



NI 43-101 Technical Report

MINERAL RESOURCE ESTIMATE FOR THE KIENA MINE COMPLEX PROJECT

Val-d'Or, Québec, CANADA

Prepared for:

Wesdome Gold Mines Ltd.



By qualified persons:

Pierre-Luc Richard, P. Geo..... BBA Inc.

Jorge Torrealba, P. Eng..... BBA Inc.



Effective Date: September 25, 2019

Signature Date: November 7, 2019



DATE AND SIGNATURE PAGE

This report is effective as of the 25th day of September 2019.

“Signed and sealed original on file”

Pierre-Luc Richard, P. Geo.
BBA Inc.

November 7, 2019

Date

“Signed and sealed original on file”

Jorge Torrealba, P. Eng., Ph.D.
BBA Inc.

November 7, 2019

Date

CERTIFICATE OF QUALIFIED PERSON

Pierre-Luc Richard, P. Geo.

This certificate applies to the NI 43-101 Technical Report and Mineral Resource Estimate for the Kiena Mine Complex Project, Val-d'Or, Québec, Canada, prepared for Wesdome Gold Mines Ltd. (Wesdome) issued on November 7, 2019 (the "Technical Report"), and effective as of September 25, 2019.

I, Pierre-Luc Richard, P. Geo., do hereby certify that:

1. I am a Principal Geologist with BBA Inc. located at 2020 Robert-Bourassa Blvd, Suite 300, Montréal, Québec, Canada, H3A 2A5.
2. I am a graduate of Université du Québec à Montréal in Resource Geology in 2004. I also obtained a M.Sc. from Université du Québec à Chicoutimi in Earth Sciences in 2012.
3. I am a member in good standing of the Ordre des Géologues du Québec (OGQ Member No. 1119), the Association of Professional Geoscientists of Ontario (APGO Member No. 1714), and the Northwest Territories Association of Professional Engineers and Geoscientists (NAPEG Member No. L2465).
4. I have worked in the mining industry for more than 15 years. My exploration expertise has been acquired with Richmond Mines Inc., the Ministry of Natural Resources of Québec (Geology Branch), and numerous companies through my career as a consultant. My mining expertise was acquired at the Beaufor mine and several other producers through my career. I managed numerous technical reports, mineral resource estimates and audits as a consultant for InnovExplo from February 2007 to March 2018 and as a consultant for BBA since.
5. I have read the definition of "qualified person" set out in NI 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of NI 43-101.
6. I am independent of the issuer applying all the tests in Section 1.5 of NI 43-101.
7. I am author and responsible for the preparation of this Technical Report except for Chapter 13.
8. I visited the Kiena Property on August 6-8 and other occasions during the course of this mandate.
9. I have had no prior involvement with the property that is the subject of the Technical Report, except for authoring Technical Reports in the past.
10. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.
11. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading

Dated and signed this 7th day of November 2019.

"Signed and sealed original on file"

Pierre-Luc Richard, P. Geo.
BBA Inc.

CERTIFICATE OF QUALIFIED PERSON

Jorge Torrealba, P. Eng.

This certificate applies to the NI 43-101 Technical Report and Mineral Resource Estimate for the Kiena Mine Complex Project, Val-d'Or, Québec, Canada, prepared for Wesdome Gold Mines Ltd. (Wesdome) issued on November 7, 2019 (the "Technical Report"), and effective as of September 25, 2019.

I, Jorge Torrealba, P. Eng., Ph.D. (APEGNB no. M7957), do hereby certify that:

1. I am employed as an engineer by and carried out this assignment for BBA Inc. – Consulting Firm in Engineering, located at 2020 Robert-Bourassa Blvd., Suite 300, Montréal, Québec, Canada, H3A 2A5.
2. I graduated with a B.Eng. and M.Sc. in Metallurgy from Santiago de Chile University (Santiago, Chile) in 1998. I obtained a Ph.D. degree in Metallurgy from McGill University (Montreal, Quebec) in 2005.
3. I am a member in good standing of the Association of Professional Engineers and Geoscientists of New Brunswick (APEGNB licence No. M7957) and a member of the Canadian Institute of Mining Metallurgy and Petroleum.
4. I have worked as an engineer for a total of twenty two (22) years since graduating from University in 1998. My expertise in Mineral processing has been acquired with Santiago de Chile University in Chile, with Chile University in Chile, with McGill University in Quebec. I have been a consulting process engineer for BBA Inc. since February 2005.
5. I have read the definition of "qualified person" set out in NI 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of NI 43-101.
6. I am independent of the issuer applying all the tests in Section 1.5 of NI 43-101.
7. I am author and responsible for Chapter 13 of the Technical Report.
8. I have visited the Kiena Property that is the subject of the Technical Report on August 6-7, 2019.
9. I have had no prior involvement with the properties that are the subject of the Technical Report.
10. I have read NI 43-101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with NI 43-101.
11. As at the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated and signed this 7th day of November 2019.

"Signed and sealed original on file"

Jorge Torrealba, P. Eng., Ph.D.
BBA Inc.



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LIST OF ABBREVIATIONS AND UNITS OF MEASURE

TABLE OF ABBREVIATIONS	
Abbreviation	Description
3D	Three dimensional
a	Annum (year)
AA	Atomic absorption
AGB	Abitibi greenstone belt
Ai	Abrasion index
Al	Aluminum
APS	Azimuth Pointing System
Au	Gold
B	Billion
BBA	BBA Inc.
BWi	Bond Work index
C	Carbon
Ca	Calcium
CAD or \$	Canadian dollar (examples of use: CAD 2.5M / \$2.5M)
CaO	Lime
Ce	Cerium
CF	Callahan Fault
CG	Cadillac Group
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CIP	Carbon-in-pulp
CL	Core length
CLLFZ	Cadillac-Larder Lake Fault Zone
CRMs	Certified Reference Materials
CTRI	Centre Technologique des Résidus Industriels
Cu	Copper
CWi	Crushing Work index
CSZ	Callahan Shear Zone
DDH	Diamond drillhole
DF	Dubuisson Formation
DPFZ	Destor-Porcupine fault zone
EOH	End of hole
et al.	and others
FA	Fire assay
Fe	Iron
FS	Feasibility study

TABLE OF ABBREVIATIONS

Abbreviation	Description
GPS	Global Positioning System
GRG	Gravity recoverable gold
HF	Héva Formation
ID ²	Inverse distance squared
IP	Induced Polarization
JF	Jacola Formation
KNA	Kriging Neighbourhood Analysis
KSZ	K Shear Zone
LLCFZ	Larder Lake-Cadillac fault zone
LVF	La Motte-Vassan
M	Million
Ma	Mega anum (Million years)
MF	Marbenite Fault
MFFP	Ministère des Forêts, de la Faune et des Parcs
Mg	Magnesium
Mpa	Mega pascals
MRE	Mineral Resource Estimate
MS	Metallic sieve
NF	Norbenite Fault
Ni	Nickel
NN	Nearest neighbour
No.	Number
NPI	Net profit interest
NQ	NQ-Caliber drillhole
NSR	Net smelter return
NTS	National topographic system
O ₂	Oxygen
OK	Ordinary kriging
P ₈₀	80% passing - Product size
Pb	Lead
PEA	Preliminary Economic Assessment
PF	Parfouru Fault
PFS	Pre-feasibility Study
PG	Piché Group
pH	Potential of hydrogen
PhD	Doctor of philosophy
PO	Pontiac Group

TABLE OF ABBREVIATIONS

Abbreviation	Description
PS	Pontiac Subprovince
QA/QC	Quality Assurance / Quality Control
QP	Qualified person
R ²	Coefficient of determination
RF	Revenue Factor
RHF	Rivière Héva Fault
RQD	Rock Quality Designation
RWi	Rod Work index
S	Sulphur
SAG	Semi-autogenous
SD	Standard deviation
SEDAR	System for electronic document analysis and retrieval
SG	Specific gravity
Std	Standard
TiO ₂	Titanium dioxide
U	Uranium
USD	United States dollar (examples of use: USD 2.5M)
UTM	Universal Transverse Mercator
VDF	Val-d'Or Formation
vs.	Versus
Zn	Zinc
Zr	Zirconium

TABLE OF ABBREVIATIONS – UNITS OF MEASURE

Unit	Description
Imperial	
deg. or °	angular degree
ft ²	square feet
ft ² /d	square feet per day
d	day (24 hours)
°F	Degrees Fahrenheit
Ø	diameter
ft	feet (12 inches)
gal	gallon
ha	Hectare
h	hour (60 minutes)
in. or ”	inch
in ²	square inch
K	Thousand (000)
lb	pound
mi.	miles
mph	miles per hour
M	Million
mesh	US Mesh
min	minute (60 seconds)
oz	Troy ounce
oz/t	Troy ounces per tonne
oz/y	Troy ounces per year
ppm	parts per million
%	Percent
%solids	Percent solids by weight
s	second
st	short ton (2,000 lbs)
Wk	Week
wt%	weight percent
yd.	yard (36 inches)
y	year (365 days)

TABLE OF ABBREVIATIONS – UNITS OF MEASURE

Unit	Description
Metric	
m ³	cubic metre
d	day (24 hours)
°C	Degrees Celsius
Ø	diameter
\$/t	Dollars per metric tonne
G	Giga
g	gram
g/t	grams per (metric) tonne
h	hour (60 minutes)
kg	kilogram
kg/t	kilograms per tonne
km	kilometres
km ²	square kilometre
kt	kilotonne
L	litre
m	metre
mg	milligram
ml	millilitre
µm	micron
mm	millimetre
M	Million
Mt	Million metric tonne
ppm	parts per million
%	percent
SG	specific gravity
m ²	square metre
mm ²	square millimetres
K	Thousand (000)
t	tonne (1,000 kg) (metric ton)
tpa	tonnes per annum
tpd	tonnes per day
tpy	tonnes per year
W	Watt
wt%	weight percent
y	year (365 days)



1. SUMMARY

1.1 Introduction

The Kiena Mine Complex Project (the “Project”) is a gold property located in the Province of Québec, in the Abitibi region within the limits of the town of Val-d’Or. The Project is 100% owned by Wesdome Gold Mines Ltd. (Wesdome).

In July 2019, Wesdome commissioned BBA Inc. (BBA) to lead and perform a Mineral Resource Estimate (MRE) on the Project in accordance with the guidelines of the Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101) and Form 43-101 F1.

This Report is in support of the Wesdome press release, dated September 25, 2019, entitled “Updated Mineral Resource Estimate for Kiena Mine Complex with significant increases in gold grade and ounces of gold”. The overall effective date of this Report is September 25, 2019. The Report has a number of close-out dates for information:

- Drill Database close-out date: August 6, 2019;
- Effective date of the mineral resource: September 25, 2019;
- Mineral Lease and Claim Status: October 29, 2019.

It should be understood that the mineral resources presented in this Report are estimates of the size and grade of the deposits. The estimates are based on a certain number of drillholes and samples, and on assumptions and parameters currently available. The level of confidence in the estimates depends upon a number of uncertainties. These uncertainties include but are not limited to: future changes in metal prices and/or production costs, differences in size, grade and recovery rates from those expected, and changes in Project parameters. In addition, there is no assurance that the Project implementation will be carried out.

1.2 Property Description, Ownership and Environmental Liabilities

The Project is located in the Province of Quebec in the Abitibi-Temiscamingue administrative region within the limits of the municipality of Val-d’Or and 100 km east of Rouyn-Noranda. It lies to the northwest of the urban centre of Val-d’Or and covers 7,047 ha.

The coordinates for the approximate centre of the Project are latitude 48°08' N and longitude 77°54' W (284105E and 5335715N: NAD 83 / UTM Zone 18).

As of October 29, 2019, the Kiena Mine Complex property consists of a contiguous group of 183 contiguous electronic map designated mining claims and one mining concession. From the 183 mining claims, Wesdome has 169 claims registered in their name at 100%. Six claims are held by Mines Dynacor (50%) and Wesdome (50%), which represents the Maufort property. Eight claims are held by Wesdome (75%) and 9264-7890 Québec inc. (25%), which represents the Siscoe Extension property.

Some of the mining titles comprising the Project are subject to certain agreements and royalties.

The Project includes the milling and tailings facilities of the Kiena mine, nine shafts including Parker Shaft, and related underground workings from past producers and exploration projects, and various surface facilities. Other than the exploration offices and underground exploration development, the principal infrastructure of the Project has been under care and maintenance since mid-2013.

Effluent is being controlled and analytical results are submitted to federal and provincial authorities who have determined that the effluent, based on the available data, complies with regulation requirements. A recent study conducted by Stantec (Stantec, 2017) to assess the chemical behaviour of the waste rock pile concluded that the waste rocks are neither acid generating nor do they have metal leaching potential under the conditions present at the time of the study.

The last version of the Kiena Closure and Rehabilitation Plan was accepted by the MERN in September 2015. The total cost was estimated at \$7.2 million. The financial guarantee was completed on September 28, 2017.

Any mining related work would be subject to environmental studies and permit applications.

1.3 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The Project is easily accessible via paved highways from local communities, such as Val-d'Or. The Project is located 10 km west of the Val-d'Or Township along the provincial Highway 117 and turning north on the Chemin Kienawisik gravel road. The property can be accessed and operated on a year-round basis. The nearest airport with daily flights connecting Montreal is in Val-d'Or.

The Val-d'Or area experiences a continental subarctic subhumid climate, characterized by short, cool summers and long, cold winters. The climatic conditions at the Property do not significantly impede the Project or hinder exploration or mining activities, beyond seasonal considerations for certain work. The operating season is year-round since the majority of the work is underground. The parts of the Project located on islands are accessible by boat during the summer season and by ice bridges in winter.

The town of Val-d'Or, with a population of approximately 32,900 residents, was founded in the 1920s and has developed to be a mining service centre. Val-d'Or is one of the largest communities in the Abitibi region and has all major services including an airport with scheduled service from Montréal. CN railway line crosses the western part of the Property, connecting east through to Montréal and west to the North American rail network.

The Project is part of the Canadian Shield, characterized by low ridges and hills flanked by generally flat areas of glacial outwash, swamps and numerous lakes and bogs. The average elevation varies from 300 m to 320 m above sea level with some areas in the southern part of the project rising to 360 masl. Overburden varies between 0 m and 15 m and consists of stratified clays as well as glacial and glaciofluvial Pleistocene deposits (MDDELCC). Most of the project is covered by Lac De Montigny, which includes several islands.

Two sources of water were used at the Project: surface water from Lac De Montigny and an underground source from level 17 in the Kiena mine at a vertical depth of 170 m. Electricity is available from Hydro-Québec through an above-ground power line. A Natural Gas line is also used to feed the mill, shaft, warehouse, backfill plant and air heating of the vent raise.

1.4 Geological Setting and Mineralization

The Kiena Mine Complex area is located in northwestern Quebec, straddling the southern part of the Abitibi greenstone belt (AGB) and the northern part of the Pontiac Subprovince:

- The AGB comprises E-trending successions of folded and faulted volcanic and sedimentary rocks and intervening domes of intrusive rocks. An important geologic feature of the AGB is the occurrence of major, E-trending ductile-brittle fault zones. These zones cut across the entire belt from the Kapuskasing structural zone in the west to the Grenville front in the east, dividing the supracrustal rocks and intervening domes into distinct lozenge-shaped domains. The most two important fault zones in the southern AGB are Destor-Porcupine fault zone (DPFZ) in the north and Larder Lake-Cadillac fault zone (LLCFZ) in the south.
- The Pontiac Subprovince (PS) consists principally of a turbiditic succession composed of graywacke and mudstone with minor intercalated conglomerate and basalt.

The southern Abitibi greenstone belt in the Kiena Complex area consists of 2714–2700 Ma volcano-plutonic assemblages, including the Malartic and Louvicourt groups, intruded by calc-alkaline plutonic rocks. The Malartic Group comprises mainly komatiitic and tholeiitic basalt flows and sills, with minor sedimentary rocks, which are interpreted as an oceanic floor in an extensional environment related to mantle plumes, whereas the Louvicourt Group is mainly composed of mafic to felsic volcanic rocks that formed in a subduction-related arc setting. From south to north, the Kiena Complex area is underlain by the lithologies of the Pontiac Group (PO), the Piché Group (PG), the Cadillac Group (CG), and formations belonging to the Louvicourt Group and the Malartic Group.

The Kiena Complex area has a series of large-scale shear zones and related subsidiary faults trending ESE-WNW to SE-NW, subparallel to stratigraphy and dipping steeply to the north. They are, from south to north: the Larder Lake-Cadillac Fault Zone (LLCFZ), the Parfouru Fault (PF), the Marbenite Fault (MF), the Norbenite Fault (NF), the Callahan Fault (CF), the K Shear Zone (KSZ) and the Rivière Héva Fault (RHF). The Kiena Complex area is cut by all of them. The shear

zones contain dykes or stocks of monzonitic or tonalitic composition that vary widely in age (pre-, syn- or post-tectonic) and are spatially associated with gold mines (Norlartic, Marban, Kiena, Sullivan, Goldex, Siscoe, Joubi, Sigma and Lamaque). The observed diversity in the styles and ages of gold mineralization related to these large-scale shear zones demonstrates that several distinct episodes of mineralization occurred.

Gold mineralization on the Kiena Mine Complex shares many geological attributes with other vein-type gold deposits of the Val-d'Or district and with orogenic gold deposits (also known as lode gold, greenstone-hosted quartz-carbonate vein, or mesothermal deposits) in terms of host rock composition, mineralogy and hydrothermal alteration.

Gold mineralization in the Property occurs in all rock types except the Proterozoic dykes but is more common in intrusive bodies and basalt as these acted as competent rock units that promoted fracturing during deformation. Gold mineralization is concentrated where there is a marked competency contrast between these competent units and the adjacent deformed komatiite and/or chlorite-talc schists. There are at least two main gold mineralizing events in the region: young deposits in which the gold mineralization did not experience much deformation after its emplacement; and early mineralization in which mineralized bodies are commonly affected by D1 asymmetric folds, are highly strained and are locally dismembered. In a few deposits, both generations are present. Gold-bearing veins in the region exhibit a great variety of orientations, mineralogy and crosscutting relationships.

At least 63 mineralized zones have been observed on the Property. In general, mineralized zones on the Property occur near a large-scale fault. They are often associated with a subsidiary shear zone that may be proximal, adjacent or host to the mineralization. Alteration minerals are dominantly albite, carbonates and pyrite with lesser chlorite and silica.

A total of 48 mineralized zones was interpreted for the purpose of this MRE.

The Kiena Deep A Zone was first intersected in December 2007 and is localized within the Marbenite Fault deformation corridor and is divided into three main lenses and a fourth smaller lens. The lenses occur along an isoclinal fold associated with the MF and a subsidiary fault.

1.5 Status of Exploration and Drilling

Since the latest technical report in December 2018, development has continued with a new exploration ramp on level 79. A total of 153 m was excavated in this ramp as of the end of September 2019.

Since October 2018, the close out date for the December 2018 MRE, five underground drill rigs have continued to operate in order to verify the up-plunge extension (VC6 and VC1 zones), test the down dip extension, and perform infill drilling in the Kiena Deep A Zones.

As of August 6, 2019 (closeout date of the MRE database), Wesdome has completed 140 new diamond drillholes (DDH) during the 2018-2019 campaign on the Property for a total of 36,050 m.

Of these 140 new drillholes, 66 are in Kiena Deep A Zones, resulting in the inclusion of an additional 18,365 m of drill data. At the effective date of this Report, Wesdome had completed an additional 50 DDH for 14,405 m that are not included in the herein MRE.

1.6 Drilling, Sampling Method, Approach and Analysis

For the 2018-2019 drilling campaign, the samples were shipped to Swaslab Ltd. in Ontario and to ALS Global labs and Actlabs facilities in Val-d'Or.

All core samples submitted for preparation and analysis to the laboratories are secured in rice bags with zip ties and collected directly at the core shack by the laboratory under the supervision of a member of Kiena's team.

Both ALS and Techni-Lab (now Actlabs) have the ISO/IEC 17025:2005 accreditation through the ALA (Canadian Association for Laboratory Accreditation Inc.) They are both independent commercial laboratories.

As per National Instrument 43-101 (NI 43-101), quality control samples were inserted into the sample batches sent to the laboratory. Inserts included pulp duplicate samples, blank samples and standards.

The QP reviewed the sample preparation, analytical and security procedures, as well as insertion rates and the performance of blanks, standards and duplicates for the 2018-2019 drilling programs, and concluded that the observed failure rates are within expected ranges and that no significant assay biases are present. According to the QP's opinion, the procedure and the quality of the data are adequate to industry standards and support the Mineral Resource Estimate.

1.7 Data Verification

Pierre-Luc Richard, P. Geo., Qualified Person, and Charlotte Athurion, P. Geo., both of BBA visited the Kiena Mine Complex from August 6-8, 2019. The site visit included a visual inspection of historical core and core drilling in progress, a field tour, an underground visit and discussions of the current geological interpretations with Wesdome geologists. The site visit also included a review of sampling and assays procedures, the QA/QC program, downhole survey methodologies, and the descriptions of lithologies, alteration and structures.

For the purpose of this MRE, Pierre-Luc Richard performed a basic verification on the entire Project database. All data was provided by Wesdome in a local mine coordinate system. The database close-out date for the resource estimate is August 6, 2019; data from 6,616 DDH (976,170.3 m) was incorporated in the resource estimate block model area. The last hole included in the database was #6533.

Clovis Auger, P. Geo., from BBA was granted access to the original assay certificates directly from ALS for all holes drilled by Wesdome (2018-2019 Program) on the Project. The original logs and the assay certificates for the historical DDH were also available at the Kiena Mine Complex office. All the assays results from ALS were verified for the 2018-2019 Program. Assays for approximately 10% of the historical DDH intersecting the current MRE mineralized zones were also verified. The assays recorded in the database were compared to the original certificates from the different laboratories. Minor discrepancies were noted and modified for the historical DDH.

Pierre-Luc Richard, P. Geo., is of the opinion that the drilling, sampling and assaying protocols in place are adequate. The database for the Kiena Mine Complex is of good overall quality. In the QP's opinion, the Project database is appropriate to be used for the estimation of Mineral Resources.

1.8 Mineral Processing and Metallurgical Testing

The Kiena Mine processing plant became operational in September 1984. A conventional gold recovery process involving cyanidation and conventional CIP was used. The principal process steps included crushing, grinding, leaching by cyanidation, gold adsorption and desorption, electrolysis, melting and casting of doré bars.

In 2018, Wesdome mandated CTRI to conduct fifteen 48-hour cyanidation tests in 4 L bottles on gold mineralized material. Three cyanidation tests were performed on the mineralized material from the Kiena Deep A Zone (four composites) and the S50 Zone. Wesdome selected and prepared the samples used for this testwork campaign. It was not possible for CTRI to confirm the samples' representativeness of the deposit.

The 48-hour recoveries for the Kiena Deep A Zone cyanidation tests ranged from 98.4% to 99.7%. The 48-hour recoveries for the S50 Zone gave a value of 95.7%, which is in the range of the historical data from the Kiena Mill.

Lime consumption for all cyanide tests ranged from 1.1 kg/t to 1.6 kg/t. The consumption of NaCN varied between 0.11 kg/t and 0.21 kg/t. Even though the head grades were higher than the S50 Zone, reagent consumption was higher for the S50 Zone compared to the Kiena Deep A Zone for both cyanide and lime. This was probably due to the presence of sulphur (pyrite) in the S50 Zone.

A new metallurgical testwork program, based on the CTRI testwork program observations and the former operation, was designed and managed by BBA. The testwork is being conducted at SGS Lakefield as of the time of writing of this chapter. The testwork program started at the end of August 2019 and will be completed by mid November 2019.

1.9 Kiena Mineral Resource Estimate

The 2019 Kiena Mine Complex Mineral Resource Estimate (the “2019 MRE”) was prepared by Pierre-Luc Richard, P. Geo., using all available information including historical and recent diamond drillholes.

The updated MRE includes drill data as of August 6, 2019 and includes an additional 140 drillholes, for a total of 36,050 m drilled since the close-out date of the last Kiena MRE announced on December 12, 2018.

The 2019 MRE combine two different approaches:

- A block model mineral resource estimate for the zones in the former Kiena Mine Area (the “block model MRE”) which was prepared by Karine Brousseau, P. Eng., Senior Engineer of Wesdome and has been reviewed and audited by Pierre-Luc Richard, P. Geo., Qualified Person of BBA. Geological wireframes were constructed in Leapfrog Geo 4.5™. Geovia® GEMS 6.8.2.2 was used for the compositing, 3D block modelling, interpolation and classification. Statistical studies were conducted using Excel and Snowden Supervisor v.8.11;
- A polygonal mineral resource estimate for the zones outside of the Kiena Area (the “polygonal MRE”) which was prepared by Turcotte et al. (2015) and reviewed and modified by Pierre-Luc Richard, P. Geo., Qualified Person of BBA with the following steps:
 - Confirmation of the lack of new material information;
 - Review and validation of the resource with Excel;
 - Review of the classification in long section;
 - Review of the underground cut-off grade.

The block model resource database for the Kiena Mine Area, as of August 6, 2019, consisted of 349 surface and 6,267 underground drillholes with a cumulative length of 893,318.52 m. The polygonal resource database consisted of 216 drillholes cutting across the mineralized zones. No new information was added to the polygonal resource database since 2015.

The mineral resources are not mineral reserves as they do not have demonstrated economic viability. The estimate is categorized as Indicated and Inferred Resources based on data density, geological and grade continuity, search ellipse criteria, drillhole density and specific interpolation parameters. The effective date of the estimate is September 25, 2019 based on the compilation status and cut-off grade parameters.

The total Indicated and Inferred Mineral Resource Estimate for the block model MRE and the polygonal MRE is presented in Table 1-1:

Table 1-1: Underground Indicated and Inferred Mineral Resource Estimate

	Indicated Resources			Inferred Resources		
	Tonnage (t)	Grade (g/t)	Ounces Au (oz)	Tonnage (t)	Grade (g/t)	Ounces Au (oz)
Block Model MRE	968,900	14.46	450,400	1,121,200	11.02	397,100
Polygonal MRE	1,859,300	5.65	337,800	1,796,900	6.94	401,000
TOTAL	2,828,200	8.67	788,100	2,918,100	8.51	798,100

Notes to Table 1-1:

1. These mineral resources are not mineral reserves as they do not have demonstrated economic viability.
2. The mineral resource estimate follows CIM definitions and guidelines for mineral resources.
3. Results are presented in situ and undiluted and considered to have reasonable prospects for economic extraction, below 100 m crown pillar.
4. The estimation combined two estimation methods, ordinary kriging in the Kiena Complex and polygonal for other deposits on the property.
5. The Kiena Complex resources encompasses for 20 zones with a minimum true thickness of 3.0 m using the grade of the adjacent material when assayed or a value of zero when not assayed. High-grade capping varies from 20 to 200g/t Au (when required) was applied to composited assay grades for interpolation using an Ordinary Kriging interpolation method based on 1.0 m composite and block size of 5 m x 5 m x 5 m, with bulk density values of 2.8 (g/cm³). In addition, a high grade limit or second capping value was used for the second and third pass grade interpolation to restrict high grade impact at greater distance from the drillhole intersect. Indicated resources are manually defined and enclose areas where drill spacing is generally less than 25 metres, blocks are informed by a minimum of three drillholes, and reasonable geological and grade continuity is shown.
6. The zone outside the Kiena Complex encompasses for eight zones with a minimum true thickness of 1.5 metre using a polygonal estimation method. Indicated resources were estimated from drillhole results using the mid distance between drillhole or a maximum of 30 metres, 12.5 metres in some areas. The high-grade capping was fixed at 34.28 g/t Au with a bulk density value of 2.8 (g/cm³).
7. The estimate is reported for potential underground scenario at cut-off grades of 3.0 g/t Au (> 40° dip) and 4.0 g/t Au (< 40° dip, Wesdome Zone). The cut-off grades were calculated using a gold price of US\$1,300 per ounce, a CAD:USD exchange rate of 1.31 (CAD1,700); mining cost \$110/t (> 40° dip); \$150/t (< 40° dip); processing cost \$35/t; G&A \$15/t. The cut-off grades should be re-evaluated in light of future prevailing market conditions (metal prices, exchange rate, mining cost, etc.).
8. The number of metric tons and ounces were rounded to the nearest hundred and the metal contents are presented in troy ounces (tonne x grade / 31.10348).
9. The QP, Pierre-Luc Richard, P. Geo., is not aware of any known environmental, permitting, legal, title-related, taxation, socio-political or marketing issues, or any other relevant issue not reported in this Technical Report that could materially affect the mineral resource estimate.

1.10 Interpretation and Conclusions

The understanding of the regional geology, lithological and structural controls of the mineralization at Kiena are sufficient to support estimation of Mineral Resources.

BBA considers the 2019 MRE to be reliable and based on quality data, reasonable hypotheses and parameters that follow CIM Definition Standards. After completing the MRE and a detailed review of all pertinent information, BBA concluded the following:

- Using a cut-off grade of 3.0 and 4.0 g/t Au, the Inferred Resources amount 2.91 Mt grading 8.51 g/t Au containing approximately 798,100 ounces of gold and the Indicated Resources amount 2.82 Mt grading 8.67 g/t Au for approximately 788,100 ounces of gold;
- It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration;
- There is potential to add resources up and down plunge of the Kiena Deep A Zone;
- There is potential to add resources down plunge extensions of the VC6 and VC1 zones and the transition to the A Zone further down along the same structure;
- There might be potential to add resources in the vicinity of the Polygonal Resources, but further compilation work is needed.

As with all mineral projects, there is an inherent risk associated with mineral exploration. Many of these risks are based on a lack of detailed knowledge and can be managed as more sampling, testing, design, and engineering are conducted at the next study stages. The mineral resources may be affected by a future conceptual study assessment of mining, processing, environmental, permitting, taxation, socio-economic and other factors.

External risks are, to a certain extent, beyond the control of the Project proponents and are much more difficult to anticipate and mitigate, although, in many instances, some risk reductions can be achieved. External risks are things such as the political situation in the Project's region, metal prices, exchange rates and government legislation. These external risks are generally applicable to all mining projects. Negative variance to these items from the assumptions made in the economic model would reduce the profitability of the mine and the mineral resource estimates.

1.11 Recommendations

Based on the results of the 2019 MRE, BBA recommends additional work on the Project and the initiation of a Preliminary Economic Assessment (PEA).

BBA recommends the two-phase work program described below in which Phase 2 depends on the success of Phase 1.



Phase 1:

- Complete Additional Metallurgical Testwork on the Kiena Deep A Zones;
- Preliminary Economic Assessment (PEA); Continue Ongoing Exploration and Definition Drilling Program of the Kiena Deep A Zones, VC Zones and S50 Zones.

Phase 2:

- Conversion of the Polygonal Resources to Block Model Resources;
- Updated Mineral Resource Estimate and pre-feasibility study (PFS);
- Compilation of historic geologic data adjacent to Kiena Mine area and across the entire property.

Expenditures for Phase 1 are estimated at \$6,720,000 (including 20% for contingencies). Expenditures for Phase 2 are estimated at \$1,500,000 (including 20% for contingencies). The grand total is \$8,220,000 (including 20% for contingencies).



2. INTRODUCTION

The Kiena Mine Complex Project (the “Project”) is a gold property located in the Province of Québec, in the Abitibi region within the limits of the town of Val-d’Or. The Project is 100% owned by Wesdome Gold Mines Ltd. (Wesdome).

In July 2019, Wesdome commissioned BBA Inc. (BBA) to lead and perform a Mineral Resource Estimate (MRE) on the Project in accordance with the guidelines of the Canadian Securities Administrators (CSA) National Instrument 43-101 (NI 43-101) and Form 43-101 F1.

BBA (www.bba.ca) is an independent engineering consulting firm headquartered in Mont-Saint-Hilaire, Québec with its mining group based in downtown Montréal and in Val-d’Or, Québec. The firm’s expertise is recognized in the fields of energy, mining and metals, biofuels and oil and gas. BBA is supported by a network of offices across Canada to serve its clients and carry out mandates at the local, national and international levels.

2.1 Scope of Study

The following Technical Report (the “Report”) presents the results of the Mineral Resource Estimate for the Kiena Mine Complex Project. As of the date of this Report, Wesdome is a Canadian based intermediate gold producer company listed on the TSX Venture Exchange (“TSXV”) under the trading symbol WDO with its head office located at:

220 Bay St, Suite 1200
Toronto, ON
M5J 2W4

This Report, titled “NI 43-101 Technical Report and Mineral Resource Estimate for the Kiena Mine Complex”, was prepared by Qualified Persons (QPs) following the guidelines of the NI 43-101, and in conformity with the guidelines of the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Standards on Mineral Resources and Reserves.

2.2 Report Responsibility and Qualified Persons

The following individuals, by virtue of their education, experience and professional association, are considered QPs as defined in the NI 43-101, and are members in good standing of appropriate professional institutions.

- Pierre-Luc Richard, P. Geo. BBA Inc.
- Jorge Torrealba, P. Eng. BBA Inc.

The preceding QPs have contributed to the writing of this Report and have provided QP certificates, included at the beginning of this Report. The information contained in the certificates outlines the sections in this Report for which each QP is responsible. Each QP has also contributed figures, tables and portions of Chapters 1 (Summary), 25 (Interpretation and Conclusions), and 26 (Recommendations). Table 2-1 outlines the responsibilities for the various sections of the Report and the name of the corresponding Qualified Person.

Table 2-1: Qualified Persons and areas of report responsibility

Chapter	Description	Qualified Person	Company	Comments and exceptions
1.	Executive Summary	P.-L. Richard	BBA	All Chapter 1
2.	Introduction	P.-L. Richard	BBA	All Chapter 2
3.	Reliance on other Experts	P.-L. Richard	BBA	All Chapter 3
4.	Project Property Description and Location	P.-L. Richard	BBA	All Chapter 4
5.	Accessibility, Climate, Local Resource, Infrastructure and Physiography	P.-L. Richard	BBA	All Chapter 5
6.	History	P.-L. Richard	BBA	All Chapter 6
7.	Geological Setting and Mineralization	P.-L. Richard	BBA	All Chapter 7
8.	Deposit Types	P.-L. Richard	BBA	All Chapter 8
9.	Exploration	P.-L. Richard	BBA	All Chapter 9
10.	Drilling	P.-L. Richard	BBA	All Chapter 10
11.	Sample Preparation, Analyses and Security	P.-L. Richard	BBA	All Chapter 11
12.	Data Verification	P.-L. Richard	BBA	All Chapter 12
13.	Mineral Processing and Metallurgical Testing	J. Torrealba	BBA	All Chapter 13
14.	Mineral Resource Estimate	P.-L. Richard	BBA	All Chapter 14
15.	Mineral Reserve Estimate	P.-L. Richard	BBA	Not required for a resource estimate
16.	Mining Methods	P.-L. Richard	BBA	Not required for a resource estimate
17.	Recovery Methods	P.-L. Richard	BBA	Not required for a resource estimate
18.	Project Infrastructure	P.-L. Richard	BBA	Not required for a resource estimate
19.	Market Studies and Contracts	P.-L. Richard	BBA	Not required for a resource estimate
20.	Environmental Studies, Permitting, and Social or Community Impact	P.-L. Richard	BBA	Not required for a resource estimate
21.	Capital and Operating Costs	P.-L. Richard	BBA	Not required for a resource estimate
22.	Economic Analysis	P.-L. Richard	BBA	Not required for a resource estimate
23.	Adjacent Properties	P.-L. Richard	BBA	All Chapter 23
24.	Other Relevant Data and Information	P.-L. Richard	BBA	All Chapter 24
25.	Interpretation and Conclusions	P.-L. Richard	BBA	All Chapter 25
26.	Recommendations	P.-L. Richard	BBA	All Chapter 26
27.	References	P.-L. Richard	BBA	All Chapter 27

2.3 Effective Dates and Declaration

This Report is in support of the Wesdome press release, dated September 25, 2019, entitled “Updated Mineral Resource Estimate for Kiena Mine Complex with significant increases in gold grade and ounces of gold”. The overall effective date of this Report is September 25, 2019. The Report has a number of close-out dates for information:

- Drill Database close-out date: August 6, 2019;
- Effective date of the mineral resource: September 25, 2019;
- Mineral Lease and Claim Status: October 29, 2019.

This Report was prepared as National Instrument 43-101 Technical Report for Wesdome by Qualified Persons from BBA Inc. collectively the “Report Authors”.

The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in the Report Authors’ services, based on: i) information available at the time of preparation; ii) data supplied by outside sources; and iii) the assumptions, conditions, and qualifications set forth in this Report. This Report is intended for use by Wesdome subject to terms and conditions of its respective contracts with the Report Authors. Except for the purposes legislated under Canadian provincial and territorial securities law, any other uses of this Report by any third party is at that party’s sole risk.

It should be understood that the mineral resources presented in this Report are estimates of the size and grade of the deposits. The estimates are based on a certain number of drillholes and samples, and on assumptions and parameters currently available. The level of confidence in the estimates depends upon a number of uncertainties. These uncertainties include but are not limited to: future changes in metal prices and/or production costs, differences in size, grade and recovery rates from those expected, and changes in Project parameters. In addition, there is no assurance that the Project implementation will be carried out.

As of the effective date of this Report, the QPs are not aware of any known litigation potentially affecting the Project. The QPs did not verify the legality or terms of any underlying agreement(s) that may exist concerning the Project ownership, permits, off-take agreements, license agreements, royalties or other agreement(s) between Wesdome and any third parties.

BBA is not an insider, associate or an affiliate of Wesdome and neither BBA nor any affiliate has acted as Advisor to Wesdome, its subsidiaries or its affiliates, in connection with this Project. The results of the technical review by BBA are not dependent on any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings. The QPs are being paid fees for this work in accordance with the normal professional consulting practice.

The opinions contained herein are based on information collected throughout the course of investigations by the QPs, which in turn reflects various technical and economic conditions at the time of writing. Given the nature of the mining business, these conditions can change significantly over relatively short periods of time. Consequently, actual results can be significantly more or less favourable.

2.4 Sources of Information

This Report is based in part on internal company reports, maps, published government reports, company letters and memoranda, and public information, as listed in Chapter 27 “References” of this Report. Section from reports authored by others may have been directly quoted or summarized in the report and are so indicated, where appropriate.

This MRE has been completed using available information contained in, but not limited to, the following reports, documents and discussions:

- Technical discussions with Wesdome direction and personnel;
- QPs’ personal inspection of the Kiena Mine Complex site, including drill core and facilities;
- Historical drill hole database;
- Review of exploration data collected by Wesdome;
- Agreements, technical data and internal technical documents supplied by Wesdome;
- Internal unpublished reports from Wesdome;
- Additional information from public domain sources (SEDAR, etc.).

