7.4.1 Copper-Nickel Mineralization

Five main styles of Cu-Ni sulphide mineralization have been described at the Thierry Mine: (Patterson and Watkinson, 1984b): 1) breccia mineralization; 2) mylonite mineralization; 3) disseminated mineralization; 4) bornite mineralization; and 5) supergene altered or oxidized mineralization. The key features of each of these styles of sulphide mineralization are summarized below.

7.4.1.1 Breccia Mineralization

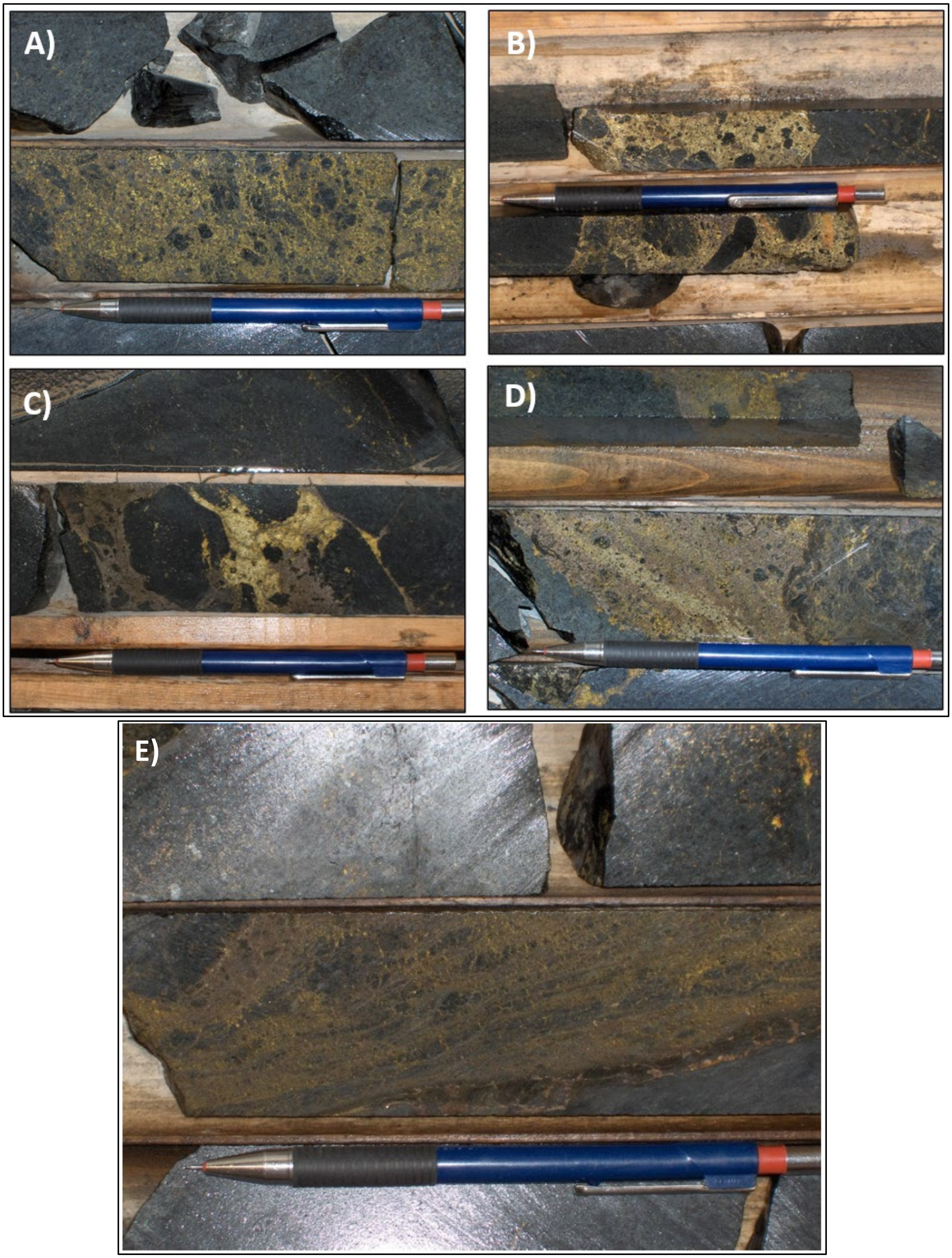
Breccia mineralization makes-up ~40% of all mineralized rock. This mineralization consists of near-massive (50 to 80% total sulphide) to massive (>80% total sulphide) chalcopyrite and pyrrhotite that contains angular to subrounded inclusions of wall rocks or other silicate gangue (mafic metagabbro, mylonite and amphibolite) (Figure 7.9A). Breccia mineralization tends to form discrete, relatively sharp-walled veins that are apparently controlled by irregular fracture arrays in relatively weakly to non-foliated wall rocks (Figure 7.9B). These veins may result from ductile flow of sulphides during deformation (i.e., piercement veins) or fluid-state remobilization during, or subsequent to, deformation (e.g., Gilligan and Marshall, 1987). The breccia veins typically do not exceed 50 cm in maximum thickness, and are composed mainly of chalcopyrite with subordinate to subequal amounts of pyrrhotite. Some veins exhibit marked segregation of pyrrhotite and chalcopyrite (Figure 7.9C). In addition to chalcopyrite and pyrrhotite, pyrite (Ni-rich and Co-rich), pentlandite, smythite, violarite (in pentlandite and pyrrhotite), and sphalerite (in pyrrhotite and with pyrrhotite + pyrite) are also present.

Late-tectonic emplacement of the breccia veins is indicated by their relatively undeformed state, and the local presence of multiphase deformation structures in wall rock inclusions (Anderson, 2007). In addition, breccia mineralization is observed to discordantly cut tight to isoclinal folds in the laminated rocks of possible sedimentary origin (Anderson, 2007), indicating emplacement subsequent to development of the intense transposition fabrics. These aspects, coupled with the relatively fine-grained, nonannealed, nature of the breccia mineralization indicate emplacement late in the tectono-metamorphic evolution of the host-rocks.

Nevertheless, some of the breccia veins preserve evidence of a more protracted, multi-phase emplacement history. One breccia vein intersected in drill hole PGM 05-60, for example, contains two generations of breccia mineralization. The earlier generation of breccia is inclusion-poor and distinctly layered, and is sharply cross-cut by a later generation of relatively massive and inclusion-rich breccia (Figure 7.9D).

Although most examples of breccia mineralization are relatively undeformed, some exhibit evidence of ductile and brittle-ductile deformation (Anderson, 2007), in the form of a moderate to strong planar fabric defined by aligned inclusions of silicate gangue. This mineralization is referred to as ‘durchbewegt’ (Marshall and Gilligan, 1989). In the example shown (Figure 7.9E), the ductile fabric is cross-cut by en-echelon arrays of chalcopyrite-filled extension veins (i.e., tension-gashes).

Figure 7.9 BRECCIA MINERALIZATION IN DRILL CORE



Source: *Anderson (2007)*

***Figure 7.9 Description**: **A)** Breccia mineralization, consisting of near-massive, fine-grained chalcopyrite and pyrrhotite with angular to subrounded inclusions of weakly foliated silicate gangue. Drill hole PGM 05-51. **B)** Breccia mineralization consisting of near-massive, fine-grained chalcopyrite and pyrrhotite with angular to subrounded inclusions of silicate gangue. Breccia forms discrete, sharp-walled veins in weakly foliated and weakly mineralized melanocratic gabbro. Drill Hole PGM 05-51. **C)** Breccia mineralization in melanocratic gabbro, showing marked segregation of pyrrhotite and chalcopyrite. Drill Hole PGM 04-28. **D)** Early generation of distinctly layered, relatively inclusion-poor, breccia mineralization (left) appears to be discordantly cut by inclusion-rich breccia (right), suggesting at least two increments of breccia development. Drill Hole PGM 05-51. **E)** Strongly foliated breccia mineralization, showing en-echelon arrays of cp-filled extension veins. Note the sharp, planar wall-rock contact along the lower right portion of the breccia. DDH PGM 05-51.*

Higher-grade mineralization is hosted by narrow, fracture-controlled veins of massive to semi-massive breccia sulphide (chalcopyrite-pyrrhotite-pentlandite), which occur as discordant structures that cross-cut the CBS or relatively low-strain rocks on the margins of, or as inclusions in, the CBS. Deformed breccia mineralization exhibits "durchbewegung" structure (e.g., Gilligan and Marshall, 1987; Marshall and Gilligan, 1989).

The breccia sulphide veins and apparent net-textured mineralization in the CBS indicate that chalcopyrite and pyrrhotite underwent significant remobilization, and that this remobilization continued into the latest increments of the ductile deformation history of the host-rocks. The absence of sulphide porphyroblasts or medium- to coarse-grained, granoblastic polygonal (i.e., annealed) sulphide textures, indicates that final emplacement of remobilized sulphide occurred following the middle amphibolite-facies peak of metamorphism (Anderson, 2007). These inferences are supported by the occurrence of high-grade chalcopyrite-pyrrhotite veins in discordant brittle-ductile faults on the northwest flank of the East Pit.

The breccia style mineralization grades into the mylonite style mineralization.

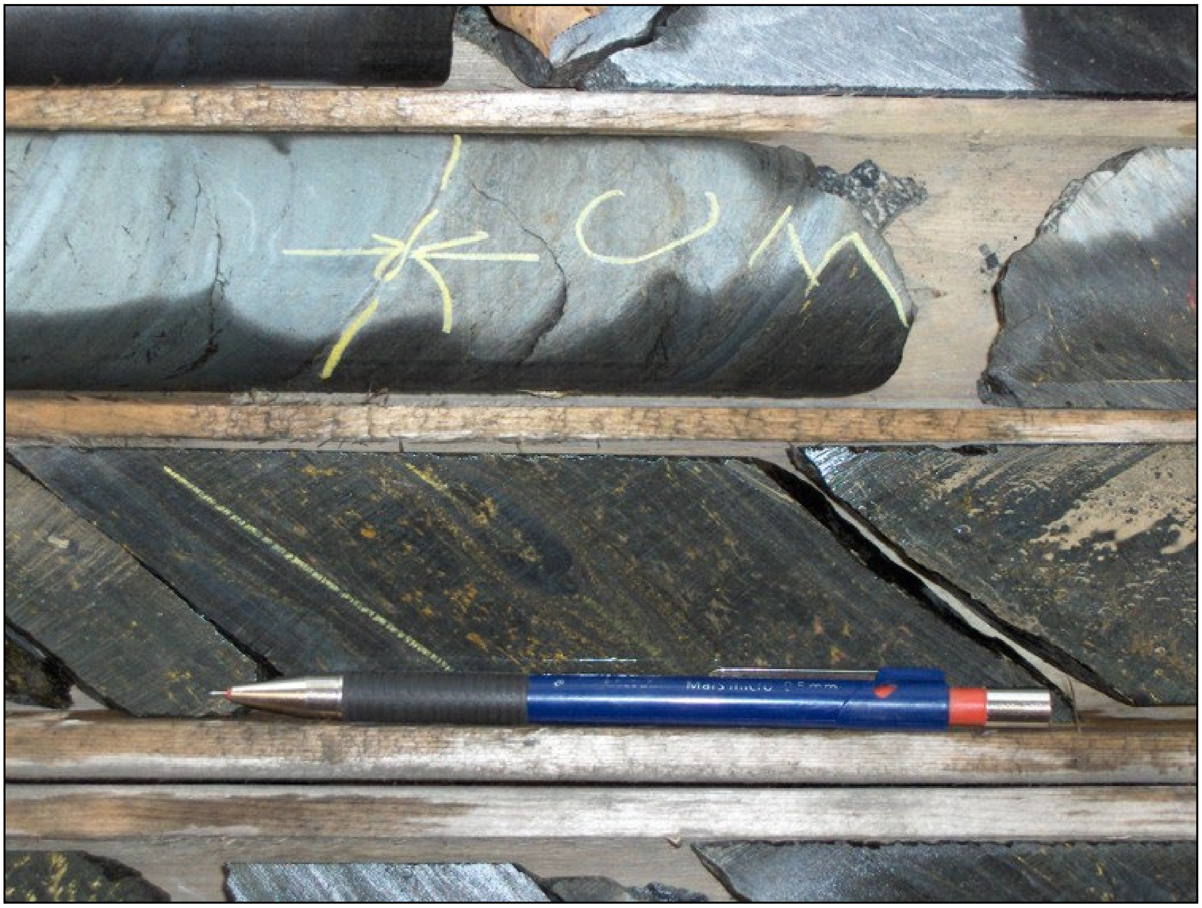
7.4.1.2 Mylonite Mineralization

Mylonite mineralization makes-up ~58% of all mineralized rock and contains 5 to 20% sulphide as stringers of chalcopyrite, pyrrhotite, pentlandite and pyrite (Ni-rich and Co-rich). The stringers parallel foliation and, where gradational with breccia mineralized rock, the breccia fragments are flattened and elongated. Violarite (in pentlandite) and sphalerite (with pyrrhotite and pyrite) are also present.