The QPs believe that the basic assumptions contained in the information above are factual and accurate, and that the interpretations are reasonable. The QPs have relied on this data and have no reason to believe that any material facts have been withheld or doubt the reliability of the information used to evaluate the mineral resources presented herein. The authors have sourced the information for this Report from the collection of documents listed in Chapter 27 (References).

2.5 Site Visit

Pierre-Luc Richard, QP, and Charlotte Athurion, both employees of BBA, visited the property on August 6-8, 2019, and on different other occasions as part of the current mandate. The purpose of the visits was to review the Project with the Wesdome team. The visits included an overview of the general geological conditions, a tour of the core storage facility, visual inspections of select mineralized drill core samples and an underground visit of the site. A review of assaying, QA/QC and drillhole procedures was also completed.

Jorge Torrealba, QP of Chapter 13, employee of BBA, visited the Property on August 6-7, 2019, as part of the current mandate. The purpose of the visit was to select and collect samples for a future testwork program. The visits included an overview of the Project with the Wesdome team, a visual inspection of selected mineralized drill core samples at the core shack, and a tour of the processing plant.

2.6 Currency, Units of Measure, and Calculations

Unless otherwise specified or noted, the units used in this Report are metric. Every effort has been made to clearly display the appropriate units being used throughout this Report.

- Currency is in Canadian dollars (“CAD” or “\$”), unless otherwise stated;
- A Canadian dollar (CAD) to United States dollar (USD) exchange rate of CAD 1.31 for USD 1.00 was used;
- Block model is in the local mine coordinates; the drillhole database is either in the local mine coordinates or UTM NAD 83 zone 18N; maps are in UTM NAD 83 zone 18N coordinates;
- This Report may include technical information that required subsequent calculations to derive subtotals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, the QPs consider them immaterial.

2.7 Acknowledgment

The Report Authors would like to acknowledge the general support provided by Wesdome personnel during this assignment. Their collaboration is greatly appreciated. The Project also benefitted from the inputs of the following specific individuals:

- Patrick Frenette, Project Superintendent – Wesdome Gold Mine
- Bruno Turcotte, Senior Project Geologist – Wesdome Gold Mine
- Karine Brousseau, Senior Engineer (Mineral Resources) – Wesdome Gold Mine
- Charlotte Athurion, Geologist – BBA
- Clovis Cameron Auger, Geologist – BBA
- Manon Dussault, Project Assistant – BBA
- Serge Morin, Senior Mining Technician – BBA
- Colin Hardie, Director, Mining and Process Studies – BBA
- Navin Gangadin, Regional Director, Studies – BBA

Their commitment, contributions and team work are gratefully acknowledged and appreciated.

3. RELIANCE ON OTHER EXPERTS

3.1 Introduction

The Qualified Persons (QPs) relied on reports, information sources and opinions provided by Wesdome and external experts for certain aspects of the Project, such as the Project's mineral rights, 3rd party agreements, surface rights, property agreements, royalties, and environmental status.

As of the date of this Report, Wesdome indicates that there are no known litigations potentially affecting the Kiena Mine Complex Project.

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

3.2 Mineral Tenure and Surface Rights

Wesdome supplied information regarding mining titles, options' agreements, royalty agreements, environmental liabilities and permits. The QPs from BBA consulted the GESTIM online claim management system via:

https://gestim.mines.gouv.qc.ca/MRN_GestimP_Presentation/ODM02101_login.aspx

for the latest status regarding ownership and mining titles. Although the QPs have reviewed the option agreements and available claim status documents, they are not qualified to express any legal opinion with respect to the property titles, current ownership or possible litigations. A description of such agreements, the property, and ownership thereof, is provided for general information purposes only. In this regard, the QPs have relied on information supplied by Wesdome and the work of experts they understand to be appropriately qualified.

This information is used in Chapter 4 of the Report. The information is also used in support of the Mineral Resource Estimate in Chapter 14.

3.3 Environmental Studies, Permitting, and Social or Community Impact

The QPs relied on information with respect to the Project's environmental status, permits and, Social and Community Impact as provided by Frank Gagnon, Environment Coordinator of Wesdome at the Kiena Mine Complex, and Patrick Frenette, Project Superintendent, Wesdome. This information is used in Chapter 4 of the Report.



4. PROPERTY DESCRIPTION AND LOCATION

4.1 Property Description and Location

The Kiena Mine Complex Project is located in the Province of Quebec in the Abitibi-Temiscamingue administrative region within the limits of the municipality of Val-d'Or and 100 km east of Rouyn-Noranda (Figure 4-1). It lies to the northwest of the urban centre of Val-d'Or and covers 7,047 Ha.

The coordinates for the approximate centre of the Project are latitude 48°08' N and longitude 77°54' W (284105E and 5335715N: NAD 83 / UTM Zone 18). The Project lies in the townships of Dubuisson and Vassan on NTS map sheets 32D/01 and 32C/04.

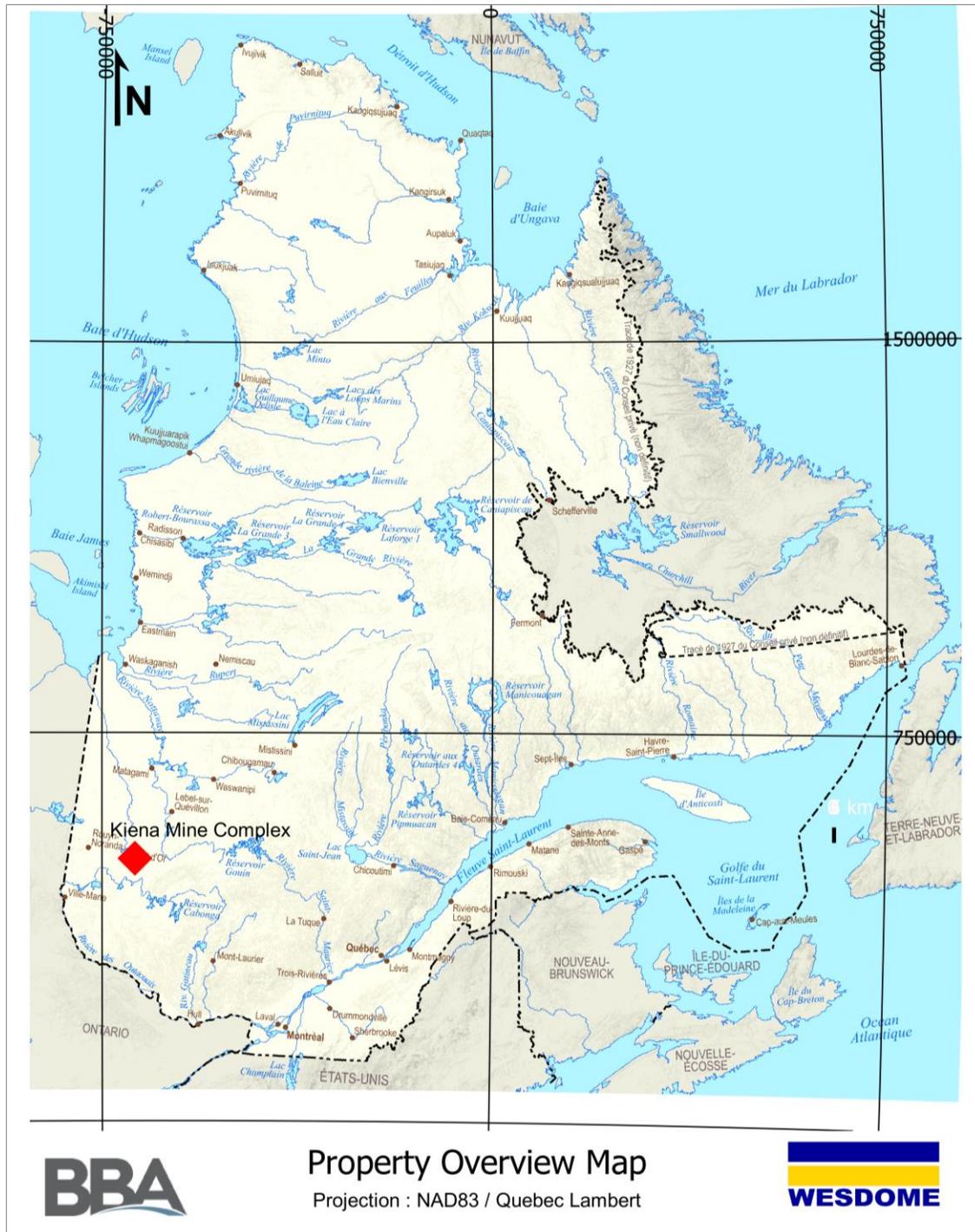


Figure 4-1: Property overview map of the Kiena Mine Complex

4.2 Mineral Tenure

Pierre-Luc Richard verified the status of the mineral claims using the Québec government online claim management tool GESTIM. As of October 29, 2019, the Kiena Mine Complex property consists of a contiguous group of 183 contiguous electronic map designated mining claims and one mining concession (Figure 4-2).

From the 183 mining claims, Wesdome has 169 claims registered in their name at 100%. Six claims are held be Mines Dynacor (50%) and Wesdome (50%), which represents the Maufort property. Eight claims are held by Wesdome (75%) and 9264-7890 Québec inc. (25%), which represents the Siscoe Extension property.

The Project is located in the Dubuison and Vassan Township, near the town of Val-d'Or in the Province of Quebec. The total area of the Project is 7,047 hectares. A detailed list of the Project mineral claims is shown in Appendix 1.

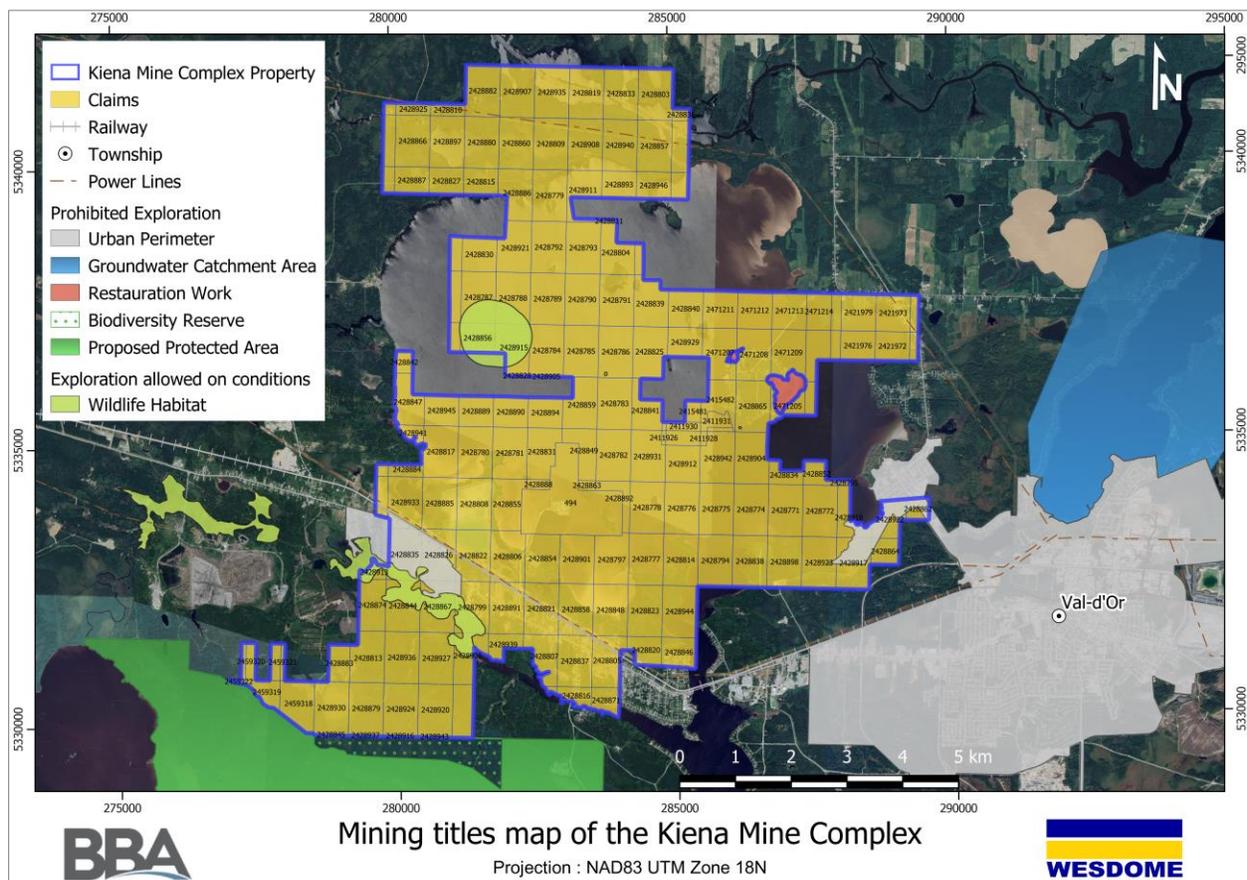


Figure 4-2: Kiena Mine Complex titles as of October 29, 2019



4.3 Royalties, Agreement and Encumbrances

Some of the mining titles comprising the Project are subject to certain agreements and royalties. Figure 4-3 shows the historical properties that were amalgamated to form the current Project, some of which have active royalties. Table 4-1 provides the details of these royalties.

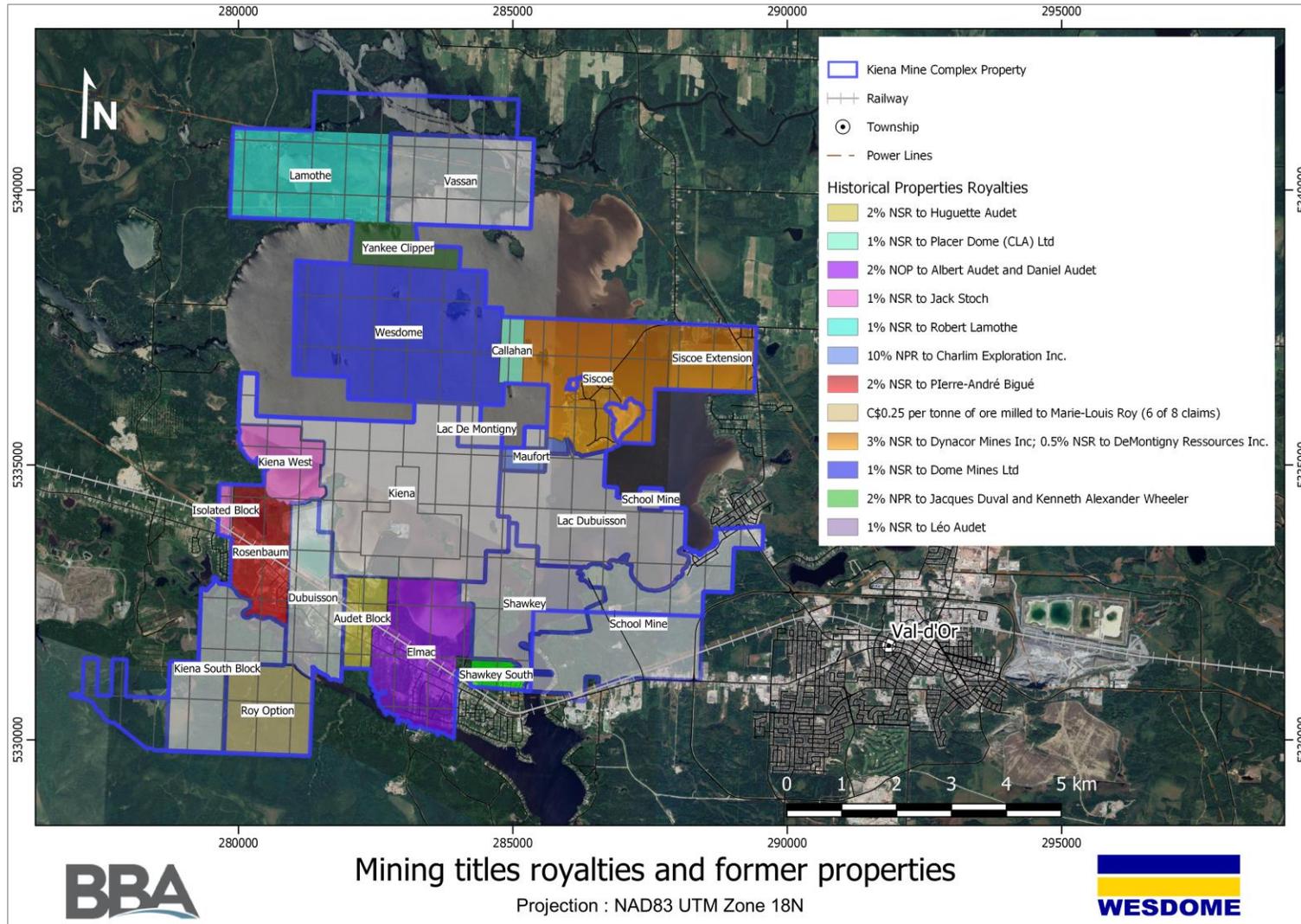


Figure 4-3: Kiena Mine Complex mining royalties and historical property names

Table 4-1: List of historical properties with their applicable royalties

Name	Royalties	Date of agreement	Details
Audet Block	2% NSR to Huguette Audet	N/A	
Callahan	1% NSR to Placer Dome (CLA) Ltd.	N/A	
Dubuisson	No royalty		
Elmac	2% NOP to Albert Audet and Daniel Audet	N/A	
Kiena	No Royalty		
Kiena South Block	No Royalty		
Kiena West	1% NSR to Jack Stoch	N/A	
Lac De Montigny	No Royalty		
Lac Dubuisson	No Royalty		
Lamothe	1% NSR to Robert Lamothe	January 15, 1998	
Maufort	10% NPR to Charlim Exploration Inc.	N/A	
Rosenbaum	2% NSR to Pierre-André Bigué	N/A	1% can be bought back for \$1,000,000
Roy Option	CAD0.25 per tonne of ore milled to Marie-Louis Roy (6 of 8 claims)	N/A	
School Mine	No Royalty		
Shawkey	No Royalty		
Shawkey South	1% NSR to Léo Audet	N/A	
Siscoe and Siscoe Extension	3% NSR to Dynacor Mines Inc.	November 9, 1999	1% can be bought back for \$500,000
	0.5% NSR to Demontigny Resources Inc.	N/A	0.5% can be bought for \$500,000
Vassan	No Royalty		
Wesdome	1% NSR to Dome Mines Ltd.	November 21, 1997	
Yankee Clipper	2% NPR to Jacques Duval and Kenneth Alexander Wheeler	February 25, 1981	

4.4 Environmental Liabilities

Several studies were conducted before and during operations on portions of the Project related to former operations and other projects within its boundaries. The Project includes the milling and tailings facilities of the Kiena mine, nine shafts including Parker Shaft, and related underground workings from past producers and exploration projects (Figure 4-4), and various surface facilities. The remaining infrastructure components at the former Kiena mine site now constitute the principal infrastructure of the Project; these components are listed below:

- The former collar of the Parker Shaft is located close to the actual mill but is not accessible;
- A functional shaft of 930 m depth;
- A dewatered underground ramp system from 170 m (level 17) to 1,050 m (level 105);

- A 2,000 tpd processing plant;
- A tailing management facility;
- Core shacks;
- Offices;
- A guard house and security gate;
- Workshops and warehouses;
- A Hazmat storage facility.

Other than the exploration offices and underground exploration development, the principal infrastructure of the Project has been under care and maintenance since mid-2013. Effluent is being controlled and analytical results are submitted to federal and provincial authorities who have determined that the effluent, based on the available data, complies with regulation requirements. A recent study conducted by Stantec (Stantec, 2017) to assess the chemical behaviour of the waste rock pile concluded that the waste rocks are neither acid generating nor do they have metal leaching potential under the conditions present at the time of the study.

The environmental permits and the social acceptability of the Project, regardless of current status, will need to be reviewed should any operations resume. Moreover, both federal and provincial authorities have amended their regulations since 2013.

Any mining related work would be subject to environmental studies and permit applications. Access is easy as the Project lies within an inhabited area and some data may already have been collected through previous studies. The Project is located near a lake since the 1980s and Wesdome's representatives mentioned to the QP that there has been no social resistance or counteraction.

The last version of the Kiena Closure and Rehabilitation Plan was accepted by the MERN in September 2015. The total cost was estimated at \$7.2 million. The financial guarantee was completed on September 28, 2017.

In the summer of 2018, a geotechnical study (Stantec, 2018) was conducted to investigate the subsurface conditions of the area surrounding the Kiena waste rock pile. Stratigraphic profiles, cone penetration tests, shear resistance profiles, test pits, and boreholes were done for the characterization.

As of December 2018, Wesdome has kept the municipal authorities informed on their mining and exploration activities but no official consultation has been conducted with other interested stakeholders. The main acknowledged concern is groundwater quality as it is the source of drinking water for nearby dwellings. Wesdome monitored the well water quality until operations ceased in 2013. Resuming any use of cyanide would trigger the resumption of the well water monitoring program.

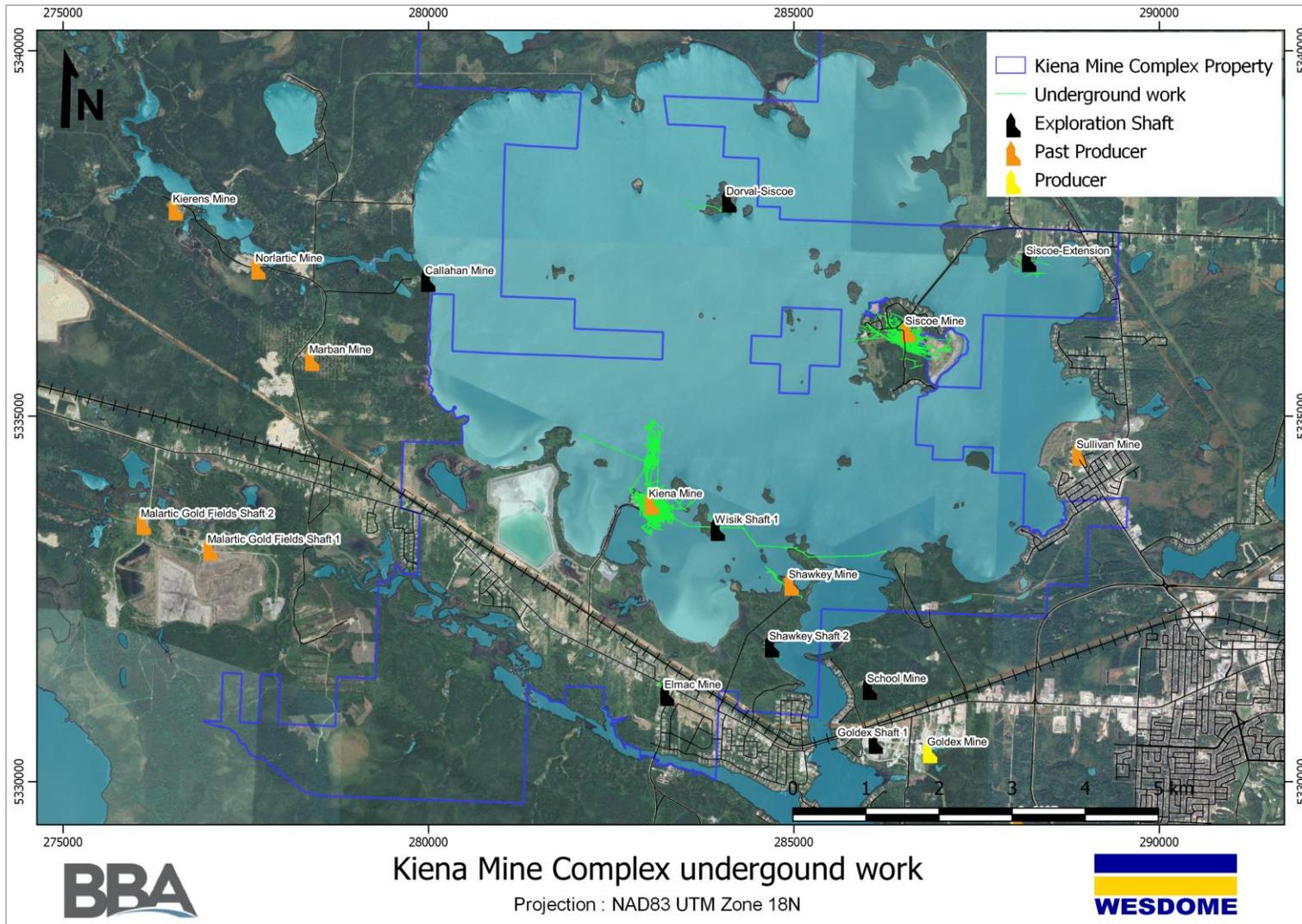


Figure 4-4: Surface projection of the Kiena Mine Complex underground work, production and exploration shafts as of end of 2018



4.5 Permitting

Wesdome has various authorization certificates for their property. Table 4-2 shows the list of certificates they currently hold with the conditions to respect. All certificates of authorization were provided by Frank Gagnon, Environment Coordinator from Wesdome at the Kiena Mine Complex, and are valid and active according to Mr. Gagnon.

Table 4-2: Wesdome certificates of authorization details

Certificate of authorization number	Title	Type	Date	Conditions
7610-08-01-70065-23	Reopening of "Les mines d'or Kiena Ltée"	Authorization certificate	1981-07-29	<ul style="list-style-type: none"> ▪ Extraction of 1,000 tpd of ore; ▪ Truck transportation to the Lamaque Mill; ▪ Hydraulic backfill with the Lamaque Mill waste; ▪ Enlargement of the island with the waste rock; ▪ Disposal of the waste rock in a sequence; ▪ Dust control of the access roads and unpaved traffic areas; ▪ Final effluent monitoring according to the Directive 019 with additionally cadmium at 0.05 mg/l and mercury at 0.001 mg/l; ▪ All mitigation measures of the: <ul style="list-style-type: none"> ▪ Environmental Impact Assessments (Nov. 21, 1980): <ul style="list-style-type: none"> ▪ Letter of January 14, 1981; ▪ Letter of May 27, 1981.
		Cession of the authorization certificate from "Les mines d'or Kiena Ltée" to "Mc Watters"	1997-09-12	<ul style="list-style-type: none"> ▪ Same conditions as the authorization certificate of July 29, 1981.
		Modification	2001-02-23	<ul style="list-style-type: none"> ▪ Extraction change of 1,000 tpd to 2,040 tpd of ore.
		Cession of the authorization certificate from "Mc Watters" to "Wesdome inc."	2004-05-25	<ul style="list-style-type: none"> ▪ Extraction of 2,040 tpd of ore.
	Expansion of the waste rock pile	Modification	2004-12-20	<ul style="list-style-type: none"> ▪ From 160,000 t to 418,000 t; ▪ On lots 24B and 25B, road A, Dubuisson township; ▪ Extraction of 10,000 t per month of waste rock; ▪ Kiena Mine waste rock and development of the ramp towards Shawkey and Wesdome; ▪ Waste rock will be haul by truck towards the waste pile; ▪ Actual waste pile of 160,000 t, 11,800 m² with a height of 8 m;



Certificate of authorization number	Title	Type	Date	Conditions
				<ul style="list-style-type: none"> ▪ Temporary extension of the waste pile to 258,000 t for 31,357 m² at 4.5 m high; ▪ Some waste rock will be used for raising the tailings pond, building berms and roads; ▪ Slope of 2H/1V.
7610-08-01-70065-24	Operation of the ore plant at the Kiena mine	Authorization certificate	1984-08-02	<ul style="list-style-type: none"> ▪ Located on lots 19B to 25B, road B, Dubuisson township; ▪ Treatment plant of 1,250 tpd; ▪ Direct cyanidation and activated carbon recovery; ▪ Hydrocarbon sensor installation where they are likely to be present; ▪ Installation of leak proof structures to store a volume equivalent to the largest tank of the same group for all tanks of toxic and dangerous products; ▪ Installation of a dry or wet scrubber to capture the emissions of gas or dust generated by the treatment operations; ▪ Installation of equipment to eliminate or reduce dust emissions from storage, disposal, transshipment and transportation areas in accordance with the Regulation on the Quality of the Atmosphere; ▪ Construction of a tailings transportation line from the plant to the park; ▪ Development of a tailings pond; ▪ Construction of a polishing pond; ▪ Digging of diversion channels for drainage water at the periphery of the tailings pond; ▪ Installation of a continuous recording system for pH and flow; ▪ Cyanide treatment at the mill effluent; ▪ Effluent monitoring according to the standards established in the authorization certificate.



Certificate of authorization number	Title	Type	Date	Conditions
	Modification of the authorization certificate of Aug. 2, 1984 for the tailings pond construction	Modification	1987-07-27	<ul style="list-style-type: none"> ▪ Lots 19B to 25B, road A, Dubuisson township; ▪ Use of the waste rocks from "Malartic Goldfields" to rise the pond; ▪ Installation of a geotextile into the structure of the pond embankment.
	Modification at the final effluent standards	Modification	1989-04-04	<ul style="list-style-type: none"> ▪ Modification of the effluent discharge standards for the tailings pond pursuant to guidelines from Directive 019.
	Operation of the ore plant at the Kiena mine	Modification	1996-11-27	<ul style="list-style-type: none"> ▪ Addition of two polishing ponds of 32,500 m² at the south end of the current pond.
		Cession of the authorization certificate from "Les mines d'or Kiena Ltée" to "Mc Watters"	1997-09-12	<ul style="list-style-type: none"> ▪ All the conditions of the authorization certificate remain unchanged.
		Modification	2001-03-19	<ul style="list-style-type: none"> ▪ Change of 1,250 tpd to the treatment of 2,040 tpd.
	Cession of the authorization certificate from "Mc Watters" to "Wesdome inc."	2004-05-25	<ul style="list-style-type: none"> ▪ All the conditions of the authorization certificate remain unchanged. 	
7610-08-01-70065-28	Tailings pond expansion	Authorization certificate	1992-05-19	<ul style="list-style-type: none"> ▪ Natural degradation of the cyanide with the SO₂-Air process; ▪ Technical description of the cyanide content of the hydraulic backfill; ▪ Installation of five piezometers at the tailings pond (P-6 to P-10) and a control piezometer for background (P-11); ▪ Commitment to comply with Directive 019; ▪ Regular inspections of embankments and pipes; ▪ Pumping of 125,000 m³ per year of fresh water from Demontigny Lake; ▪ The overburden will be kept.
		Cession of the authorization certificate from "Les mines d'or Kiena Ltée." to "Mc Watters."	1997-09-12	<ul style="list-style-type: none"> ▪ All the conditions of the authorization certificate remain unchanged.



Certificate of authorization number	Title	Type	Date	Conditions
		Cession of the authorization certificate from "Mc Watters" to "Wesdome inc."	2004-05-25	<ul style="list-style-type: none"> All the conditions of the authorization certificate remain unchanged.
		Modification	2005-10-28	<ul style="list-style-type: none"> Upgrading of the northern cell of the tailings pond from elevation 3,048 m to 3,050 m; Lots 18B to 22B, road A, Dubuisson township.
7610-08-01-70065-29	Clay quarry exploitation	Authorization certificate	1994-08-26	<ul style="list-style-type: none"> Exploitation area of 40,000 m², with an average thickness of 1.5 m and maximum of 2 m; Lots 21B, 22B and 23B, rang A, Dubuisson township.
		Cession of the authorization certificate from "Les mines d'or Kiena Itée" to "Mc Watters"	1997-09-12	<ul style="list-style-type: none"> All the conditions of the authorization certificate remain unchanged.
		Cession of the authorization certificate from "Mc Watters" to "Wesdome inc."	2004-06-04	<ul style="list-style-type: none"> All the conditions of the authorization certificate remain unchanged.
7610-08-01-70065-33	Clay borrow pit exploitation	Authorization certificate	1999-05-21	<ul style="list-style-type: none"> Topsoil will be stored on the edge of the exploitation for use during restoration (8,550 m³); Exploitation above the water table.
		Cession of the authorization certificate from "Mc Watters" to "Wesdome inc."	2004-06-04	<ul style="list-style-type: none"> Exploitation of 12,000 m³ of clay on an area of 29,000 m², an average thickness of 1 m and maximum of 2 m on lots 18B half East and half West, road A, Dubuisson township.
7610-08-01-70065-00	Septic system	Authorization certificate	1981-02-10	<ul style="list-style-type: none"> For the services building with a maximum capacity of 135 persons; Installation of the septic system with a capacity of 5,744 US gallons; Installation of a pumping station with two pumps; Installation of a leaching field with an area of 3,200 ft².

5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES AND INFRASTRUCTURE, PHYSIOGRAPHY

5.1 Accessibility

The Project is easily accessible via paved highways from local communities, such as Val-d'Or. The Project is located 10 km west of the Val-d'Or Township (Figure 5-1) along the provincial Highway 117 and turning north on the Chemin Kienawisik gravel road. The property can be accessed and operated on a year-round basis. The nearest airport with daily flights connecting Montreal is in Val-d'Or.

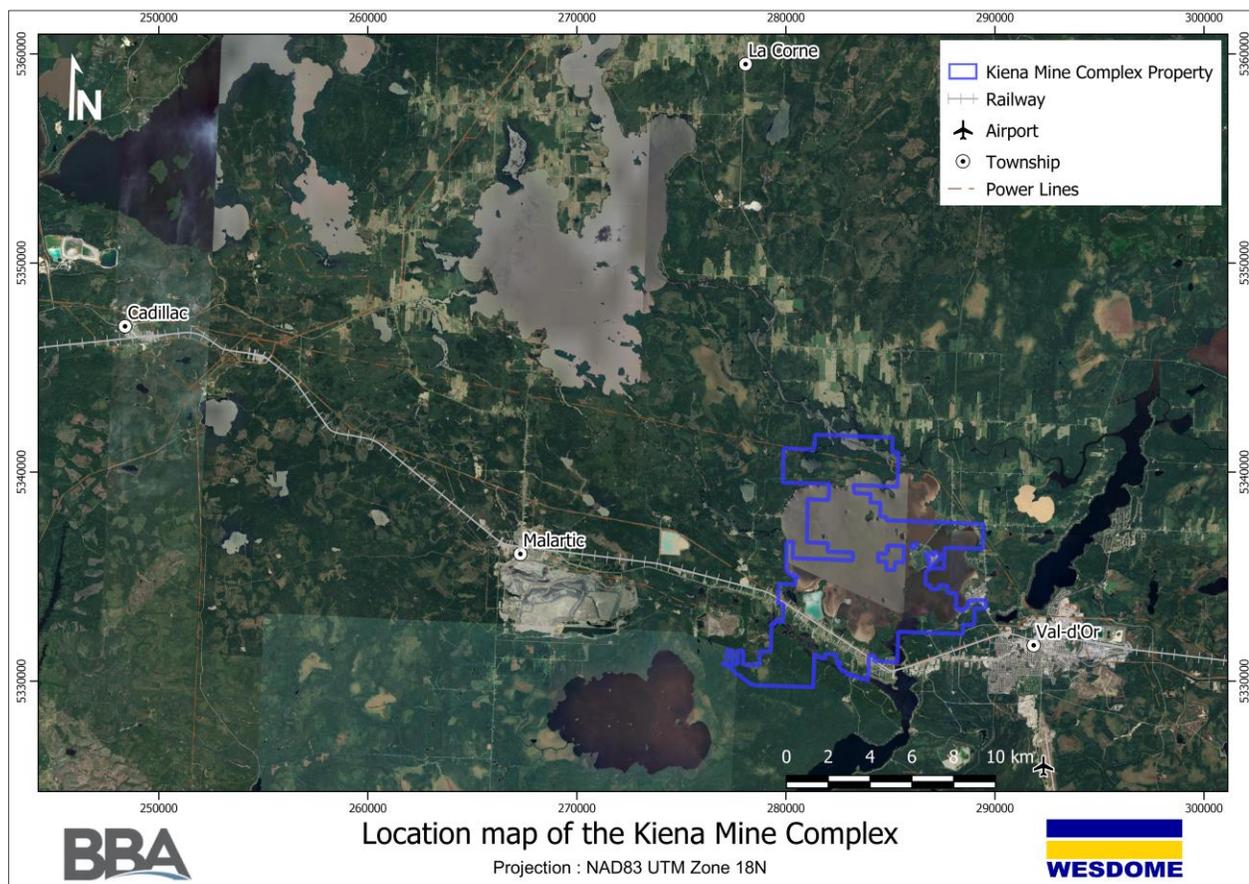


Figure 5-1: Location of the Kiena Mine Complex Property



Figure 5-2: Gravel road leading to the property with an overview of the infrastructure
(© Jean-Philippe Richard, 2016)

5.2 Climate

The Val-d'Or area experiences a continental subarctic subhumid climate, characterized by short, cool summers and long, cold winters. The nearest permanent weather monitoring station maintained by Environment Canada (climat.meteo.gc.ca) is the Amos station, approximately 50 km north of the Property. According to the available data collected from 1981-2010 at this weather station, the daily average temperature for January was -17.2°C and the daily average temperature in July was 17.4°C . The record low during this period was -52.8°C , and the record high was 37.2°C .

Data collected from the Amos weather station from 1981 to 2010 indicates that the total annual precipitation was 929.0 mm, with peak rainfall occurring during July (112.1 mm average), August (98.3 mm average) and September (106.7 mm average). Snowfall is light to moderate, with an annual average of 253.3 cm. Snow typically accumulates from October to April, with a peak snowfall occurring in November (45.0 cm average), December (58.5 cm average) and January (55.6 cm average); during this period, snowpack averages 39 cm depth, with a maximum depth of approximately 142 cm. On average, the Property is frost-free for 97 days, though discontinuous permafrost exists in the area. Hours of sunlight vary from 15.5 hours at the summer solstice in June to 8.1 hours at the winter solstice in December.

The climatic conditions at the Property do not significantly impede the Project or hinder exploration or mining activities, beyond seasonal considerations for certain work. The operating season is year-round since the majority of the work is underground. The parts of the Project located on islands are accessible by boat during the summer season and by ice bridges in winter.

5.3 Local Resources and Infrastructure

5.3.1 Airports, Rail Terminals and Bus Services

The town of Val-d'Or, with a population of approximately 32,900 residents, is located 10 km east of the Project along the provincial Highway 117. Val-d'Or has been a mining service centre since its foundation in the 1920s. Val-d'Or is one of the largest communities in the region and has all major services including an airport with scheduled service from Montreal. CN railway line crosses the southern part of the property, connecting east through to Montreal and west to the North American rail network. Val-d'Or is a six-hour drive from Montreal, and there are daily bus services between Montreal and the other cities in the Abitibi-Temiscamingue region.

5.3.2 Local Work Force

According to the 2016 census prepared by Statistics Canada, the population of the MRC of La Vallée-de-l'Or was 43,226 people, with 66% of the residents aged 15-64, and an average of 41 years old. Male population accounts for 51% of the population, 49% is female, and 8.5% is Aboriginal. In 2016, 64.4% of the population participated in the labour force, with 14.2% of the labour force employed in mining, quarrying, and oil and gas extraction. This portion of the workforce is experienced in mining operations, as they are currently employed at exploration and gold mines located elsewhere in the region. Local resources also include commercial laboratories, drilling companies, exploration service companies, engineering consultants, construction contractors and equipment suppliers.

5.3.3 Additional Support Services

Additional services within the town of Val-d'Or include the Val-d'Or Hospital, grocery stores, fuel stations, financial institutions and hotels. Val-d'Or has a Canada Post office and additional shipping/freight services by several providers. Landline telephone, mobile service, high-speed internet and satellite internet are available in town and the nearby vicinity.

5.4 Physiography

The Project is located in the Abitibi Greenstone Belt of the Superior Province. The topography of the area is characterized by low ridges and hills flanked by generally flat areas of glacial outwash, swamps and numerous lakes and bogs. The average elevation varies from 300 masl to 320 masl with some areas in the southern part of the project rising to 360 masl. Overburden varies between 0 m and 15 m and consists of stratified clays as well as glacial and glaciofluvial Pleistocene deposits (MDDELCC). Most of the project is covered by Lac De Montigny, which includes several islands.

The Project is located in the southern part of the boreal bioclimatic domain. The dominant vegetation is fir and white spruce forest, with occurrences of white birch, black spruce, jack pine, larch and aspen (MFFP website).

Two sources of water were used at the Project: surface water from Lac De Montigny and an underground source from level 17 in the Kiena mine at a vertical depth of 170 m. Surface water is used in case of emergencies (e.g., fire). Two large pumps are located in a building behind the plant. Underground water flows naturally on level 17. A pumping system was installed to bring water to the surface at the pumping facilities near the No.1 shaft. This water is used as clean water for showers and toilets. A small storage tank (holding water from level 17) is also located on level 38 for industrial underground use.

Electricity is available from Hydro-Québec through an above-ground power line. This source of power is used to heat the surface buildings and run the mill. A generator is also available in case of a power outage to run the emergency lighting, the underground pumps and the silo truck at the surface. A 10,000 L capacity diesel tank is located near the generator, linked to a tank with a capacity of 1,135 L. Four diesel tanks are located underground at mine levels 27, 33, 48 and 64. These tanks have a capacity of 4,500 L.

A Natural Gas line is also used to feed the mill, shaft, warehouse, backfill plant and air heating of the vent raise.

5.5 Mine Infrastructure

The Project is an amalgamation of 20 former properties. Figure 4-4 shows all underground development for the Project. Table 5-1 presents a summary of the remaining infrastructure in each part (former site) of the Kiena Mine Complex.

Table 5-1: Kiena Mine Complex infrastructure

Historical mine	Underground infrastructure	Surface infrastructure
Kiena Mine	<ul style="list-style-type: none"> ▪ Access to underground work is through the No.1 shaft to a depth of 930 m. It provides access from level 12 (120 m below surface) to level 93 (930 m below surface). Levels 17 to 105 are accessible by a ramp that extends from 170 m to 1,050 m below surface. A total of 49 levels was excavated. A northwest exploration drift of 947 m is present on level 12. A second exploration drift of about 3,500 m extends to the east on level 33. 	<ul style="list-style-type: none"> ▪ The shaft and head frame; ▪ A dry facility; ▪ A laboratory; ▪ A core shack; ▪ A hoisting room; ▪ Main electric substation (4 transformers); ▪ A secondary electrical substation (25 kV); ▪ Fuel reservoirs.
Wisik	<ul style="list-style-type: none"> ▪ N/A 	<ul style="list-style-type: none"> ▪ Concrete slab and old foundation walls.
Shawkey Mine Shaft No. 1 Area	<ul style="list-style-type: none"> ▪ A shaft is connected to 7 levels of underground drifts and raises at levels 125 ft (38 m), 225 ft (69 m), 325 ft (99 m), 450 ft (137 m), 575 ft (175 m), 625 ft (191 m) and 725 ft (221 m) below surface. The drifts amount to approximately 1,125 ft (343 m); ▪ Plan views for the first five levels are available. 	<ul style="list-style-type: none"> ▪ Concrete slab and old foundation walls.
Shawkey Mine Shaft No.2 Area	<ul style="list-style-type: none"> ▪ A 743 ft (227 m) shaft provides access to four levels of drifting at 250 ft (76 m), 400 ft (122 m), 550 ft (168 m) and 700 ft (213 m) below the surface. Drifting and cross-cutting amounted to approximately 927 ft (283 m); ▪ Total underground lateral development in the form of drives, crosscuts and drifts amounted to 2,337 ft (712.3 m). One drive on the 4th level was extended 926 ft southeast. 	<ul style="list-style-type: none"> ▪ Concrete slab and old foundation walls; ▪ Two core racks near the intersection of Highway 117 and the road to the site.
Elmac Shaft Area	<ul style="list-style-type: none"> ▪ A 100 ft (30 m) shaft provides access to one level of drifting. Drifting and crosscutting amounted to approximately 460 ft (140 m) 	<ul style="list-style-type: none"> ▪ Concrete slab and old foundation walls.

Historical mine	Underground infrastructure	Surface infrastructure
Island No. 3	<ul style="list-style-type: none"> No underground infrastructure, 23 m shaft collar. 	<ul style="list-style-type: none"> Island No. 3 is accessible by boat. The shaft was collared in 1999 at a depth of 23 m, the 10-ft hoist and surface buildings were installed in 2000-2001 to access the Wesdome Deposit and the permitting process was initiated. The acquisition of the Kiena mine in 2003 provided an alternate access and work was suspended.
Dorval-Siscoe Shaft Area	<ul style="list-style-type: none"> A historical three-compartment shaft of 343 ft (105 m) provides access to level 300 ft (91 m), where there are 850 m of drifts and cross-cuts. 	<ul style="list-style-type: none"> The Dorval-Siscoe Shaft is located on Island No. 6, which is east of Island No. 3. The Dorval-Siscoe Shaft was built to access part of the Wesdome Deposit. All that remains of the surface infrastructure are old foundation walls, concrete slabs and pieces of broken equipment.
Siscoe Mine Area	<ul style="list-style-type: none"> A shaft of 2,475 ft (754 m) provides access to 19 levels below surface from 150 ft (46 m) to 2,475 ft (754 m). The development work amounts to more than 15,000 m of drifts and cross-cuts. 	<ul style="list-style-type: none"> Mine site rehabilitation is complete, flooded sink holes, caused by the collapse of near-surface underground excavations, were observed. These areas are protected by fences.
Siscoe Extension Area	<ul style="list-style-type: none"> A three-compartment shaft of 725 ft (221 m) provides access to two levels below surface at 350 ft (107 m) and 725 ft (221 m). The development work amounts to about 2,000 m of drifts and cross-cuts 	<ul style="list-style-type: none"> The area is restricted and blocked by a fence and a security camera system.

5.5.1 Crown Pillar – Kiena Mine

A crown pillar of approximately 100 m thick was left in place in the Kiena Mine. The crown pillar is located under Parker Island (Zone S50) and the lake.

In 2010, Itasca (Andrieux, 2010) performed a preliminary empirical analysis of crown pillar stability in the North Zone. The analysis evaluated two scenarios: the first assumes that the pillar is made of poor quality rock (schist), and the second assumes good quality (hard) rock. In the first scenario, the pillar showed significant potential for instability. The second case showed a situation of near-instability.

Three recommendations were made to monitor pillar stability. Any of these three would be an adequate protocol.

1. Instrumentation:

- Manual probe to access any rock disentanglement (weekly readings); or
- Multi-point borehole extensometers installed toward the surface from level 12 (weekly readings or datalogger).

2. Hydrostatic barricades;

3. Backfilling of open stopes:

- Backfill the majority of the void: in the advent of a pillar collapse, the loose material from the pillar would not have a chance to expand and fill the rest of the opening.

Level 12 was equipped with two extensometers at the North Zone Area. During mining operations, a monthly inspection was made of level 12 and measurements taken, and level 17 at the North S50 Area was visually inspected every 6 months: once after the spring thaw and the other time in fall.

Since the suspension of mining operation in June 2013, the inspections have been maintained on a quarterly basis rather than on a monthly basis.

Hydraulic barricades are currently being constructed on the six levels allowing access to the North Zone. These barricades are designed to withstand a water or backfill column. In the event the mill is restarted, tailings could be stored underground behind these barricades.

6. HISTORY

The following information was mostly borrowed from a previous NI 43-101 technical report on the property (Turcotte et al., 2015). This chapter is divided into two sections as follows: Wesdome historical involvement in the Project and historical work on the different mineralized zones of the Property.

6.1 Wesdome Principal History in the Project

1945: The origin of the Company's business can be traced back to Western Quebec Mines Inc., incorporated in 1945. Western Quebec Mines began developing the Dorval-Siscoe property and carried out various exploration works on the property until 1975.

1976: Wesdome Resources Limited ("Wesdome Resources") was created as a joint venture in 1976 for the purpose of exploring and developing the Wesdome property (formerly the Dorval-Siscoe property). The word "Wesdome" is a combination of the names Western Quebec Mines and Dome Exploration Ltd. Wesdome Resources was held 30% by Western Quebec Mines and 70% by Dome Exploration.

1984: On November 13, 1984, Western Quebec Mines agreed to purchase a 40% interest in the Joubi property from Valmag Inc.

1988-1989: The School Mine property, the Shawkey South property and a 35% interest in the Shawkey property were acquired in 1988 and 1989 by Western Quebec Mines from Valmag Inc.

1990: Production started at the Joubi mine in 1990.

1992: On October 27, 1992, Western Quebec Mines acquired the Yankee Clipper property from Goldhunter Explorations Inc.

1993: Western Quebec Mines completed its acquisition of the 100% interest in the Joubi property.

1994: Western Quebec Mines drilled 6 DDH for 2,958 m in the southwestern part of the School Mine Property. Erratic values reached 77 g/t Au.

1996: Western Quebec Mines acquired the Dubuisson West property from Republic Goldfields Inc. This property was merged with the Joubi property.

1997: On November 21, 1997, Western Quebec Mines acquired the 525,000 common shares of Wesdome Resources that were held by Dome Exploration. The result was that Wesdome Resources became wholly-owned by Western Quebec Mines. In November 1997, Western Quebec Mines also acquired the 65% interest of the Shawkey property from Placer Dome. This property hosts the past-producing Shawkey mine. The Shawkey and Shawkey South properties were merged. During the period between 1936 and 1964, the Shawkey mine produced a total of 25,637 ounces of gold from 127,737 metric tons of ore grading an average 6.24 g/t Au. On December 1, 1997, Western Quebec Mines acquired the Callahan property from Placer Dome.

1998: Western Quebec Mines staked 3 claims (the Lamothe-Extension property) adjacent to the Lamothe property. On January 15, 1998, the Lamothe property was acquired by Western Quebec Mines from Robert Lamothe and Alphonse Beaudoin. On November 3, 1998, Western Quebec transferred to Wesdome Resources all its interests in the Lamothe, Lamothe-Extension (now Vassan), Yankee Clipper and Callahan properties.

1999: In October 1999, Dynacor Mines Inc. and Western Quebec Mines signed an agreement whereby ownership of the contiguous Siscoe and Siscoe-Extension (Dynacor Mines) and Wesdome, Lamothe, Lamothe-Extension, Yankee Clipper and Callahan (Wesdome Resources) properties were to be pooled into a new company in order to develop them jointly. The new company, Wesdome Gold Mines Inc., was created by Dynacor Mines, and the latter transferred its 100% interest in the Siscoe property and its 75% interest in the Siscoe-Extension property. Following this, Wesdome Gold Mines Inc. then acquired 100% of the share of Wesdome Resources from Western Quebec. During the period between 1929 and 1949, the Siscoe mine produced a total of 802,303 ounces of gold and 306,070 ounces of silver from 2,975,785 metric tons of ore grading an average 9.22 g/t Au and 3.20 g/t Ag.

The Joubi mine was closed in 1999 after a 10-year production history. The historical production amounted to 62,283 ounces from 327,561 metric tons of mined ore.

2003: In December 2003, Western Quebec Mines purchased the Kiena Complex and subsequently placed the property into Wesdome Gold Mines Inc., thereby completing and consolidating Wesdome's land package around Lac De Montigny. As a part of this transaction, Wesdome Gold Mines acquired a 100% interest in the Kiena, Kiena West, Lac Dubuisson, Rosenbaum, Dubuisson, Audet Block, Elmac, South Block Kiena, Option Roy and Lac De Montigny properties, and a 50% interest in the Maufort property.

Before this transaction, the Kiena mine produced a total of 1.56 million ounces of gold from 10.7 Mt of ore grading an average 4.54 g/t Au.

2006: On February 1, 2006, River Gold Mines Ltd. and Wesdome Gold Mines Inc. completed a merger to form the current company called Wesdome Gold Mines Ltd. (Wesdome).

On April 4, 2006, Wesdome staked seven claims and added them to the Vassan property. The Kiena mine was in the pre-production development stage until August 1, 2006, when commercial production commenced.

2007: On July 10, 2007, a merger was completed with parent company Western Quebec Mines on the basis of 1.45 shares of Wesdome for each share of Western Quebec Mines. Wesdome was the surviving operating entity.

2013: Wesdome continuously operated the Kiena mine until its temporary shutdown on June 30, 2013. The mine was placed under a care and maintenance program. During the period between August 2006 and June 2013, the Kiena mine produced a total of 198,708 ounces of gold from 1.826,500 metric tons of ore averaging 3.38 g/t Au.

2014-2015: A total of 47 DDH was drilled on different areas to test extension and continuity of the zones. Number of DDH and total length (m) are as follow: Dubuisson North Zone (14 DDH; 5,634m), S-50 Zone (25 DDH; 2,809 m), Siscoe C Vein Area (1 DDH; 300m), Presqu'île Zone (7 DDH, 1,968 m).

2015: Wesdome released a technical report (Turcotte et al., 2015) to provide a technical summary of Wesdome's primary mining and exploration assets around the Kiena mine property, known at the time as the Quebec Wesdome Project (now collectively the Kiena Mine Complex).

Measured and Indicated Resources of 2,500,600 t at 5.59 g/t Au below the 100-m crown pillar for a total of 449,300 oz of gold, and 134,000 t at 5.48 g/t Au within 100-m crown pillar for a total of 23,600 oz of gold was estimated. Inferred Resources were estimated to be 1,563,300 t at 7.97 g/t Au below the 100-m crown pillar for a total of 400,400 oz of gold and 747,600 t at 8.22 g/t Au within the 100-m crown pillar for a total of 197,600 oz of gold.

2016-2018: Wesdome carried out an underground drilling program from June 2016 to October 2018 consisting of 269 DDH for a total of 58,646 m. Targets was drilled as follow: VC1 (20 DDH), VC6 (18 DDH), Kiena Deep A Zone (39 DDH), South Zone (9 DDH), S-50 (45 DDH), Other targets (138 DDH). In August 2017 an exploration ramp starting at level 100 was developed to provide additional underground drilling platforms. Total development as of November 2018 was 2,200 m and allowed diamond drilling to be conducted from a better direction to intersect the steeply plunging zones and provide drilling platforms for definition drilling on the central area of Kiena Deep A Zone. In February 2018, a heliborne high-resolution magnetic survey over the entire property was conducted.

2019: In January 2019, Wesdome released a mineral resources estimate (MRE) technical report (Beausoleil et al., 2019) following their 2016-2018 drilling campaign. Measured and Indicated Resources of 2,957,400 t at 5.83 g/t Au below the 100-m crown pillar for a total of 554,700 oz of gold, and 162,800 t at 5.32 g/t Au within 100-m crown pillar for a total of 27,900 oz of gold was estimated. Inferred Resources were estimated to be 3,025,300 t at 7.79 g/t Au below the 100-m crown pillar for a total of 757,600 oz of gold and 1,113,200 t at 6.97 g/t Au within the 100-m crown pillar for a total of 249,600 oz of gold.

6.2 Detailed Historical Work by Area

6.2.1 Kiena Mine Area

The following description of historical work in the Kiena Mine Area is mostly modified and summarized from Mailhiot (1920), Cooke et al. (1931), Hawley (1931), Bell (1935; 1936; 1937), Auger (1947), Dresser and Denis (1949), Claveau et al. (1951), Salt (1960), Robinson (1961a; 1961b; 1962), Cormier (1986a; 1986b), Sauv   et al. (1993), Morasse (1998), Beauregard and Gaudreault (2005) and the annual reports of Wesdome Gold Mines Inc. and Wesdome Gold Mines Ltd. (2003–2013).

1911–1914: The first record of exploration along the shores of what was known then as Lac Kienawisik (later Lac De Montigny) dates back to 1911–1914 when prospector Barney Parker reported the discovery of native gold-bearing quartz veins in a shear zone at the northwestern end of the island on which Kiena’s mill was later built.

1922–1927: Martin Gold Mines and Parker Island Gold Mines did some follow-up work on the discovery outcrop between 1922 and 1927, and tested five quartz veins with trenches and drillholes. Soon afterward, gold was also discovered in the "Wisik vein" on the eastern shore of Moccasin Island, the larger of two nearby islands to the east of Parker Island.

1936–1940: In 1936 Kiena Gold Mines Ltd. was created. Under the control of Ventures Ltd., Kiena Gold Mines immediately initiated a major surface and exploration program on the property, which resulted in the sinking of the Parker shaft at the western end of the island. Shaft-sinking to a depth of 455 ft (-138 m) was followed by the development of exploration drifts at the 130-, 230-, 330-, and 430-ft levels in an effort to test the surface showing, but the discovery veins were found to be of limited extent. During an extensive stratigraphic winter drilling program from lake surface ice in 1937–1938, the S-21 Zone (later called the North Zone) was discovered 2,300 ft (701 m) north of the island. A crosscut was excavated toward the S-21 Zone, intersecting four mineralized veins. Mining operations ceased in 1940 due to limited ore reserves and wartime difficulties, and exploration activities were suspended for 20 years.

1948: Ventures drilled two diamond drillholes (DDH) totalling 1,313 ft (400.2 m).

1961–1965: Ventures, which controlled the 1958 joint venture between Kiena Gold Mines and Wisik Gold Mines Ltd., carried out a magnetometer and geological mapping survey on their combined claim block. A 13-hole diamond drilling program was proposed on the basis of favourable recommendations from these surveys, but R.W. Robinson cut this proposal down to only three holes. In 1961, the third and last drillhole (S-50) of this exploration program, targeting the "nose of a fold" and a "magnetic low that could represent a siliceous intrusive", intersected 0.22 oz/t Au (7.54 g/t Au) over 50 ft (15.2 m) of core, at approximately 800 ft (243.8 m) below the lake’s surface.

Following the discovery of the S-50 Zone, Falconbridge acquired Ventures in 1962, took over the management of Kiena Gold Mines and its Kiena-Wisik property, and financed the subsequent underground exploration. Based on 79,000 ft (24,079.2 m) of drilling from the surface, original reserves of the S-50 Zone were estimated at 5 million short tons (4.53 Mt) averaging 0.185 oz/t Au (6.34 g/t Au; Cormier, 1986a).

In 1963, the No. 1 shaft was collared approximately 800 ft (243.8 m) east of the Parker shaft and sunk to a depth of 1,324 ft (403.55 m). Extensive underground exploration and a definition diamond drill program outlined reserves of 1.5 million short tons (1.36 Mt) grading 0.265 oz/t Au (9.09 g/t Au; Cormier, 1986a) above the 27th level (270 m below surface).

This reserve estimate is considered to be historical in nature and should not be relied upon; however, it does give an indication of mineralization on the property. It is included in this section for illustrative purposes only and should not be used out of context.

But due to adverse ground conditions found in a test stope conditions much related to the structural geology of the deposit, it was concluded that no large openings could be left unfilled and low-cost mining could not be expected. In 1965, a feasibility study on the S-50 orebody showed that mining operations would be marginal at best, with gold selling for US \$35.00/oz at that time. The property was placed under a care and maintenance program, leaving the S-50 orebody dormant for the next 14 years.

1979–1984: In 1979, Falconbridge re-evaluated the property and recommended to bring it into production. The transition from an advanced exploration project to a mine operation was successful, and mining officially started in October of 1981. Trackless and cut-and-fill methods were employed. Custom milling at Teck's nearby Lamaque Mill was used for the first three years of production until September 1984 when Kiena's own new CIP (carbon-in-pulp) mill was operational.

1986–1994: Campbell Red Lake Mines Ltd. became Kiena's major shareholder on January 25, 1986, when Falconbridge sold 56.7% of its interest in Kiena Gold Mines. Following the amalgamation in 1987 of Placer Development Ltd., Dome Mines Ltd. and Campbell Red Lake Mines Ltd., Placer Dome Inc. of Vancouver, became the owner and operator of the Kiena mine. On January 1, 1994, Placer Dome Inc. changed its name to Placer Dome Canada Ltd.

1997–2003: Placer Dome Canada sold the mine (along with the neighbouring Sigma mine) to McWatters Mining Inc., who officially became the new owner and operator of Kiena on September 12, 1997. McWatters continuously operated the Kiena mine until its closure in September 2002.

During the period between October 1981 and September 2002, the Kiena mine produced a total of 1.56 Moz of gold from 10.7 Mt of ore grading an average 4.54 g/t Au (Table 6-1). An exploration program commenced in 2002 to further investigate five previously identified gold targets. McWatters carried out a 5,012-m underground drill exploration program, the first phase of the exploration program at the Kiena Complex to test the hanging wall mineralization of the S-50 ore body. A follow-up drill program began on January 20, 2003 and was completed in March 2003. The objective of this second phase of the exploration program, corresponding to approximately 8,200 m of surface drilling program, was to extend the hanging wall mineralization, and add to or otherwise improve the resources of the Kiena Complex.

The Kiena mine complex was acquired by Wesdome Gold Mines Inc. in December 2003.

When mining operations were suspended in 2003, measured and indicated resources stood at 3,010,000 metric tons grading 4.25 g/t Au or 410,000 ounces of contained gold (Wesdome, 2005).

This resource estimate is considered to be historical in nature and should not be relied upon; however, it does give an indication of mineralization on the property. It is included in this section for illustrative purposes only and should not be used out of context.

Table 6-1: Kiena mine production from 1981 to 2002 (Turcotte et al., 2015)

Year	Metric tonnes milled	Recovered grade Au g/t	Gold production (oz)
1981	101,231	4.61	15,018
1982	287,916	6.81	63,038
1983	307,661	6.19	61,193
1984	378,014	5.48	66,658
1985	381,376	5.71	70,035
1986	453,793	4.98	72,694
1987	478,752	4.36	67,113
1988	477,947	3.79	58,219
1989	470,705	4.38	66,235
1990	473,602	4.33	65,953
1991	486,217	4.55	71,112
1992	501,827	5.03	81,195
1993	496,401	4.95	79,034
1994	504,873	5.12	83,044
1995	534,330	5.03	86,375
1996	608,701	4.32	84,609
1997	631,606	4.59	93,169
1998	594,000	4.39	83,807
1999	647,933	4.16	86,602
2000	719,363	3.74	86,610
2001	745,391	3.41	81,631
2002	415,400	2.82	37,626
TOTAL	10,697,039	4.54	1,560,970

2004: Wesdome Gold Mines developed and explored its properties from underground via the Kiena shaft and underground workings. Wesdome Gold Mines drove a drift 4.5 km to the north to explore the Wesdome property on the 520 m level, and a second drift 2.0 km to the east on the 330 m level to explore the 22 Zone on the Shawkey property. Definition drilling and development work proceeded on known zones of gold mineralization on the Kiena property with the intent of preparing these for commercial production as soon as possible. Late in 2004, access was established to the VC Zone, located 500 m north of the shaft, and fan drilling of the zone commenced from the 520 m level.

2005: Wesdome Gold Mines continued the underground development at the Kiena Mine Complex. The North Drift (at 520 m) was used to conduct a major exploration program on the VC Zone approximately 500 m north of the shaft. Further work was completed on the North Zone and the 388 Zone from the 330-m level. Progress was also made on the East Drift (at 330 m). Development crews also drifted into the Martin Zone (from which Shawkey produced ore in the 1930s).

During the same year, Beauregard and Gaudreault (2005) estimated that the four zones (North, VC, 388 and Martin) contained measured resources of 574,023 metric tons at 4.45 g/t Au, and indicated resources of 750,137 metric tons at 4.52 g/t Au. Wesdome Gold Mines also completed a new resource estimate for the VC1 to VC3 zones, calculating a total of 737,900 metric tons at 5.05 g/t Au.

This resource estimate is considered to be historical in nature and should not be relied upon; however, it does give an indication of mineralization on the property. It is included in this section for illustrative purposes only and should not be used out of context.

2006–2013: The Kiena mine was in pre-production development stage until August 1, 2006, when commercial production commenced. Wesdome continuously operated the Kiena mine until its shutdown in June 30, 2013. The mine was placed under a care and maintenance program. During the period between August 2006 and June 2013, the Kiena mine produced a total of 198,708 ounces of gold from 1.826,500 metric tons of ore at an average grade of 3.38 g/t Au (Table 6-2).

Table 6-2: Kiena mine production from 2006 to 2013 (Turcotte et al., 2015)

Year	Metric tonnes milled	Recovered grade Au g/t	Gold production (oz)
2006	94,200	3.07	9,300
2007	284,757	3.87	35,404
2008	241,641	5.19	40,344
2009	302,034	3.65	35,398
2010	285,527	3.50	32,162
2011	255,311	2.38	19,516
2012	265,872	2.20	18,814
2013	97,158	2.49	7,770
TOTAL	1,826,500	3.38	198,708

6.2.2 Wisik Shaft Area

The following description of historical work in the Wisik Shaft Area is mostly modified and summarized from Bell (1935; 1936; 1937), Taschereau (1936), Denis (1937), Auger (1947), Dresser and Denis (1949), and the diamond drill logs of Wisik Gold Mines Ltd.

1934–1937: The property around the Wisik deposit was owned by H. Klee who founded Wisik Gold Mines. The property was held under option in 1935 by Teck Hughes interests, who carried out some diamond drilling. The only visible mineralized showing of substantial size was a quartz vein, exposed for only a few feet on the eastern shore of the largest Moccasin Island. In addition to the diamond drilling in the vicinity of the vein, some holes were also put down along the water stretch between the island and Shawkey Peninsula. The option was subsequently allowed to lapse.

In 1936, the overburden was removed by Wisik Gold Mines for the purpose of sinking a shaft on Moccasin Island. A three-compartment shaft was sunk below 300 ft (91.4 m). Drifts were excavated along the principal vein or shear on the 200- and 300-ft levels, totalling 2,100 ft (640.1 m). In 1937, metallurgical testwork was performed at the Ottawa facilities of the Department of Mines and Resources of Canada on two samples of gold ore: one from the Wisik North drift (237 lbs, 107.5 kg), and the other from Wisik South (200 lbs or 90.7 kg). The North drift sample assayed 0.125 oz/t Au (4.29 g/t Au) and 0.19 oz/t Ag (6.51 g/t Ag), whereas the South Drift sample returned 0.675 oz/t Au (23.14 g/t Au) and 0.09 oz/t Ag (3.09 g/t Ag). In September 1937, work was suspended and the mine flooded.

1958–1959: In July 1958, Ventures Ltd., who controlled the 1958 joint venture between Kiena Gold Mines and Wisik Gold Mines, drilled one hole (W-1) totalling 350 ft (106.7 m) on Moccasin Island, northwest of the Wisik shaft. In January 1959, another hole (W-2), totalling 750 ft (228.6 m), was drilled to the north of hole W-1 to test the eastern extension of the No. 1 Zone located on the Kiena mine property.

Later, Kiena Gold Mines took over management of the Wisik property and eventually formed the Kiena-Wisik property.

6.2.3 Shawkey Mine Area

The following description of historical work in the Shawkey Mine Area is mostly modified and summarized from Mailhiot (1920), Cooke et al. (1931), Hawley (1931), Bell (1935; 1936; 1937), Dresser and Denis (1949), Ingham (1950), Claveau et al. (1951), Ingham (1953), Bourret et al. (1956), Sauv  (1985), Chevalier (1989b), Sauv  et al. (1993), Beauregard and Gaudreault (2005), and the annual information forms of Western Quebec Mines Inc., Wesdome Gold Mines Inc. and Wesdome Gold Mines Ltd. (1997–2013).

1911: Fred La Palme discovered a gold-bearing vein (No. 1 Vein) on the south shore of Lac De Montigny.

1917–1919: The Martin Gold Mining Company Ltd. was incorporated to develop the new gold showing, and in 1917, underground work commenced as well as the erection of a small mill which was completed the following year. A two-compartment vertical shaft was sunk 125 ft (38.1 m) on the shore of Lac De Montigny, and a small amount of drifting and cross-cutting was done. About 600 pounds of rock were milled during the summer of 1918. Work was suspended in 1919.

1921–1923: Two years later, the property was sold to John Dalton. In 1922, an option was secured by J.J. Godfrey and underground work resumed. The shaft was deepened to 325 ft (99.1 m), and about 700 ft (213.4 m) of drifts and cross-cuts were excavated. A total of 4,500 ft (1,371.6 m) of diamond drilling was also carried out. The option lapsed in 1923.

1934–1938: The mine was purchased by Shawkey Gold Mines Ltd. who became operator. During 1935, drifting and raising on the 125', 225' and 325' levels revealed continuous lengths of ore. A raise was completed to the surface, north of the shaft. Shrinkage stopes were prepared above the first and second levels.

The shaft was deepened to 725 ft (221.0 m) and new levels were established at the 450', 575' and 625' horizons. A new mill was erected and started production in 1936. Several gold-bearing veins were discovered over the course of the exploration, but all the production came from the discovery vein. The vein was developed for a maximum length of 1,000 ft (304.8 m). By 1938, this had been mined out, and operations were suspended.

A total of 3,915 ft (1,193.3 m) of surface drilling, 45,885 ft (13,985.7 m) of underground drilling, and 1,125 ft (342.9 m) of drifting and crosscutting had been carried out. Total production was 25,414 ounces of gold from 137,978 st (125,174 metric tons) of processed ore, for a recovery of 0.184 oz/t Au (6.31 g/t Au).

1945–1951: In 1945, Shawkey Mines Ltd. took over the abandoned workings and began an extensive diamond drill program. From 1945 to 1947, the company completed about 37,000 ft (11,277.6 m) of surface drilling, 28,500 ft (8,686.8 m) of which was used to explore the No. 10 Vein. Another 9,000 ft (2,743.2 m) of drilling was used in cross-sectional exploration on the east side of the Thompson River and south of the No. 10 Zone. Underground drilling from old workings amounted to 20,000 ft, used in lateral and depth tests from the 4th and 6th levels. Total underground lateral development in the form of drives, crosscuts and drifts amounted to 2,337 ft (712.3 m). Over 7,000 ft³ (198.2 m³) of rock was slashed. One drive on the 4th level was extended 926 ft southeast, under the Thompson River, to reach a body of diorite containing auriferous quartz veins. The No. 10 Zone was explored for 2,300 ft (701.0 m) by drilling. Underground drilling and drifting led to the discovery of new auriferous zones (the No. 9, No. 11 and No. 12 zones).

The No. 2 shaft was collared in July 1950, adjacent to the north side of the No. 10 Zone, approximately 900 m south of the No. 1 shaft. Shaft-sinking to a depth of 743 ft (226.5 m) was completed in April 1951. Four level stations were established at 250 ft (76.2 m), 400 ft (121.9 m), 550 ft (167.6 m) and 700 ft (213.4 m). After carrying out 927 ft (282.5 m) of drifting and crosscutting on the 700' level and 605 ft (184.4 m) on the 550' level, as well as 2,265 ft (690.4 m) of underground drilling, the mine was closed again in September 1951. A total of 1,735 st (1,574 metric tons) of ore grading 0.09 oz/t (3.09 g/t Au) was mined from various drifts and slashes.

1962–1964: The project came under the control of Con-Shawkey Gold Mines Ltd. The No. 2 shaft (No. 10 Zone) was reopened, and more exploration was completed. A bulk sample of 51.3 st (46.5 metric tons) was sent to the Ministry of Natural Resources pilot plant, and an average grade of 0.23 oz/t (7.89 g/t Au) was obtained from 53 samples. Another bulk sample of 1,039 st (942.6 metric tons) was sent to the Malartic Goldfields Mill where an average grade of 0.053 oz/t Au (1.82 g/t Au) was obtained. In addition, 14,000 ft (4,267.2 m) of surface drilling, 1,600 ft (487.7 m) of underground drilling, 1,400 ft (426.7 m) of underground development, and Mag and EM surveys were also carried out on the project.

1964–1966: Noranda carried out 3,710 ft (1,130.8 m) of diamond drilling that concentrated on the No. 10 Zone. Mag and EM surveys were also performed on the project.

1972–1976: Umex acquired an interest in the project and drilled six drillholes for a total of 2,240 ft (682.8 m). Mag and EM surveys were conducted on the project.

1979–1989: Les Mines Sigma (Québec) Ltée started work to acquire a 65% interest in the Shawkey property from Valmag Inc. During three years, 45 km of Mag surveys and more than 11,500 m of diamond drilling were completed on the 22 Zone. From June to March 1984, another 24 km of Mag surveying was completed over Lac De Montigny. Twenty-three holes were drilled for a total of more than 6,000 m. From June to August 1988, nine more holes were drilled for an additional 2,224 m. The Shawkey South property and the 35% interest in the Shawkey property were acquired by Western Quebec Mines Inc. in 1988 and 1989 from Valmag Inc.

In 1988, Placer Dome Inc. acquired Les Mines Sigma (Québec) and carried out a drilling program comprising seven drillholes for a total of 1,897.5 m. Drilling concentrated on two target areas: the West Zone and the 22 Zone. The Shawkey Property consists of four mining concessions in Dubuisson Township.

1990–1997: The Shawkey property was under a joint venture with Placer Dome Inc. until November 1997. In 1990, Placer Dome Inc. estimated the mineral inventory of the Shawkey property to be 883,132 metric tons in the “possible” category, with an average grade of 4.04 g/t Au (Lebel and Lafleur, 1991). The mineral inventory was contained in six lenses designated by the letters A to F. The mineral inventory was performed using the polygonal method and a specific gravity of 2.7 g/cm³.

This resource estimate is considered to be historical in nature and should not be relied upon; however, it does give an indication of mineralization on the property. It is included in this section for illustrative purposes only and should not be used out of context.

1997: Western Quebec Mines purchased from Placer Dome 70% of the outstanding shares of Wesdome Resources Ltd. (which it would later own 100%), and a 65% interest in the Shawkey property (which it would later own 100%).

2002–2003: In 2002, Western Quebec Mines drilled 11 holes totalling 1,248 m to test the No. 22 Zone. In 2003, the company added ten more holes for another 1,657 m. During the period between 1936 and 1964, the Shawkey mine produced a total of 25,637 ounces of gold from 127,737 metric tons of ore with an average grade of 6.24 g/t Au (Table 6-3).

Table 6-3: Shawkey mine production from 1936 to 1964
(Turcotte et al., 2015)

Year	Metric tonnes milled	Recovered grade Au g/t	Gold production (oz)
1936-1938	125,174	6.31	25,414
1945-1951	1,574	3.08	156
1962-1964	989	2.11	67
TOTAL	127,737	6.24	25,637

6.2.4 Elmac Shaft Area

The following description of historical work in the Elmac Shaft Area is mostly modified and summarized from Mailhiot (1920), Cooke et al. (1931), Hawley (1931), Bell (1935; 1936), Koulomzine and Brossard (1946), Dresser and Denis (1949), Chevalier (1989a), Beaugard and Gaudreault (2005), and the annual information forms of Western Quebec Mines Inc., Wesdome Gold Mines Inc. and Wesdome Gold Mines Ltd. (1997–2013).

1919–1935: The property was originally known as Fosie-Kengrow, these being the names of the men who staked the claims in 1919. From 1919 to 1935, the property was successively controlled by Union Mining Corporation, Unison Gold Mines Ltd., Lorette Mines Ltd., Minorand Co-operative Company Ltd., Minrand Gold Ltd., and finally by Crossroads Gold Mines Ltd. The deposit was discovered in 1919. The discovery vein, which was exposed over a distance of roughly 200 ft (61.0 m), displayed a contorted pattern with numerous offshoots and stringers. Some diamond drilling was done in 1922, establishing sufficient ore for mining purposes, as long as ore grades were high enough. Mining machinery was installed, and in 1925, a shaft was sunk to a depth of 100 ft (30.5 m) where some underground work was carried out. The mine was again operated in 1932–33, and there has been sporadic development work, including a small amount of underground work and diamond drilling, as well as the assembling of a small mill. In 1935, the mine workings were flooded.

1940–1946: Elmac Malartic Mines Ltd. carried out work around the shaft and in underground workings. A new mineralized zone was discovered (the “Carbonated Zone”). All known zones were resampled. A drilling program was also conducted in the northern part of the property (Claims Potter-Kee). A magnetic survey was carried out over the entire property in 1945.

1963–1965: Elmac Malartic Mines conducted an 18-hole drilling program for a total of 8,800 ft (2,682.2 m). Seven holes were drilled in the northern part of the property (Potter-Kee Claims) on Lac De Montigny. Nine holes were drilled in the centre of the property, in the shaft and Carbonated Zone areas. The drilling program cut the Carbonated Zone, which assayed 23.78 g/t Au over 2.74 m. Two holes were drilled near the Piché River in the southern part of the property. In 1965, another drilling program (1531.0 m) was conducted on Lac De Montigny, resulting to the discovery of a new mineralized zone associated with feldspar porphyries. The new zone assayed 4.14 g/t Au over 6.24 m.

1978–1983: Les Mines Sigma (Québec) Ltée optioned the property. A total of seven holes was drilled on the Carbonated Zone totalling 1,905 m. Between 1981 and 1983, the company carried out 22.3 km of magnetic surveying and 3.6 km of induced-polarization surveying. In addition, a total of 53,823 ft was also drilled on the property.