From the descriptions of Patterson and Watkinson (1984a), Novak and Mlot (2004), Goodman (2004), and Keller (2005), the mylonite was probably derived through intense deformation and hydrothermal alteration of mafic or ultramafic intrusive rocks. However, Anderson (2007) points out that this interpretation appears to be inconsistent with the observation that these rocks occur in sharp contact with mafic and ultramafic intrusive rocks that lack mesoscopic deformation fabrics, which would require very abrupt strain-gradients from the mylonite into the precursor rocks. Nevertheless, similar such abrupt strain gradients are apparent in the Kambalda Nickel Camp of Western Australia and have been attributed to extreme competency contrast during ductile deformation (Stone et al. 2005).

Alternatively, according to Anderson (2007), the mylonite (CSB) unit precursor was originally sedimentary rock that has been intensely sheared. Evidence of intense transposition is provided by the occurrence of tight to isoclinal, strongly asymmetric and rootless folds in these rocks (Figure 7.10).

FIGURE 7.10 MYLONITE MINERALIZATION



Source: *Anderson (2007)*
Figure 7.10 Description*: Isoclinal, rootless fold in laminated, "mylonite" mineralized rocks of possible sedimentary origin. Drill hole PGM 05-60.*

7.4.1.3 Bornite Mineralization

Bornite mineralization constitutes only ~1% of all mineralized rock and contains 1 to 5% sulphide as stringers and disseminations of chalcopyrite and bornite in carbonate veins associated with blocks of amphibolite schist up to 20 m in diameter in the main shear zone (chlorite-biotite ± amphibole schist). Disseminated bornite was intersected in a cross-cut on the 180 m level (Sage and Breaks, 1982).

In addition to chalcopyrite and bornite, millerite (NiS), carrollite ($CuCo_2S_4$) , and wittichenite and emplectite (sulphosalts) are also present. Precious metal minerals native silver (with acanthite and stuetzite) and merenskyite ($PdTe_2$) occur as micrometre-size grains disseminated in bornite and chalcopyrite.

7.4.1.4 Disseminated Mineralization

Disseminated mineralization makes-up ~1% of all mineralized rock. The disseminated sulphides are hosted in thick sections of mafic metagabbro and talc-carbonate schist. The disseminated sulphides occur between remnant olivine and serpentine-talc pseudomorphs of olivine in the metagabbro and along cleavages in amphibole and chlorite in the schist. The sulphide phases are chalcopyrite, pyrrhotite, pentlandite, bornite and cubanite intergrown with magnetite.

Disseminated mineralization consists of isolated, monomineralic to polymineralic grains of pyrrhotite, chalcopyrite and (or) pentlandite that typically are <2 mm across and are evenly distributed throughout the host rock. Typically, this style of mineralization contains <5% total sulphide. Disseminated mineralization is observed in ultramafic and mafic rocks of inferred intrusive origin (Figure 7.11A), and has been interpreted to represent recrystallized primary magmatic sulphide (e.g., Patterson and Watkinson, 1984a, 1984b). More heavily disseminated mineralization (5 to 10% total sulphide; called matrix-textured mineralization by Anderson, 1977) consists of blebs and irregular veinlets of chalcopyrite and pyrrhotite that form the matrix to equant to irregular-shaped fragments or grains of silicate gangue (Figure 7.11B).

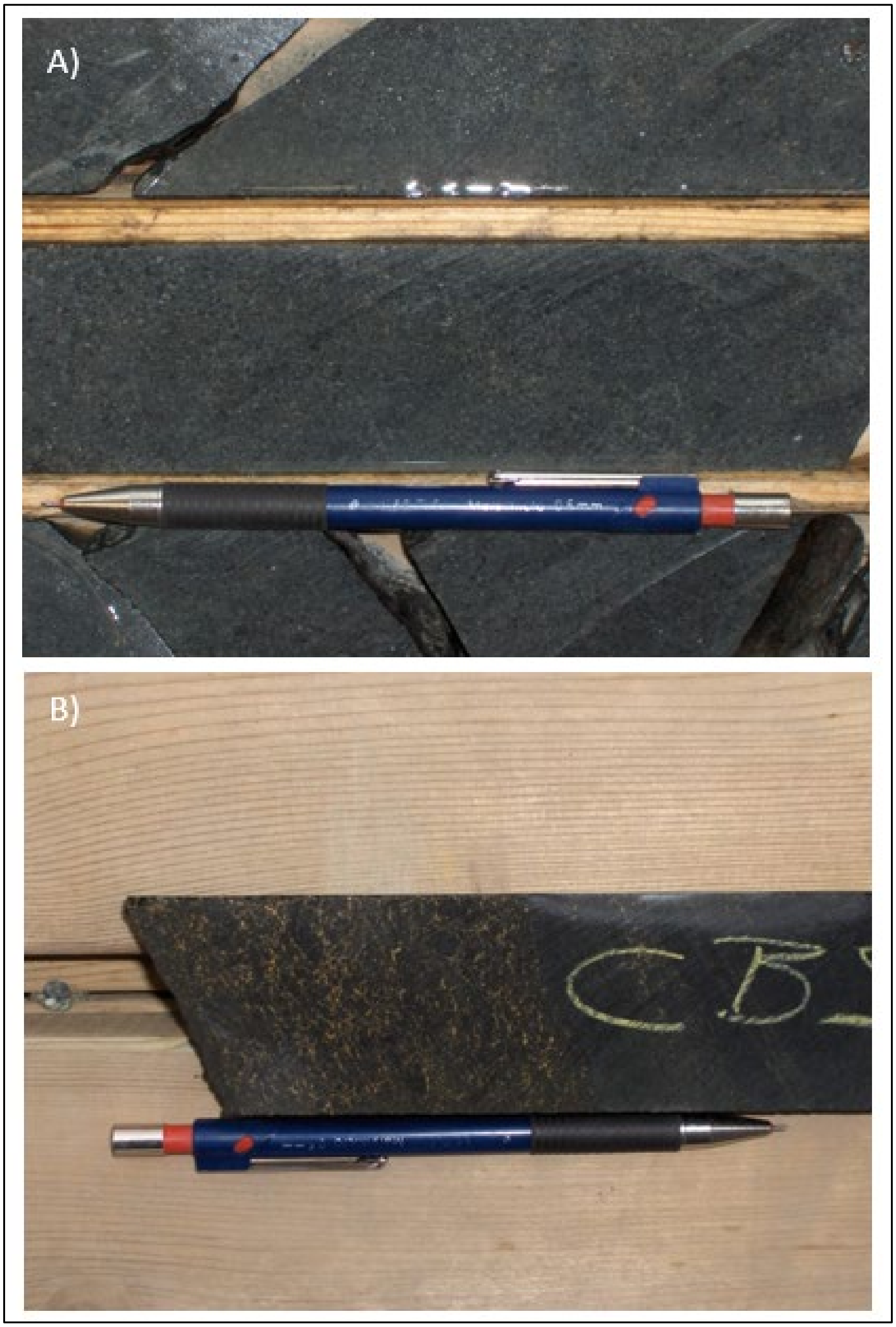
7.4.1.5 Supergene Altered/Oxidized Mineralization

Additionally, there is also supergene altered or oxidized mineralization, which is characterized by the presence of violarite, millerite and bornite (Patterson and Watkinson, 1984b). Also present are the mineral phases polydmite (Cu-rich and Co-rich varieties), vaesite, pyrite (Co-rich), and chalcopyrite. The alteration produced Fe oxide at the expense of Fe sulphide, thereby increasing the Ni:Fe ratio of the remaining sulphide mineralization.

7.4.1.6 Cu:Ni Ratio Variation

According to Naldrett & Cabri (1976), intrusive complexes similar to those at Thierry contain sulphides with a Cu:Ni ratio of 2:1 and a pyrrhotite/chalcopyrite ratio of 10:1. At the Thierry Deposit, the Cu:Ni ratio is 8:1 and the chalcopyrite/pyrrhotite ratio is 1:1 (Patterson and Watkinson, 1984a). In detail, the ratio of Cu:Ni appears to increase from approximately 6:1 to 13:1 from east to west along the Deposit (Verbeek et al., 1972; Sage and Breaks, 1982). The overall elevated contents of Cu and chalcopyrite relative to Ni (and Fe) and pyrrhotite (and pentlandite) is attributed to the greater mobility of Cu in the presence of hydrothermal fluids during shear deformation and metamorphism.

FIGURE 7.11 DISSEMINATED MINERALIZATION



Source: *Anderson (2007)*
Figure 7.11 Description*:* ***A)*** *Disseminated mineralization, consisting of 1 to 2% very finely disseminated chalcopyrite and pyrrhotite in weakly foliated, medium-grained, melanocratic gabbro. DDH PGM 05-51.* ***B)*** *Heavily disseminated mineralization, composed of fine-grained blebs and veinlets of chalcopyrite and pyrrhotite that surround equant, <1 cm size fragments and grains of silicate gangue. In this example, the disseminated mineralization forms a discrete layer in strongly foliated chlorite-biotite schist (drill hole PGM 05-54).*

7.4.2 Platinum-Group Element and Silver Mineralization

Two distinct associations of precious metal minerals have been recognized in the Thierry Deposit (Patterson and Watkinson, 1984b):

1. In breccia mineralized rock, merenskyite ($PdTe_2$), moncheite ($PtTe_2$), stuetzite (Ag_7Te_4), and an unnamed mineral (Ag_3BiTe_2) occur with chalcopyrite, pyrrhotite. pentlandite, pyrite and violarite; and

2. In bornite mineralized rock, native silver, acanthite (Ag_2S), stutzite and merenskyite are associated with chalcopyrite, bornite, and the copper bismuth sulphosalts wittichenite (Cu_3BiS_3) and emplectite ($CuBiS_2$).

According to Patterson and Watkinson (1984b), the precious metal minerals occur as <0.1 mm size, isolated grains with chalcopyrite, pyrrhotite and pentlandite. The moncheite occurs in chalcopyrite, pyrrhotite and pentlandite with small pods of stuetzite. Merenskyite occurs with lamellae of kotulskite and stuetzite. A single specimen contains stuetzite intergrown with Ag_3BiTe_2. Compositions of the precious metal minerals are listed in Table 7.1.

TABLE 7.1
WEIGHT PERCENT COMPOSITION OF PRECIOUS METAL MINERALS FROM THE THIERRY MINE*

Mineral	No. of Analyses	Pd (%)	Pt (%)	Au (%)	Ag (%)	Ni (%)	Fe (%)	Te (%)	Bi (%)	S (%)	Total
Moncheite	11	11.60	22.60	n.d.	n.d.	0.93	0.22	55.4	7.38	n.d.	98.3
Merenskyite[1]	2	26.00	3.80	n.d.	2.12	n.d.	n.d.	60.1	8.01	n.a.	100.0
Merenskyite[2]	1	16.90	3.52	n.d.	9.53	n.d.	n.d.	61.1	6.38	n.a.	97.4
Kotulskite	1	44.30	2.31	n.d.	n.d.	n.d.	n.d.	53.5	1.80	n.a.	101.9
Stuetzite	5	0.75	0.38	1.54	56.80	n.d.	n.d.	39.7	tr	n.a.	99.2
unknown	2	n.d.	n.d.	n.a.	40.10	0.57	n.d.	33.0	25.70	n.a.	99.4
Acanthite	1	n.a.	n.a.	n.a.	87.00	n.a.	n.a.	n.d.	tr	13.4	100.7
Native Silver	1	n.a.	n.a.	2.10	97.80	n.a.	n.a.	n.d.	n.d.	n.d.	99.9

Source: *modified by P&E (January 2024) after Patterson and Watkinson (1984b)*
Notes: ** Compositions determined by electron microprobe analysis. 1. exsolved with kotulskite; 2. exsolved with stuetzite; n.d. = not detected; n.a. = not analysed; tr = trace.*

In terms of statistics, the strongest positive correlation of the metals is shown by silver and copper. A negative correlation of silver and nickel exists at values of Ni >0.5%.