1989: Les Mines Sigma (Québec) conducted an 8-hole drilling program in the northern half of the property during the winter of 1989 for a total of 2,117.75 m.

1997–2002: Placer Dome Canada Ltd. sold the Elmac property to McWatters Mining Inc., who officially became the new owner and operator of the property until 2003.

2003: In December of 2003, Western Quebec Mines purchased the Kiena Complex, including the Elmac property.

6.2.5 Joubi Mine Area

The following description of historical work in the Joubi Mine Area is mostly modified and summarized from Mailhiot (1920), Bell (1935), Ingham (1944b), Hinse (1975), Lavery (1983a), Laforest (1987) Castonguay (1995), and the annual information forms of Western Quebec Mines Inc. (1996–2006).

1919: Before 1919, prospecting work on the Clowse claim led to the discovery of a narrow gold-bearing vein. The vein was traced at surface over a length of 100 ft (30.5 m). A 27-ft-deep (8.2-m) exploration shaft was sunk on the vein.

1934: During spring and summer 1934, Amity Gold Mines Ltd. carried out surface trenching, surface sampling and diamond drilling, chiefly in the vicinity of the old shaft sunk by Clowse Claim. Four holes were reportedly drilled to test this old occurrence.

1941–1942: A diamond drilling program was started in July 1941 by Seventh Malartic Mines Ltd., and it continued until April 1942, when 28 holes had been completed for a total of 13,550 ft. Only four holes were located on the Joubi property, one of which constituted the first indication of the presence of the Range Line Zone.

1943–1944: In 1943, Perron Gold Mines optioned the property, and diamond drilling was resumed in the spring of 1944. Eighteen holes were drilled during the program.

1960: Iso-Newlund Mines covered part of the property with a Mag survey, followed by five drillholes.

1964: One hole was drilled by Amerel Mining Company, followed by a Mag survey.

1973: The Joubi Mining Corporation acquired the property in 1973, and drilled 24 holes on the Range Line Zone.

1979: Massey-Gauthier Ltd. drilled six holes on the Range Line Zone.

1981: A joint venture was made up of U. F. Venture Associates (70% participating interest) and Messeguy Mines Inc. (30% participating interest). The Joubi JV continued the assessment of the Range Line Zone with 1,341.4 m of core drilling in 11 holes during 1981, bringing the total drilling in the zone to 6,838 m in 46 holes.

1982: The participation in the JV was modified in 1982. The result was a 51.11% participating interest for U. F. Venture Associates, a 30% participating interest for Messeguy Mines, and a 18.89% non-participating interest for V. Audet. In 1982, based on all drilling results to date, W.N. Ingham estimated that the Range Line Zone contained 167,545 metric tons grading 7.34 g/t Au in three separate shoots (Lavery, 1983a).

This resource estimate is considered to be historical in nature and should not be relied upon; however, it does give an indication of mineralization on the property. It is included in this section for illustrative purposes only and should not be used out of context.

Between 1982 and 1983, 12 holes, totalling 2,402.7 m, were added on the Range Line Zone. In late 1982, detailed total field magnetic, vertical gradient magnetic and VLF surveys had been completed by the Joubi JV.

1984–1986: Western Quebec Mines carried out an exploration program including different geophysical methods, followed by some 3,178 m of diamond drilling distributed in 11 holes.

1987–1989: Western Quebec Mines agreed to grant Messeguy Mines and Oasis Resources Inc. working rights and an option to acquire a 49% interest in the Joubi property. Western Quebec Mines had Minexpert Inc. complete an evaluation review, which recommended an underground exploration program to define the essential parameters required for a better understanding of the nature of the gold mineralization. Surface installations were constructed, a three-compartment

shaft was sunk to a depth of 253 m with four shaft stations, 2,780 m of crosscuts and drifts were developed, 1,094 m of raises were completed, and a diamond drilling program totalling 47,812 m was carried out. During this period, Western Quebec Mines developed the zones defined by the previous underground exploration program, conducted detailed drilling of the zones (3,645 m) and began mining operations.

1990: In 1990, Western Quebec Mines completed development work and mining of the zones defined in 1988–89, conducted a drilling program of 15,084 m (zone definition, surface exploration, and exploration below the last level). In 1991, exploration work discovered the F Zone at the border of the Dubuisson West property. Western Quebec Mines drilled 12,614 m of core on the Joubi property. Since the mineable reserves on the Joubi property were almost exhausted, Western Quebec Mines decided to deepen the shaft by 71 m to reach the lower A Zone.

1992: In early 1992, Western Quebec Mines was granted an option from Republic Goldfields Inc. on the Dubuisson East property. Western Quebec Mines also purchased the Dubuisson West property from Republic Goldfields Inc. Both properties were adjacent to the Joubi property.

In spite of the shaft deepening, reserves were insufficient to maintain the operations. One kilometre (1 km) of drifts was developed at the 2nd level to access the Dubuisson East zone. Western Quebec Mines drilled 268 m of core on the Dubuisson West property, 3,610 m on the Dubuisson East property (exploration and definition), and 2,409 m on the Joubi property. By the end of the year, the reserves from the known economic zones on the Joubi property had been exhausted.

1993: The Dubuisson East zones were developed and mined from the 2nd level to the surface. Since reserves were rapidly running out, it was decided that the drift on the 5th level would be extended under the Dubuisson East workings to access additional reserves. Definition drilling (3,633 m of core) was completed on the Dubuisson East property. Mining of the Dubuisson East zones was slowed by wall instabilities, which resulted in an excessive dilution problem.

1994: Western Quebec Mines continued to mine the Dubuisson East upper zones and to develop the lower zone. The company also extracted a few pockets of ore on the Joubi property. Also carried out were definition drilling and exploration on the Dubuisson East property (3,171 m), and drilling of the A Zone below the 5th level (659 m) on the Joubi property.

1995: Western Quebec Mines commenced a two-year underground exploration and development program on the Joubi property. The first phase of this program involved 200 m of shaft sinking to a depth of 524 m, upgrading of production infrastructure, development of a loading system, and establishment of levels 360 and 440. Due to the shaft sinking program, production was interrupted for more than six months. Almost all production came from the Dubuisson East property where the bulk of the reserves were located.

1996: The emphasis continued to be on exploration following the shaft-deepening program and the establishment of new drifts at a depth of 440 m. Western Quebec Mines completed a total of 15,000 m in 110 drillholes along the 1.1-km strike length of the Joubi shear zone. This drilling identified a small, high-grade zone (DE-F) above the 440 m level. In addition, preliminary drilling on the 440 m level identified the down-dip extension of zones DE-B/C over a strike length of 80 m, which remained open to the east and at depth.

1997–1998: In 1997, 90 holes were drilled for a total of 8,600 m, resulting in the discovery of the DE-F zone below the 440 m level. In 1998, the company conducted an extensive underground exploration effort involving 480 m of drifting and 14,200 m of drilling in 81 holes. The goal of the program was to test the depth and strike potential of the Joubi shear zone in an effort to identify significant new reserve blocks. Results were insufficiently encouraging to justify further development.

1999: The Joubi mine was closed in 1999 after a 10-year production history. Total production amounted to 62,283 ounces from 327,561 metric tons of mined ore. Ore was custom-milled at facilities in the Val-d'Or area when excess capacity was available, with gold recoveries of 98%. The headframe was dismantled and the shaft sealed. The three-compartment shaft reached a depth of 524 m with levels developed at 70 m, 120 m, 220 m, 280 m, 360 m and 440 m. Ore chutes were installed at levels 120 m, 220 m, 280 m and 440 m.

Table 6-4: Joubi mine production from 1990 to 1999 (Turcotte et al., 2015)

Year	Metric tonnes milled	Recovered grade Au g/t	Gold production (oz)
1990	30,146	10.94	10,601
1991	36,998	6.99	8,319
1992	36,572	7.64	8,983
1993	28,419	4.49	4,104
1994	57,115	4.55	8,351
1995	20,166	5.37	3,484
1996	35,270	4.73	5,364
1997	39,191	4.72	5,947
1998	27,470	4.17	3,679
1999	16,214	6.62	3,451
TOTAL	327,561	5.91	62,283

2016: Agnico Eagle Mines purchase some claims from Wesdome to acquire a portion of the property. Agnico Eagle Mine, granted a 3% NSR on the Joubi Property.

6.2.6 Dorval-Siscoe/Wesdome Deposit Area

The following description of historical work in the Dorval-Siscoe Area is mostly modified and summarized from Beckman et al. (1933), Bell (1937), Ross et al. (1938), Ross and Asbury (1939), Koulomzine (1941; 1942; 1943), Ingham (1944a; 1947), D’Aragon (1947), Auger (1947), Dresser and Denis (1949), Young (1955), Salamis (1970), Prud’homme (1970), Audet (1975a; 1975b), Matheson (1976), Audet (1979), Gardiner (1987; 1988), Sauvé et al. (1993), Beauregard and Gaudreault (1999; 2005), Turcotte and Pelletier (2009), and the annual information forms of Western Quebec Mines Inc., Wesdome Gold Mines Inc. and Wesdome Gold Mines Ltd. (1996- 2013).

1933–1937: Dorval-Siscoe Gold Mines drilled 37 diamond drillholes for a total of 7,050 m, and established the presence of a wide and intensely sheared zone (Dorval-Siscoe Main Break). Snowshoe Mines Ltd. drilled five holes totalling 844 m on the Snowshoe intrusion. A diamond drillhole cut the Dorval Siscoe Main Break. The material in the zone consisted of schistose and talcose granodiorite with laminated quartz-carbonate stringers up to 10 in (25 cm) wide, and a feldspar porphyry dyke about 10 ft (3 m) in section width that was injected and replaced by vein quartz. The mineralization consists of pyrite, chalcopyrite, galena and tourmaline.

Good results obtained by Dorval-Siscoe Mines prompted the company to sink a three-compartment shaft on Island No. 6 in 1937 and 1938, to a depth of 343 ft (104.5 m). Other work included the development of about 850 m of drifts and crosscuts on the 300’ level, and a drilling program of 14 underground diamond drillholes totalling 686 m. A strong vein was exposed for a length of 780 ft (237.7 m) in a drift on the 300’ level.

Particular emphasis was placed on extending the K Zone in the Siscoe gold mine onto the Dorval-Siscoe property. At the time, the K Zone was considered spatially related to most of the mineralization on the Dorval-Siscoe property. The primary focus of the work was to outline a broad zone of weak to moderate mineralization, as described in the report by Koulomzine (1941).

1941–1943: Camp Bird Gold Mines Ltd. took an option on the project held by Dorval-Siscoe Gold Mines. A dip needle magnetic survey was carried out over 590 ha on the project, outlining many magnetic anomalies. Twenty-four holes totalling 5,400 m were drilled from the surface, and 16 holes totalling 1,467 m were drilled underground from the earlier Dorval-Siscoe workings.

1945–1948: Another dip needle magnetic survey was conducted by Snowshoe Gold Mines Ltd. over an additional 191 ha. In addition, 14 surface diamond drillholes, totalling 2,671 m, were drilled on the periphery of a large circular magnetic depression (granodiorite plug) located in the centre of the property. In 1946 and 1947, Western Quebec Mines (incorporated in 1945) began developing the property held by Camp Bird Mines Ltd. Twelve surface diamond drillholes, totalling 3,394 m, were drilled on magnetic anomalies, providing encouraging results. 1955: Snowshoe Gold Mines Ltd. carried out an EM survey over the western part of the Snowshoe intrusion.

1963–1965: Western Quebec Mines drilled four holes (holes 87 to 90), totalling 1,559 m, on the A Zone, and in 1964, completed a Mag survey over the western and southwestern part of the property.

1965–1970: Kerr Addison Mines and Western Quebec Mines conducted a geophysical survey over the project, including 209 km of Mag and 12.9 km of EM surveys, and drilled four holes totalling 1,613 m (65-1 to 65-4). In 1970, Western Quebec Mines initiated other geophysical surveys on the western part of the project, including 132.9 km of Mag, and 182 km of Max-Min (EM) and induced polarization (IP). The goal of these surveys was to delineate massive sulphides associated with peridotites. In addition, nine holes (W70-1 to W70-9) were drilled, totalling 1,373 m.

1975–1983: Wesdome Resources Ltd., a company owned by Dome Exploration Co. Ltd. and Western Quebec Mines, drilled 136 holes totalling 37,999 m. This phase can be split into four major periods:

- 1975–1976: A 78-km VLF survey was carried out on the project, and 38 holes (82-1 to 82-38) were drilled for a total of 10,584 m. The goal of this program was to evaluate the general potential of the project;
- Winter 1979: Four holes (82-39 to 82-42) were drilled, for a total of 1,273 m. The goal was to complete a transverse section north of the A and B zones (Audet, 1979);
- 1980–1981: A drilling program was carried out to delineate the mineralization and evaluate gold reserves in the A and B zones and associated “flat” quartz veins. In total, 19,740 m (67 holes) were drilled;
- Winter 1983: Drilling was conducted to extend the A Zone mineralization eastwards. A first reconnaissance field program was carried out to identify mineralization in an altered (albitized) monzodiorite on the western periphery of the property, adjacent to a project held by Falconbridge Nickel Ltd. A total of 26 holes (82-105 to 82-130) was drilled for a total of 6,348 m (Duhaime, 1983).

1984: Wesdome Resources established a grid of 116.5 km on the project, and a total field and gradient Mag survey was undertaken. During the same year, 51 holes, totalling 18,656 m, were drilled on the project, mainly in two sectors: 21 holes in the intrusive dyke complex (the Falconbridge Zone) for a total of 10,935 m; and 30 holes in the A and E zone extensions for an additional 7,721 m. During this program, a new zone, the F Zone, returned encouraging results.

1987: Wesdome Resources completed a geophysical survey (seismic refraction) followed by a 30-hole drilling program (holes 82-177 to 206) for a total of 12,180 m.

1988: Another geophysical program consisting of seismic refraction, IP, Mag, EM and bathymetry was carried out by Sigma Mines Ltd. After that, Wesdome Resources completed a 13-hole winter drilling program (holes 82-207 to 219) for a total of 5,318 m, followed by another 13-hole drilling program in the fall of 1988 (82-220 to 82-232), for an additional 4,524 m.

During the 1980s, geologists of Placer Dome Inc. and subsidiary Les Mines Sigma (Québec) Ltée separately estimated the total contained mineralization for the A, B, C, D, E and E3 zones as 2.7 Mt grading 4.6 g/t Au (using various cut-off grades; Beauregard and Gaudreault, 2005).

This resource estimate is considered to be historical in nature and should not be relied upon; however, it does give an indication of mineralization on the property. It is included in this section for illustrative purposes only and should not be used out of context.

1998–1999: Wesdome Gold Mines built a 5.5-km access road on the northern peninsula, and completed rock mechanic tests and seismic surveys for overburden and rock quality on the former site of the decline portal. Results revealed the presence of a deep trough (over 60 m) over an east-west striking, multi-metre wide, sheared and altered ultramafic unit. These results indicated a ramp project would not be feasible. One hundred (100) holes (37,278 m) were drilled, including six holes on the Yankee Clipper property to the north. Three distinct zones of the Wesdome property were tested: the sector north of the K Zone, the E3 and E zones, and the A and B zones. Wesdome Gold Mines was planning to sink an exploration shaft on Island No. 3. A 600-m pilot hole was completed on the island for rock mechanic purposes prior to shaft sinking, with positive results. Preparation work, which consisted of levelling the site (Island No. 3), was conducted during the winter of 1998–99. In 1999, permitting and engineering work continued, and limited mining equipment was purchased.

2000–2001: During 2000, work concentrated on the construction of the surface infrastructure required to commence shaft sinking and underground development. The shaft was collared at a depth of 23 m, the hoist and surface buildings were installed, the wharf-barge access system was made fully functional, and was made using a specialty submarine electrical cable. In addition, two exploration holes were drilled to test the western limits of the A zone.

6.2.7 Siscoe Mine Area

The following description of historical work in the Siscoe Mine Area is mostly modified and summarized from Mailhiot (1920), Cooke et al. (1931), Hawley (1931), Bell (1937), Auger (1940), Auger (1947), James (1949), Dresser and Denis (1949), Gill (1981), Timmins and Wing, (1981), Trudel (1985), Allard (1988) and Sauvé et al. (1993).

1912–1919: Siscoe Island was staked in 1912 by Siscoe Mining Syndicate. Gold was discovered on the northernmost part of the property during the initial prospecting in 1911 and 1912, but gold showings on Siscoe Island were not reported until three or four years later. The first gold discovery was made in 1913.

Between 1913 and 1919, exploration work was conducted on four principal veins: A, B, C, and D. A 45-ft exploration vertical shaft was sunk on the A Vein. The vein was exposed over a length of 90 ft (27.4 m). The vertical exploration shaft of the B Vein was 32 ft (9.8 m) deep. On the C Vein, an exploration shaft was sunk to a depth of 100 ft (30.5 m), inclined at an angle of 35°, following the dip of the vein. The zone of the D Vein comprised a number of scattered veins and quartz lenses measuring several feet in length. Several quartz veins contained nests or pockets rich in native gold, in which wonderful specimens were sometimes found. An exploration shaft 88 ft (26.8 m) deep was sunk on the vein.

1923–1927: The property was bought by British Mineral Corporation, and in 1923, Siscoe Gold Mines Ltd. was created. In June 1926, the underground workings included a shaft sunk to a vertical depth of 105 ft (32 m) on the D Vein, and about 1,500 ft (457.2 m) of drifting and crosscutting. Most of this work has been of an exploratory nature, directed to finding single veins large enough to mine. The long crosscut that runs southwest from the shaft to the granodiorite-basalt boundary cut a vein, known as the K Vein, which seemed to follow that boundary. In 1927, active development on the C shaft and C Vein was recommenced. Since renewing operations, the shaft was continued to a depth of 500 ft (152.4 m), and much lateral work was completed on the 170', 300', 400' and 500' levels.

1929–1930: Milling equipment was installed, and in January 1929, the mine came into production. Later in 1929, following the discovery of a vein nearly parallel to the cross-cut driven south of the D-shaft, an extensive diamond drilling program was carried out that proved the continuity of the vein, which became known as the New Vein. A new three-compartment shaft (the Central shaft) was completed in spring 1930 to a depth of 472 ft (143.9 m). From this, cross-cuts were driven northwest on the 300' and 450' levels at distances of 50 (15.2 m) and 100 ft (30.5 m) beyond the New Vein. From the Central shaft, the workings on the 300' level were driven east to connect with the 5th level of the inclined C shaft by an 85-ft raise from the latter. At the 450' level, a cross-cut was driven east to intersect the C Vein on this level.

1930–1946: By the end of 1936, the mine had been developed on levels to a vertical depth of 1,350 ft (411.5 m). For the first 600 ft (182.9 m), levels are at intervals of 150 ft (45.7 m); below this they were spaced at 125-ft intervals. The Central shaft serviced the entire mine. It was deepened to 1,900 ft (579.1 m) to permit the opening of the newly opened 11th and 12th levels. By the end of 1939, the Central shaft had reached the 19th level at a depth of 2475 ft (754.4). At this time, the mine had been continuously in production since 1929.

1946–1951: Starting in 1940, and despite an intense exploration program, no new ore sources were found. In 1949, the mine was closed and all reserves were mined out. In 1951, the mill and all equipment were sold. Exploration activities were suspended until 1981.

1981: Canzona Mineral Inc. carried out an EM (VLF) survey covering all of Siscoe Island. In the spring, a 19-hole diamond drilling program was completed on Siscoe Island. Due to the significant mineralized zones intersected, Phase 2 of the drilling program was completed in June, consisting of four diamond drillholes, drilled northward into a VLF EM conductor associated with the K Zone.

1984–1990: From 1984 to 1990, Maufort Resources Inc. completed exploration and underground work in joint venture partnership with Teck Corporation (1984–1987) and Cambior Inc. (1987–1989). A total of 20,693 m of diamond drilling was carried out and the mine pumped dry.

1993–1997: In 1993, Maufort Resources Inc. changed its name to Dynacor Mines Inc. Dynacor Mines completed mapping, outcrop stripping, diamond drilling and sampling. In 1997, nine diamond drillholes were sunk on the property for a total of 3,170 m.

1999: As part of its Reorganization Agreement, Dynacor Mines transferred all its interests in the Siscoe property (100%) to Wesdome Gold Mines on November 9, 1999.

During the period between 1929 and 1949, the Siscoe mine had produced a total of 882,303 ounces of gold and 306,070 ounces of silver from 2,975,785 metric tons of ore grading an average of 9.22 g/t Au and 3.20 g/t Ag (Table 6-5).

Table 6-5: Siscoe mine yearly production from 1929 to 1949

Year	Metric tonnes milled	Recovered grade Au g/t	Gold Production (oz)	Recovered grade Ag g/t	Silver Production (oz)
1929	27,067	17.07	14,853	1.38	1,200
1930	30,613	18.02	17,740	1.44	1,420
1931	50,508	22.10	35,883	0.99	1,614
1932	58,059	26.06	48,651	2.04	3,810
1933	87,407	19.48	54,729	3.14	8,826
1934	112,630	16.93	61,291	2.83	10,247
1935	135,236	14.82	64,446	3.70	16,089
1936	164,364	13.08	69,138	3.23	17,090
1937	181,895	12.89	75,383	3.61	21,095
1938	170,342	12.19	66,783	3.63	19,906
1939	171,965	9.76	53,982	3.76	20,765
1940	176,251	8.15	46,159	3.17	17,973
1941	208,710	6.63	44,461	3.79	25,457
1942	288,668	5.13	47,630	4.20	38,961
1943	290,407	4.35	40,656	3.51	32,808
1944	294,366	4.16	39,384	3.30	31,196
1945	241,466	4.33	33,610	2.30	17,864
1946	143,148	4.95	22,799	2.24	10,304
1947	64,649	10.37	21,556	2.33	4,847
1948	60,984	8.27	16,212	2.15	4,206
1949	17,049	12.69	6,957	0.72	392
TOTAL	2,975,785	9.22	882,303	3.2	306,070

6.2.8 Siscoe Extension Area

The following description of historical work in the Siscoe Extension Area is mostly modified and summarized from Hawley (1931), Bell (1937), Denis (1937a), Ross et al. (1938), Auger (1940), Auger (1947), Dresser and Denis (1949), Sullivan Consolidated Mines Ltd. (1957) and Dussault (1988).

1929–1937: During the winter of 1929–1930, some 10,000 ft (3,048 m) of diamond drilling was undertaken, by Siscoe Extension Gold Mines Ltd., on the property. Drilling was undertaken in the hope of picking up the eastern extension of the Siscoe granodiorite and possible veins. Following the drilling program, a three-compartment shaft was sunk on the lake's shore, and underground work was carried out on the 350' level. In 1936, diamond drilling was carried out from both underground and surface (from ice on Lac De Montigny). The latter was chiefly concerned with exploration for the presumed continuation onto the property of the northeastern branch or split of the K Zone of the Siscoe mine. But the drilling program was unsuccessful in locating the Siscoe K Zone beneath the lake. The overburden was penetrated to depths of up to 202 ft (61.6 m), but bedrock was not definitively reached. In 1937, the shaft reached a depth of 750 ft and the 750' level was established. Drifting was carried out on the 750' level.

1938: Operations were suspended in the fall of 1938, and the mine was flooded.

1946: Siscoe Gold Mines optioned the property and dewatered the underground workings. Geological surveying and re-sampling were carried out underground. Following this work, the option lapsed and the underground workings were flooded again.

1957: Sullivan Consolidated Mines Ltd. optioned the property and carried out an EM survey on the property. Surface diamond drilling was done from the ice south of the main underground workings.

1986: Maufort Resources Inc. acquired the property from Extension Holdings Inc. A total of 12 holes was drilled on the property for a total of 10,400 ft (3,169 m).

1987: Maufort Resources carried out a 56-hole drilling program on the property for a total of 81,361 ft (24,798.8 m). IP, Mag and seismic surveys were also carried out. The underground workings were dewatered.

1993: Maufort Resources Inc. changed its name to Dynacor Mines Inc.

1999: As part of its Reorganization Agreement, Dynacor Mines transferred all its interests in the Siscoe-Extension property (75%) to Wesdome Gold Mines Inc. on November 9, 1999.

7. GEOLOGICAL SETTING AND MINERALIZATION

The Kiena Mine Complex area is located in northwestern Quebec (Figure 7-1), straddling the southern part of the Abitibi greenstone belt (AGB) and the northern part of the Pontiac Subprovince.

7.1 Regional Geology

7.1.1 Abitibi Greenstone Belt

The following description of the AGB is mostly modified and summarized from Monecke et al. (2017) and references therein.

The Neoproterozoic AGB forms the northeastern portion of the Abitibi-Wawa Subprovince in the southeastern portion of the Superior province (Figure 7-1). The southern Superior province consists of a collage of E-trending Mesoproterozoic to Neoproterozoic terranes that underwent a complex history of aggregation between 2720 and 2680 Ma (Percival, 2007). To the north, the AGB is bounded by the Opatica Subprovince (Figure 7-1), a high-grade metamorphic terrain that consists of tonalite, granodiorite, and granite intrusions, with minor outcrop areas of volcanic and sedimentary rocks (Benn et al., 1992; Sawyer and Benn, 1993; Davis et al., 1994). Geophysical constraints indicate that rocks of the Opatica Subprovince structurally underlie the supracrustal rocks of the AGB (Benn and Moyen, 2008).

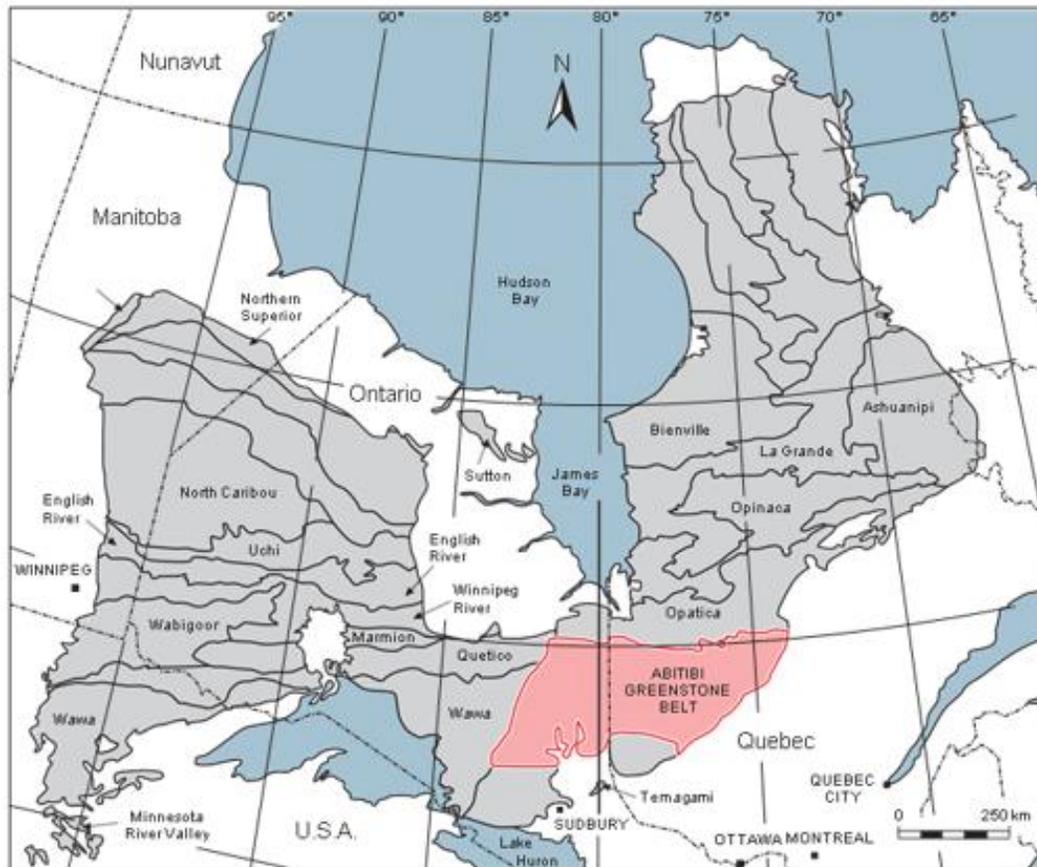


Figure 7-1: Location of the Abitibi greenstone belt within the Superior province
Subdivision of Superior province from Thurston et al. (2008) and Stott et al. (2010);
modified from Monecke et al. (2017)

To the east and southeast, the AGB is truncated by the Mesoproterozoic Grenville front tectonic zone, which is a southeasterly dipping zone of thrusts that juxtapose granulite facies metamorphic rocks with low-grade of the AGB (Indare and Martigole, 1989; Daigneault et al., 1990; Culshaw et al., 1997; Ludden and Hynes, 2000). To the southeast, the AGB is bounded by the Pontiac Subprovince (Figure 7-2). Structural studies along the Abitibi-Pontiac contact indicate that the AGB was thrust over the Pontiac Subprovince from the north (Camiré and Burg, 1993; Benn et al., 1994; Daigneault et al., 2002; Bedeaux et al., 2017). To the west, the AGB is interrupted by the 500-km-long NNE-trending Kapuskasing structural zone that exposes granulite facies metamorphic rocks (Percival and West, 1994). The Kapuskasing structural zone is a W-dipping thrust of Paleoproterozoic age along which Archean lower continental crust was upthrust (Percival and al., 1989). The uppermost part of the stratigraphy of the Wawa greenstone belt (Williams et al., 1991) to the west of the Kapuskasing structural zone is correlative with the AGB to the east (Percival and Card, 1983; Ayer et al., 2010).

The AGB comprises E-trending successions of folded and faulted volcanic and sedimentary rocks and intervening domes of intrusive rocks (Daigneault et al., 2004; Goutier and Melançon, 2007; Thurston et al., 2008; Ayer and Chartrand, 2011). The volcanic successions in the AGB typically have a steep dip and commonly young away from major intervening domes of intrusive rock (Thurston et al., 2008). Submarine mafic volcanic rocks prevail, forming approximately 90% of the outcrop area. Felsic volcanic rocks account for most of the remainder (Goodwin and Ridler, 1970; Goodwin, 1977; Hannington et al., 1999), with komatiites forming a small but important part of many of the volcanic successions (Imreh, 1984; Sproule et al., 2002; Houlé and Leshner, 2011; Dostal and Mueller, 2013).

An important geologic feature of the AGB is the occurrence of major, E-trending ductile-brittle fault zones. These zones cut across the entire belt from the Kapuskasing structural zone in the west to the Grenville front in the east, dividing the supracrustal rocks and intervening domes into distinct lozenge-shaped domains. The most two important fault zones in the southern AGB are Destor-Porcupine fault zone (DPFZ) in the north and Larder Lake-Cadillac fault zone (LLCFZ) in the south (Figure 7-2). These faults are subvertical (70°-90°) and dip either to the north or the south. They have highly variable widths, ranging from tens to hundreds of metres (Poulsen, 2017), and are generally marked by intense ductile-brittle deformation and penetrative fabric development. Most geologists agree that the fault zones are long-lived structures that controlled sedimentation and volcanism in the AGB since at least 2679 Ma. (Dimroth et al., 1982; Mueller et al., 1991, 1994; Cameron 1993; Mueller and Corcoran, 1998; Daigneault et al. 2002; Bleeker, 2012).

Based on recent geochronological information (Ayer et al., 2002b, 2005; Thurston et al., 2008), six volcanic assemblages are distinguished that formed by submarine volcanic activity between ca. 2750 and 2695 Ma (Figure 7-2). These assemblages spanned over 50 Ma years and are listed below from oldest to youngest:

- Pacaud Assemblage (2750-2735 Ma);
- Deloro Assemblage (2734-2724 Ma);
- Stoughton-Roquemaure Assemblage (2723-2720 Ma);
- Kidd-Munro Assemblage (2719-2711 Ma);
- Tisdale Assemblage (2710-2704 Ma);
- Blake River Assemblage (2704-2695 Ma).

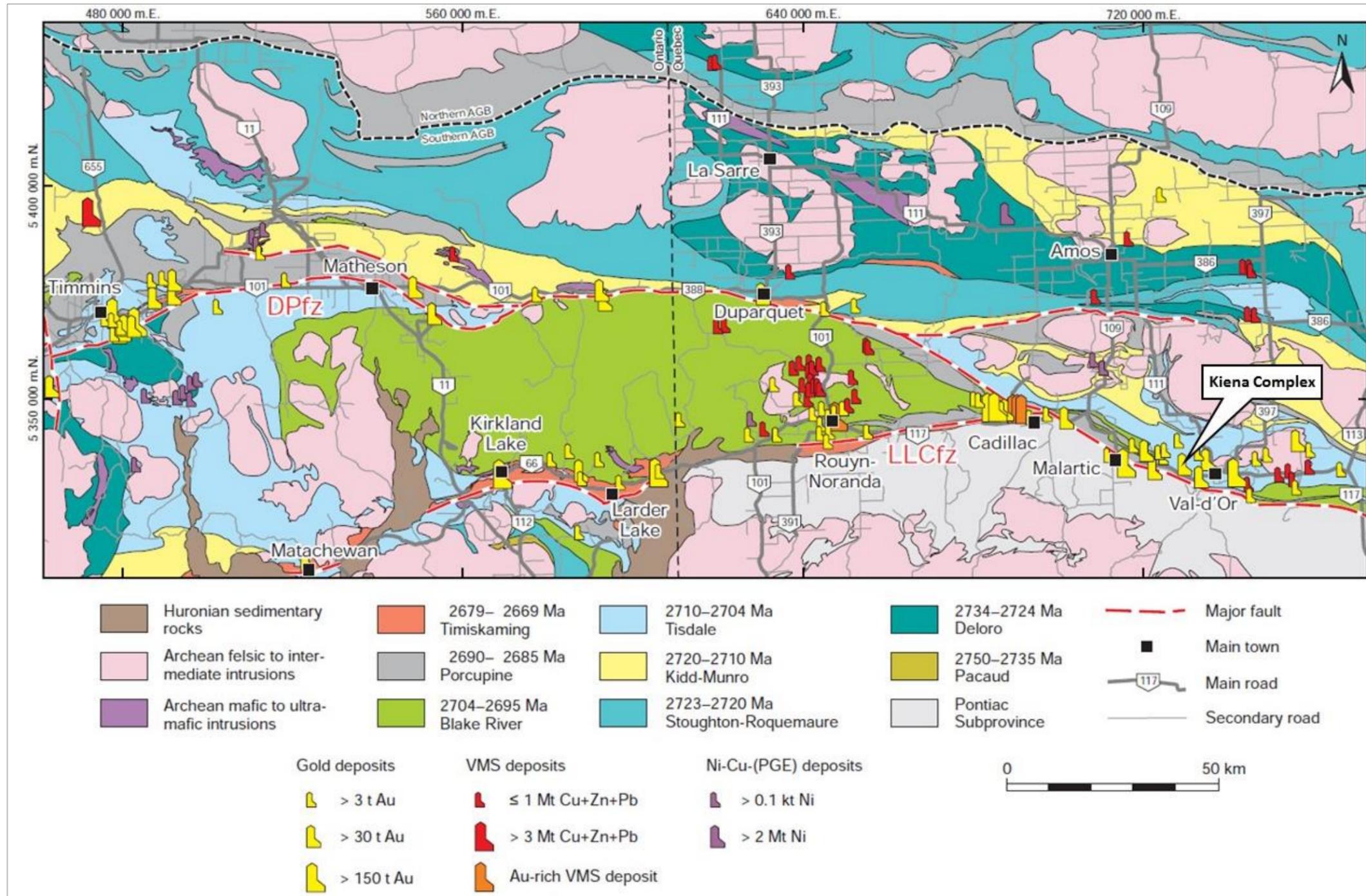


Figure 7-2: Geologic map of the southern Abitibi greenstone belt and location of the Kiena Complex
 LLCfz = Larder Lake-Cadillac Fault Zone; DPFz = Destor-Porcupine Fault Zone (modified from Thurston et al. (2008) and Poulsen (2017))

Volcanic rocks older than 2750 Ma locally are found in the AGB, as indicated by recent studies southwest of Chibougamau, where 2795 to 2759 Ma volcanic rocks were mapped (Mortensen, 1993; Bandyayera et al., 2004; Davis and Dion, 2010; Leclerc et al., 2011, 2012)

In the southern Abitibi greenstone belt, the ≤ 2690 to ≤ 2685 Ma Porcupine assemblage consists of flysch-like deposits that records sedimentation in a deep submarine environment (Rocheleau, 1980; Lajoie and Ludden, 1984; Stone, 1990; Born, 1995; Frieman et al., 2017). The Porcupine assemblage locally includes minor calc-alkaline volcanic rocks (i.e., the Krist Formation in the Timmins area; Ayer et al., 2002b). The ≤ 2679 to ≤ 2669 Ma Timiskaming assemblage in the southern AGB is characterized by molasse-like clastic rocks deposited in a terrestrial setting (Hewitt, 1963; Dimroth and Rocheleau, 1979; Hyde, 1980; Rocheleau, 1980; Mueller et al., 1991, 1994; Legault and Hattori, 1994; Born, 1995). The clastic deposits of this assemblage are locally intercalated with predominately alkaline volcanic rocks (Cooke and Moorhouse, 1969; Mueller et al., 1994; Wilkinson et al., 1999; Ispolatov et al., 2008).

The supracrustal rocks of the AGB are intruded by plutons of variable compositions and sizes. Depending on emplacement age, several groups of plutons can be distinguished (Rive et al., 1990; Feng and Kerrich, 1992a, 1992b; Sutcliffe et al., 1993; Mueller et al., 1995; Chown et al., 2002; Beakhouse, 2011). Pre-2695 Ma intrusions in the southern AGB are commonly tonalitic to granodioritic composition and their ages overlap with those of supracrustal rocks. The intrusions are weakly to well foliated and complexly deformed, suggesting that they were folded together with volcanic host-rock successions (Beakhouse, 2011). Pre-2695 Ma mafic to ultramafic intrusions are found throughout the southern AGB. Many of these intrusions form sills or lenticular units that crosscut stratigraphy at a low angle. Compositionally, the intrusions range from peridotite to gabbro and diorite. A large number of intrusions in the southern AGB range in age 2695 to 2660 Ma, which broadly corresponds to the timing of sedimentation in the Porcupine and Timiskaming successor basins. Intrusions of this age range are typically of granodioritic to granitic and dioritic to quartz monzodioritic composition. Post 2660 Ma intrusions of granitic or granodioritic compositions are rare in the southern AGB and mostly form part of large, multiphase batholithic complexes (Beakhouse, 2011).