8.0 DEPOSIT TYPES

Two models have been proposed to explain the origin of the Thierry Mine Deposit: 1) it formed originally as a mafic-ultramafic magmatic sulphide deposit and subsequently deformed during regional metamorphism and deformation; and 2) it formed in part or in its entirety as a hydrothermal mineral deposit during regional metamorphism and deformation. The evidence in support of each of these two alternative mineralization models is summarized below.

8.1 DEFORMED MAGMATIC SULPHIDE DEPOSIT

Investigations of the Thierry Deposit by Bowdidge (1970), Patterson and Watkinson (1984a, 1984b) and Goodman (2004) concluded that the mineralization had undergone intense modification following initial deposition as magmatic sulphides. This interpretation also applies to the K1-1 Deposit. Bowdidge (1970) suggested that the textural evidence and the occurrence of sulphide inclusions in olivine supported the argument that the mineralization was originally an intercumulus sulphide phase. The excess Cu relative to Ni (>3:1 ratio) was interpreted by Bowdidge (1970) to occur as a result of depletion of Ni due to prior removal of olivine and pyroxene from the parental magma.

A schematic model for the formation and subsequent deformation of magmatic sulphide deposits is shown in Figure 8.1. Magmatic sulphide deposits form when sulphur-undersaturated picrite or high magnesium basalt magma becomes saturated in sulphides, generally as a result of interaction with and assimilation of sulphur-bearing sedimentary rocks (Eckstrand, 2004; Eckstrand and Hulbert, 2007). Assimilation of crustal sulphur results in the formation of an immiscible sulphide liquid that segregates toward the base of the flow or sill. Assimilation and concentration may be enhanced by multiple pulses of magma in a dynamic conduit system. The mineralization typically forms lenses or tabular concentrations in the middle or lower parts of the gabbro intrusions. Well-known examples of this type of mineralization are: the Montcalm Ni-Cu Deposit (Eckstrand, 1984; Barrie and Naldrett, 1989); Moxie Deposits, Maine, U.S.A. (Thompson, 1982; Thompson and Naldrett, 1984); Lynn Lake Deposits, Manitoba (Hulbert, 1978; Pinsent, 1980); and possibly Madziwa, Zimbabwe (Birch and Buchanan, 1989), the Salay Malay Deposit in the Yilgarn Block of northwest Australia (Thornett, 1981); and Proterozoic Duluth Complex in Minnesota, USA (Hauck *et al*., 1997; Severson *et al*., 2002; Naldrett, 2010) .

Strong evidence exists at the Thierry Deposit that re-mobilization of the original sulphide material is responsible for the observation that the amount of chalcopyrite increases relative to pentlandite in late-stage veins. During regional metamorphism, the primary disseminated sulphides were mobilized into veins and veinlets as the surrounding silicates recrystallized (Patterson and Watkinson, 1984a, 1984b). Strong dynamic (retrograde) metamorphism also mobilized the sulphides into fractures and pressure shadows and significantly changed the Cu/Ni ratio of the mylonite- and breccia-hosted sulphides compared to the disseminated sulphides. Furthermore, the occurrence of fragments of mylonite in the breccia mineralization suggests formation of the breccia-hosted sulphides during dynamic metamorphism (Patterson and Watkinson, 1984a, 1984b).

FIGURE 8.1 PROCESSES LEADING TO MAGMATIC NICKEL SULPHIDE DEPOSIT FORMATION

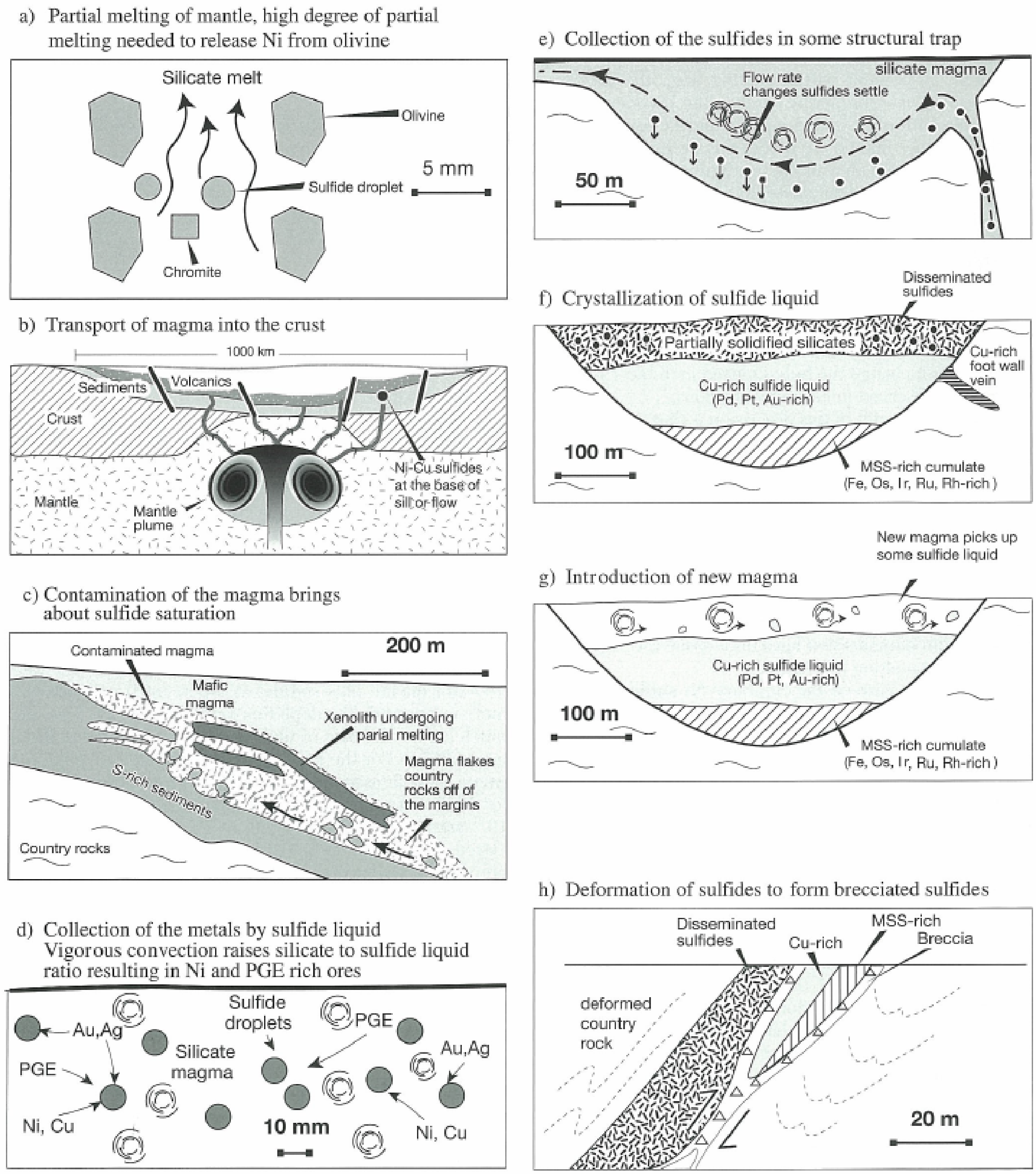


FIG. 16. Cartoon outlining the processes that lead to the formation of a Ni sulfide ore deposit. a. The mantle melts to release Ni from olivine and PGE from sulfides. b. Magma is transferred to the crust along crust penetrating faults. c. Sulfur is added to the magma from sediments to bring about saturation of a sulfide liquid. d. The sulfide droplets assimilate chalcophile metals. e. The droplets are transported by the magma until the magma flow slows such that they collect at the base of the intrusion or flow. f. The sulfide liquid undergoes crystal fractionation to produce an mss cumulate and a Cu-rich liquid that can be injected into the footwall. g. In some cases there may be a new injection of magma and the Cu sulfide liquid may be entrained and moved to a new site collection site. h. Deformation concentrates in the incompetent sulfides, resulting in sulfides being displaced from their parent body, possibly as breccias.

Source: *Barnes and Lightfoot (2005)*

The sulphide mineralization is considered to have been deposited initially as magmatic sulphides, and subsequently overprinted and remobilized in the presence of hydrothermal fluids during shear deformation and regional metamorphism. Specifically, the remobilization and re-concentration of the sulphide mineralization was linked by Stott and Brown (1986) and Stott (1996) to deformation imposed by the emplacement of the Pickle Lake Stock (2740 Ma).

8.2 HYDROTHERMAL MINERALIZATION MODEL

Curtis (2001) observed that the Thierry Deposit contains significant concentrations of platinum and palladium with abnormal characteristics. Unlike many Ni-Cu (PGE) deposits, Thierry is not obviously of primary magmatic derivation. The Ni-Cu (PGE) mineralization at Thierry is hosted in a metamorphosed and deformed mafic-ultramafic complex and there exists little textural evidence to suggest that primary magmatic concentration of sulphides played a major role in elevating the PGE content of the mineralization.

According to Curtis (2001), what is more evident at Thierry, and common to several other PGE enriched deposits, are the following features:

- The PGE enriched mineralization is structurally confined;
- The PGE occur in association with higher contents of Ni and (or) Cu, but the relationship is not exclusive; that is, high contents of PGEs occur in zones that have low concentrations of Ni and Cu;
- Host rocks to the mineralization have been subjected to upper greenschist-lower amphibolite grade regional metamorphism;
- There is evidence for late-stage remobilization of sulphides with PGEs; and
- There is evidence for involvement of hydrothermal fluids during metamorphism and remobilization.

Furthermore, the occurrence of merenskyite in bornite-bearing carbonate veins that cut metamorphic foliation in the amphibolite host rocks at Thierry implies mobility of the PGE during deformation and metamorphism.

Evidence from studies of similar deposits, such as the New Rambler Mine in Wyoming (McCallum *et al.,* 1976), Rathburn Lake occurrence in northeastern Ontario (Rowell and Edgar, 1986), Salt Chuck Intrusion in Alaska (Watkinson and Melling, 1992), and parts of the Lac des Isles complex in northwestern Ontario (Pyle, 1968), that platinum and palladium (in association with bismuth and tellurium) can be mobilized and concentrated by hydrothermal fluids. The additional association of hydrous silicates, particularly chlorite, biotite, sericite and actinolite-talc that are atypical of magmatic environments, suggest that PGE can be remobilized and re-concentrated by hydrothermal fluids during metamorphism.

8.3 SYNOPSIS

Structural studies of Thierry (Goodman, 2004; Anderson, 2007) contend that the primary magmatic relationship between host rocks and mineralization has been obscured by deformation, metamorphism, and remobilization of mineralized rock. The present form of the Deposit is considered to result from extensive remobilization, possibly by a combination of solid state mobilization mechanisms and solution transport via hydrothermal fluids, into a ductile shear zone setting. Furthermore, Keller (2005) concluded that the Thierry Deposit is a shear-zone hosted deposit. Therefore, the Thierry Deposit shares the characteristics of any fault or shear-zone system, in that there are predictable areas of extension and compression where the shear-zone bends or splays. Mineralization commonly accumulates in areas of dilation, such as the fold hinges, which represent low-pressure or strain shadow zones that physically favour sulphide precipitation and entrapment/accumulation.

9.0 EXPLORATION

XXIX Metal has not completed any exploration work since the acquisition of the Thierry Project. Historical and previous exploration work is summarized in Section 6 of this Report.

10.0 DRILLING

XXIX Metal has not completed any drilling on the Thierry Property. Historical and previous drilling programs are summarized in Section 6 of this Report.

11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

XXIX Metal have not completed any sampling and analytical work on the Thierry Property

12.0 DATA VERIFICATION

12.1 SITE VISIT AND INDEPENDENT SAMPLING

Site visits to the Thierry Property were undertaken in 2005, 2010, 2011 and 2024 for independent sampling and data verification purposes.

12.1.1 2005, 2010 and 2011 Site Visits and Independent Sampling

Mr. Eugene Puritch, P.Eng., of P&E, visited the Thierry and K1-1 Deposits on December 15, 2005, May 5, 2010, and June 2, 2011 for the purpose of completing independent site visits and data verification sampling programs.

In 2011, six samples were collected from six diamond drill holes by taking a quarter split of the half drill core remaining in the core box. An effort was made to sample a range of grades. At no time were any employees of Cadillac advised as to the identification of the samples to be chosen during the visit.

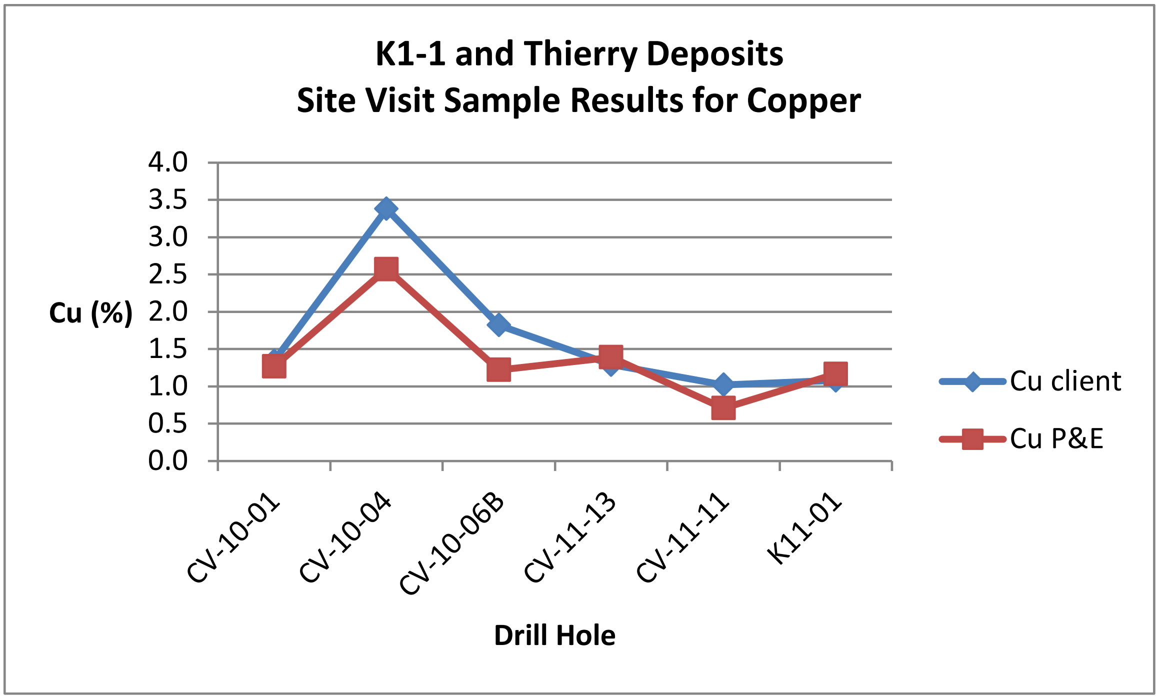
The 2011 samples were selected by Mr. Puritch and placed into sample bags that were sealed with tape and placed in a larger bag. The samples were brought by Mr. Puritch to the P&E office in Brampton and from there they were sent by courier to AGAT Laboratories ("AGAT") in Mississauga for analysis.

At each of its locations, AGAT has developed and implemented 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, which 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.

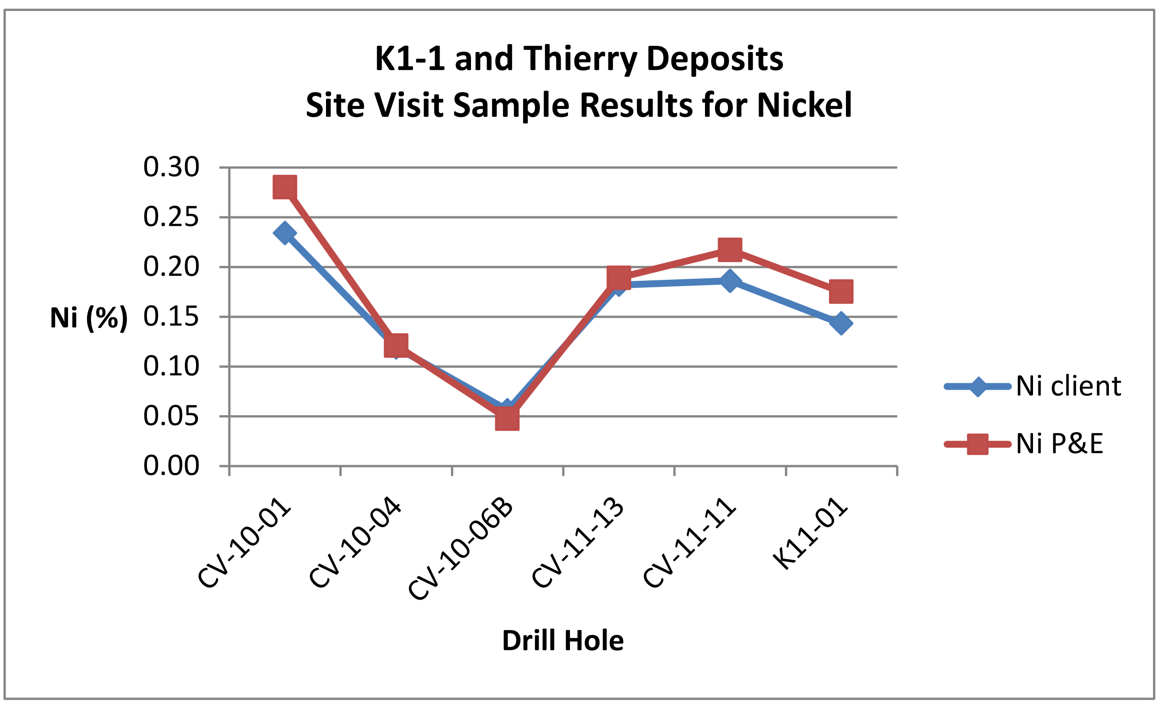
Samples were analysed for copper, nickel and silver using a multi-acid-digest ($HCl/HNO_3/HClO_4/HF$), with an ICP finish. Gold, palladium and platinum were determined using lead collection fire assay with an ICP finish. A comparison of the results is presented in Figure 12.1 through Figure 12.5.