The greenstone belt is affected by a widespread greenschist facies metamorphism (Jolly, 1978; Powell et al., 1993; Dimroth et al., 1983; Benn et al., 1994). The grade of metamorphism increases to amphibolite at the fringes of some plutons and approaching the Pontiac and Opatica Subprovinces or the Grenville front tectonic zone.

7.1.2 Pontiac Subprovince

The Pontiac Subprovince (PS) (Figure 7-2 and Figure 7-3) consists principally of a turbiditic succession composed of graywacke and mudstone with minor intercalated conglomerate and basalt (Gunning and Ambrose, 1940; Imreh, 1976; Sansfaçon and Hubert, 1990; Fallara et al., 2000; Pilote, 2013; De Souza et al., 2017). The metamorphic grade increases rapidly southward in the Pontiac Group (Imreh, 1976; Card, 1990; Camiré and Burg, 1993; Benn et al., 1994), from the biotite-chlorite zone along the southern contact of the Larder Lake-Cadillac fault zone, to garnet and staurolite zones within about 2 km to the south (Sansfaçon and Hubert, 1990; Fallara et al., 2005; Grant et al., 2005; Piette-Lauzière et al., 2014).

The minimum depositional age of the Pontiac Group is constrained by the crosscutting 2682 ±1 Ma Lac Fournière Pluton (Fallara et al., 2000), whereas the maximum age is given by the youngest detrital zircons from greywacke dated at about 2685 Ma (Davis, 2002; De Souza et al., 2017).

7.2 Geology of the the Kiena Mine Complex Area

The southern Abitibi greenstone belt in the Kiena Complex area consists of 2714–2700 Ma volcano-plutonic assemblages, including the Malartic and Louvicourt groups, intruded by calc-alkaline plutonic rocks (Figure 7-3). The Malartic Group comprises mainly komatiitic and tholeiitic basalt flows and sills, with minor sedimentary rocks, which are interpreted as an oceanic floor in an extensional environment related to mantle plumes, whereas the Louvicourt Group is mainly composed of mafic to felsic volcanic rocks that formed in a subduction-related arc setting (Desrochers et al. 1993; Daigneault et al. 2002; Scott et al. 2002). From south to north, the Kiena Complex area is underlain by the lithologies of the Pontiac Group (PO), the Piché Group (PG), the Cadillac Group (CG), and formations belonging to the Louvicourt Group and the Malartic Group.

The following description of the Kiena Complex area geology is mostly modified and summarized from Champagne et al. (2002), Champagne (2004), Scott et al. (2002), Olivo and Williams-Jones, (2002), Scott (2005), Pilote et al. (1998a, 1998b, 1999, 2014a, 2014b, 2015a, 2015b, 2015c), Pilote (2015a, 2015b), Monecke et al., 2017, and references therein.

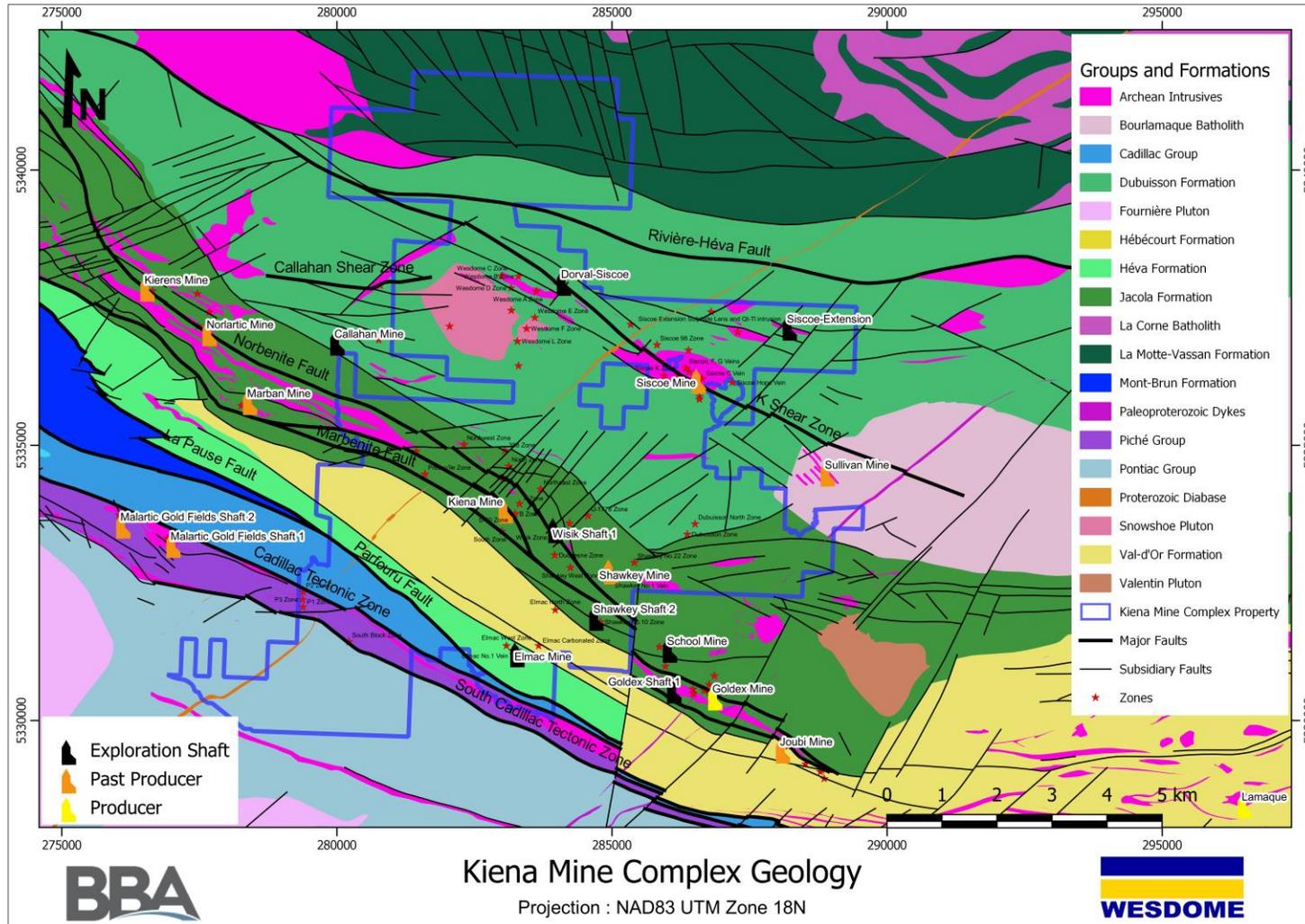


Figure 7-3: Kiena Mine Complex property geology with historic and active mines and mineralized zones (Adapted and modified from Pilote (2013, 2015a, 2015b))

7.2.1 Stratigraphy

Stratigraphic concepts were used to subdivide the E-Trending successions of folded and faulted volcanic rocks from the AGB into formally named rock units (Figure 7-4). Stratigraphic criteria have been successfully applied in mapping individual mining camp from the AGB. However, stratigraphic correlation at the larger scale across and between mining camps is hampered by the fact that boundaries between lithostratigraphic units of higher rank are often structural in nature. In addition, the glacial cover is extensive in some areas, further complicating stratigraphic correlation.

The AGB in the Val-d'Or–Malartic region has been divided into two stratigraphic groups based on regional tectonics and volcano-sedimentary stratigraphy: the basal Malartic Group comprising the La Motte-Vassan (LVF), Dubuisson (DF) and Jacola formations (JF), and the upper Louvicourt Group comprising the Val-d'Or (VDF) and Héva formation (HF) (Figure 7-3).

Originally, the volcanic rocks in the Val-d'Or–Malartic region were assigned to the Malartic Group (Gunning and Ambrose, 1940). Latulippe (1976) revised the stratigraphic nomenclature and distinguished a Lower and Upper Malartic Group. According to this stratigraphic nomenclature, the La Motte-Vassan and Dubuisson formations form the Lower Malartic Group, whereas the Jacola, Héva, and Val-d'Or formations represent the Upper Malartic Group. Based on a subsequent revision of the stratigraphic nomenclature by Scott et al. (2002), the Malartic Group today encompasses the La Motte-Vassan, Dubuisson, and Jacola formations. Scott et al. (2002) added the Louvicourt Group in the recent stratigraphic nomenclature, which was further divided into the Héva and Val-d'Or formations.

7.2.1.1 Pontiac Group (PO)

In the Kiena Complex area, the PO covers the sector to the south of the LLCФЗ. The PO, located only in the Pontiac Subprovince, consists of turbiditic units (mostly greywacke and siltstone) with rare monomict conglomerate intercalations intruded by thin ultramafic units (Dimroth et al., 1982; Goulet, 1978, Ludden and Hubert, 1986). It is interpreted as an accretionary prism created by the subduction of the Pontiac Subprovince under the Abitibi Subprovince (Camiré and Burg, 1993; Card, 1990; Davis, 2002). It is contemporaneous with the Cadillac Group with a maximum age between 2682 Ma and 2685 Ma (Davis, 2002; Mortensen, 1993). The sedimentary strata of the Pontiac and Cadillac groups are interpreted as synorogenic flysch-type assemblages (Mueller et al., 1996; Daigneault et al., 2002), whereas Dimroth et al. (1982) considered the Pontiac Group to have been deposited in a foreland belt.

7.2.1.2 Piché Group (PG)

The Piché Group (PG), at the contact between the Cadillac and Pontiac sedimentary successions, forms a relatively narrow (<2 km) band that marks the trace of the LLCFZ (Latulippe 1976; Dimroth et al. 1982; Doucet and Lafrance 2005). The LLCFZ was then delimited (Ambrose, 1944; Gunning, 1937; Gunning and Ambrose, 1940) based on the presence of talc-schist and chlorite-schist correlated to the PG. The PG consists mainly of highly strained and metamorphosed volcanic rocks (tholeiitic basalts, porphyritic andesites, calc-alkaline tuffs, and komatiites) crosscut by felsic to mafic dykes and sills (Latulippe 1976; Dimroth et al. 1982; Imreh 1984; Landry 1991; Beaudoin and Trudel 1989). However, it has since been shown that the rocks of the LLCFZ were not uniformly affected due to heterogeneities in the distribution and intensity of deformation. Primary textures, such as spinifex and cumulates, have been preserved in areas where deformation is less intense. These less deformed rocks are typically discontinuous and encompassed by bands of schists. Latulippe (1976) proposed that the Piché Group be considered as a lithostratigraphic unit, whereas Imreh (1984) proposed that the Piché Group be considered as a discordant unit.

The minimal age for the PG is constrained by a U-Pb age of 2708.8 ± 1.0 Ma obtained from a tonalite dyke that cuts the ultramafic units of the Buckshot pit near the Canadian Malartic deposit (David et al., 2018).

7.2.1.3 Cadillac Group (CG)

The Cadillac Group (CG) (Figure 7-3) crops out extensively immediately to the north of the LLCFZ, stretching from Rouyn Noranda in the west (Dimroth et al., 1982; Rocheleau, 1980) to Val-d'Or (Figure 7-4) in the east (Pilote, 2015a). The CG (≤ 2687 Ma; Davis, 2002) consists of sedimentary rocks including greywacke, pelitic schists, polymictic conglomerates, and iron formations (Trudel et al. 1992). Daigneault et al. (2002) proposed that the sedimentary rocks of the Cadillac Group represent an extensive volcano-sedimentary apron sequence that straddles the LLCFZ.

The CG is a flysch-type sedimentary basin that rests unconformably over volcanic assemblages (Mueller and Donaldson, 1992). The CG is a 150 km by 5 km basin located along the LLCFZ to the north. The group is interpreted to be a lateral equivalent of the Porcupine Group in Ontario (Ayer et al., 2002a; Thurston et al., 2008).

The sedimentary basin pinches out to a few hundred metres thick southeast of the Kiena Complex (Figure 7-4). It is mostly composed of turbiditic sedimentary rocks with rare local interlayering of polymictic conglomerates. The CG is identified based on its distinctive banded iron formations (Dimroth et al., 1982). Deposition ages for sediments are estimated at $2687 \text{ Ma} \pm 3$ (Davis, 2002).

7.2.1.4 Louvicourt Group (LG)

The Louvicourt Group (LG) is divided into the Héva (HF) and Val-d'Or (VDF) formations (Scott et al., 2002).

Héva Formation (HF)

The Héva Formation (HF) can be as thick as 2.5 km and is composed of laterally extensive massive to pillowed basalt flows, gabbroic sills and dykes, and minor felsic to mafic volcanoclastic deposits (Scott et al., 2002). Volcanoclastic units are characterized by coarse or fine tuff horizons with millimetre-scale laminations, intruded by gabbro. The volcanic rocks of the HF have a U-Pb age of 2702 ± 2 Ma (Scott et al., 2002). The HF belongs to the Blake River assemblage.

Val-d'Or Formation (VDF)

The Val-d'Or Formation (VDF) has a stratigraphic thickness of 3 km to 5 km and is dominated by massive to pillowed andesitic to rhyolitic lavas and associated volcanoclastic deposits. Diorite intrusions represent a minor component. Andesites form up to 1-km-thick and 9-km-long amalgamated flow units. Individual flow can be as thick as 80 m. The flows are intercalated with amalgamated volcanoclastic beds 5 m to 40 m thick. The pillows exhibit a variety of forms, from strongly amoeboid to lobed. Felsic lavas are laterally more restricted, but can be traced for 1 km to 3 km along strike. Volcanoclastic units reach up to 40 m in thickness. The volcanoclastic beds are composed of lapilli tuff, lapilli and blocks tuffs, and, to a lesser extent, fine to coarse tuffs. The VDF yielded a U-Pb age of 2704 ± 2 Ma (Scott et al., 2002). The VDF belongs to the Blake River assemblage.

7.2.1.5 Malartic Group (MG)

The Malartic Group (MG) encompasses the La Motte-Vassan (LVF), Dubuisson (DF), and Jacola (JF) formations (Scott et al., 2002).

Jacola Formation (JF)

The Jacola Formation (JF) has an apparent stratigraphic thickness of 1 km to 2 km and consists of basalts and komatiites. Basaltic flows are typically non-vesicular, ranging from massive to pillowed, and sometimes are in the form of flow breccias. Mafic volcanoclastic deposits, primarily formed by quench fragmentation, are locally abundant. Individual basalt units can be traced for distances of up to 5 km along strike. Individual komatiite units reach thicknesses of 100 to 200 m and range from massive to pillowed. Occasionally, spinifex-textured komatiite flows can be observed. The top of the JF has a U-Pb age of 2703.8 ± 1.3 Ma (Scott et al., 2002). The JF belongs to the Tisdale assemblage.

Dubuisson Formation (DF)

The Dubuisson Formation DF (2708 ±2 Ma) consists mainly of pillowed and massive basalt with various interbedded komatiitic flows (Imreh, 1980; Pilote et al. 1999). Ultramafic and mafic flows are similar to those described in the LVF but in different proportions. The DF belongs to the Tisdale assemblage.

La Motte-Vassan Formation (LVF)

The La Motte-Vassan Formation (LVF) crops out on the north side of Lac De Montigny. Komatiites occur as sheet and tube-shaped flows that are intercalated with pillowed or massive basalt flows (Latulippe, 1976; Imreh, 1984, Pilote et al., 2009). Komatiites are more abundant than basalts (Imreh, 1980). A well-exposed example of spinifex-textured komatiite flow of the Kidd-Munro assemblage is located at Spinifex Ridge north of Rivière-Héva (Champagne et al., 2002; Champagne, 2004; Houlé et al., 2017). The komatiite succession at Spinifex Ridge is interpreted to be age-equivalent to the 2714 ±2 Ma komatiite succession of the LVF at Marbridge Ni deposit to the southwest (Pilote et al., 2009; Houlé et al., 2017).

The age of the LVF (2714 ±2 Ma) suggests it may be contemporaneous with the upper part of the Kidd-Munro Assemblage (Figure 7-1). The LVF consists of komatiites, tholeiitic basalts and magnesian basalts metamorphosed to amphibolite facies. The base of the sequence is mostly represented by komatiites with some minor intercalated basalt. However, a decrease in the proportion of komatiites is observed towards the top of the sequence (Imreh, 1984). Komatiites are mainly found as two morphofacies: classic sheet flows with spinifex textures or tube-shaped flows, or mega-pillows. The basalt flows are usually massive or pillowed (Imreh 1980).

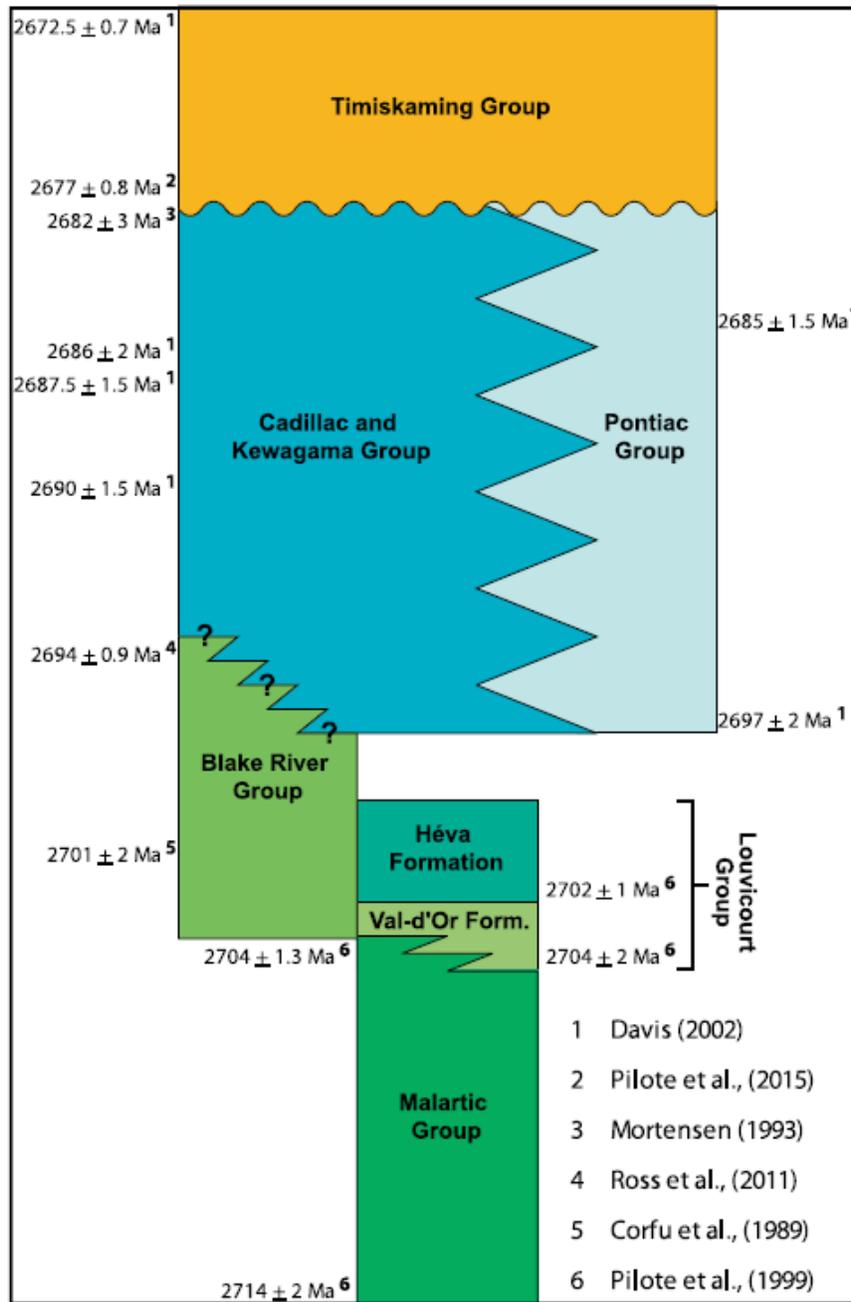


Figure 7-4: Stratigraphic chart of the Kiena Complex region with relevant isotopic ages
 Stratigraphic relationships based on Dimroth et al., (1982); Mueller et al., (1996); Scott et al., (2002);
 Tourigny et al., (1988). Figure from Bedeaux et al. (2017)

7.2.2 Intrusive Rocks

Pre-2695 Ma mafic to ultramafic intrusions are found throughout the southern AGB. Many of these intrusions form sills or lenticular units that crosscut stratigraphy at a low angle. Compositionally, the intrusions range from peridotite to gabbro and diorite. In the Kiena Complex area, the pre-2695 Ma Bourlamaque batholith (2699 ± 1 Ma; Wong et al., 1991) is a good example of synvolcanic intrusive rocks.

A large number of intrusions in the southern AGB range in age from 2695 to 2660 Ma, which broadly corresponds to the timing of sedimentation in the Porcupine and Timiskaming successor basins. Intrusions of this age range are typically of granodioritic to granitic and dioritic to quartz monzodiorite composition.

In the Kiena Complex area, intrusions with ages between 2695–2685 Ma were emplaced immediately prior to the deposition of the Temiskaming assemblage. A number of small granodiorite, tonalite and monzonite range in age 2694 to 2685 Ma. This includes Camflo stock (Jemielita et al, 1990), Kiena porphyry dykes (Morasse et al., 1995), Lamaque stock (Jemielita et al., 1989), Norlartic dykes (Pilote et al., 1993), Sigma-Lamaque feldspar porphyry dykes (Wong et al., 1991), and Snowshoe stock (Morasse et al., 1995).

Intrusions emplaced at 2679 to 2660 Ma formed during and immediately after the deposition of the Timiskaming assemblage. Several small monzonite intrusions from the Malartic area yielded U-Pb zircon and titanite ages of ~ 2678 Ma (De Souza et al., 2017).

Post-2660 Ma intrusions of granitic or granodioritic compositions are rare in the southern AGB and mostly form part of large, multiphase batholithic complexes (Beakhouse, 2011). The La Corne batholith is a good example and represents a large intrusion post-2660 Ma (Feng and Kerrich, 1991; Powell et al., 1995; Ducharme et al., 1997).

The youngest igneous activity in the Kiena Complex area corresponds to the emplacement of Proterozoic diabase dykes that cut across the Superior Province along a NE trend.

7.2.3 Structural Elements from Kiena Complex

Although the structural geology of individual mining camps is well established, there is no widely agreed upon model for the structural evolution and generation of structures in the southern Abitibi greenstone belt (Monecke et al., 2017). This is in part due to the highly variable quality of exposures, strain heterogeneity, the lack of temporal constraints and, most importantly, variable preservation of early structures in the different mining camps. Actually, the structural and tectonic evolution of the southern AGB is not yet widely accepted.

Pilote et al. (2015c) established the nomenclature for the various structural elements in the Kiena Complex area, as described below.

The oldest regional schistosity is S1. It is systematically subparallel to bedding, S0. Within the formations of the Malartic Group, the overall S1 trend is NW-SE. Both fabrics, S0 and S1, are coplanar and show a moderate to steep dip to the north. S1 contains the primary stretching lineation L1. In the southern and central parts of the Property, S0 and S1 are jointly folded into Z-folds, with an average axial plane of N095°/85° and generally E-W axially planar cleavage (S2). The axes of F1 and F2 folds are parallel to the plunges of the L1 stretching lineation contained in S1.

A late S3 cleavage is the product of kinking and chevron folds in highly altered units showing a strong pre-existing anisotropy. Dykes, mainly tonalite and monzonite, are deformed and affected by S2. They trend to the SE, subparallel to the trace of the La Pause Fault. In places, they exhibit a stretching lineation with a shallow westward plunge.

7.2.4 Large-scale Fault Zones

The Kiena Complex area has a series of large-scale shear zones and related subsidiary faults trending ESE-WNW to SE-NW, subparallel to stratigraphy and dipping steeply to the north (Figure 7-3). They are, from south to north: the Larder Lake-Cadillac Fault Zone (LLCFZ), the Parfouru Fault (PF), the Marbenite Fault (MF), the Norbenite Fault (NF), the Callahan Fault (CF), the K Shear Zone (KSZ) and the Rivière Héva Fault (RHF). The Kiena Complex area is cut by all of them. Most faults at surface have been interpreted by geophysics and traced on high-resolution aeromagnetic maps. Some faults correspond to a break in metamorphic grade.

The shear zones contain dykes or stocks of monzonitic or tonalitic composition that vary widely in age (pre-, syn- or post-tectonic) and are spatially associated with gold mines (Norlartic, Marban, Kiena, Sullivan, Goldex, Siscoe, Joubi, Sigma and Lamaque). The observed diversity in the styles and ages of gold mineralization related to these large-scale shear zones demonstrates that several distinct episodes of mineralization occurred.

7.2.4.1 Larder Lake-Cadillac Fault Zone (LLCFZ)

The LLCFZ in the AGB is a first order gold-bearing structure on a province-wide scale, accounting for half of the gold production and reserves in Abitibi and more than 25% in Canada (based on data by Dubé and Gosselin, 2007). The LLCFZ is a 250-km-long, moderately to steeply dipping structure with a curvilinear trace (Figure 7-2 and Figure 7-3). It dips northward or southward depending on location along its strike. A remarkable characteristic of the LLCFZ is that over much of its 250-km length it marks the contact of a persistent band of volcanic rocks, which in places is only 1 km to 100 m thick. Composed mainly of ultramafic komatiite and tholeiitic basalt, the volcanic rocks provide sharp lithologic contrasts with adjacent sedimentary units.

The LLCFZ in the Kiena Complex area is sharply defined as the contact between the southward-facing volcanic successions of the Malartic Group and the younger folded, but dominantly northward-facing, graywacke-mudstone successions of the Pontiac Group to the south (Poulsen, 2017). The LLCFZ is confined to a 200-m-wide high-strain zone containing thin, strongly deformed, but distinctive lithologic units. From north to south, these are porphyritic diorite that intrudes mafic rocks of the Malartic Group, graywacke and mudstone with lenses of conglomerate (assigned by most workers to the Cadillac Group), and felsic to ultramafic volcanic rocks of the Piché Group (Robert, 1989). The ultramafic talc-chlorite-carbonate schist of the Piché Group is compositionally a komatiitic to komatiitic basalt. Spinifex textures are locally preserved (Robert et al., 1990). The anomalous high strain is manifested by shape fabrics in primary lithic clasts and phenocrysts, intense schistosity, and common minor folds that result in strong transposition of layers (Robert, 1989).

Located south of the Kiena Complex, the LLCFZ is generally oriented N110° and dips steeply to the NNE.

7.2.4.2 Parfouru Fault (PF)

The PF is an ESE-WNW shear zone that dips steeply (75°) to the north or northeast and is interpreted as an early synvolcanic structure (Daigneault, 1996; Bedeaux et al., 2017). The shear zone can reach 300 m wide and has been traced for tens of kilometres.

7.2.4.3 Marbenite Fault (MF)

This major second order gold-bearing fault trends ESE-WNW to SE-NW and dips steeply to the northeast. The MF was first observed at the Marban mine (Trudel and Sauv , 1992; Sauv  et al., 1993; and Beaucamp, 2010). Similar to the LLCFZ, the MF is characterized by the presence of ultramafic talc-chlorite-carbonate schist that came from strongly deformed and metamorphosed komatiitic basalt and/or komatiite. The MF is represented by an anastomosed schist that sometimes is folded in some places. Thin mylonitic fabrics are also present within the schist in some places.

In the Kiena Complex area, the MF is more than 100 m thick. It hosts the South Zone from level 27 to level 32 and the S50 Zone from level 57 to level 100. A subsidiary folded fault, located 400 m north of the MF, merges with the MF master fault at a depth of 500 m. This subsidiary fault hosts a large part of the S50 Zone between level 12 and level 54.

7.2.4.4 Norbenite Fault (NF)

The NF is a major second-order gold-bearing fault that strikes WNW and dips 40-60° to the northeast in the Norlartic Mine area where the fault was first observed (Trudel and Sauv , 1992; Sauv  et al., 1993). This fault also hosts the gold-bearing Kierens Zone that was accessible by underground working from Norlartic mine.

The NF is 15 m to 110 m wide and has been traced for more than 10 km. The VC Zone at Kiena occurs within this shear zone. The fault affects mainly the komatiitic units and occasionally the basaltic units of the JF. It can be divided into two or three branches in some places. Similar to the LLCFZ and the MF, the NF is characterized by the presence of ultramafic talc-chlorite-carbonate schist that came from strongly deformed and metamorphosed komatiitic basalt and/or komatiite.

7.2.4.5 Callahan Shear Zone (CSZ)

The CSZ strikes N090° and dips 60-80° to the north. The CSZ can reach up to 200 m in width (Beaudoin et al., 1987).

7.2.4.6 K Shear Zone (KSZ)

The KSZ is a shear zone 300 m to 600 m wide that has been traced for more than 3 km. It strikes N295° and dips 80° northeast. It is composed of talc and chlorite schists, actinolite schists and minor sericite schists, and bodies of pure talc and massive actinolite (Olivo and Williams-Jones, 2002; Olivo et al., 2007). The shear hosts the K Zone at the former Siscoe mine and bounds the Main Zone to the south. The volcanic domain north of the KSZ is at upper greenschist to amphibolite facies.

7.2.4.7 Riv re-H va Fault (RHF)

The RHF is an 18-km-long ESE-WNW shear zone that dips steeply (80°) to the north or northeast (Daigneault, 1996). The shear zone can reach 300 m wide and has been traced over many kilometres. This structure corresponds to a change in metamorphic grade, from greenschist facies in the south to amphibolite in the north.

7.2.5 Mineralization Types

The information of this section was taken from Turcotte et al. (2015) and Beausoleil et al. (2019). Gold mineralization in the Property occurs in all rock types except the Proterozoic dykes but is more common in intrusive bodies and basalt as these acted as competent rock units that promoted fracturing during deformation. Gold mineralization is concentrated where there is a marked competency contrast between these competent units and the adjacent deformed komatiite and/or chlorite-talc schists.

According to Couture et al. (1994), there are at least two main gold mineralizing events in the region: young deposits in which the gold mineralization did not experience much deformation after its emplacement; and early mineralization in which mineralized bodies are commonly affected by D1 asymmetric folds, are highly strained and are locally dismembered. In a few deposits, both generations are present. Precise U-Pb zircon dating of an inter-mineral granodiorite dyke assigns a minimum age of 2686 ± 2 Ma to the gold mineralization at the Kiena mine (Morasse et al., 1995). This age reveals that gold mineralization postdates volcanism and the Snowshoe plutonism but predates regional syn-metamorphic deformation (ca. 2677-2645 Ma).

Gold-bearing veins in the region exhibit a great variety of orientations, mineralogy and crosscutting relationships. For the purpose of this report, they are classified into the following three main types:

- Type 1: early quartz-carbonate veins cut by various dykes;
- Type 2: deformed veins within a shear zone;
- Type 3: relatively weak deformed late quartz±tourmaline veins cutting all intrusive types and previous gold-bearing vein systems.

On occasion, all three types may occur together.

At least 63 mineralized zones have been observed on the Property and are described in Turcotte et al. (2015). The veins of these zones have been categorized as Type 1, 2 or 3 based on their principal characteristics.

In general, mineralized zones on the Property occur near a large-scale fault. They are often associated with a subsidiary shear zone that may be proximal, adjacent or host to the mineralization. Alteration minerals are dominantly albite, carbonates and pyrite with lesser chlorite and silica.

The gold occurrences found in shear zone settings are mainly restricted to competent units, and thus the size and shape of the mineralized zones often depend on the size, shape and concentration of the competent intrusive or basalt. Generally, it is possible to observe a flexure in the shear zone.

In zones of structural dislocation, three settings for gold mineralization have been recognized:

- Shattered intrusive bodies, such as diorite or feldspar porphyry dykes, enclosed in talc-chlorite schist;
- Zones of fracturing and brecciation in large bodies, such as basalt;
- Visible gold in quartz veins localized in schist and komatiite or in basalt and flow breccia near the contact with the schist and komatiite.

In large bodies of basalt, fracturing was generally restricted to narrow zones, and subsequent mineralization resulted in narrow and often closely spaced mineralized zones. In narrower dykes, the whole body is affected by fracturing, and subsequent mineralization was able to spread throughout the dyke, forming large mineralized zones. Three factors control the size and shape of mineralized zones associated with dykes in shear zone settings: the size of individual dykes, the density of the swarms, and the shear zone folding intensity.

Quartz veins with visible gold are usually found in a folded shear zone (schist). Generally, the veins seem to fill the available space created during the shear zone fracturing. The quartz veins density clearly increased going toward the nose of the fold. In some areas, two or three zones are stack in the fold's nose.

7.3 Mineralized Zones

Past gold production on the Property came from the Kiena, Siscoe and Shawkey mines. A summary of the geological setting and mineralization is presented for each of these past producers. The following sections are taken from Turcotte et al. (2015), and Beausoleil et al. (2019).

7.3.1 Kiena Mine

A total of six zones was mined at Kiena. Five are aligned in an N-S corridor (from south to north): South, S50, VC, North and 388. Those zones are situated in a sector where the Marbenite and Norbenite faults are changing direction. Regionally, those faults are N290° but change direction to N320° near those five zones. The sixth zone, Martin, is about 1.2 km east of the Kiena shaft.

7.3.1.1 S50 Zone

The S50 Zone was the main orebody at Kiena (Figure 7-5). It consists of a multistage carbonate-albite-pyrite stockwork, breccia and replacement vein system (Morasse et al., 1995; Morasse, 1998). It is located on the N-S limb of a local fold adjacent to the MF and is more or less concordant with the upper contact of a moderately west-dipping tholeiitic flow with a variably altered and schistose basaltic komatiite assigned to the JF. The mineralized zone measures between 225 m and 600 m long, between 10 m and 50 m wide, and has a vertical extent of 250 m to 1,000 m.

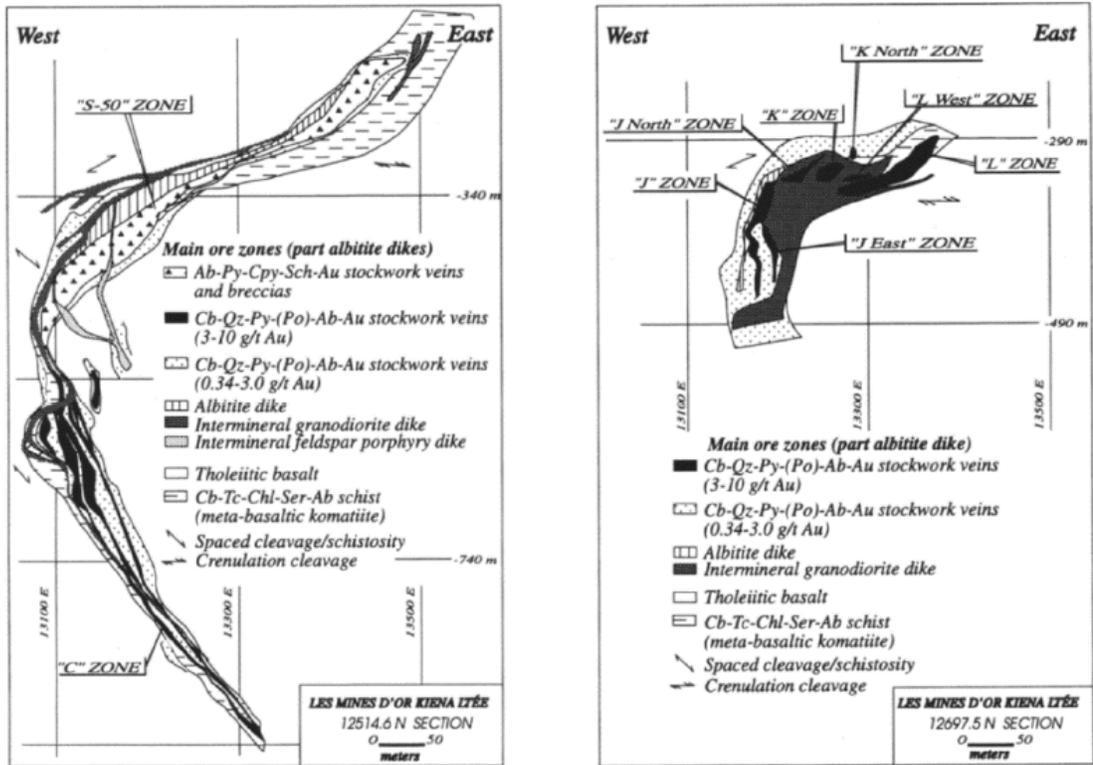


Figure 7-5: Geological cross-section of S50 zone (Morasse et al., 1995)

The S50 Zone is associated with an intermediate to felsic dyke complex composed of a pre-mineralization albitized diorite (albitite) dyke swarm and post-mineralization granodiorite and feldspar porphyry dykes. It comprises Type 1 veins consisting of two mineralized types (from oldest to youngest):

1. Carbonate (ankerite)-pyrite-Au replacement veins, also known as the “Breccia 1” mineralization type.
2. Albite stockwork veins and breccias with disseminated pyrite, chalcopyrite, scheelite and gold, also known as the “Breccia 2” mineralization type.

These Type 1 veins are cut by various dykes, including porphyry dykes that are weakly mineralized by Type 3 calcite-quartz-pyrite-Au stockwork veins. The S50 zone was divided into seven individual mineralized zones (A, B, C, D, J, K, L) based on the attitude and composition of the mineralization and the presence or absence of a granodiorite dyke. These mineralized zones can be regrouped into a high-grade core consisting of the A, B and D zones and the lower part of the C, and a lower-grade mineralized shell comprised of the J, K and L zones and the upper part of C (Figure 7-4). The C Zone is transposed within the MF.

Almost all zones in the MF are thin and elongated lenses and have a pitch angle of 60° to the east, making an angle of around 30° with the down-plug axis of the fault plane. This probably represents the stretching lineation in the fault zone.

7.3.1.2 S50 Deep Extension

Five mineralized lenses have been defined in the deep extension of the S50 Zone (Figure 7-6). These lenses correspond to the extension at depth of the S50 Zone below level 96. They are named (from south to north) S50_104, S50_100, S50_101, S50_102 and S50_103. The lenses are sheeted and parallel to, or contained within, the MF and are all part of the S50 mineralized system. The five lenses are separated from each other by 5 m to 15 m of less mineralized material. S50_102 and S50_103 are associated with a mylonite that defines the hanging wall of the MF or its splay, near the contact between basalt and talc-chlorite schist. S50_102 is in direct continuity at depth with the C Zone and is similar in composition. The upper part of the S50_102 was clipped on the mined-out area starting below the 94th level (940 m vertical) and has lateral and vertical extents of 250 m and 110 m, respectively. The S50_103 has lateral and vertical extents of 110 m and 150 m, respectively.