FIGURE 12.1 K1-1 AND THIERRY DEPOSITS 2011 SITE VISIT SAMPLE RESULTS FOR COPPER



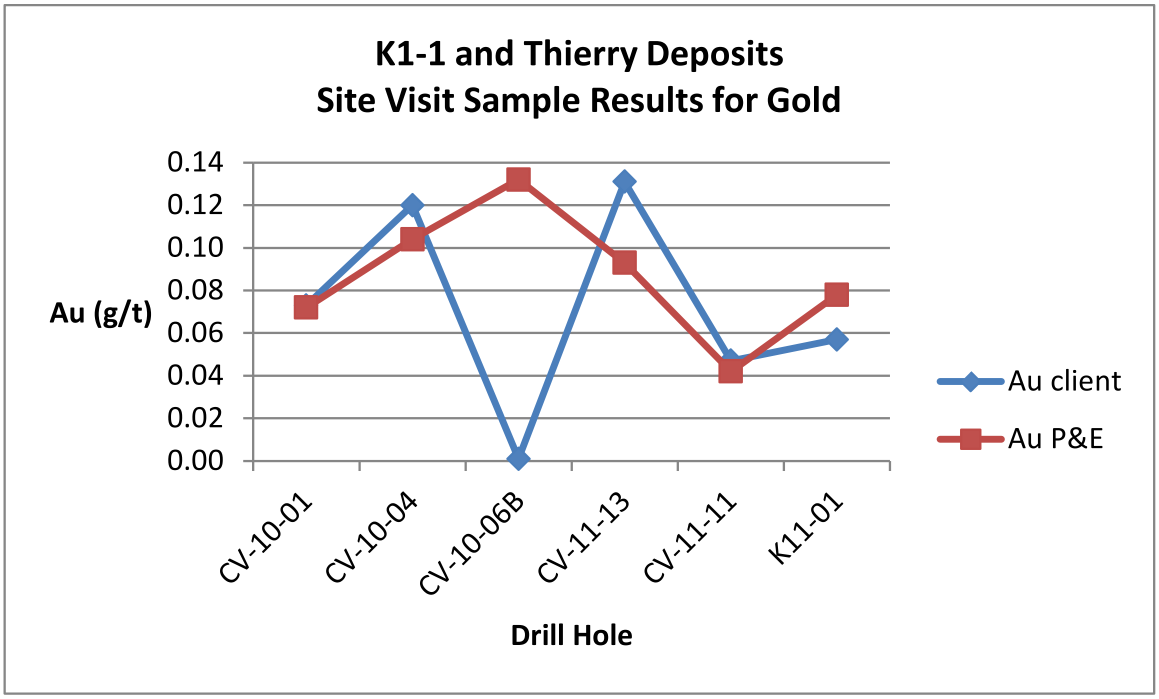
Source: *P&E (2021)*

FIGURE 12.2 K1-1 AND THIERRY DEPOSITS 2011 SITE VISIT SAMPLE RESULTS FOR NICKEL



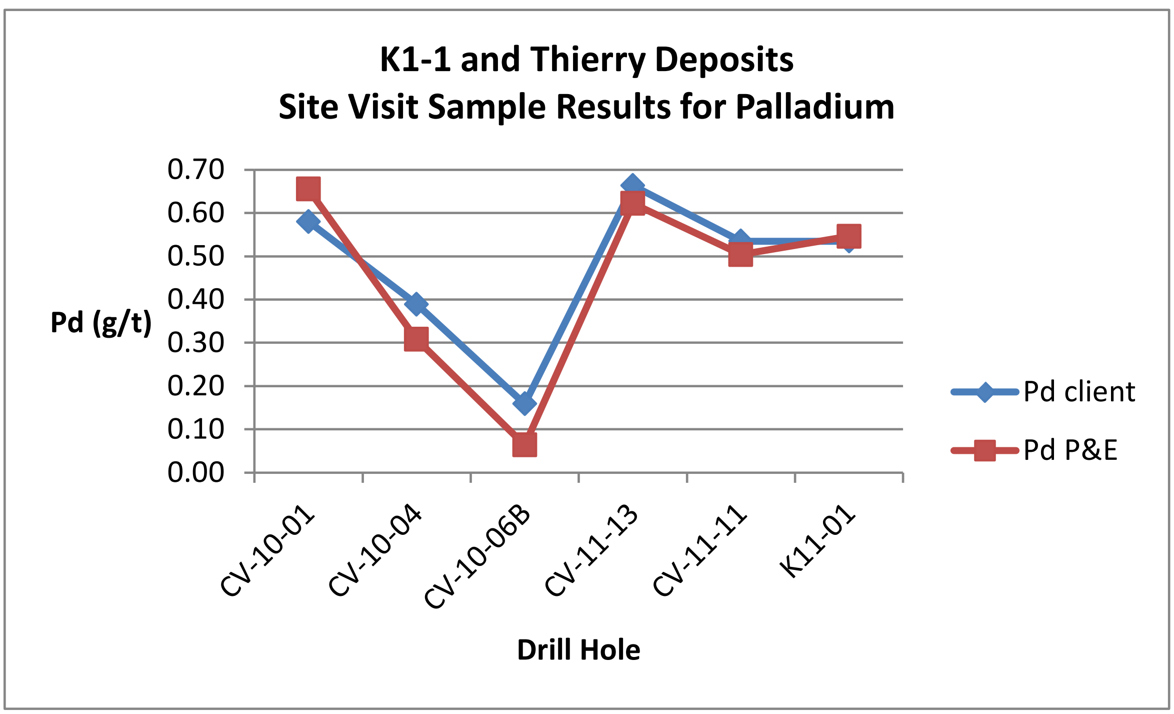
Source: *P&E (2021)*

FIGURE 12.3 K1-1 AND THIERRY DEPOSITS 2011 SITE VISIT SAMPLE RESULTS FOR GOLD



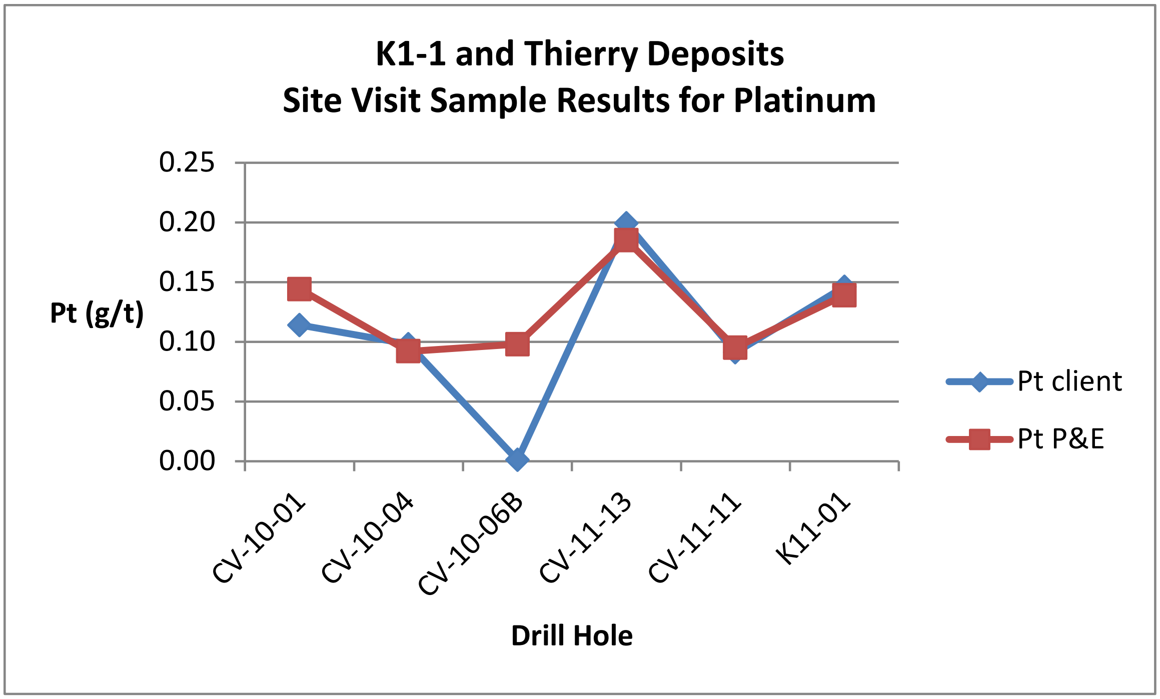
Source: *P&E (2021)*

FIGURE 12.4 K1-1 AND THIERRY DEPOSITS 2011 SITE VISIT SAMPLE RESULTS FOR PALLADIUM



Source: *P&E (2021)*

FIGURE 12.5 K1-1 AND THIERRY DEPOSITS 2011 SITE VISIT SAMPLE RESULTS FOR PLATINUM



Source: *P&E (2021)*

12.1.2 2024 Site Visit and Independent Sampling

Mr. David Burga P.Geo., of P&E, visited the Thierry Property on January 24, 2024 for the purpose of an independent site visit and completion of an independent verification sampling program. Nine samples were collected from three of CCMI's 2023 diamond drill holes by taking the half drill core remaining in the drill core box. An effort was made to sample a range of grades. The Company employees were not advised at any time as to the identification of the samples to be chosen during the visit. The samples were selected by Mr. Burga and placed into sample bags that were subsequently sealed with tape and placed in a larger bag. The samples were brought by Mr. Burga back to Toronto where he delivered them personally to the Activation Laboratories ("ActLabs") in Ancaster, Ontario for analysis.

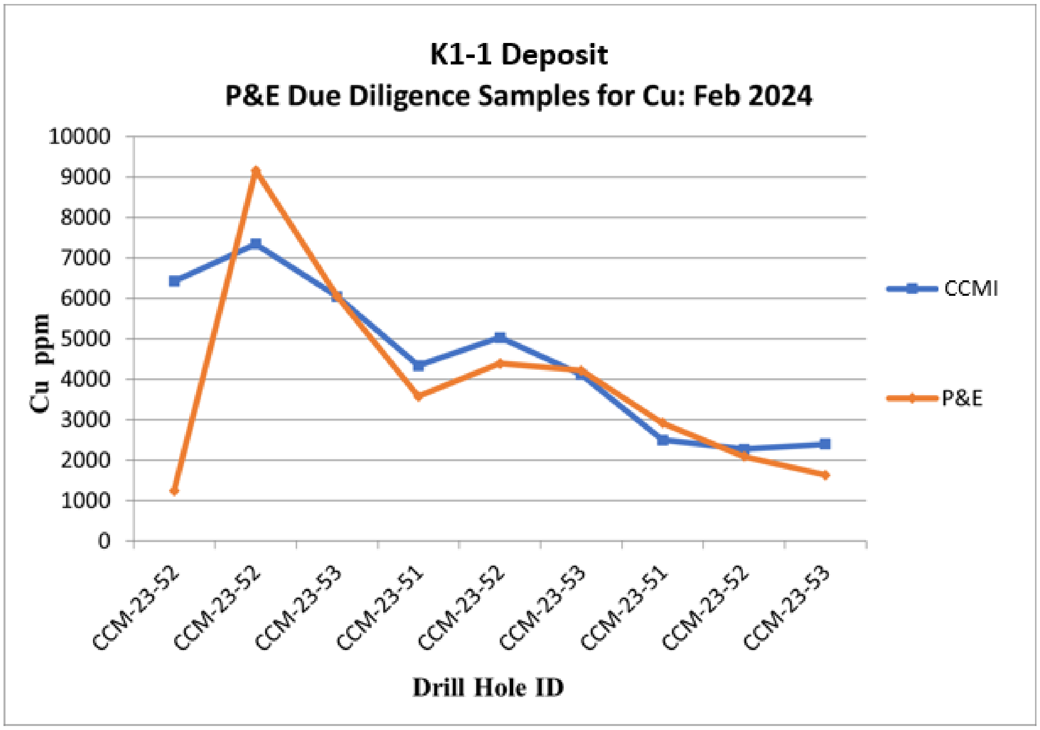
At each of its locations, ActLabs has developed and implemented a Quality Management System ("QMS") designed to ensure the production of consistently reliable data. The system covers all laboratory activities and takes into consideration the requirements of ISO standards. ActLabs maintains ISO registrations and accreditations, which provide independent verification that a QMS is in operation at the location in question. The Ancaster location is registered to ISO/IEC 17025:2017.

The samples were analysed for copper, nickel and silver using a multi-acid-digest ($HCl/HNO_3/HClO_4/HF$) with an ICP finish. Gold, palladium and platinum were determined using lead collection fire assay with an ICP finish. A comparison of the results is presented in

Figure 12.6 through Figure 12.10. Overall, the verification samples aligned well with the original values other than gold, which can show variation even in different sides of a single piece of drill core, due to the sporadic nature of gold mineralization.

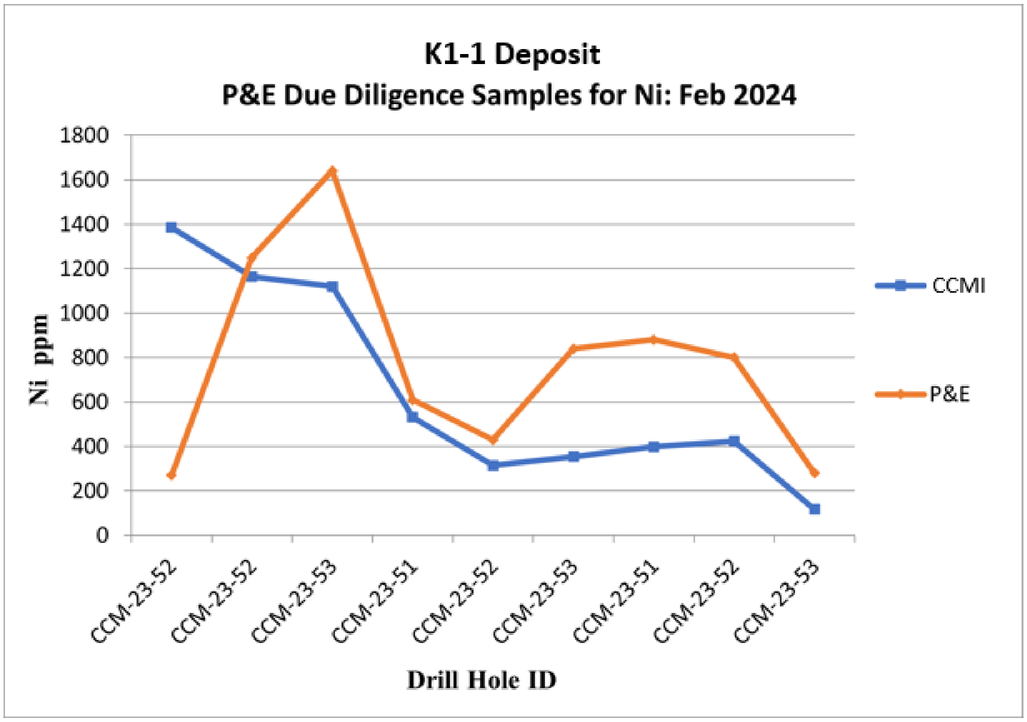
Overall, the verification samples aligned well with the original values other than gold, which can show high variation even in different sides of a piece of drill core, due to the sporadic nature of gold mineralization.

FIGURE 12.6 THIERRY 2024 SITE VISIT SAMPLE RESULTS FOR COPPER



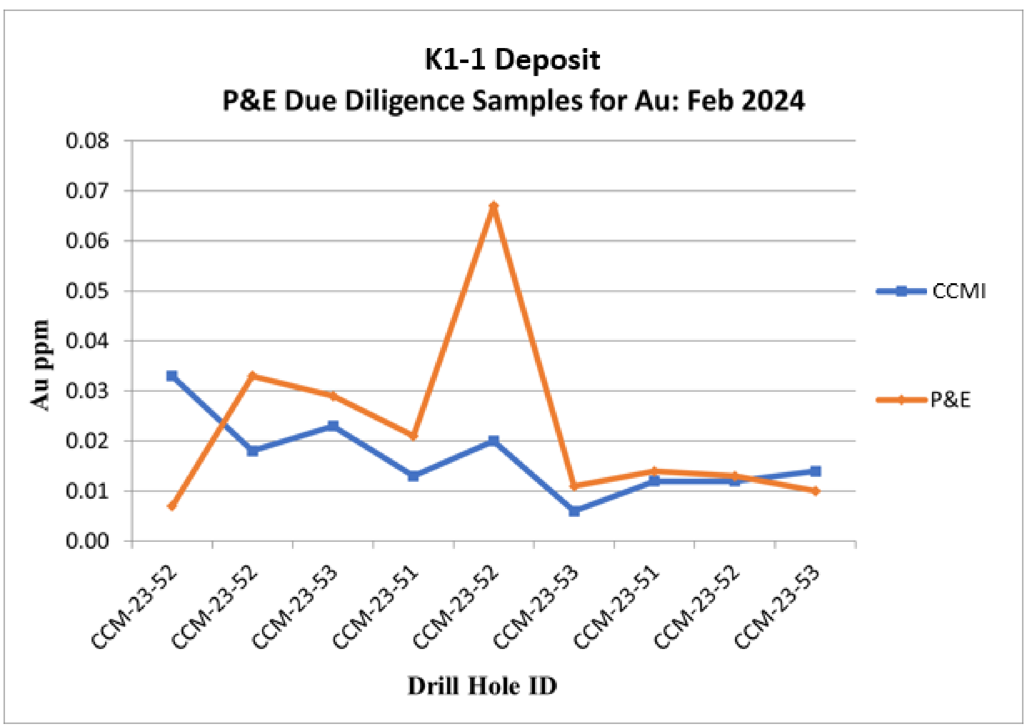
Source: *P&E (2024)*

FIGURE 12.7 THIERRY 2024 SITE VISIT SAMPLE RESULTS FOR NICKEL



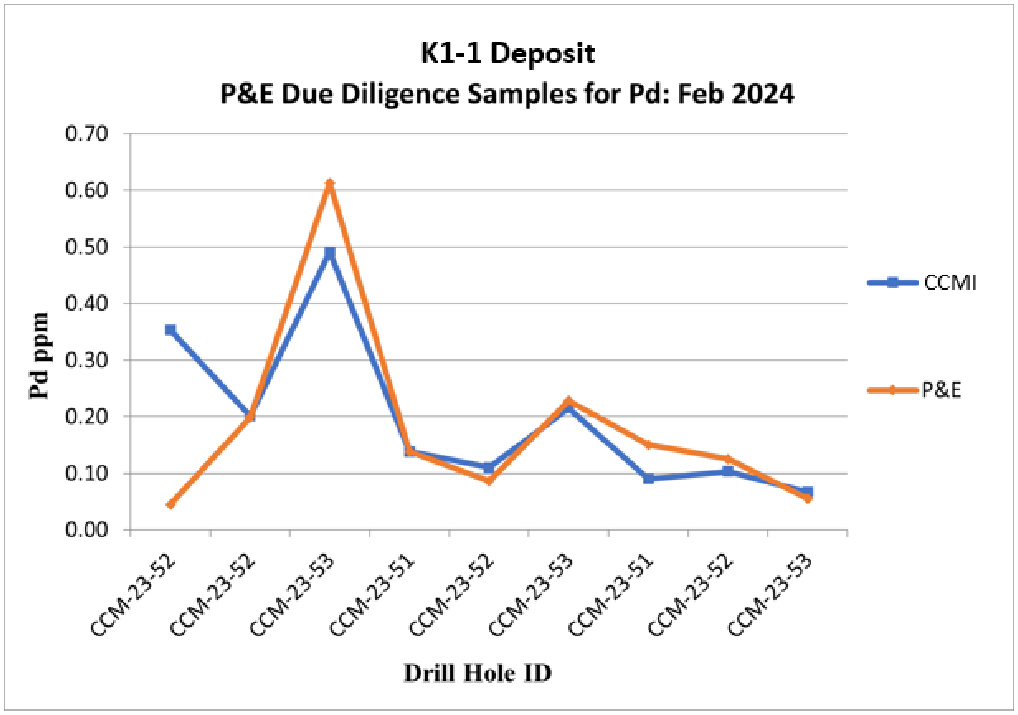
Source: *P&E (2024)*

FIGURE 12.8 THIERRY 2024 SITE VISIT SAMPLE RESULTS FOR GOLD



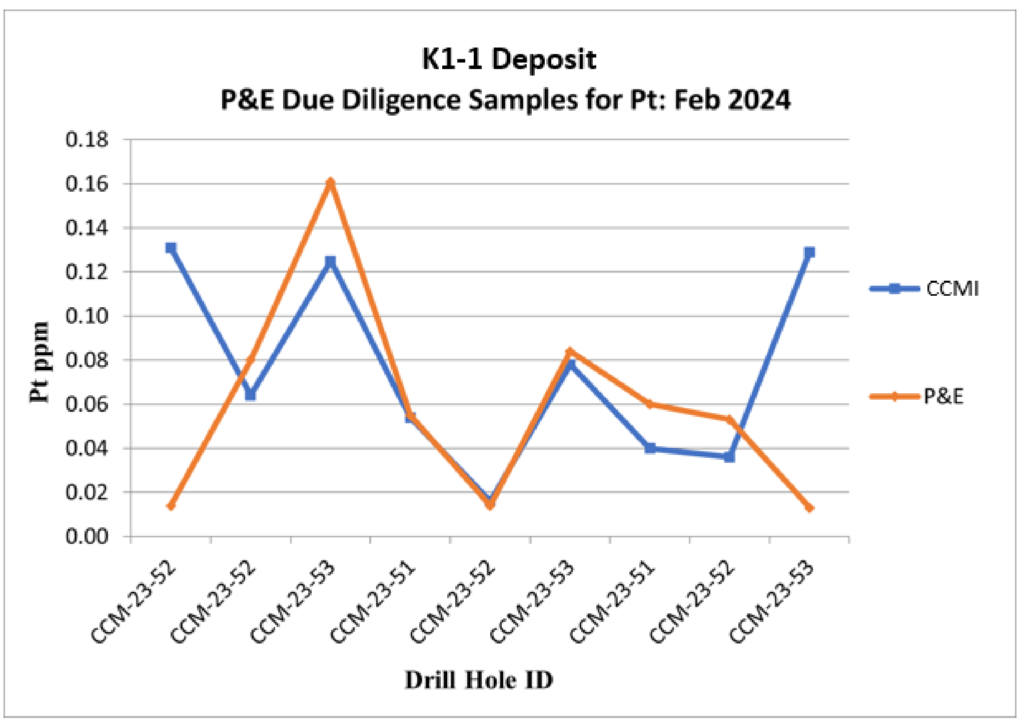
Source: *P&E (2024)*

FIGURE 12.9 THIERRY 2024 SITE VISIT SAMPLE RESULTS FOR PALLADIUM



Source: *P&E (2024)*

FIGURE 12.10 THIERRY 2024 SITE VISIT SAMPLE RESULTS FOR PLATINUM



Source: *P&E (2024)*

12.2 CONCLUSION

Based on the due diligence sampling and data verification results, the Author concludes that the data are satisfactory for use in this current Report.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

XXIX Metal has not completed any mineral processing and metallurgical testing since the acquisition of the Thierry Project. Historical mineral processing and metallurgical testwork results are summarized in Section 6 of this Report.

14.0 MINERAL RESOURCE ESTIMATE

XXIX Metal has not completed any Mineral Resource estimation work since the acquisition of the Thierry Project. Historical mineral resources and recent Mineral Resource Estimates are summarized in Section 6 of this Report.

15.0 MINERAL RESERVE ESTIMATE

No National Instrument 43-101 Mineral Reserve currently exists for the Thierry Project. This section is not applicable to this Technical Report.

16.0 MINING METHODS

This section is not applicable to this Technical Report.

17.0 RECOVERY METHODS

This section is not applicable to this Technical Report.

18.0 PROJECT INFRASTRUCTURE

This section is not applicable to this Technical Report.

19.0 MARKET STUDIES AND CONTRACTS

This section is not applicable to this Technical Report.

20.0 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

This section is not applicable to this Technical Report.

21.0 CAPITAL AND OPERATING COSTS

This section is not applicable to this Technical Report.

22.0 ECONOMIC ANALYSIS

This section is not applicable to this Technical Report.

23.0 ADJACENT PROPERTIES

There are no similar Cu-Ni (PGE) properties in the immediate Thierry Property area that are being actively explored or under development as of the effective date of this Report. However, there are three notable historical gold mine projects in the area east of the Thierry Property: Pickle Crow; Central Patricia and Dona Lake (Figure 23.1). The summaries below are taken largely from the First Mining Gold website www.firstmininggold.com on January 8, 2024 and from Micon (2018).

23.1 PICKLE CROW GOLD MINE PROPERTY

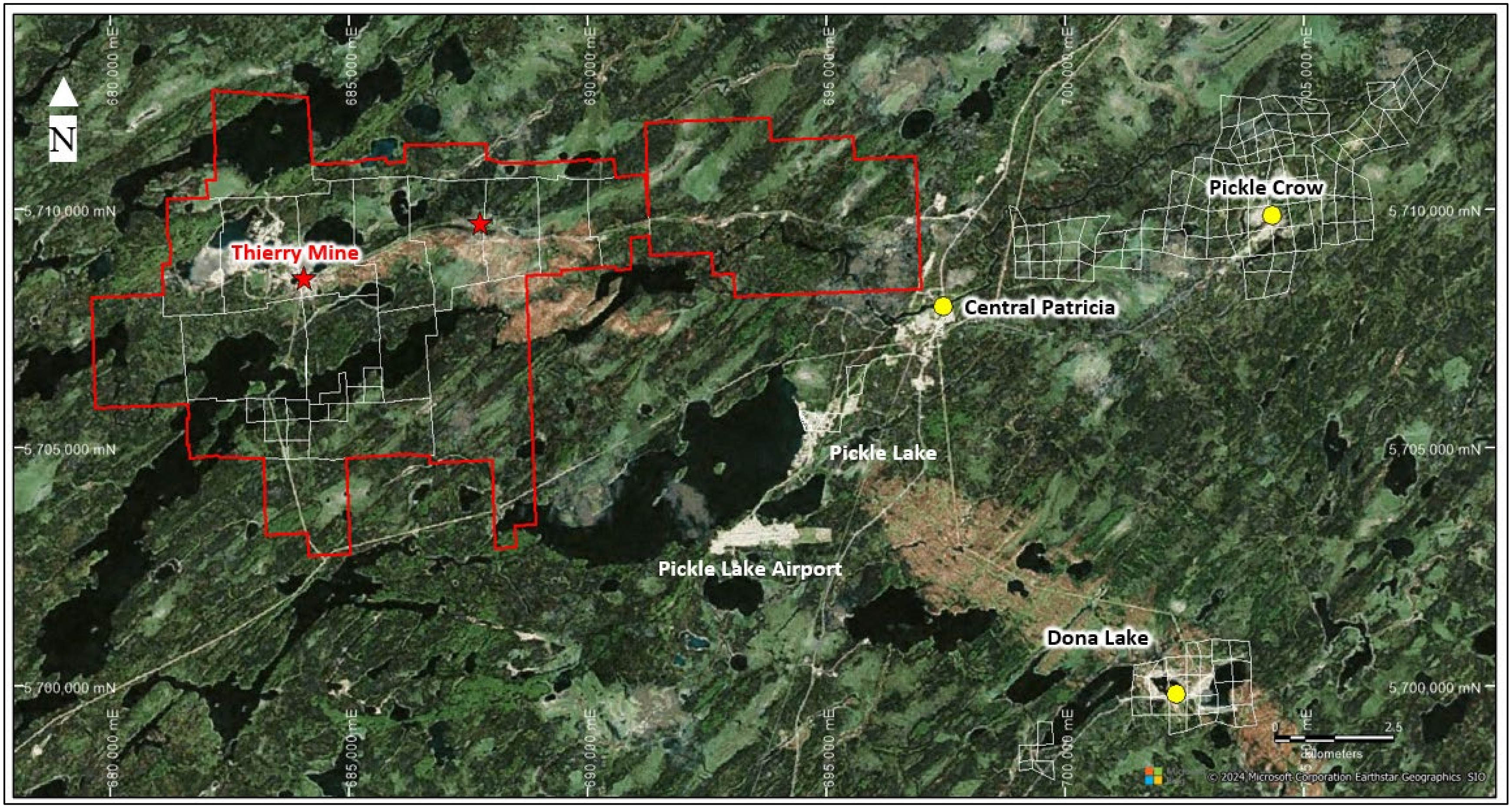
The Pickle Crow Gold Project is located ~20 km east of the Thierry Property. First Mining Gold Corp ("First Mining") holds a 30% interest in the Pickle Crow Gold Project, which is being advanced in partnership with Firefly Metals Ltd (formerly known as Auteco Minerals Ltd). The project hosts an NI 43-101 Inferred Mineral Resource of 9.5 Mt grading 4.1 g/t Au, containing 1.23 million ounces Au (Micon, 2018).

The Pickle Crow gold deposit is a high-grade, shear-hosted, mesothermal Archean lode gold deposit. The deposit occurs primarily within mafic volcanics and banded iron formation units. Mineralization is focused around steeply northwest dipping, regional scale shear zones. Multiple mineralization styles have been identified on the Property, including quartz-gold-tungsten ± tourmaline shear veins and banded iron formation mineralization.

The Pickle Crow Mine is one of Canada's highest-grade historical gold mines. It operated from 1935 until 1966, during which time it reportedly produced ~1.5 million ounces gold at an average grade of 16.14 g/t Au. On November 16, 2015, First Mining acquired the project through its acquisition of PC Gold Inc. On March 12, 2020, First Mining entered into a definitive earn-in agreement with Auteco Minerals Ltd ("Auteco") (ASX: AUT), whereby Auteco may earn up to an 80% interest in the First Mining's wholly-owned subsidiary PC Gold Inc., which holds the Pickle Crow Gold Project. On June 9, 2021, Auteco completed the Stage 1 earn-in to own 51% of PC Gold Inc. On August 30, 2021, Auteco completed the Stage 2 earn-in, increasing its current ownership to 70% of PC Gold Inc., with First Mining owning 30%.

The Author has been unable to verify the information pertaining to the Pickle Crow Gold Mine. The information is not indicative of the mineralization on the Thierry Property that is the subject of this Report.

FIGURE 23.1 ADJACENT AND NEARBY PROPERTIES



Source: *P&E (January 2024)*
Note: *Red outline shows the Thierry Property.*

23.2 CENTRAL PATRICIA GOLD MINE PROPERTY

The Central Patricia Gold Mine is a former producer contiguous with, and situated 12 km east of the Thierry Property. Mining operations were carried out at two locations:

1. Central Patricia Mine. Iron formation-hosted gold mineralization was mined between 1934 and 1951; and

2. Central Patricia No. 2 Operation (Springer Shaft). A high-grade auriferous quartz vein was mined between 1938 and 1940.