S50_100, S50_101 and S50_104 occur at the eastern end of S50_102 in an area where the MF widens and branches out. They are also spatially associated with the mylonite zone. They have vertical extents between 430 m and 230 m and a horizontal extent of less than 150 m. Their thicknesses vary from 3 m to 15 m. Host rocks are talc-chlorite-carbonate schists with mineralized breccias typical of the S50 Zone. These breccias contains about 1-2% disseminated pyrite and pyrrhotite. Albite and ankerite alteration are present in the S50_100 and S50_102 lenses. Sometimes visible gold in quartz veins is observed inside mineralized breccia. Quartz veins with visible gold crosscut the mineralized and albitized breccia. Those veins are similar to those observed in the Kiena Deep A Zone.

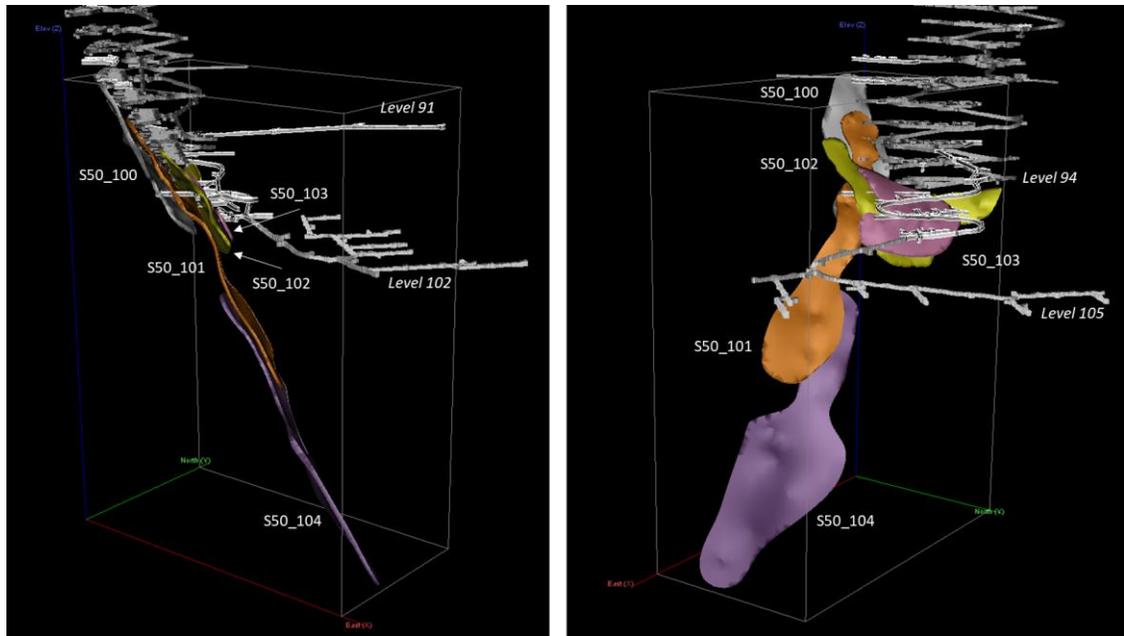


Figure 7-6: S50 deep extension mineralized zones

7.3.1.3 VC Zone

The VC Zone is approximately 700 m north of the S50 Zone and is bounded to the north by the Norbenite Fault. The following description of the VC Zone is mostly modified and summarized from Beauregard and Gaudreault (2005). The VC Zone was mined by Wesdome between 2006 and 2013. A total of 841,625 t of material with an average grade of 4.16 g/t Au was mined from this zone.

The mineralized zone occurs as four vertical E-W pinch-and-swell lenses (VC1, VC2, VC3 and VC4) in locally brecciated albitized basalt. The four lenses were mined over a vertical extent of 475 m. In cross-section, the lenses occur in a pseudo-en echelon pattern within a steep south-plunging corridor 100 m across. In plan view, the individual lenses are 100 m to 180 m long and average 8 m to 10 m wide, with a maximum width of 30 m. Gold mineralization is associated with quartz veins and carbonate-quartz-pyrite veins (Turcotte et al., 2015), presenting a similar mode of occurrence as seen in the S50 Zone.

In 2017, VC6 Zone was discovered when DDH 6187 intercepted a mineralized basalt and a non-mineralized granodiorite dyke. DDH 6187 was drilled down-dip of the zone and returned a value of 5.24 g/t on 48.7m.

7.3.1.4 VC1 and VC6

Four mineralized lenses were defined at depth in the extension of the VC1. The VC1_114 lens is the continuity at depth of the VC1 lens and is interpreted to a depth of 315 m below the last level mined (i.e., level 67). In plan view, the VC1_114 lens is 65 m long and averages 4 m to 6 m across. The VC1_114 lens is generally associated with a diorite dyke located within the talc-chlorite schist. The dyke contains 1-5% pyrite and quartz-chlorite-pyrite veinlets ranging from 2 mm to 5 cm. In places, quartz veins are present within the dyke or at its contact. Visible gold is usually observed within the quartz veins and veinlet. The three other lenses are located about 10 m north of the VC1_114 lens. VC1_111, VC1_112 and VC1_113 are sub-parallel to the VC1_114 but shows a low dipping eastern mineralized shoot instead of a vertical extension, based on preliminary understanding. The best results from VC1_114 were obtained in DDH 6205 where a diorite dyke hosting quartz veins with visible gold returned a 7.5 m interval grading 262.13 g/t Au or 17.7 g/t Au cut at 34.28 g/t (1 oz/t).

VC6_123 is located 150 m southeast of VC1_114. The mineralization is typical of the S50 Zone. The lens is elongated in shape, plunging to the south-west and measuring 185 m high by 80 m wide with thicknesses ranging from 5 m to 12 m. The lens is oriented NE, parallel to a 20 m thick chlorite-carbonate shear zone that bounds the mineralization to the northwest. It is hosted in a sheared basalt and in minor porphyritic or dioritic dykes. The main alteration minerals are chlorite and carbonates, with minor patches of albite, silica and/or amphibole alteration. Pyrite and pyrrhotite account for less than 3% of the rock. Locally, visible gold was observed in quartz-carbonate veinlets. This zone is crosscut by a massive, slightly sheared and barren granodiorite dyke. The dyke was possibly deformed at the same time as the volcanic host rocks. Figure 7-7 presents the VC1 and de VC6 mineralized lenses.

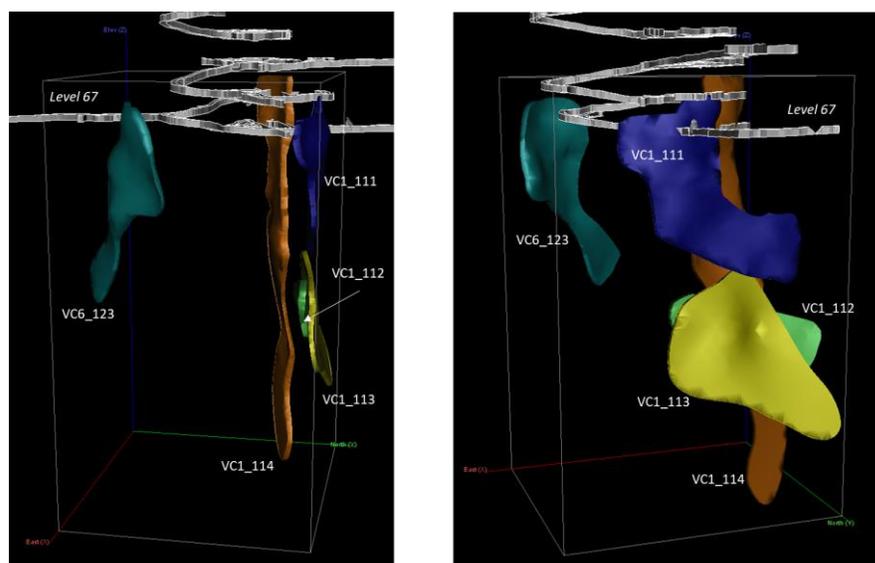


Figure 7-7: VC1 and VC6 mineralized zones

7.3.1.5 North Zone

The North Zone (formerly the No. 1 Zone) was first encountered by surface drilling in 1938. The zone is 900 m north of the S50 Zone and 200 m north of the NF (Figure 7-3). It consists of two parallel lenses shaped like flattened tubes, each measuring 10 m by 60 m to 90 m in plan view and plunging 70° north, which can be traced over a length of at least 520 m. From 2007 to 2013, Wesdome extracted 458,860 t of material from the North Zone with an average grade of 2.44 g/t Au.

The main structural control for the gold mineralization is a sodium-rich diorite intrusion in basalt host rock. Mineralization occurs as a quartz-carbonate-sulphide matrix-filling in brecciated and albite-altered diorite, and as quartz-carbonate-pyrite veins and veinlets in basalt wall rock (Turcotte et al., 2015). These veins and veinlets are predominantly developed in a steeply dipping orientation that is suggestive of a sheeted or ribbon-vein system. There are subsidiary veinlets at oblique and sub-random orientations, which may be described as a pseudo-stockwork. Well-developed albitized envelopes with disseminated pyrite encompass the quartz-carbonate veins, and it is common to observe 5-10% disseminated pyrite where intense and closely spaced veining is developed. The North Zone is cut by unmineralized granodiorite and feldspar porphyry dykes.

7.3.1.6 388 Zone

The following description of the 388 Zone is mostly modified and summarized from Laplante (2000). The 388 Zone has been defined as a small deposit parallel to the North Zone at a distance of 300 m to the north (Figure 7-3). It was mined by Wesdome from 2007 to 2013. A total of 146,268 t of material was mined from the zone at an average grade of 3.01 g/t Au.

The 388 Zone has a vertical extent of 100 m. Gold mineralization is associated primarily with a single major quartz vein 2 m wide that developed in albitized basalt alongside a diorite dyke. The vein is rather erratic and structurally meanders within an irregular zone of altered basalt 3 m to 6 m wide. Small scattered quartz-carbonate veinlets with minor pyrite occur in the wall rock.

7.3.1.7 South Zone

The South Zone lies 100 m to the south of the S50 Zone in the MF deformation corridor. It strikes northwest and dips 65° northeast. Discovered in 1981 (hole S-129), the South Zone includes the hanging wall and footwall lenses, which are 18 m apart. They were mined on three levels only (between levels 27 and 32) over a vertical extent of 55 m. They are parallel and concordant to the enclosing volcanic host rocks, predominately basalts with minor diorite dykes and komatiitic ultramafic flows. The basalts are strongly chloritized and carbonatized with local silicification and brecciation (quartz-carbonate veining) accompanied by low concentrations of pyrite (5%). The mineralization is similar to that observed in the S50 Zone.

The South Zone is generally strongly fractured by the fault zone. Wesdome tried to mine this zone in 2012 and 2013, but after producing 37,076 t with an average grade of 1.74 g/t Au, production was abandoned due to dilution problems.

7.3.1.8 ZS-130, ZS-131, ZS-132, ZS-133 and ZS-135

Five mineralized lenses have been defined in the South Zone area (Figure 7-8). Wesdome extended the footwall and hanging wall lenses up-plunge to near-surface and 200 m down-plunge, and these extensions are now named the ZS_131 and ZS_132 lenses, respectively. ZS_130 is located less than 20 m south of ZS_131 and is sub-parallel to it. The maximum lateral extension of the ZS_130 is 500 m, but both ends are poorly drilled up to date. ZS_135 is a small lens intercalated between ZS_130 and ZS_131, with lateral extents of 150 m and vertical extents of 175 m. The thickness of the alteration and mineralization envelope that encloses the four lenses ranges from 25 m to 60 m. A fifth lens (ZS_133) was defined near the contact with the S50 Zone, in a distinct band of basalt. The ZS_133 is located 25 m north of ZS_132 and has a vertical extent of 285 m with thicknesses ranging from 3 m to 6.5 m.

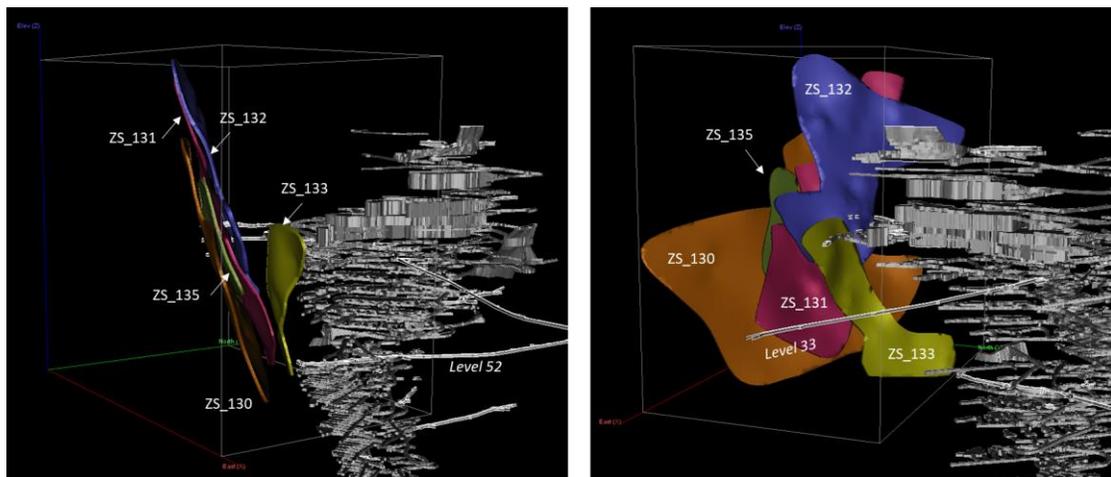


Figure 7-8: Zone South mineralized zones

7.3.1.9 Kiena Deep A Zone

The first hole that intersected the Kiena Deep A Zone was 4320 collared from level 91 in December 2007. This hole cut a quartz vein containing about 10 specks of visible gold within a talc-chlorite schist. A value of 28.23 g/t Au over 1 m was obtained. In January 2010, two more holes (4928 and 4929) were drilled in the Kiena Deep A Zone from level 91. Hole 4928 returned an average grade of 12.31 g/t Au (8.42 g/t Au cut) over 12.8 m. Hole 4929 cut an average grade of 25.42 g/t Au (14.73 g/t Au cut) over 10.5 m. In 2012, four more holes were drilled from the same level with the following best results: hole 5965B with 66.77 g/t Au (11.04 g/t Au cut) over 3 m, hole 5966 with 51.86 g/t Au (21.49 g/t Au cut) over 7.5 m, hole 5967 with 10.17 g/t Au (8.20 g/t Au cut) over 5.4 m, and hole 5974 with 42.49 g/t Au (8.80 Au g/t cut) over 14.9 m. The six subsequent holes also intersected the Kiena Deep A Zone and cut gold-bearing quartz veins and veinlets hosted by a talc-chlorite schist, like in hole 4320. In June 2016, Wesdome tried again to explore the area of the Kiena Deep A Zone.

The Kiena Deep A Zone is localized within the Marbenite Fault deformation corridor. Contrary to previous beliefs, the Kiena Deep Zone is not the extension of the S50 zone. The structures, mineralization type, host rocks and grades are completely different. The MF plane at that depth (1,350 m below surface) strikes NNW and dips shallower (55°) to the east compared to the WNW direction near the surface and the dip of 70°. The geology and structures were interpreted in 3D by Ravenelle (2018) based on drillhole data and reviewed by Pierre-Luc Richard in 2019.

The Kiena Deep A Zone is divided into three main lenses: ZA, ZA1 and ZA2. A fourth smaller lens (H1ZA) is located in the hanging wall of the ZA at the contact between the basalt and the flow breccia units (Figure 7-9). The lenses occur along an isoclinal fold associated with the MF and a subsidiary fault. All lenses in the Kiena Deep A Zone are variably altered to chlorite, carbonate and amphibole. Pyrite content is less than 2% with traces of pyrrhotite and chalcopyrite. According to Ravenelle (2018), two styles of gold mineralization occur in the zone; the first style largely dominates Kiena Deep and the second style is seen occasionally:

1. Laminated veins (shear veins) hosted within sheared ultramafic rocks (grade is up to several ounces of gold per ton). Folding is observed in shear zones. Veins are composed of vitreous to milky quartz with carbonates. There is more than one gold bearing vein generation. Sulphides range from traces to 1% locally (pyrite, pyrrhotite, chalcopyrite, sphalerite and galena).
2. Stockworks of quartz-carbonate veins and veinlets hosted in basalt (like the S50 style of gold mineralization) typically yielding less than 10 g/t Au.

The main lenses ZA, ZA1 and ZA2 are coplanar to the MF to the SW, conforms to the fold hinge in the middle part and is sub-vertical to the NE. The axial plan of the isoclinal fold undulates and plunges abruptly to the ESE (Figure 7-10). Lens ZA is located at the contact of the basalt domain and the chlorite-carbonite schist. We generally observe a feldspar porphyry dyke in the hanging wall of the ZA, which is a guide for the interpretation. This dyke seems to have undergone the same deformation as the host schist. The ZA has a horizontal footprint of 150 m and a vertical extent of 460 m with thicknesses ranging from 3 m to 18 m.

ZA1 and ZA2 lenses are sub-parallel to the ZA and are entirely in the chlorite-carbonate schist of the fault along with minor intermediate dykes. ZA1 shows a vertical extent of 550 m and a horizontal footprint of 120 m with thicknesses ranging from 3 m to 8 m. ZA2 is less drilled than ZA and ZA1 and is actually separated in two domains by a low-grade area. The lower part of the ZA2 has a much higher grade than the upper part and is also thicker with thicknesses of up to 15 m in the lower part. The overall vertical extent of the ZA2 is 590 m. The lenses ZA1 and ZA2 still have to be defined on the sub-vertical contact. Definition drilling is ongoing in this area.

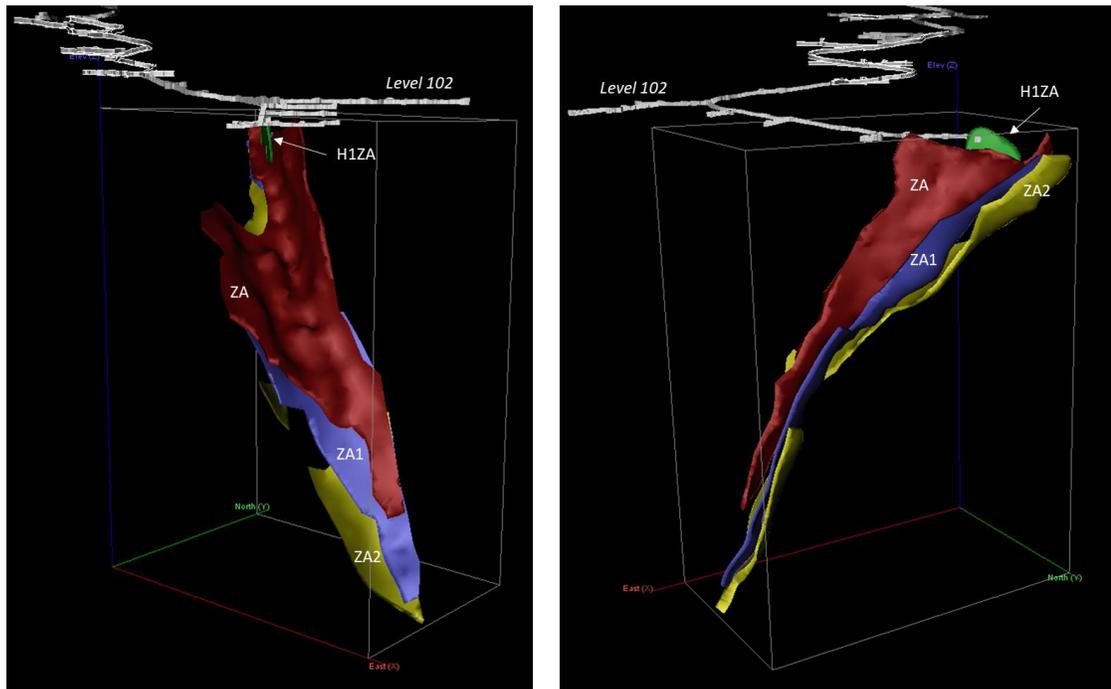


Figure 7-9: Kiena Deep A zones folded within the schist

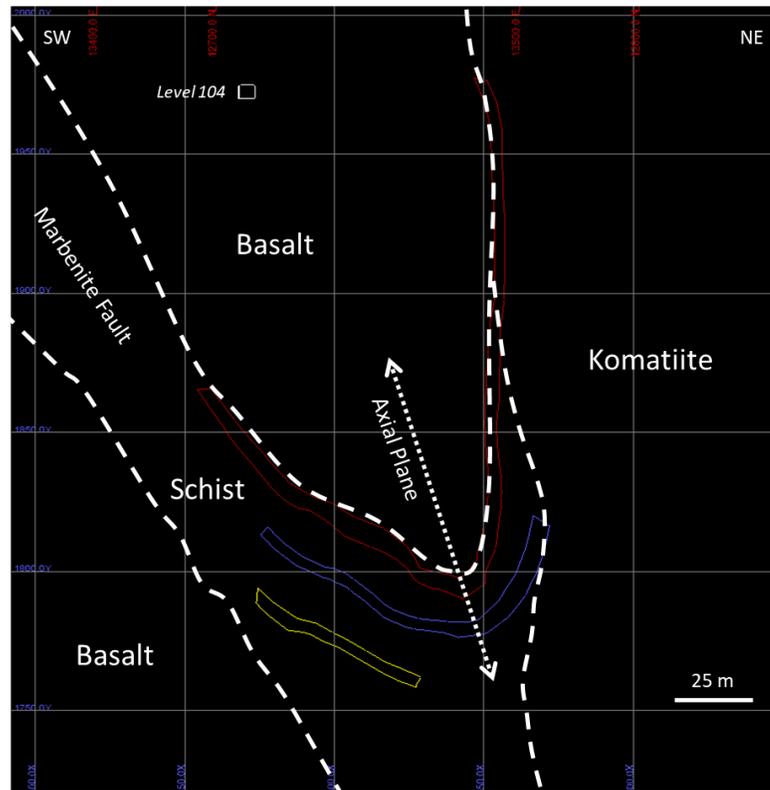


Figure 7-10: Typical cross-section of the Kiena Deep A zones (1615NE)

7.3.1.10 Kiena Deep B Zone

The Kiena Deep B Zone consists of the ZB_140 lens (Figure 7-11). It is the only mineralization at Kiena hosted in the footwall of the MF. The shape, elongation and plunge of the zone is similar to that of S50 zones at depth in the MF. The lens is stacked 25 m below the S50_100 lens in basalt. Alteration consists of chlorite, amphibole and carbonate, with local biotite and silica. The pyrite content is less than 2%. High-grade intervals are associated with quartz-carbonate-albite-tourmaline extension veins and veinlets.

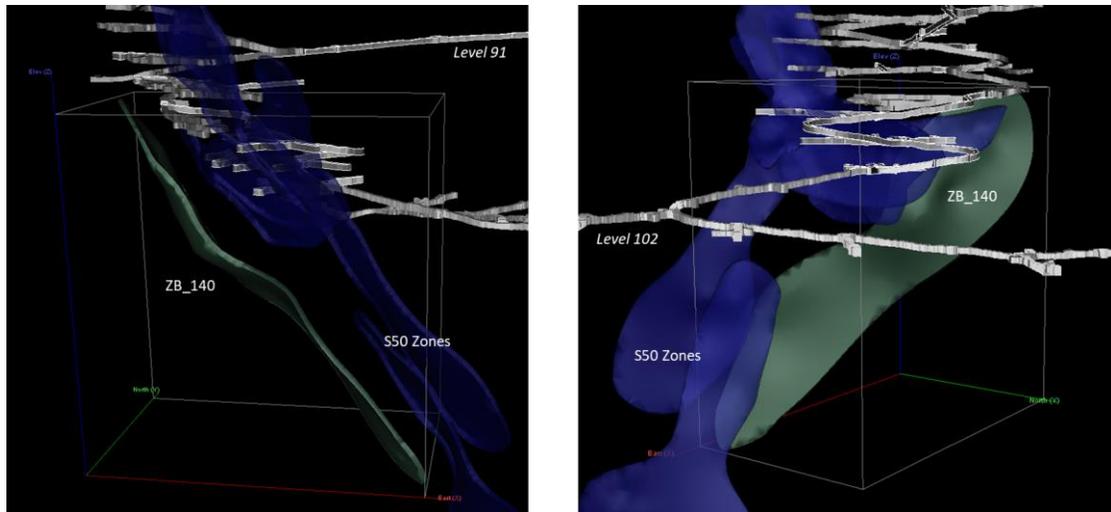


Figure 7-11: Kiena Deep B zone

7.3.2 Siscoe Mine

The geology of the Siscoe mine is predominantly felsic intrusive rock of the Siscoe Stock and tholeiitic basalts with minor intercalations of ultramafic lavas belonging to the DF. The contact between the Siscoe Stock and the DF is marked by the K Shear Zone. Most of the producing veins are located in the stock (85-90% of total production), although minor amounts of gold were also extracted from the shear zone and from small veins hosted in volcanic rocks of the DF. Type 1, 2 and 3 veins were documented in the most productive gold vein systems of the mine. Type 1 veins correspond to the Siscoe Main Zone that produced almost half of the total production from the mine, and to the Siscoe, Hope, F and G veins. Type 2 veins correspond to the dismembered quartz veins of the K Zone. Type 3 veins correspond to the Siscoe C Vein, the first producer at the mine that yielded some 40,000 oz of gold, and to the Siscoe No. 27 Vein.

7.3.2.1 Shawkey Mine

The rocks that underlie the Shawkey mine area belong to the Jacola Formation. The characteristic lithologies found on the Property consist of ultramafic to mafic flows at the base of the sequence, followed by massive and minor pillowed basalts, basaltic flow and pillow breccia, tuff breccia and basaltic tuffs. The Shawkey No. 1 Vein is located about 250 m northeast of the NF in a secondary shear called the Martin Shear Zone. This shear zone is filled by a quartz vein (the Main Vein) accompanied by quartz stringers (Type 2 veins) in the walls. The Main Vein is hosted by altered basalts cut by dioritic dykes.

8. DEPOSIT TYPES

Gold mineralization on the Kiena Mine Complex shares many geological attributes with other vein-type gold deposits of the Val-d'Or district and with orogenic gold deposits (also known as lode gold, greenstone-hosted quartz-carbonate vein, or mesothermal deposits) in terms of host rock composition, mineralogy and hydrothermal alteration.

The degree of fracturing was the primary control on the formation of mineralized zones on the Property. Thus, gold mineralization is mainly hosted in fractured competent units that acted as fluid conduits and precipitation sinks, both during and after deformation. Alteration, notably albitization, likely played a key role in host unit competency. The competency contrast between intrusive bodies, or basalts, and the talc-chlorite schists may be responsible for strain localization at the rheological boundary, and it induced a secondary permeability that provided greater access to hydrothermal gold-bearing fluids during episodic shear zone movements.

The presence in the same area of more than three types of gold-bearing veins exhibiting a wide range of orientations, mineralogy and crosscutting relationships, and the fact that several generations of dykes and veins are involved, suggests that gold mineralization was the product of multiple mineralizing phases (Beausoleil et al., 2019).

8.1 Archean Greenstone-Hosted Orogenic Gold Deposits

The Kiena Mine Complex mineralization presents characteristics of typical Archean greenstone-hosted orogenic gold deposits. The following description is taken from Simard et al. (2013) unless specified otherwise.

Greenstone-hosted quartz carbonate vein deposits occur in deformed greenstone belts of all ages elsewhere in the world; especially those with variolitic tholeiitic basalts and ultramafic flows intruded by intermediate to felsic porphyry intrusions, and sometimes with swarms of albitite or lamprophyre dikes (Dubé and Gosselin, 2007).

Archean greenstone-hosted orogenic gold deposits are typically distributed along first-order compressional to transpressional crustal-scale fault zones (Figure 8-1), characterized by several strain increments (e.g., Cadillac–Larder Lake Fault Zone) that mark the convergent margins between major lithological boundaries, such as volcano-plutonic and sedimentary domains. Large-scale carbonate alteration is also commonly distributed along those major fault zones and associated subsidiary structures (Dubé and Gosselin, 2007). This gold deposit type is, however, seldom located within these first-order structures. Major, or first-order faults are interpreted as primary hydrothermal pathways to higher crustal levels (Eisenlohr et al., 1989; Colvine, 1989; McCuaig and Kerrich, 1998; Kerrich et al., 2000; Neumayr and Hagemann, 2002; Kolb et al., 2004; Dubé and Gosselin, 2007); however, only a few significant gold deposits are hosted in major faults such as the Ajjanahalli mine, Dharwar Craton, South India (Kolb et al., 2004), and the McWatters mine and the Orenada deposit, Abitibi Subprovince, Canada (Robert, 1989; Morin et al., 1993; Neumayr et al., 2000; 2007). Significant mineralized quartz veins are commonly hosted

in second- and third-order shear zones (Eisenlohr et al., 1989). Structurally, these shear zones vary from brittle–ductile to ductile, depending on their depth of formation (Hodgson 1993; Robert and Poulsen, 2001). They are formed at intermediate depths ranging from 5 km to 10 km (Dubé and Gosselin, 2007). At depths greater than 10 km, quartz veins are seldom located within shear zones whereas gold mineralization is mostly associated with disseminated sulfides (Witt and Vanderhor, 1998).

At the deposit scale, the nature, distribution and intensity of the wall-rock alteration is largely controlled by the composition and competence of the host rocks and their metamorphic grade. Typically, the alteration haloes are zoned and characterized at greenschist facies by iron-carbonatization and sericitization, with sulphidation of the immediate vein selvages (mainly pyrite, less commonly arsenopyrite) (Dubé and Gosselin, 2007).

The main gangue minerals are quartz and carbonate with variable amounts of white micas, chlorite, scheelite and tourmaline. The sulphide minerals typically constitute less than 10% of the mineralized material. The main minerals are native gold with pyrite, pyrrhotite and chalcopyrite without significant vertical zoning. The mineralization is syn- to late-deformation and typically post-peak greenschist-facies or syn-peak amphibolite-facies metamorphism (Dubé and Gosselin, 2007).

There is a general consensus that the greenstone-hosted quartz-carbonate vein deposits are related to metamorphic fluids from accretionary processes and generated by prograde metamorphism and thermal re-equilibration of subducted volcano-sedimentary terranes. The deep-seated gold transporting metamorphic fluid has been channelled to higher crustal levels through major crustal faults or deformation zones. Along its pathway, the fluid has dissolved various components, notably gold, from volcano-sedimentary packages, including a potential gold-rich precursor. The fluid is then precipitated as vein material or wall rock replacement in second and third order structures at higher crustal levels through fluid pressure cycling processes and temperature, pH and other physico-chemical variations (Dubé and Gosselin, 2007).

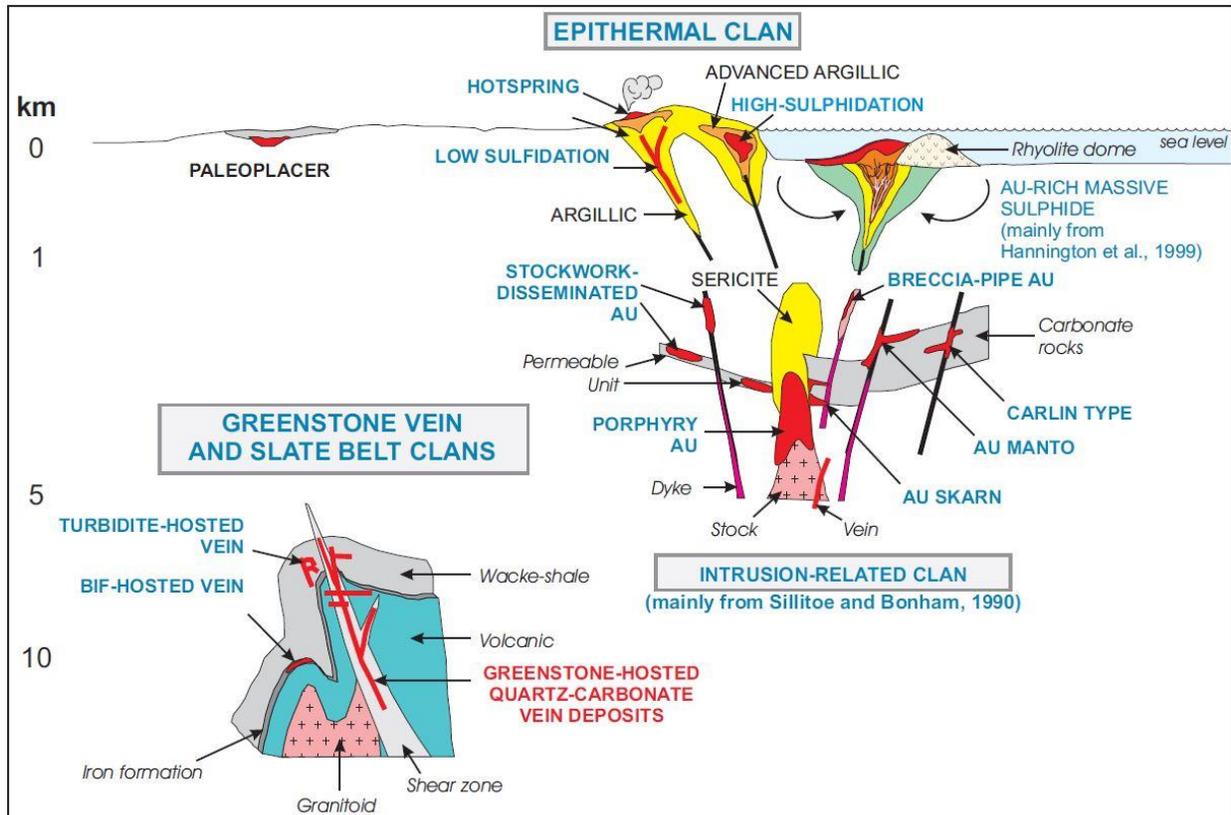


Figure 8-1: Inferred crustal levels of gold deposition showing the different types of gold deposits and the inferred deposit clan (from Dubé et al., 2001; modified from Poulsen et al., 2000)

8.2 Gold Mineralization in the Val-d'Or District

The following is taken from Couture et al., (1994), who published a detailed description and chronology of the Archean greenstone-hosted quartz carbonate vein of the Val-d'Or district.

Gold mineralization occurs in all rock types but is more commonly located within intrusive bodies that acted as competent rock units promoting fracture during deformation. In the Val-d'Or district, there are two main generations of gold quartz veins: young deposits in which the gold mineralization did not experience much deformation after its emplacement; and early mineralization in which mineralized bodies are commonly affected by D₂ asymmetric folds, are highly strained and locally dismembered. In a few deposits both generations are present.

At least two major gold mineralizing events have been recognized in the Val-d'Or district on the basis of morphological and structural features, mineralization and alteration mineral assemblages, and crosscutting relationships with dated intrusive rocks (Robert, 1990a, 1990b, 1994; Sauvé et al., 1993; Couture et al., 1994). The older mineralizing event is manifested by veins and breccias (e.g., Norlartic, Marban, Kiena mines, and Main mineralized zone at Siscoe mine) that are mainly associated with second-order shear zones and commonly folded or boudinaged by D1 deformation. These veins and breccias are cut by diorite and tonalite dykes, which have U-Pb zircon ages of 2692 ± 2 (Pilote et al., 1993) and 2686 ± 2 Ma (Morasse et al., 1995). The younger gold event, which produced the Sigma, Lamaque, Perron-Beaufor, Shawkey, Wesdome and Camflo deposits, as well as the C Vein (quartz-tourmaline) at the Siscoe mine, is represented by veins commonly associated with third-order shear zones. These veins clearly crosscut plutonic rocks intruded between 2694 ± 2 Ma (Wong et al., 1991) and 2680 ± 6 Ma (Jemielita et al., 1990), and they may have formed during the last stages of D1 deformation.

Young gold mineralization is characterized by networks of shear-hosted quartz-carbonate±tourmaline±scheelite veins and associated subhorizontal extension veins. This is well documented at the Sigma mine and also occurs in other deposits east of Val-d'Or, namely Lamaque, Perron, and L.C. Béliveau. Mineralized veins and associated structures crosscut all rock types except Proterozoic dykes. In the Sigma deposit (Robert and Brown, 1986) the gold-bearing quartz-tourmaline vein system is hosted by andesite of the Val-d'Or domain (2705 ± 1 Ma, Wong et al., 1991; 2706 ± 3 Ma, Machado et al., 1991), porphyritic diorite, and feldspar porphyries (2704 ± 3 Ma and 2694 ± 2 Ma, respectively, Wong et al., 1991) metamorphosed to greenschist facies. The porphyritic diorite is deformed, but feldspar porphyry dykes cut D₂ folds and thus postdate regional D₂ folding (Robert and Brown, 1986). The vein network consists of coeval and cogenetic steeply dipping shear-hosted veins and sub-horizontal extensional veins (Robert and Brown, 1986; Figure 8-2). Preserved delicate vein-filling textures and crosscutting relationship indicate that gold mineralization postdates the youngest intrusion as well as metamorphism and much of the deformation (Robert and Brown, 1986). Rutile associated with the mineralization has been dated by U-Pb at 2599 ± 9 Ma (Wong et al., 1991). Similar vein geometry and morphology were also described in the Lamaque mine (Daigneault, 1983), where most of the mineralization is hosted by small circular tonalite plugs crosscutting porphyry intrusion similar to that of Sigma. Jemielita et al. (1990) reported U-Pb ages of 2685 ± 3 and 2682 ± 2 Ma for the Lamaque Main tonalite plug and 2593 ± 5 Ma for rutile associated with gold mineralization. Similar age relationships can be inferred from structural studies at the Perron and Béliveau mines (Tessier, 1990; Gaumond, 1986, respectively). West of Val-d'Or, significant gold was extracted from the post-D₂ Camflo quartz monzonite dated at 2680 ± 6 Ma (Jemielita et al., 1990) and 2685 ± 10 Ma (Zweng et al., 1993), whereas titanite and rutile, associated with the gold mineralization, yield ages of 2625 ± 7 Ma (Jemielita et al., 1990) and 2621 Ma (Zweng et al., 1993).