Between 1934 and 1951, the miners recovered ~650,000 oz (20.2 t) gold at an average recovered grade of 0.38 oz/ton Au (13.03 g/t Au) at the Central Patricia and No. 2 operations, from approximately 1.73 million tons (1.57 million tonnes) of mineralized material processed. The Central Patricia mineralization is iron formation-hosted, but arsenopyrite-rich. The Central Patricia No. 2 operation produced from a narrow, high-grade quartz vein (the Springer Vein), very similar to the vein which produced the bulk of the mineralized material at the Pickle Crow Mine.

The current owners of the Central Patricia patented claim group are unknown at this time. The Author has been unable to verify the information pertaining to the Central Patricia Mine. The information is not indicative of the mineralization on the Thierry Property that is the subject of this Report.

23.3 DONNA LAKE GOLD MINE PROPERTY

The Dona Lake Mine, located ~20 km southeast of Pickle Lake, was discovered by Dome Exploration Limited in 1980. Dona Lake is predominantly iron formation-hosted gold deposit. Production by Placer Dome commenced in February 1989 at a rated concentrator capacity of 550 tons per day, with "proven and probable reserves" of 754,000 tons (684,000 tonnes) averaging 0.24 oz/ton Au (8.23 g/t Au). After producing approximately 220,000 oz gold, the mine closed in 1994 due to exhaustion of viable reserves. The statement of "proven and probable reserves" predates implementation of NI 43-101, and therefore is not compliant. The Authors have not confirmed the results for this Report and they should not be relied on.

The mining lease covering the Dona Lake Mine is held by Newmont Corporation ("Newmont"), following their acquisition of Goldcorp Inc. In 2020, Metals Creek Resources had an Option Agreement with Newmont to earn 100% of Donna Lake.

The Author has been unable to verify the information pertaining to the Dona Lake Mine and the information is not indicative of the mineralization on the Thierry Property that is the subject of this Report.

23.4 ADDITIONAL ADJACENT PROPERTIES

Several individuals and companies hold mining claims adjacent to and near the Thierry Property. Information available for those claims does not affect the opinions of the Authors of this Report.

24.0 OTHER RELEVANT DATA AND INFORMATION

To the best of the Authors' knowledge, there are no other relevant data, additional information or explanation necessary to make this Report on the Thierry Property more understandable and not misleading.

25.0 INTERPRETATION AND CONCLUSIONS

The Thierry Copper-Nickel Property consists of 27 mining leases and 179 mining claims covering an area 7,997 ha in the Patricia Mining Division of northwestern Ontario. The Property includes the historical Thierry and K1-1 Mines. In October 2023, Cuprum Corp., a private company (formerly Pickle Lake Minerals Inc.) holding 100% interest in the Thierry Property, was acquired by Orecap as a Qualifying Transaction for listing as a public company on the TSX Venture Exchange. In October 2024, QC Copper announced a binding agreement to acquire Cuprum Corp. and its 100% owned Thierry Property. The acquisition was approved by the TSXV and QC Copper shareholders and closed on December 9, 2024. On closing, QC Copper changed its name to XXIX Metal Inc. This Technical Report is considered current as of the effective date of October 24, 2024. The mining leases and mining claims are in good standing as of the effective date of this Technical Report.

The Property benefits significantly from excellent access and close proximity to the community of Pickle Lake and the historical Patricia Gold Mining Camp. Mineral exploration and mining have historically been major components of the local economy. Access and weather conditions allow for exploration and development work to be completed year-round.

Gold was discovered at the Property in 1928. Intermittent gold mining operations were carried out until 1966. UMEX acquired the Thierry Property in 1969 and completed exploration and metallurgical testwork on recovery of copper and nickel. After a positive Feasibility Study, UMEX decided in 1974 to proceed with project development and mine production. The Thierry Mines operated from 1976 to 1982. Two open pits and an underground mine produced 5.3 Mt grading 1.13% Cu and 0.14% Ni. In total, the Mine produced concentrates containing 480.1 Mlb copper, 15.2 Mlb nickel, 17,500 oz platinum, 47,000 oz palladium, and 17,000 oz gold.

Since 1982, further exploration and pre-development studies were completed, most notably by Cadillac, and Braveheart/CCMI. In 2010, Cadillac acquired the Property, completed exploration drilling programs until 2012 and issued MREs and a positive PEA on the Project. Braveheart acquired the Thierry Property in 2020. An updated Mineral Resource Estimate and positive PEA were completed in 2021. Braveheart subsequently became CCMI and completed a small drill program in summer 2023. As a result, copper-nickel (PGE) sulphides are currently defined in the Thierry and K1-1 Deposits. Additional copper-nickel mineralized and gold mineralized occurrences are known on the Property.

The Thierry Property is underlain by the Archean Pickle Lake Assemblage of the Uchi Subprovince in the western part of the Superior Province. The regional geology consists of an east-to-west trending of metavolcanic basalt flows with minor felsic volcanic and metasedimentary rocks, including iron formations, of the Pickle Crow Assemblage (>2860 Ma). The volcano-sedimentary sequence is intruded by mafic to ultramafic rocks that range in composition from gabbro to peridotite and by felsic-intermediate plutons. The regional metamorphic grade is middle greenschist facies, where temperatures and pressures peaked at ~600 °C and 5.5 kbar in the thermal aureoles of the felsic-intermediate plutons. The rocks subsequently underwent dynamic (retrograde) metamorphism and related deformation that produced a major shear zone and a system of conjugate faults. Where mafic and ultramafic rocks were sheared, a mylonite was produced that consists of fragments of hornblende in a matrix of chlorite and biotite.

Historical exploration and drilling programs have shown that the Thierry mineralization occurs as sheet-like and lensoidal bodies in a major shear zone hosted within deformed and metamorphosed mafic and ultramafic units. The shear zone is a chlorite-biotite (±amphibole) schist that hosts all the significant mineralization. The Deposits measure 1,300 m along strike, up to 30 m thick and 800 m down-dip, and are open to expansion by drilling at depth. The sulphide minerals are chalcopyrite, pyrrhotite, pyrite and pentlandite with smaller amounts of bornite and cubanite. Violarite, mackinawite, millerite and other minor phases occur as alteration products of pentlandite. Platinum-group minerals present are merenskyite, moncheite and kotulskite.

The copper, nickel, and platinum-group metals at Thierry were likely concentrated originally as orthomagmatic sulphide deposits hosted related to mafic-ultramafic intrusion. The metals were subsequently remobilized into the chlorite-biotite schist shear zone. The highly elevated contents of Cu and chalcopyrite relative to Ni and Fe and pentlandite and pyrrhotite, are attributed to the greater relative mobility of Cu in the presence of hydrothermal fluids during the shear deformation and metamorphism.

Historical production records and metal recovery testwork completed between the 1970s and 2006, indicated that conventional crushing-grinding-flotation processes could produce a saleable copper concentrate with relatively high grades of copper, palladium, platinum and gold and low nickel. A nickel concentrate was also produced, that would probably be not saleable to a smelter. Concentrate tonnage and concentration ratios would depend on head grade. The PGEs may not be payable.

It is the Authors opinion that sample preparation, security and analytical procedures for the Property drilling and sampling programs were adequate for the purposes of this Report. Based on the evaluation of the QA/QC programs undertaken by Cadillac and CCMI, the Authors conclude that the data are adequate for purpose of this Report. Due diligence sampling by the Authors of this Technical Report confirms presence of the copper-nickel (PGE) mineralization in drill core at Thierry. It is the Technical Report Authors' opinion that the site visit sample verification results are satisfactory for this Technical Report.

The Property will be subject to the normal and usual risks faced by potential mining projects, including those related to environmental, permitting, taxation, marketing, labour availability, weather and political and social factors. To the extent known, the Authors are not aware of any unusual risk factors to which this Property would be subject.

26.0 RECOMMENDATIONS

Additional expenditures for data compilation, validation, drill core sampling and assaying, and geological interpretation and modelling are warranted to advance the Thierry Project. Specifically, the Authors recommend completion of the following tasks:

- Completing data compilation and verification work to validate the most recent historical Mineral Resource and identify new targets for expansion drilling. The drill hole database should be converted from Imperial to SI (metric) units. Level plans and diamond drill hole data could be utilized to generate detailed 3-D models of the mineralized zones, the CBS/mylonite, the ultramafic intrusive rocks and, if possible, the sedimentary rocks. These models could provide important constraints on the relative importance of structural controls on the current distribution of the sulphide mineralization;

- Performing 3-D inversions of IP/resistivity and electromagnetic geophysical survey data collected during the 2004 and 2011 exploration programs to identify new targets for drill testing. In addition, the possibility of downhole electromagnetic surveys should be considered, particularly for the most recent drilling, to detect the presence of off-hole conductors. The copper-rich nature of the known mineralization together with the presence of ultramafic rocks suggests potential for the presence of nickel-dominated sulphide mineralization nearby;

- Assaying of available samples from previous and historical drill holes where assaying was incomplete; and

- Adding drill core storage racks.

The estimated cost of the recommended work program is CAD$236,000, which includes 10% contingency (without applicable taxes) (Table 26.1). The recommended program should be completed in the next 6 to 12 months.

Table 26.1
Estimated Budget for Recommended 2025 Program

Activity	Number Units	Units	Unit Cost	Cost (CAD$)
Geological Compilation, Data Validation, Project Management	6	months	11,667	70,002
IP/Resistivity 3D Inversion				1,500
Magnetics 3-D Inversion				3,000
Collar Validation and Field Work	15	work days	500	7,500
Assaying	1,033	samples	82	84,706
Shipping to ALS Thunder Bay				1,000
Management Fee				11,931
Technical Support	15	work days	400	6,000
Core Racks	2	new core racks	1,200	2,400
Site Preparation for Core Racks				4,500
Travel, Camp, Meals				8,000
Report Update and Filing				14,000
Contingency (10%)				21,454
Total				**235,993**

27.0 REFERENCES

Anderson, S. 2007. Thierry Mine Project, Pickle Lake Belt, Ontario: Observations Pertaining to the Structural Geology of the Thierry Cu-Ni (PGE) Deposit. Prepared for Richview Resources Inc., dated November 2007. 39 pages.

Barrie, C.T. and Naldrett, A.J. 1989. Geology and Tectonic Setting of the Montcalm Gabbroic Complex and Ni-Cu Deposit, Western Abitibi Subprovince, Canada. In, Magmatic Sulphides – the Zimbabwe Volume (edited by M.D. Prendergast and M. J. Jones), p. 151-163.

Barnes, S.-J. and Lightfoot, P.C. 2005. Formation of Magmatic Nickel Sulfide Deposits and Processes Affecting Their Copper and Platinum Group Element Contents. Economic Geology 100, 179-213.

Birch G.J. and Buchanan D.L. 1989. Controls on the Distribution of Nickel Sulphide Mineralization Associated with the Madziwa Mafic Intrusion, Zimbabwe. In, Magmatic Sulphides – the Zimbabwe Volume (edited by M.D. Prendergast and M. J. Jones), p. 71-80.

Bowdidge, C. 1970. Petrography of the Kapkichi Lake Copper-Nickel Deposits and Associated Rocks, Pickle Lake Area, Northwest Ontario, Internal Report to UMEX.

Curtis, L. 2001. Thierry Mine Property, Thunder Bay, Ontario for PGM Ventures Corporation. Curtis & Associates Inc. (Oakville).

Eckstrand, O.R. 1984. Canadian Mineral Deposit Types: A Geological Synopsis. Geological Survey of Canada Economic Geology Report 36, 86 pages.

Eckstrand, O.R. and Hulbert, L.J. 2007. Magmatic Nickel-Copper-Platinum Group Element deposits; *in* Goodfellow, W.D., ed., Mineral Deposits of Canada: A Synthesis of Major Deposit Types, District Metallogeny, the Evolution of Geological Provinces, and Exploration Methods: Geological Association of Canada, Mineral Deposits Division, Special Publication No. 5, p. 205–222.

Fyon, J.A., Breaks, F.W., Heather, K.B., Jackson, S.L., Muir, T.L., Stott, G.M. and Thurston, P.C. 1992, Metallogeny of Metallic Mineral Deposits of the Superior Province of Ontario. *in*, Thurston, P.C., Williams, H.R., Sutcliffe, and Stott, G.M., eds., Geology of Ontario: Ontario Geological Survey Special Volume 4, 1091-1252.

Gilligan, L.B. and Marshall, B. 1987. Textural Evidence for Remobilization in Metamorphic Environments; Ore Geology Reviews 2, 205–229.

Goodman, S. 2004. Structural Architecture of the Thierry Mine Cu-Ni-PGM Deposit, Pickle Lake, Ontario. SRK Project Number 3CP009.01 Report for PGM Ventures Corporation, dated August 2004. 64 pages.

Gurgurewicz-Luck, S. 1988. PGE and Other Precious Metals Evaluation of the Thierry Mine and Area - Internal report to UMEX.

Hauck, S.A., Sverson, M.J., Zanko, L., Barnes, S.-J., Alminas, H., Foord, E.E. and Dahlberg, E.H. 1997. An Overview of the Geology and Oxide, Sulfide and Platinum-Group Element Mineralization Along the Western and Northern Contacts of the Duluth Complex. Geological Society of America Special Paper 312. 137-185.

HBT AGRA Limited. 1993. Thierry Mine Closure Plan, Pickle Lake, Ontario. Etruscan Enterprises Limited.

Hulbert L. J. 1978. Geology of the Fraser Lake Gabbro Complex, Manitoba. M.Sc. Thesis, University of Regina, 197 p.

Keller, G.D. 2004. Thierry Mine Cu-Ni PGM Deposit, Pickle Lake, Ontario. SRK Consulting (Toronto) Report for PGM Ventures Corporation, dated October 2004. 22 pages.

Keller, G.D. 2005. Technical Report, Thierry Deposit, Pickle Lake, Ontario. Richview Resources Inc. SRK Consulting, (Toronto).

Klein, T.L. and Day, W.C. 1994. Descriptive and Grade-Tonnage Models of Archean Low-Sulfide Au-Quartz Veins and a Revised Grade-Tonnage Model of Homestake Au. United States Department of the Interior Geological Survey Open-file Report 94-250.

Lascelles, D. and Fleming, C. 2006. The Recovery of Copper, Nickel and PGM from the Thierry Deposit, SGS Lakefield Research Limited.

Lightfoot, P.C. and Naldrett, A.J. 1994. Proceedings of the Sudbury-Noril'sk Symposium. Ontario Geological Survey, Special Volume 5, 457 p.

MacLellan, J. 1980. UMEX – Internal Thierry Mine Report re: Nickel Circuit, dated Dec. 1980.

Marshall, B. and Gilligan, L.B. 1989. Durchbewegung Structure, Piercement Cusps and Piercement Veins in Massive Sulfide Deposits: Formation and Interpretation; Economic Geology 84, 2311–2319.

Micon. 2018. An updated Mineral Resource Estimate for the Pickle Crow Property, Patricia Mining Division, Northwestern Ontario, Canada. Report prepared for First Ming Gold, by B. Terrance Hennessey, P.Geo. of Micon International Limited, dated June 15, 2018 (effective date August 31, 2016). 251 pages.

Mullen, D. 1988. Reconnaissance Geology Report Thierry Mine Area, Kawinogau B. Property - UMEX Internal report.

Naldrett, A.J. 2010. Secular Variation of Magmatic Sulfide Deposits and Their Source Magmas. Economic Geology 105, 669-688.

Naldrett, A.J. and Cabri, L.J. 1976. Ultramafic and Related Mafic Rocks; Their Classification and Genesis with Special Reference to the Concentration of Nickel Sulfides and Platinum-Group Elements. Economic Geology 71, 1131-1158.

Novak, N. and Mlot S. 2004. Technical Report on the Geology, and Mineral Resources of the Thierry Copper-Nickel Project, Pickle, Lake, Ontario.

Patterson, G., 1980. The Geology of the Kapkichi Lake Ultramafic-Mafic Bodies and Related Cu-Ni Mineralization, Pickle Lake, Ontario. Unpublished Ph.D. Thesis, Carleton University, Ottawa.

Patterson, G. and Watkinson D.H. 1984a. The Geology of the Thierry Cu-Ni Mine, Northwestern Ontario. Canadian Mineralogist 22, 3-11.

Patterson, G. and Watkinson, D.H. 1984b. Metamorphism and Supergene Alteration of Cu-Ni Sulfides, Thierry Mine, Northwestern Ontario. Canadian Mineralogist 22, 13-21.

P&E. 2006. Technical Report and Resource Estimate on the Thierry Cu-Ni –PGE Mine Property, Pickle Lake Area, Patricia Mining District North-Western Ontario, Canada. Prepared for Richview Resources Inc. by P&E Mining Consultants Inc. dated April 6, 2006.

P&E. 2012. Technical Report and Preliminary Economic Assessment of the Thierry and K1-1 Cu-Ni-PGE Deposits, Thierry Project, Pickle Lake Area, Patricia Mining District, North-Western Ontario, Canada. NI 43-101, Prepared for Cadillac Ventures Inc by P&E Mining Consultants Inc. with an effective date of May 15, 2012.

P&E. 2021. Preliminary Economic Assessment of the Thierry Cu-Ni-PGE Deposit, Pickle Lake Area, Patricia Mining District, Northwestern Ontario, Canada. Prepared for Braveheart Resources Inc. by P&E Mining Consultants Inc., dated February 22, 2021 (effective date January 21, 2021). 264 pages.

Pinsent R. H. 1980. Nickel-Copper Mineralization in the Lynn Lake Gabbro. Manitoba Department of Energy, Mines, Mineral Resources Division Report ER79-3, 138 pages.

Sage, R.P. and Breaks, F.W. 1982. Geology of the Cat Lake-Pickle Lake Area, Districts of Kenora and Thunder Bay. Ontario Geological Survey Report 207, 261 pages.

Severson, M.J., Miller, J.D., Peterson, D.M., Green, J.C. and Hauck, S.A. 2002. Mineral Potential of the Duluth Complex and Related Intrusions: in Geology and Mineral Potential of the Duluth Complex and Related Rocks of Northeastern Minnesota. Report of Investigations 58, Minnesota Geological Survey, University of Minnesota, 21-51.

Stone, W.E., Beresford, S.W. and Archibald, N.J. 2005. Structural Setting and Shape Analysis of Nickel Sulfide Shoots at the Kambalda Dome, Western Australia: Implications for Deformation and Remobilization. Economic Geology 100, 1441-1455.

Stott, G.M. 1986. Regional Geology and Structure of the Pickle Lake Metavolcanic Belt, District of Kenora, Patricia Portion. In, Summary of Field Work and Other Activities 1986. Ontario Geological Survey, Miscellaneous Paper 132, pages 9-14.

Stott, G.M. 1996. The Geology and Tectonic History of the Central Uchi Subprovince. Ontario Geological Survey Open File Report 5952. 210 pages.

Stott, G.M., and Brown, G.H. 1986. Economic Geology of the Pickle Lake Metavolcanic Belt, District of Kenora, Patricia Portion. In, Summary of Field Work and Other Activities 1986. Ontario Geological Survey, Miscellaneous Paper 132, pages 15-19.

Thompson, J.F.H. 1982. The Intrusion and Crystallization of Gabbro, Central Maine and Genesis of their Associated Sulfides. Ph.D. Thesis, University of Toronto.

Thompson J.F.H. and Naldrett A.J. 1984. Sulphide-Silicate Reactions as a Guide to Ni-Cu-Co Mineralization in Central Maine, U.S.A. In, Sulphide Deposits in Mafic and Ultramafic Rocks (edited by D.L. Buchanan and M.J. Jones. London Institute of Mining and Metallurgy),
103-113.

Thornett J.R. (1981). The Salay Malay Deposit: Gabbroid-Associated Nickel-Copper Sulfide Mineralization in the Halls -Reek Mobile Zone, Western Australia. Econ. Geol.,76, 1981, 1565-1580.

UMEX Inc. 1970. Petrography of the Kapkichi Lake Copper-Nickel Deposits and Associated Rocks, Pickle Lake Area, North-West Ontario. Internal UMEX report dated Dec. 1970.

UMEX Inc. 1982. The Kapkichi Deposits, Internal report dated April 1982.

Verbeek, T., Dehenne, R. and Bowridge, C. 1972. Geophysical Case History: the Thierry Copper-Nickel Deposit in Northwestern Ontario, Canada. International Geological Congress, 24th Session, Section 9, 133-151.

Watts, Griffith and McOuat. 1990. Comments on Future Mining Operations at the Thierry Mine for Etruscan Enterprises Ltd., with notes on reserve estimation.

Watts, Griffith and McOuat. 1991. Economic Analysis on the Thierry Mine for Etruscan Enterprises Ltd., with notes on reserve estimation.

Xstrata Process Support. 2008. Review of Previous Mineralogical and Metallurgical Work – Thierry Mine Property. Internal review report – 09000100 dated Jan 28, 2008. 9 pages.

Young, M.D., McNicoll, V., Helmstaedt, H., Skulski, T. and Percival, J.A. 2006. Pickle Lake Revisited: New Structural, Geochronological and Geochemical Constraints on Greenstone Belt Assembly, Western Superior Province, Canada. Canadian Journal of Earth Sciences 43, 821–847.

28.0 CERTIFICATES

CERTIFICATE OF QUALIFIED PERSON

EUGENE PURITCH, P. ENG., FEC, CET

I, Eugene J. Puritch, P. Eng., FEC, CET, residing at 44 Turtlecreek Blvd., Brampton, Ontario, Canada, 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 on the Thierry Copper-Nickel (PGE) Property, Pickle Lake Area, Patricia Mining Division, Northwestern Ontario, Canada", (The "Technical Report") with an effective date of October 24, 2024.
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 a Bachelor's degree in Engineering Equivalency. I am a mining consultant currently licensed by the: Professional Engineers and Geoscientists New Brunswick (License No. 4778); Professional Engineers, Geoscientists Newfoundland and 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); Professional Engineers of Ontario (License No. 100014010); Association of Professional Engineers and Geoscientists of British Columbia (License No. 42912); and Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists (No. L3877). 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 on December 15, 2005, May 5, 2010 and June 2, 2011.
5. I am responsible for authoring Sections 2 to 6, 13 to 22, 24 to 27 and co-authoring Sections 1, 12, 25, 26 and 27 of this Technical Report.
6. I am independent of XXIX Metal Corp. applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for several Technical Reports, the most recent one titled "Preliminary Economic Assessment of the Thierry Cu-Ni-PGE Deposit, Thierry Project, Pickle Lake Area, Patricia Mining District, North-Western Ontario" with an effective date of January 21, 2021.
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: October 24, 2024

Signed Date: December 12, 2024

{SIGNED AND SEALED}

[Eugene Puritch]

____

Eugene Puritch, P.Eng., FEC, CET

CERTIFICATE OF QUALIFIED PERSON

DAVID BURGA, P.GEO.

I, David Burga, P. Geo., residing at 3884 Freeman Terrace, Mississauga, Ontario, Canada, L5M 6P6 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 on the Thierry Copper-Nickel (PGE) Property, Pickle Lake Area, Patricia Mining Division, Northwestern Ontario, Canada", (The "Technical Report") with an effective date of October 24, 2024.
3. I am a graduate of the University of Toronto with a Bachelor of Science degree in Geological Sciences (1997). I have worked as a geologist for over 20 years since obtaining my B.Sc. degree. I am a geological consultant currently licensed by the Association of Professional Geoscientists of Ontario (License No 1836).

   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:
   - Exploration Geologist, Cameco Gold 1997-1998
   - Field Geophysicist, Quantec Geoscience 1998-1999
   - Geological Consultant, Andeburg Consulting Ltd. 1999-2003
   - Geologist, Aeon Egmond Ltd. 2003-2005
   - Project Manager, Jacques Whitford 2005-2008
   - Exploration Manager – Chile, Red Metal Resources 2008-2009
   - Consulting Geologist 2009-Present
4. I have visited the Property that is the subject of this Technical Report on January 24, 2024.
5. I am responsible for authoring Sections 7, 8, 9, 10, 11 and co-authoring Sections 1, 12, 25, 26 and 27 of this Technical Report.
6. I am independent of XXIX Metal Corp. applying the test in Section 1.5 of NI 43-101.
7. I have had prior involvement with the Project that is the subject of this Technical Report. I was a "Qualified Person" for several Technical Reports, the most recent one titled "Preliminary Economic Assessment of the Thierry Cu-Ni-PGE Deposit, Thierry Project, Pickle Lake Area, Patricia Mining District, North-Western Ontario" with an effective date of January 21, 2021.
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: October 24, 2024
Signed Date: December 12, 2024

{SIGNED AND SEALED}
[David Burga]

____

David Burga, P.Geo.