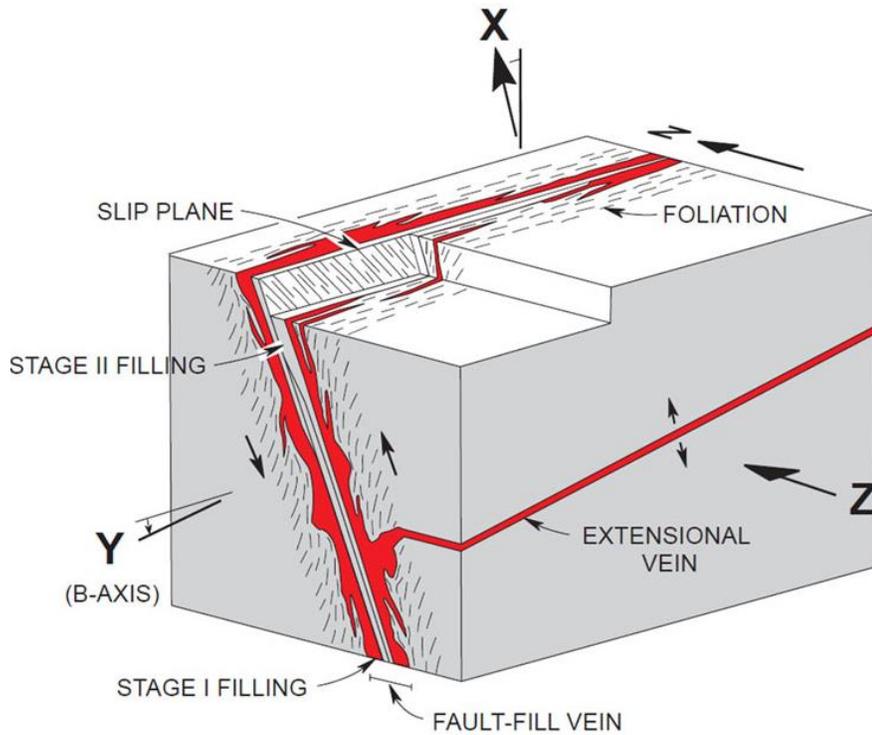


Figure 8-2: Schematic diagram of the geometric relationships between the structural elements of veins and shear zones and the deposit-scale strain axes (Robert, 1990; Modified after Dubé and Gosselin, 2007)

9. EXPLORATION

This chapter presents the exploration work performed by Wesdome on the Project since November 2018.

9.1 Surface Exploration

No surface exploration work has been carried out.

9.2 Underground Exploration

In August 2017, Wesdome developed an exploration ramp to provide additional underground drilling platforms. The exploration ramp allowed shorter holes to be drilled with better angles and accelerated access to the Kiena Deep zones.

Ramp development started at the 100 level. The CMAC-THYSSEN Mining Group Inc. was contracted to perform the underground development. The first drilling bay was completed in October 2017 and diamond drilling began on the Kiena Deep Zone.

From August 2017 to November 2018, a total development of 2.2 linear kilometres allowed diamond drilling to be done from a more optimal direction (i.e., to the northwest) to intersect the steeply plunging zone to the southeast and provide drilling platforms that allowed definition drilling in the central area of the Kiena Deep A Zone. The enhanced drill platforms also made it easier to drill several step-out exploration holes.

Since the latest technical report in December 2018, development has continued with a new exploration ramp on level 79. A total of 153 m was excavated in this ramp as of the end of September 2019.

10. DRILLING

This chapter presents the drilling program carried out by Wesdome between October 12, 2018 and August 6, 2019 (the “2018-2019 Program”) on the Kiena Mine Complex.

10.1 Drilling Methodology

The underground drilling program was performed by Forage Orbit Garant Inc. (Orbit-Garant). Drilling was conducted with NQ caliber (47.6 mm core diameter) and telescoped with BQ caliber when rock quality was poor (i.e., faults, shears, schist). Electric diamond drill rigs were used, starting with four rigs in October 2018 and increasing to a total of five rigs in November 2018. The drill types and models were as follows:

- One YU1800 (125 hp): max 1,200 m (NQ); max 1,600 m (BQ);
- One YU1200 (100 hp): max 750 m (NQ); max 1,000 m (BQ);
- One YU615 (100 hp): max 400 m (NQ); max 600 m (BQ);
- Two B15 rigs (100 hp): max 450 m (NQ); max 650 m (BQ).

Every hole was drilled with maximum stabilization using two hexagonal core barrels and a 36" shell until reaching the schistose unit.

10.1.1 Drillhole Location/Set-up

Diamond drillholes for the 2018-2019 Program were planned using vertical cross-sections and plan views with the aim of improving the accuracy of the interception angle in mineralized zones.

The coordinate system in use was a Local Mine Grid.

The software used were GeoticGraph, AutoCad and Promine. Hole collars were implanted by a surveyor who drew a line between the front side spad and a backside spad. The drillers aligned themselves according to the line and started the hole at the most suitable place. After drilling, collars were initially surveyed by contract surveyors, and later by a Wesdome technician. Collar azimuth and dip were measured when possible.

10.1.2 Drillhole Orientation during Operation

The drillhole orientation is checked and monitored using a down hole surveying device as follows:

- REFLEX EZ-Trac instrument is used to conduct deviation surveys. Single-shot measurements are taken every 50 m until reaching the schistose unit, at which point the stabilization tools are removed;
- Multi-shot measurements are taken at every 3 m while the rods are pulled out;

- If ground conditions in the schistose area are deemed acceptable, single-shot measurements are resumed;
- At the end of the hole, a final multi-shot survey is performed with measurements every 3 m while the rods are pulled out until reaching the end of the first multi-shot survey or the beginning of the schist.

The REFLEX instrument is handled by the drilling contractor who transfers the multi-shot data to the Wesdome geology department. The single-shot data is transcribed and provided in paper format to Wesdome geologists.

10.1.3 Drilling

Recovered drill cores by the drilling contractor are in NQ and BQ size. Drillholes are generally started in NQ caliber in mafic rocks. When the drillhole reaches the komatiites, schists or a major fault, BQ caliber is used, otherwise NQ rods get stuck at the bottom of the hole. The core is collected in a standard drilling tube and the driller's helper carefully places the core into wooden core boxes at the drill rig. He/she also marks the depth (m) after each 3 m runs with wooden blocks and wraps the boxes with tape once it is full. Core trays are numbered with a permanent marker indicating the drillhole number and the sequential box number.

Generally, the drillhole is abandoned in the komatiites or schists. Occasionally, it is possible to pierce and stop the drillhole in the mafic units; if this occurs, the drillhole is terminated by the geologist.

Once the drillhole is terminated and the final downhole survey reading is collected, the drill crew pulls the rods for mobilization to the next drill site. Every hole is systematically grouted with cement. The collars of underground holes are identified by a conical plug with a metal tag displaying the hole number. Sometimes it is not possible to complete the multi-shot survey due to the rock and structures encountered (faults, high fracturing, etc.).

10.1.4 Core Logging and Measurement

In the core shack, Wesdome employees remove the tape and place the boxes on the logging tables. The geologists rotate the core so that all pieces are fitted together, showing a cross-sectional view. They verify that distances are correctly indicated on the wooden blocks placed every 3 m. The core is then measured and the boxes are labelled.

Wesdome geologists log and record the data using GeoticLog software. Lithologies (principal and secondary), alteration, mineralization, veins, structures, magnetism, samples and assay results are compiled in the database.

10.1.4.1 Core Recovery

The core recovery is calculated by measurement in centimetres of core in the core tray divided by the centimetres claimed to be drilled on the meterage blocks. This number multiplied by 100 is recorded as percent recovery. Core recovery is recorded for each drill run. Specific areas of loss are noted, if possible, and marked by placement of a wooden marker and the estimated loss. The ideal core recovery is 100%; however, it is not always possible due to ground conditions or sometimes loss of drill core during the coring process, e.g., grinding, etc. For the 2018-2019 Program, the average core recovery is 98%.

10.1.4.2 Rock Quality Designation (RQD)

The rock quality designation is designed to give qualitative and quantitative information on the stability of rock surrounding and included in mineralized material. This information is used to determine the mineability and rock control procedures that will be required to extract the mineralized material.

RQD is a quantitative index of rock quality based on a core recovery procedure in which the core recovery is determined by incorporating only those pieces of hard, solid core longer than twice the diameter of the core. For NQ core, the nominal diameter is 5 cm, so the length index is 10 cm; shorter lengths of core are ignored. RQD is determined for each core run as these are the only definitively known distance markers. RQD is determined using the following formula for each core run:

$$RQD (\%) = 100 \times \frac{\text{the sum of the length of the core pieces equal to or longer than 10 cm}}{\text{Core run length}}$$

It is important to distinguish between mechanical breaks and natural breaks identified in the core.

RQD is valid for solid core only and should not be used for very poorly disaggregated materials such as highly weathered rock, clays or un-cemented aggregates.

The average RQD for the 2018-2019 Program is 81% based on 13,401 measurements.

10.1.5 Core Photography

Once logged by the geologist, all drill core is photographed wet, four boxes at a time. The objective of core photos is to have a digital image recorded with sufficient details to clearly see core features prior to destructive sampling procedures. This record can be used later to qualify rock quality features and to examine core images against geological logging if the core is unavailable for examination. The photos are also used, as required, during the construction of geological sections.

Once the core is photographed, it is assigned to the core saw operator for splitting and sampling.

10.1.6 Core Storage

After the sampling process, the core boxes are stored under roofed racks in the outdoor core storage area, which is enclosed with secure fencing. Every box is labelled with an aluminum tag displaying the hole number, the box number and the From-To meterage. An Excel spreadsheet serves as an inventory of box location in the core storage area.

10.2 Recent Diamond Drilling

As of August 6, 2019 (closeout date of the MRE database), Wesdome has completed 140 new diamond drillholes (DDH) during the 2018-2019 campaign on the Property for a total of 36,050 m (Table 10-1). Of these 140 new drillholes (Appendix B), 66 are in Kiena Deep A Zones, resulting in the inclusion of an additional 18,365 m of drill data (Figure 10-1). At the effective date of this Report, Wesdome had completed an additional 50 DDH for 14,405 m that are not included in the herein MRE (Appendix B).

Since October 2018, the close out date for the December 2018 MRE, five underground drill rigs have continued to operate in order to verify the up-plunge extension (VC6 and VC1 zones), test the down dip extension, and perform infill drilling in the Kiena Deep A Zones. Underground drill rigs were active at level 67 (one drill rig) and in the new exploration ramp (four drill rigs).

Table 10-1: Summary of the drilling completed on the Property during the 2018-2019 Program (Included in this MRE)

Year	Drillholes count	Total length (m)
2018-2019	140	36,050

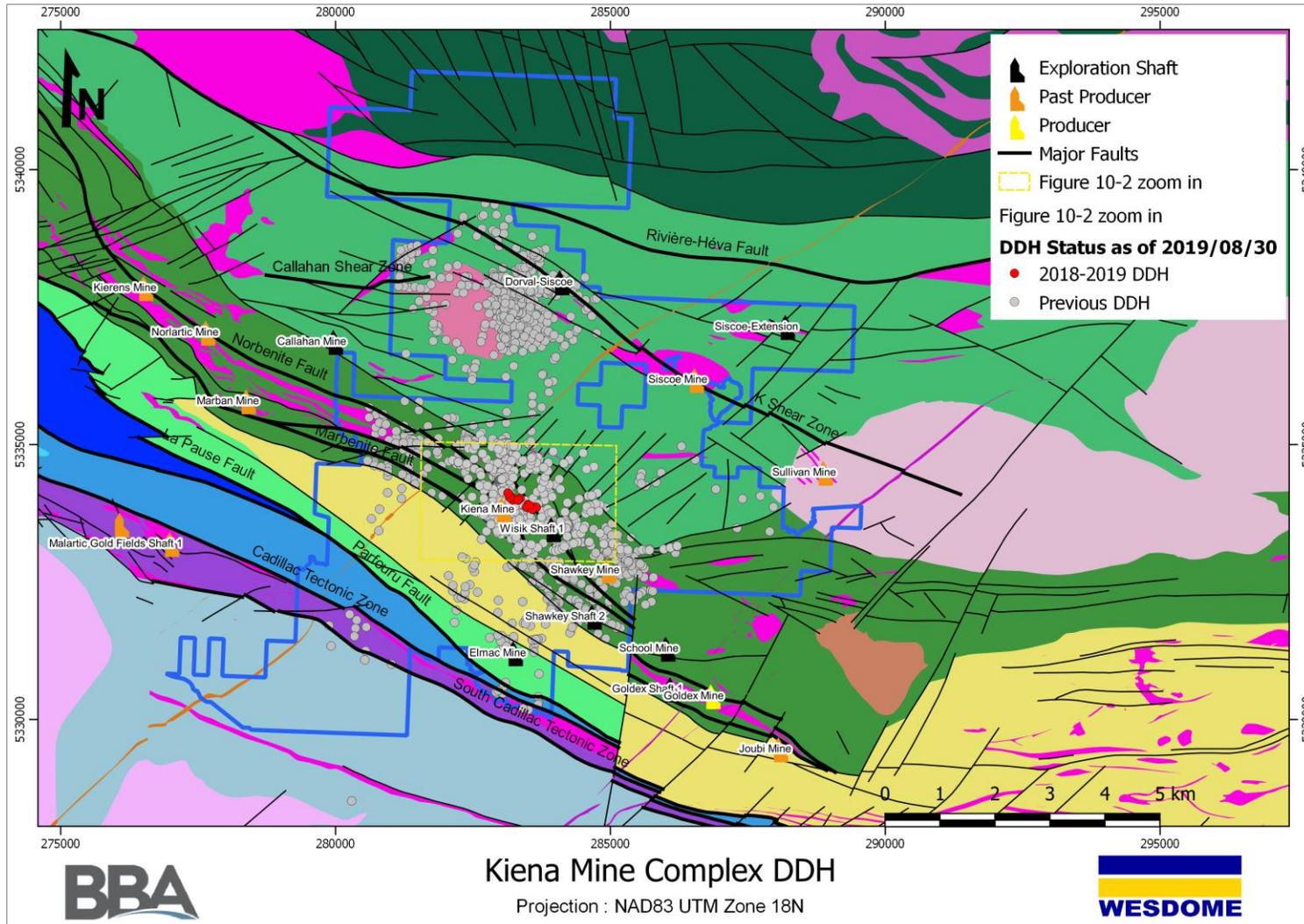


Figure 10-1: Location of drillholes throughout the property with their status

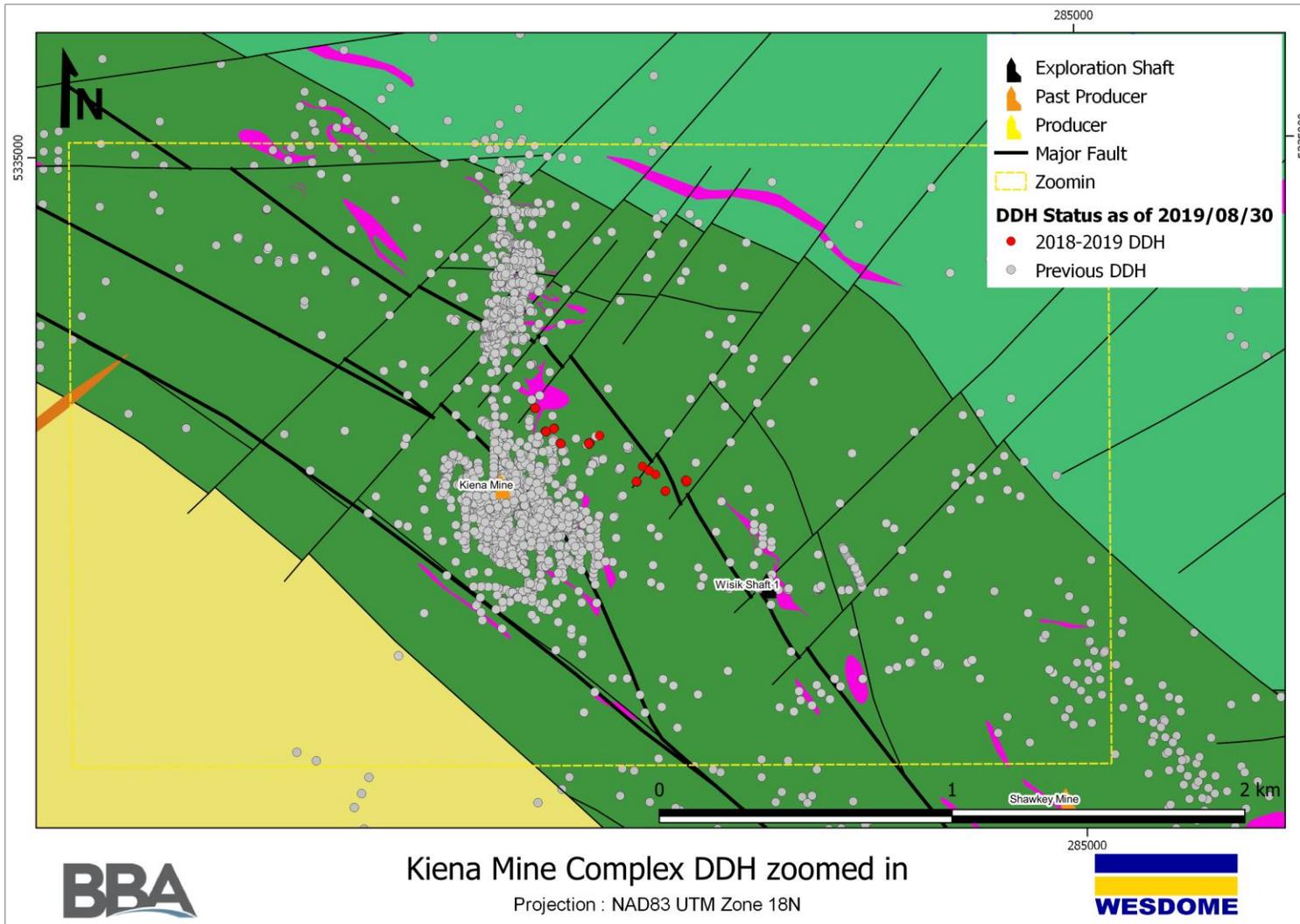


Figure 10-2: Kiena Mine Complex diamond drillhole locations, close-up view of the 2019 MRE zone

11. SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Wesdome Data

The origin of Wesdome Gold Mines on the property can be traced to Western Quebec Mines Inc., incorporated in 1945 when developing the Dorval-Siscoe property. Commercial production started in 2006 and temporary shutdown was done on June 30, 2013.

11.1.1 Core Handling, Sampling and Security

The drill core is boxed and sealed at the drill rigs and transported by the drillers to the underground station and brought to surface via the service cage at the end of each shift. A technician from Wesdome takes over the core handling and brings it to the core shack. After being logged and sampled, individual sample bags are placed in rice bags along with the list of samples. QA/QC samples are prepared and bagged ahead of time by Wesdome personnel and are batched at the core shack following the geologist's instructions. Batches have been shipped daily to the ALS Global labs facility in Val-d'Or, Québec since December 7, 2018. Batches and shipments contain variable numbers of samples. During the period of October 2018 to January 2019 samples were also shipped to Actlabs in Val-d'Or.

11.1.1.1 Gold Assays Samples

To create representative and homogenous samples, sampling honours lithological contacts, i.e., no sample crossed a major lithological boundary, alteration boundary or mineralization boundary.

Sampling intervals are determined by the geologist during logging and marked on the core boxes or on the core itself using coloured lumber pencils with a line drawn at right angles to the core axis. Sample lengths typically range from 0.5 m to 1.50 m with a preferred length of 1.0 m for the mineralized zones. The sampled core is considered representative. Two shoulder samples, each having a sample length of approximately 1.0 m to 1.5 m, are collected from the non-mineralized core above and below the mineralized intervals.

Samples are numbered in consecutive order utilizing sample tag books containing numerical sequences of 50 pre-labeled triplicate water durable sample tags (three tags per sheet). The first of the tags remained with the sample tag book as an archival record of the samples' parameters. The second tag is used to indicate the position of the sample in the core box. This is a permanent sample reference that will remain on the wooden core box. The third and last tag is inserted inside the sample bag. From each sample sheet, the last two tags are separated from the page and tucked under the core at the beginning of each sample by the geologist.

The sample sequence includes blank samples, duplicate samples and Certified Reference Materials (CRMs) that are inserted into the sample stream using sample numbers that are in sequence with the core samples. A CRMs sample, consisting of material of known metal content and internationally recognized and verified, is included in the sample sequence by the trained core sampler. A “blank” sample is material technically devoid of any metals. Blanks and CRMs are stored in a designated secure area in the core shack. There is never any written reference to the location of any control samples on sample bags, sample tags or dispatch documentation for the assay lab.

Once logged and labelled, the core of each selected interval is sawed in half using a typical table-feed circular rock saw. The core saw operator, trained in core cutting procedures, executes the core cutting at the Wesdome core shack. The logging geologist has already clearly marked out all pertinent cores for cutting and sampling. The core is sawn in half, along its length, with a diamond saw. One half (consistently from the same half of the split core) is put into the plastic sample bag and the other half is retained and kept in the core box for later reference. The paired sample tags are then torn with one tag stapled to the core box at the start of its sample interval and the other tag placed into the sample bag with the core sample. When cutting, the core saw operator looks for visible gold inside the veins and reports it to the geologist when positively observed.

The sample tag number is also written on the outside of the sample bag using a permanent marker. The bag will then be closed using a zip tie and stored in sequence prior to sample dispatch preparation. Sample bags are packed in large ‘rice’ bags sealed with a zip tie that is ‘broken’ or opened at the assay laboratories only.

The range of sample numbers inside the bag is written on the rice bag. The sealed rice bags are stored in the core shack in Val-d’Or until shipping to the laboratories. For the 2018 to 2019 drilling campaigns, the samples were transported by a Wesdome employee to Actlabs and ALS Global labs in Val-d’Or, where the samples were prepared and processed.

11.1.1.2 Core Density Samples

New specific gravity (SG) test were conducted on 37 samples. SG was measured by water displacement method at the ALS laboratory using the OA-GRA08 ALS method (see method below).

About 0.10 m to 0.20 m of core was selected for each density measurement. The dry mass was measured followed by the submerged mass. Both measurements were recorded and the density was measured using the following formula:

$$\text{Specific Gravity} = \frac{Mass_{Dry\ in\ air}}{(Mass_{Dry\ in\ air} - Mass_{Submerged\ in\ water})}$$

11.1.2 Methods of Preparation, Processing and Analysis

11.1.2.1 Lab Accreditation and Certification

ALS and Techni-Lab (now Actlabs) have the ISO/IEC 17025:2005 accreditation through the ALA (Canadian Association for Laboratory Accreditation Inc.) They are both independent commercial laboratories.

11.1.2.2 ALS Sample Analysis Procedure

At ALS laboratories, samples are sorted, bar-coded and logged into the ALS Webtrieve program. Damaged samples are documented and Wesdome personnel are informed. Samples are dried to constant weight and weighted (WEI-21). The sample is then crushed to P₇₀ 2,000 µm (CRU-31). A split is collected using a riffle splitter (SPL-21) and a reject duplicate split is prepared from that original sample (SPL-21d). A pulverization split of 250 g is then prepared for both the original and duplicate split (PUL-31; PUL-31d) at P₈₅ 75 µm. A pulp duplicate is also prepared from the original sample (SPL-34). When a metallic sieve analysis is conducted (Au-SCR21), a pulverization of 1,000 g P₉₅ 106 µm is done (PUL-35a).

Samples are then analyzed by fire assay (FA) with atomic absorption (AA) spectroscopy from 30 g pulps (Au-AA23). The lower detection limit is 0.005 g/t. When assay results are higher than 3 g/t, the sample is re-assayed with a gravimetric finish (Au-GRAV21) on a 30 g pulp. If results are higher than 10 g/t, gravimetric finish is done and the Metallic sieve method (Au-SCR21) is also conducted. In this case, 1,000 g is pulverized and screened to 100 µm. Duplicate assay is done on screen undersize and the entire oversize fraction is assayed.

Results are provided through a secure server and downloaded, by the geologist in charge of the project, in Excel format and the official certificate (sealed and signed) in PDF format.

As part of ALS internal quality control program, four QA/QC samples are inserted by ALS per batch of 24 samples (one blank, two standards and one pulp duplicate). A method blank and certified reference material is applied and reported for each furnace load to monitor the fire assay process. A duplicate crushed sample is drawn at random and assayed for each work order to monitor precision.

11.1.2.3 Actlabs Sample Analysis Procedure

Once the samples are received at the Actlabs facility, they are sorted, bar-coded and logged into the Actlabs LIMS program. Damaged samples are documented and Wesdome personnel are informed with photographs. Samples are dried at 60°C, crushed to P₈₀ passing 10 mesh, and split into 250 g to 300 g using a Jones riffle splitter. The sub-sample is pulverized to P₈₀ passing 200 mesh. Samples are analyzed by FS with AA spectroscopy from 30 g pulps. The lower detection limit is 0.01 g/t. When assay results are higher than 3 g/t Au but lower than 10 g/t Au, core sample pulps are re-assayed by FA with gravimetric finish, while sample results higher than 10 g/t Au are rerun with the metallic sieve (MS) method. In this case, 350 g is pulverized and assayed.

Results are provided through a secure server and downloaded, by the geologist in charge of the project, in Excel format and the official certificate (sealed and signed) in PDF format. As part of Actlabs internal quality control program, four QA/QC samples are inserted by Actlabs per batch of 24 samples (one blank, two standards and one pulp duplicate).

11.1.3 Sample Shipping and Security

The following procedures are applied to ensure a safe and secure management of materials and data as it pertains to core samples at the Kiena Mine Complex:

- All core samples submitted for preparation and analysis to the laboratories are secured in rice bags with zip ties and collected directly at the core shack by the laboratory under the supervision of a member of Kiena's team;
- The lab is notified by email that the samples are en route and is instructed to notify Kiena's geologists when the samples arrive at the prep lab;
- The sample shipment contains a sample submittal form as well as a sample dispatch list detailing the security tag number, rice bag number and the number of samples contained in each rice bag;
- The sample submittal form and sample dispatch list are electronically transmitted to the laboratories once the shipment has left the core shack;
- Samples are sent to:

Actlabs	ALS
1960, 3e avenue	1324, rue Turcotte
Val-d'Or, QC J9P 7B2, Canada	Val-d'Or, Qc, J9P 3X6
- Results are downloaded by Bruno Turcotte, Senior Project Geologist for Wesdome, via a secure server, as Excel files;
- QA/QC data is evaluated before the samples are integrated into a master database;

- The core boxes are stored under roofed racks in the outdoor core storage area enclosed by secure fencing. The exact location of each hole in the outdoor core library is recorded in an Excel spreadsheet for future reference;
- The sample pulps and rejects are stored at the Kiena Mine Complex.

11.2 Quality Assurance and Quality Control (QA/QC)

Canadian National Instrument 43-101 (NI 43-101) Standards of Disclosure for Mineral Projects requires mining companies reporting results in Canada to comply with the CIM Best Practice Guidelines. The guidelines describe the elements required in the reports, but do not provide guidance for Quality Assurance and Quality Control (QA/QC) programs.

QA/QC programs have two components: Quality Assurance (QA) deals with the prevention of problems using established procedures, while Quality Control (QC) aims to detect problems, assess them and take corrective actions. QA/QC programs are implemented, overseen and reported on by a Qualified Person (QP) as defined by NI 43-101.

QA programs should be rigorous, applied to all types and stages of data acquisition and include written protocols for: sample location, logging and core handling; sampling procedures; laboratories and analysis; data management; and reporting.

QC programs are designed to assess the quality of analytical results for accuracy, precision and bias.

The materials conventionally used in mineral exploration QC programs include standards, blanks and duplicates. Definitions of these materials are presented hereunder:

- **Standards** are samples of known composition that are inserted into sample batches to independently test the accuracy of an analytical procedure. They are acquired from a known and trusted commercial source. Standards are selected to fit the grade distribution identified in the Kiena mineralization;
- **Blanks** consist of material that is predetermined to be free of elements of economic interest to monitor for potential sample contamination during analytical procedures at the laboratory;
- **Duplicates** are samples submitted to assess both assay precision (repeatability) and to assess the homogeneity of mineralization. Duplicates can be submitted from all stages of sample preparation with the expectation that better precision is demonstrated by duplicates further along in the preparation process;

As per NI 43-101, quality control samples were inserted into the sample batches sent to the laboratory. Inserts included pulp duplicate samples, blank samples and standards.

Table 11-1 summarizes the QA/QC samples submitted to the laboratories along with routine drill core samples.

Table 11-1: Samples submitted to the laboratories for analysis during the 2018 to 2019 drilling campaigns

Type of sample	Quantity	%
Primary drill core samples	22,614	77.9
Field blanks	1,823	6.3
CRM	1,757	6.0
Coarse duplicates	1,007	3.5
Pulp duplicates	1,830	6.3
TOTAL	29,031	100

11.2.1 Duplicates

Duplicate samples are submitted to assess both assay precision (repeatability) and to assess the homogeneity of mineralization.

Coarse duplicates consist of second splits of crushed material. This material will then need to be pulverized.

Pulp duplicates consist of second splits of prepared samples ready to be analyzed and are indicators of analytical precision, which may also be affected by the quality of pulverization and homogenization.

As part of the Wesdome QA/QC program, the laboratory assayed one coarse duplicate for every 20 samples. Coarse duplicate started within the first batch of samples sent to ALS. The QA/QC program also included one pulp duplicate for every 20 samples. Figure 11-1, Figure 11-2 and Figure 11-3 show the scatterplots of the various duplicate for each laboratory. The correlation coefficient varies from 90.5% to 94.0%. The results show relatively good reproducibility,

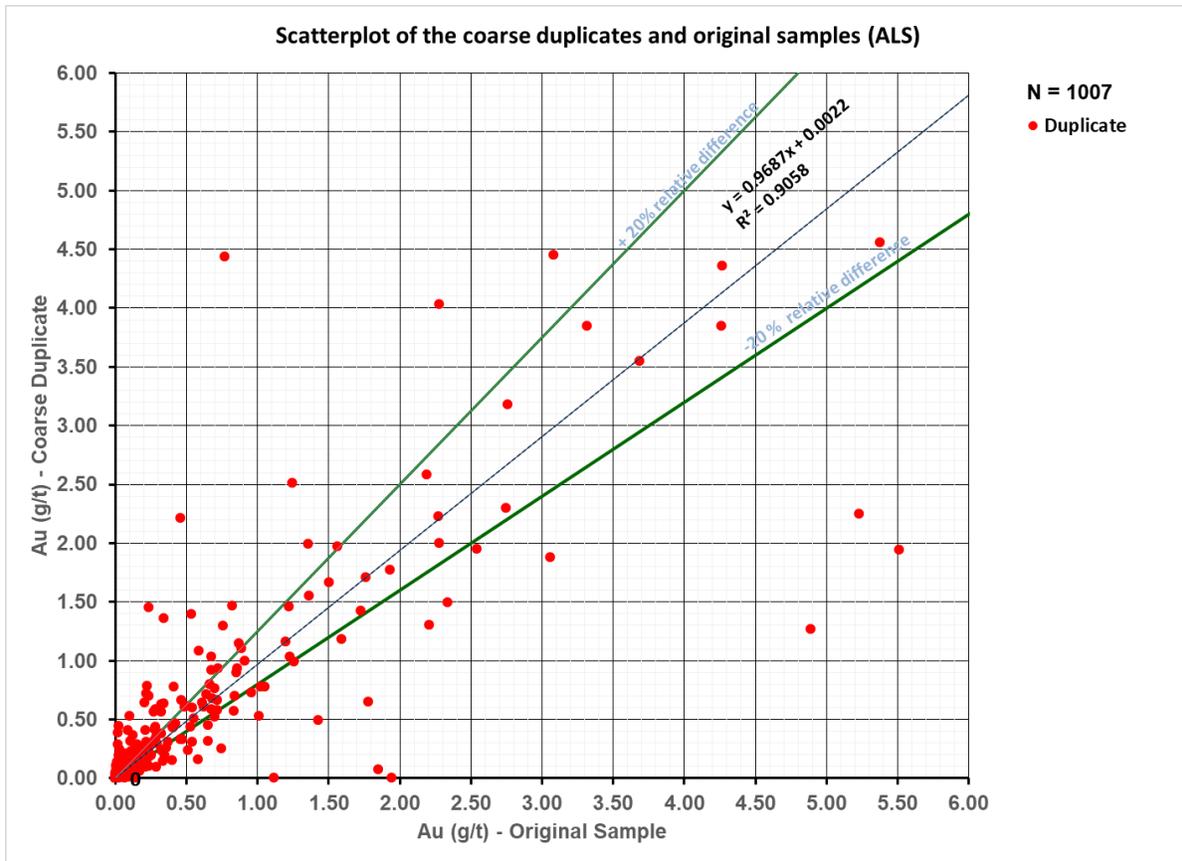


Figure 11-1: Zoomed in scatterplot with linear trend of the coarse duplicates and original samples' results from ALS for the 2018-2019 drilling program (n=1007)
 (Two higher grade samples are not shown on the scatterplot)

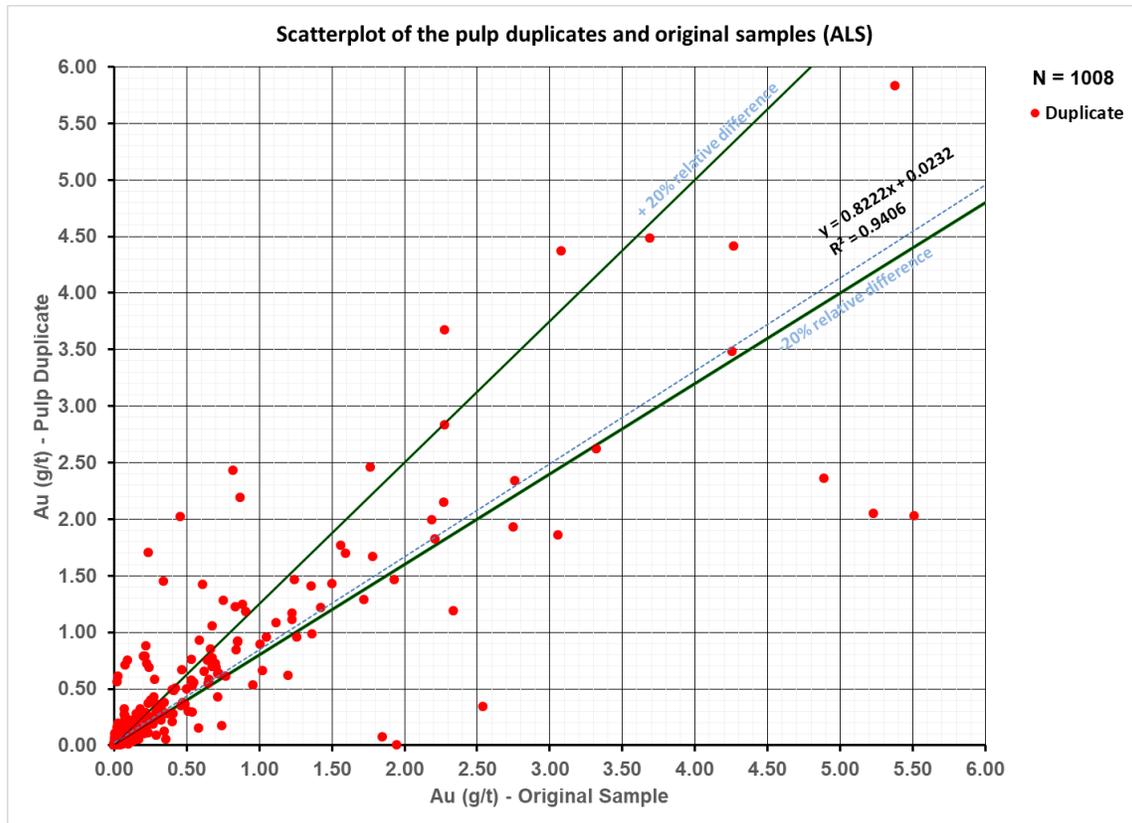


Figure 11-2: Zoomed in scatterplot with linear trend of the pulp duplicates and original samples results from ALS for the 2018-2019 drilling program (n=1008)
(Three higher grade samples are not shown on the scatterplot)

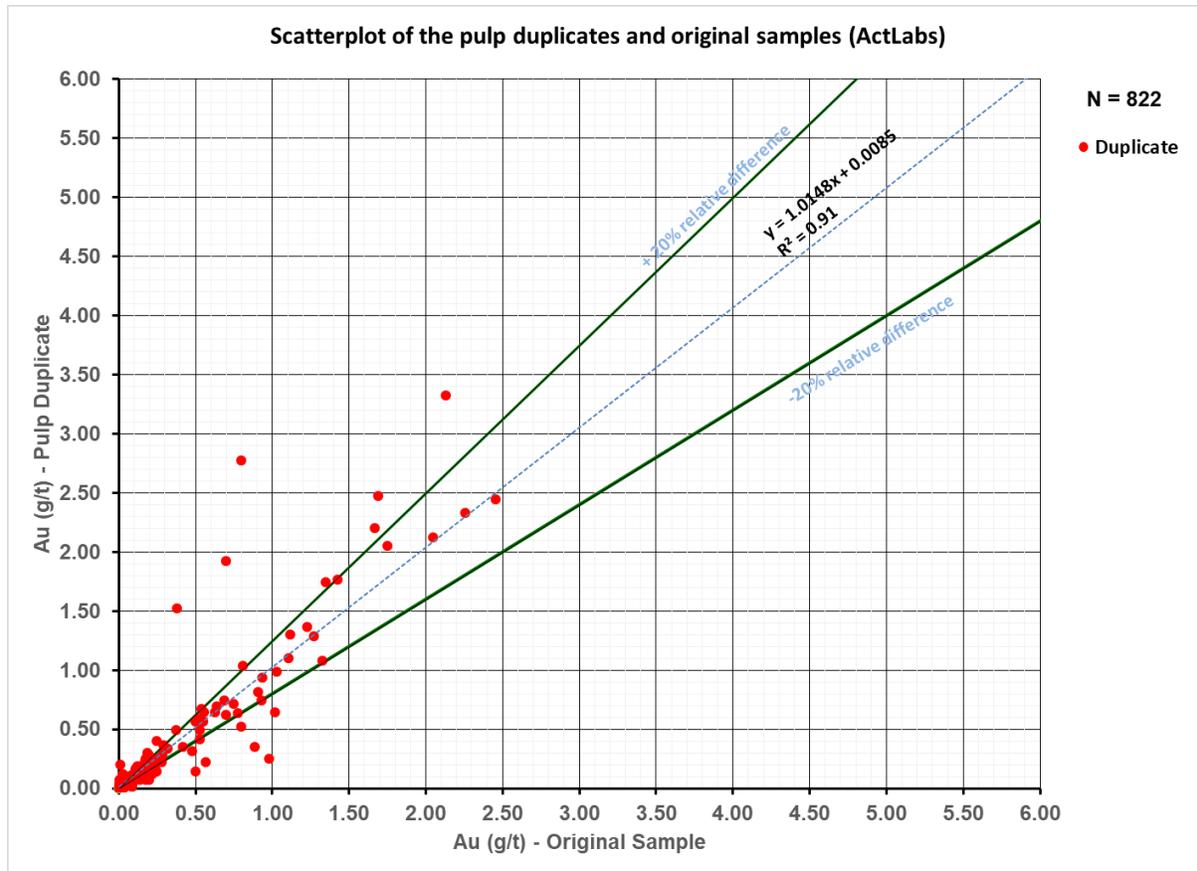


Figure 11-3: Zoomed in scatterplot with linear trend of the pulp duplicates and original samples' results from Actlabs for the 2018-2019 drilling program (n=822)
 (Three higher grade samples are not shown on the scatterplot)

11.2.2 Blanks

Blanks are used to monitor for potential sample contamination that may take place during sample preparation and/or assaying procedures at the laboratory. Sample of barren crushed white marble (blank) were used by Wesdome.

One blank sample was inserted for every 20 samples. According to Wesdome's QA/QC protocol, if any blank yields a gold value above 0.1 g/t Au, all samples from the 20 samples batch should be reanalyzed. From the 1,823 blank analysis, four blank samples failed the protocol, which represents 0.2%. Figure 11-4 shows the results of the blank material used during the 2018-2019 Program on the Project.

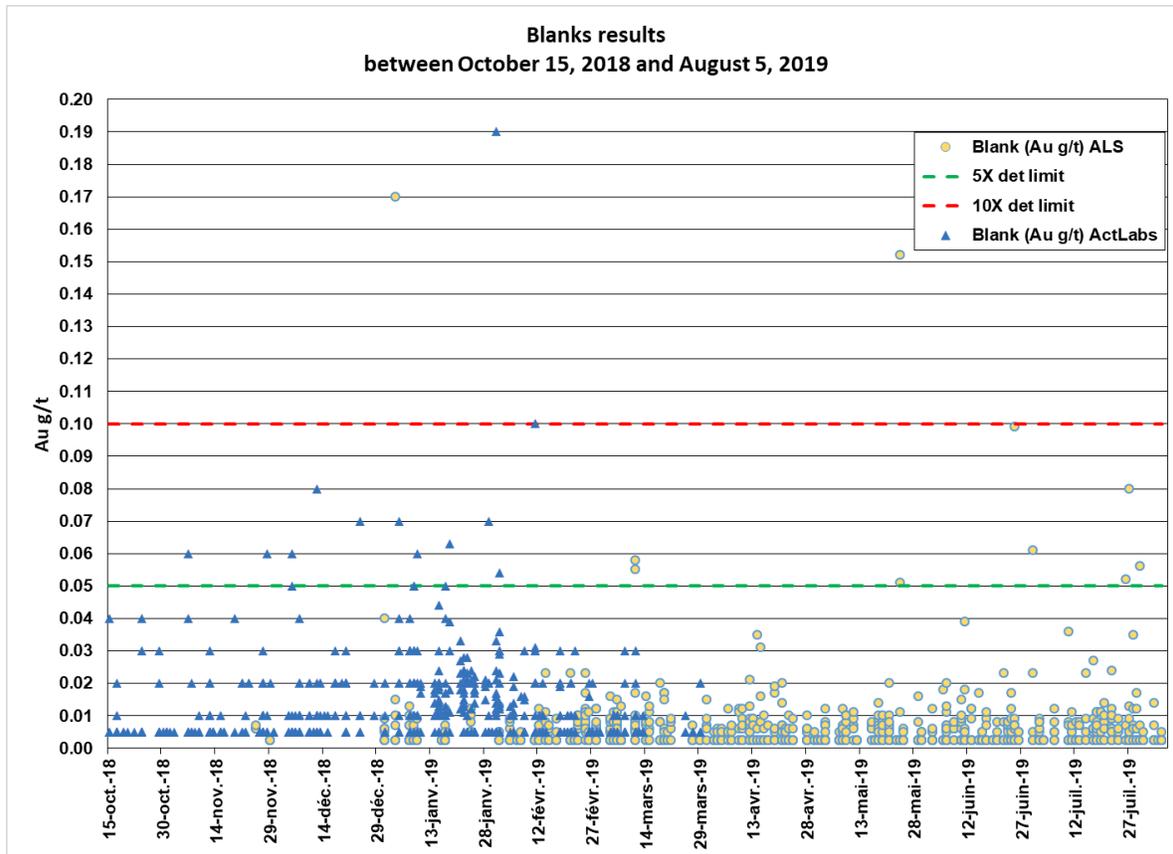


Figure 11-4: Results for blanks used by Wesdome during the 2018-2019 drilling program. Detection limit for Actlabs was 0.01 g/t and for ALS 0.005 (g/t) (802 samples assayed by Actlabs and 1,021 samples assayed by ALS, both by fire assay with atomic absorption finish)

Generally, the blank can indicate contamination at the laboratories. The re-assay of one batch was requested following a failure for sample Y703875. ALS laboratory was called and explanations were asked. Following the re-assay, the conclusion showed that the inversion of a sample tag was probably the cause of the failure.

11.2.3 Certified Reference Materials (Standards)

Accuracy and precision are monitored by the insertion of Certified Reference Materials (CRMs). A suite of commercially available CRMs are used on the Project. One sample was inserted for every 20 samples. Table 11-2 shows the CRMs used for the 2018-2019 Program.

Table 11-2: Standard reference materials used at the Kiena Mine Complex during the 2018-2019 drilling campaign

Standard (CRM)	Method	Laboratory	Certified gold value (g/t)	Quantity inserted	Mean grade (Au g/t) w/o gross outliers	Lower process limit (mean - 3SD)	Upper process limit (mean + 3SD)	Failed (outliers)	Gross outliers	(%) passing QC
SJ80	AA	ALS	2.656	284	2.580	2.485	2.827	30	5	89.4
SJ80	AA	Techni-Lab	2.656	267	2.603	2.485	2.827	22	0	91.8
SK94	AA	ALS	3.899	243	3.793	3.647	4.151	22	2	90.9
SK94	AA	Techni-Lab	3.899	254	3.895	3.647	4.151	13	0	94.9
SL76	AA	ALS	5.960	353	5.790	5.384	6.536	11	5	96.9
SL76	AA	Techni-Lab	5.960	31	5.911	5.384	6.536	0	0	100.0
SN75	AA	ALS	8.671	43	8.105	8.074	9.268	8	0	81.4
SN75	AA	Techni-Lab	8.671	12	8.516	8.074	9.268	1	0	91.7
SJ95	AA	ALS	2.789	50	2.756	2.627	2.951	5	2	90.0
SK109	AA	ALS	4.102	19	4.083	3.850	4.354	0	0	100.0
SN91	AA	ALS	8.679	13	8.365	8.097	9.261	1	0	92.3
SK94	Grav	ALS	3.899	71	3.939	3.647	4.151	22	0	69.0
SL76	Grav	ALS	5.960	93	5.933	5.384	6.536	7	0	92.5
SN75	Grav	ALS	8.671	13	8.450	8.074	9.268	3	0	76.9
SN91	Grav	ALS	8.679	11	8.476	8.097	9.261	1	0	90.9
Total				1,757				146	14	91.7

The selection of the CRMs was based on anticipated cut-off grade and the 10 g/t re-analysis metallic sieve grade.

CRMs were considered failed by Wesdome when a gold result exceeded three standard deviations (± 3 SD) beyond the expected value. If the analytical value exceeded the ± 3 SD control limits, systematic re-assaying was not always requested. For each failed standard, Wesdome QC protocol stipulates that only samples included with mineralized zone material should be reanalyzed. If there is no significant gold result within the batch of 20 samples, no re-assay is ordered. During the 2018-2019 drilling programs, 146 CRMs representing 8.3% failed. Considering the low failure rate, the location of these failed CRMs, and the actions taken when such failures occurred, the QP is of the opinion that the failed CRMs are not material for the purpose of this MRE and show the natural statistical spread in the data.

11.3 Conclusion

Pierre-Luc Richard reviewed the sample preparation, analytical and security procedures, as well as insertion rates and the performance of blanks, standards and duplicates for the 2018-2019 drilling programs, and concluded that the observed failure rates are within expected ranges and that no significant assay biases are present. According to the QP's opinion, the procedure and the quality of the data are adequate to industry standards and support the Mineral Resource Estimate.

12. DATA VERIFICATION

The Mineral Resource Estimate (MRE) in this Report is based on drill data from several eras of drilling on the Kiena Mine Complex that includes holes completed in the 1940s.

For the purpose of this MRE, Pierre-Luc Richard performed a basic verification on the entire Project database. All data was provided by Wesdome in a local mine coordinate system. The database close-out date for the resource estimate is August 6, 2019; data from 6,616 DDH (976,170.3 m) was incorporated in the resource estimate block model area. The last hole included in the database was #6533.

The overall Kiena Project database contains 8,351 diamond drillholes (DDH) at the Report effective date.

12.1 Site Visit

Pierre-Luc Richard, P. Geo., Qualified Person, and Charlotte Athurion, P. Geo., both of BBA visited the Kiena Mine Complex from August 6-8, 2019. The site visit included a visual inspection of historical core and core drilling in progress, a field tour, an underground visit and discussions of the current geological interpretations with Wesdome geologists.

The site visit also included a review of sampling and assays procedures (Figure 12-2), the QA/QC program, downhole survey methodologies, and the descriptions of lithologies, alteration and structures (Figure 12-1).

Pierre-Luc Richard, P. Geo. also visited the site on a few other occasions during the course of the mandate to exchange ideas with the on-site geologists.

Charlotte Athurion, P. Geo., visited the Wesdome office several times during the mandate in order to support Wesdome's geologist with the geological interpretation and modelling.

12.2 Sample Preparation, Analytical, QA/QC and Security Procedures

Wesdome procedures are described in Chapters 10 and 11 of the current Report. Discussions held with on-site geologists confirmed that the procedures were adequately applied.

Pierre-Luc Richard reviewed sections of mineralized core while visiting the Project (Figure 12-1). All core boxes were labelled and properly stored (Figure 12-3). Sample tags were present in the boxes and it was possible to validate sample numbers and confirm the presence of mineralization in witness half-core samples from the mineralized zones.

The historical data used in this MRE was taken before the implementation of the National Instrument NI 43-101. Little information is available about sample preparation, analytical, QA/QC or security procedures. However, it is assumed that exploration activities conducted in the past were in accordance with prevailing industry standards at the time.

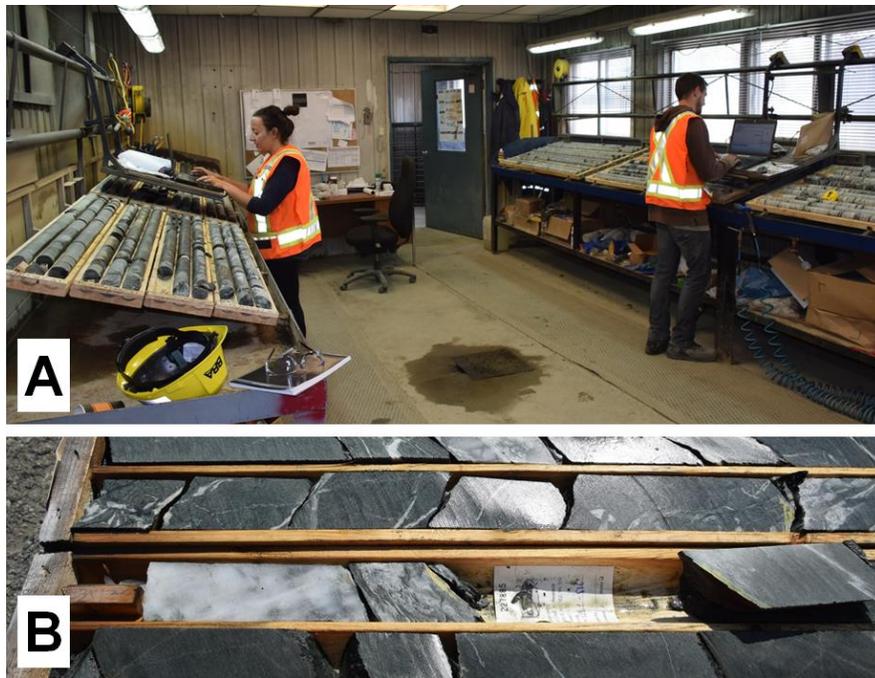


Figure 12-1: Core review in the core logging facility during the August 6-8, 2019 site visit
 A) Core logging facility with Wesdome’s employees describing core;
 B) Core box close-up showing a mineralized interval with associated sample tag



Figure 12-2: Sampling procedures review during the August 6-8, 2019 site visit
 A) Core saw used to sample the core; B) Sample bags after being saw;
 C) Standards used for QA/QC; D) Sample batches ready to be sent to the Laboratory.



Figure 12-3: Storage review during the August 6-8, 2019 site visit
 A) Pulps safely stored on the property; B) Additional pulps and rejects;
 C) Outdoor core storage facility on the property.

12.2.1 Drillhole Location

For drilling conducted between 2018 and 2019, drill collars have been surveyed using a Leica TS16. The Kiena surveyor collar data (Excel spreadsheet) was compared with the collar from the Geotic database for discrepancies. For the historical data, approximately 10% of the drillholes intersecting mineralized zones of this MRE were checked against the historical paper logs.

12.2.2 Downhole Survey

Downhole survey data for the 2018 to 2019 drilling programs were checked for discrepancies. Spurious measurements are tagged by the Wesdome geologist as “false” in the database and are not considered by the software for the modelling. For the historical data, surveys of approximately 10% of the drillholes intersecting mineralized zones of the MRE were checked against the historical paper logs at the Kiena Mine Complex.

12.2.3 Assays

Clovis Auger, P. Geo., from BBA was granted access to the original assay certificates directly from ALS for all holes drilled by Wesdome (2018-2019 Program) on the Project. The original logs and the assay certificates for the historical DDH were also available at the Kiena Mine Complex office. All the assays results from ALS were verified for the 2018-2019 Program. Assays for approximately 10% of the historical DDH intersecting the current MRE mineralized zones were also verified. The assays recorded in the database were compared to the original certificates from the different laboratories. Minor discrepancies were noted and modified for the historical DDH.

In the assay table, the gravimetric finish result always replaces a value obtained by AA finish and when a sample was assayed using the metallic screen procedure, the value recorded as “Au (g/t AVG)” always corresponds to the gold value obtained by metallic sieve method. Values lower than the detection limits were set to zero (0). With AA and gravimetric finish, when a sample has a reject duplicate, the average of the assay results is used in the Wesdome database.

12.3 Underground Voids

Underground workings were imported from the Wesdome working files. Previous MRE voids were validated in the 2018 MRE and the robustness of the 3D shapes were also validated. The underground voids include shafts, drifts, raises, stopes and the exploration ramp developed since 2017.

Pierre-Luc Richard considers that the precision and details from the voids to be acceptable and reliable for the current estimate. Uncertainties remain, especially concerning the stopes. In order to address the uncertainty, all block grades were initialized to zero within a 5-m buffer around existing stopes, using a clipping boundary. Uncertainties do not have a significant effect on the MRE.

12.4 Conclusion

Pierre-Luc Richard, P. Geo., is of the opinion that the drilling, sampling and assaying protocols in place are adequate. The database for the Kiena Mine Complex is of good overall quality. In the QP’s opinion, the Project database is appropriate to be used for the estimation of Mineral Resources.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

This chapter presents information based on the “NI 43-101 Technical Report and Mineral Resource Estimate for the Kiena Mine” Complex in Quebec dated January 25, 2019. The report presented the available information on historical mineral processing at the Kiena mine and the results of milling operations, as well as testwork results. Sections 13.1 and 13.2 were taken directly from the report entitled “Technical Report for the Wesdome Quebec Project, dated December 16, 2015 (Turcotte et al., 2015).

Section 13.3 presents the series of laboratory testwork carried out in 2018 by the Centre Technologique des Résidus Industriels (CTRI) using samples from the Project (Noël, 2019). Wesdome selected and prepared the samples used for this testwork campaign. It was not possible for CTRI to confirm the samples’ representativeness of the deposit.

A new metallurgical testwork program, based on the CTRI testwork program observations and the former operation, was designed and managed by BBA. The testwork is being conducted at SGS Lakefield as of the time of writing of this chapter.

13.1 Process Description

The Kiena Mine processing plant became operational in September 1984. A conventional gold recovery process involving cyanidation and conventional CIP was used. The principal process steps included crushing, grinding, leaching by cyanidation, gold adsorption and desorption, electrolysis, melting and casting of doré bars. Figure 13-1 shows the process flowsheet of the Kiena plant.

The following sections provide a detailed description of the Kiena processing plant.

13.1.1 Crushing Circuit

The crushing circuit starts underground with a Birdsboro Buchanan jaw-crusher, reducing the maximum grain size of rock to 6 inches. The mineralized material entering the plant has therefore a maximum grain size of 6 inches. The design plant throughput is 1,250 tpd. In the event that the production is greater than 1,250 tpd, a new primary crusher will be installed at the surface. The mineralized material-receiving facilities start with a 35-tonne capacity hopper equipped with a 30 in x 10 ft vibrating feeder and a 30-inch belt conveyor, which transfers the mineralized material onto the existing No. 1 belt conveyor. Conveyor No. 1 will transport the mineralized material into two coarse rocks silos, both with a capacity of 600 tonnes. The mineralized material discharged from the silos is conveyed, screened and crushed to approximately 1¼" (32 mm). The crushing unit is a standard cone crusher operating in an open circuit. The crushed and screened rocks are then stored in a 1,800-tonne silo. The mineralized material is then forwarded by vibrating feeders to the grinding circuit by a belt conveyor.

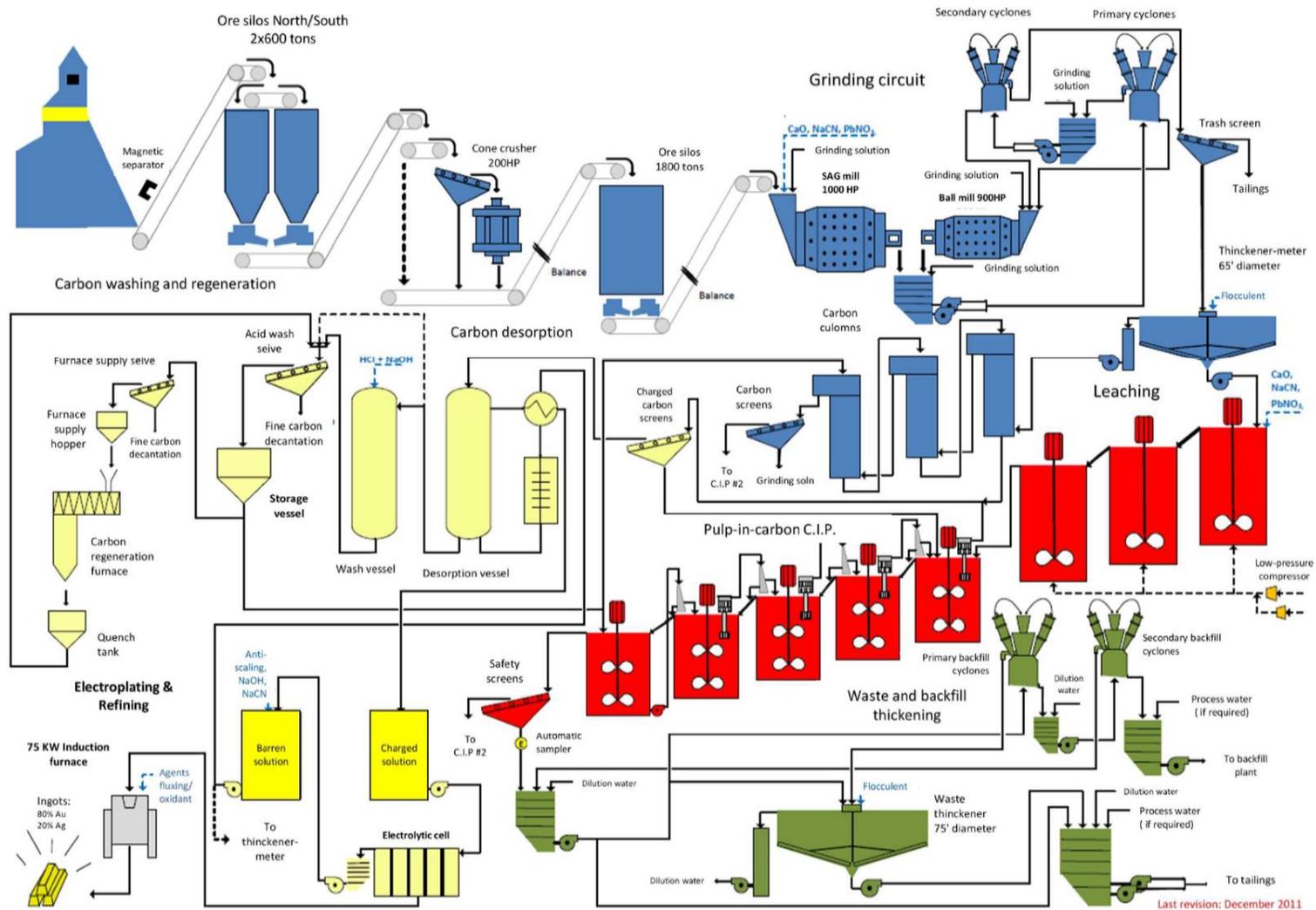


Figure 13-1: Mineralized material processing plan at the Kiena Mine

13.1.2 Grinding Circuit

The rocks will be ground in a 1,000 hp semi-autogenous (SAG) mill (11'6" x 18'8") operating in an open circuit, followed by a 900 hp ball mill (10'6" x 13') operating in closed circuit and two stages of cyclones for classification. Cyanide and lead nitrate will be added at the SAG mill (Figure 13-2) and ball mill, as grinding solution. Quicklime will be added to the SAG mill to control pH.



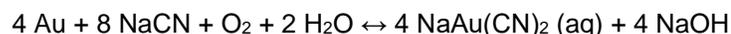
Figure 13-2: SAG mill at the Kiena Mine Complex

The underflow of the cyclones will be redirected to the ball mill for further grinding. The ground mineral will then be pumped to a vibrating 20 mesh screen to remove the trash (wood chips, plastic, particles, etc.) The screen underflow will be directed to a 65-ft diameter process thickener to increase the density of the pulp.

13.1.3 Cyanidation

Thickener overflow will be pumped to a series of three carbon columns tanks where the gold in solution will be adsorbed by the carbon. The last carbon column in the series will overflow into a carbon screen where the oversize will be sent to the second CIP tank. The screen undersize (solution with cyanide) will be recycled back to the grinding circuit as grinding solution.

Thickener underflow will be forwarded to a series of three leach tanks. Cyanide and quicklime are added to the leach feed. Additionally, lead nitrate and oxygen will be added to optimize the gold dissolution and control the pH. The cyanidation reaction is the following:



Retention time in the carbon columns and leach tanks is approximately 11 minutes and 36 hours respectively, based on a plant feed of 1,250 tpd.

13.1.4 Carbon-in-pulp (CIP) Process

The leach tails are pumped to the next unit operation, the CIP circuit. The CIP circuit is composed of five CIP tanks in series. At the CIP circuit, the slurry is fed at the first CIP tank in the row. The activated carbon is fed at the last CIP tank and pumped in counter-current mode relative to the slurry. The $\text{NaAu}(\text{CN})_2$ molecules in solution in the CIP tanks are held by the activated carbon by adsorption.

At the discharge of the CIP reservoirs, the cyanide solution is separated from the mineral pulp. The latter is filtered by the 28-mesh safety screens to recover any carbon particles escaping from the tanks. The slurry can be treated to produce backfill or sent to tailings. In the first case, the slurry is sent to primary and secondary backfill cyclones. The cyclones underflow (coarse particles) is then sent to the backfill plant.

The cyclones overflow with fine particles is directed to the 75 ft diameter waste-thickener. From the waste-thickener, the fine slurry is sent to the tailings. The dilution water is recycled toward the grinding circuit.

The loaded carbon is pumped to the elution vessel, where the gold desorption takes place using the Zadra process at a temperature of 140°C and a pressure of 80 psi. The pregnant solution obtained is pumped through an electrowinning cell where gold is recovered by plating on steel wool cathodes. The cathodes are washed under pressurized water and the dried sludge is then melted in an induction furnace to produce doré bars.

13.1.5 Acid Wash and Carbon Regeneration

Once desorption is completed, the carbon is transferred in the wash vessel where it is washed with hydrochloric acid. It is then forwarded to the regeneration furnace where it is heated up to a temperature of 1,050°C. Finally, the carbon is screened to the desired grain size in order to be reused in the process.

13.2 Recovery Statistics

The Kiena process plant started its operation in 1984. From 1984 to 2002, the milling rate gradually increased from 1,092 tpd to 2,150 tpd, with an average of 1,520 tpd. The mineralized material grade gradually decreased from 5.94 g/t to 2.72 g/t, with an average of 4.67 g/t. Mining operations were suspended from 2003 to 2006.

From 2006 to 2013, the milling rate was constant at about 543 tpd. The mineralized material grade gradually decreased from 5.28 g/t to 2.24 g/t, with an average of 3.36 g/t, with a peak in 2008.

The mine was closed in June 2013. Since the cessation of mining operations, the concentrator has been on stand-by maintenance and will be available for the processing of new mineralized material in the future.

Figure 13-3 shows the milling rate (tpd), gold recovery (%) and the mine Au grade (g/t) from 1984 to 2013. It is to be observed that the gold recovery was approximately constant during at the Kiena operation, considering the variations in mine grade and milling rate (Figure 13-4). For example, the recovery ranged from 92.2% to 98.8%, with an average of 96.3% and a standard deviation of 1.5%. The data from year 2002 was discarded, and since a 100% recovery value seems unlikely, 74% of the recovery data fall within the one standard-variation interval around the average.

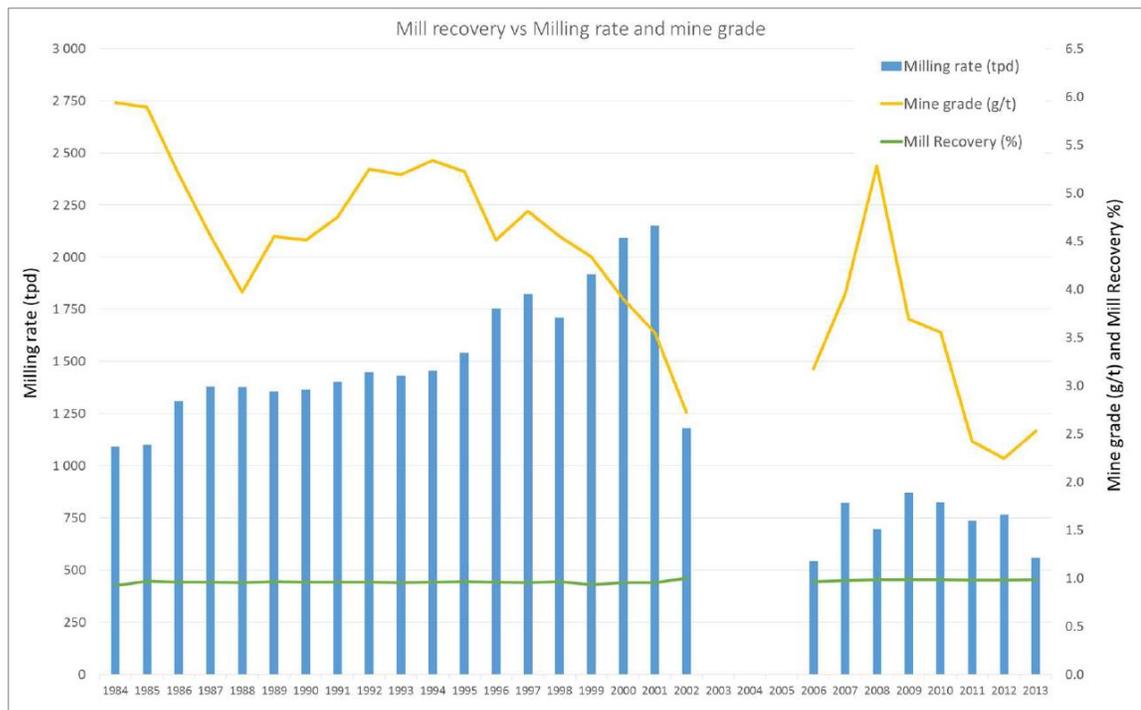


Figure 13-3: Mine grade, milling rate and mill recovery, from 1984 to 2013

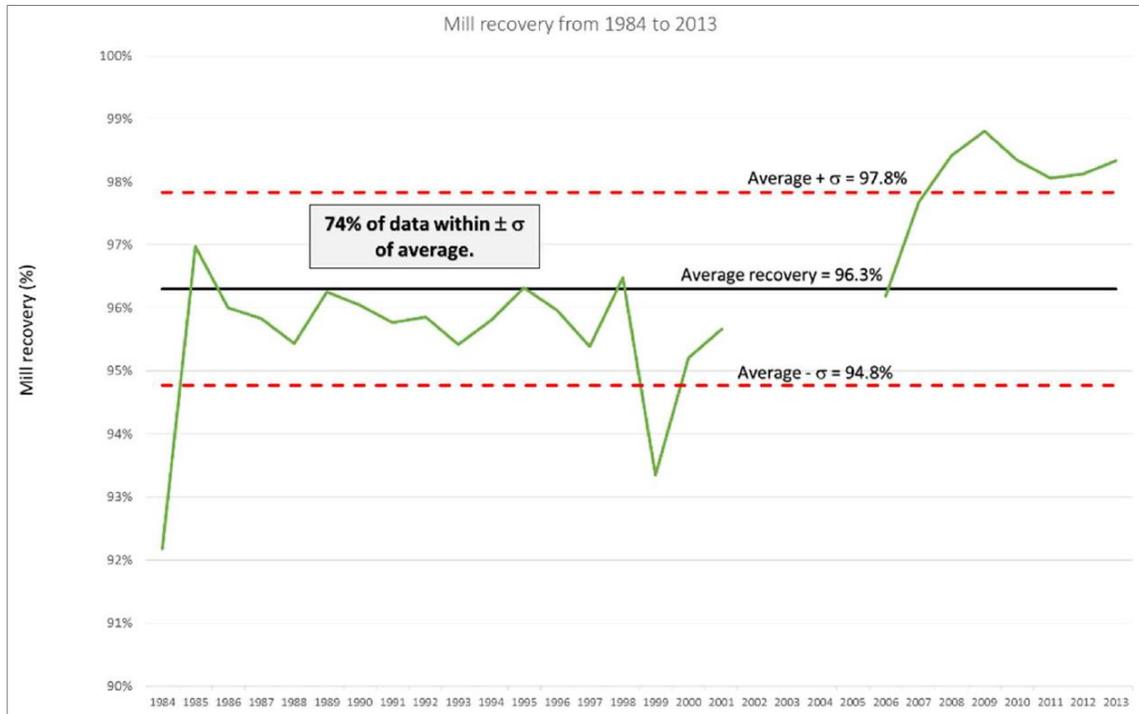


Figure 13-4: Variations in mill recovery, from 1984 to 2013

13.3 CTRI 2018 Metallurgical Tests

13.3.1 Testwork Program

Wesdome mandated CTRI to conduct fifteen 48-hour cyanidation tests in 4 L bottles on gold mineralized material. Three cyanidation tests were performed on the mineralized material from the Kiena Deep A Zone (four composites) and the S50 Zone.

13.3.2 Sample Preparation

The material received included 57 sub-samples for a total of 92 kg. Following a discussion with Wesdome representatives, the 57 samples were divided to produce five composites: four for the Kiena Deep A Zone and one for the S50 Zone (Table 13-1).

Table 13-1: Composite splits and weights

Composite	Weight (kg)
Kiena Deep A zone – 1	16.2
Kiena Deep A zone – 2	22.9
Kiena Deep A zone – 3	15.9
Kiena Deep A zone – 4	13.4
S50 zone	23.7

The 57 sub-samples were assayed for gold individually. Following a discussion between Wesdome and CTRL representatives, a blending sample recipe was prepared. Table 13-2 presents the calculated gold head grade for each composite. Final composites were assayed for gold head grade validation (Table 13-2). All assays were performed at the ALS geochemistry laboratory located in Rouyn-Noranda (Quebec).

In the recipe, each composite listed in Table 13-1 was prepared selecting individual samples from the 57 sub-samples. The samples included, in a given composite, were blended, homogenized twice (at the splitter) and then bagged into 1 kg charges. The resulting composite charges were assayed for gold and used for direct cyanidation (in triplicate) for each composite listed in Table 13-2.

Table 13-2: Composite feed assays

Composite	Calculated (g/t)	Assay (g/t)
Kiena Deep A zone – 1	19.51	18.24
Kiena Deep A zone – 2	12.22	11.99
Kiena Deep A zone – 3	6.45	11.08
Kiena Deep A zone – 4	22.38	23.78
S50 zone	3.11	3.05

13.3.3 Cyanidation Tests

For each composite, the cyanidation tests were conducted in 4 L bottle in triplicate. The leaching time was 48 hours. As discussed with Wesdome representatives, the cyanidation parameters used would be the same ones than the ones used historically at the Kiena Mill:

- Grind: 80% passing 75 µm;
- Cyanide: 500 g/t NaCN;
- Lead Nitrate: 75 g/t;
- pH: 11.3 (maintain with lime).

As tests were performed in bottles, no air or oxygen was added during the tests. In addition, as the lead nitrate addition was usually done at the grinding stage in the mill, the lead nitrate was added in the bottle one hour prior to the addition of cyanide to simulate the real circuit. Cyanide and pH were monitored at regular intervals to maintain the proper conditions. At the end of each test, the solid residue and the solution were collected and sent to the Laboratoire Expert Inc. facility located in Rouyn-Noranda for gold assaying.

Test results

The gold recoveries for all cyanidation tests are shown in Table 13-3. For each composite, the results are an average of the three cyanidation tests. The 48-hour recoveries for the Kiena Deep A Zone cyanidation tests ranged from 98.4% to 99.7%.

The 48-hour recoveries for the S50 Zone gave a value of 95.7%, which is in the range of the historical data from the Kiena Mill.

Table 13-3: Cyanidation test results

Composites	NaCN (kg/t)	CaO (kg/t)	Au tail (g/t)	Recovery (%)	Re-calc Head (g/t)
Kiena Deep A Zone – 1	0.15	1.22	0.19	98.8	16.40
Kiena Deep A Zone – 2	0.18	1.23	0.23	98.4	13.88
Kiena Deep A Zone – 3	0.11	1.14	0.02	99.7	7.12
Kiena Deep A Zone – 4	0.11	1.30	0.16	99.3	22.21
S50 Zone	0.21	1.56	0.12	95.7	2.83

Lime consumption for all cyanide tests ranged from 1.1 kg/t to 1.6 kg/t. The consumption of NaCN varied between 0.11 kg/t and 0.21 kg/t. Even though the head grades were higher than the S50 Zone, reagent consumption was higher for the S50 Zone compared to the Kiena Deep A Zone for both cyanide and lime. This was probably due to the presence of sulphur (pyrite) in the S50 Zone.

13.3.4 Current Testwork

In July 2019, BBA was selected by Wesdome to design and manage the 2019 metallurgical testwork program for the Kiena Deep Project. The testwork program started at the end of August 2019 and will be completed by mid November 2019.

The objective of the testwork was to provide preliminary design information and validate gold recovery for composites selected by Wesdome and BBA.

The high gold recoveries obtained for Kiena Deep A Zone composites (CTRI testwork program see Section 13.3), suggested variables that could be investigated in the current testwork program, e.g.: the impact of pre-oxidation (addition of lead nitrate and pre-aeration), leach time (48 hrs), and coarser grind in leach kinetics and gold recovery.

An additional observation indicates a variance between the gold assays and the recalculated gold grades for each composite (nugget effect) suggesting the presence of free gold in the Kiena Deep A Zone. Considering that the gold head grades of the Kiena Deep A Zone were high (see Table 13-3), it was recommended to conduct gravity testwork on the current testwork program.

The metallurgical testwork is currently being conducted at SGS Lakefield includes the following key deliverables (number of tests in brackets):

- Chemical analysis of composites prepared for testwork;
- Grindability testing:
 - SMC (3), BWi (3), RWi (3), Ai (3), CWi (1);
- Metallurgical testwork:
 - Whole ore leach (WOL) recoveries and reagent consumptions (6);
 - Gravity recovery and leaching of gravity tails:
 - Gravity recoverable gold assessment (3);
 - Gravity tailings cyanidation gold recoveries and reagent consumptions (24);
- Preliminary estimate of flocculant consumptions by static settling tests (3).

13.3.5 Future Testwork

The following future testwork is recommended for the Kiena Deep deposit:

- A comminution testwork program to study the mineralized material hardness variability;
- A metallurgical testwork program to study the Au recovery variability with Au head grade;
- Gravity recoverable gold (GRG) testwork to characterize the nature of the gravity gold in the Kiena Deep A Zone. A cyanide leaching optimization program could be implemented following a GRG testwork program;
- An optimization testwork program to study the optimization of leaching variables for the option selected in the current testwork program (WOL or gravity recovery with leaching of gravity tails):
 - Stirred reactor tests could be conducted to validate or optimize process variables such as cyanide addition, oxygen vs air, lead nitrate addition, etc.;
- A preliminary cyanide destruction testwork program based on the future tailings handling system;
- A dynamic settling testwork program to optimize reagent addition.

14. MINERAL RESOURCE ESTIMATE

14.1 Introduction

BBA was retained by Wesdome Gold Mines to review and audit the updated Mineral Resource Estimate (MRE) for the Kiena Mine Complex Project (the “Project”), which incorporates historical drilling data and recent drilling programs. The updated MRE includes drill data as of August 6, 2019 and includes an additional 140 drillholes, for a total of 36,050 m drilled since October 12, 2018 being the close-out date of the last Kiena MRE announced on December 12, 2018 (Beausoleil et al, 2019).

14.2 Methodology

The herein MRE combine two different approaches:

- A block model mineral resource estimate for the zones in the former Kiena Mine Area (the “block model MRE”) which was prepared by Karine Brousseau, P. Eng, Senior Engineer of Wesdome and has been reviewed and audited by Pierre-Luc Richard, P. Geo., Qualified Person of BBA.;
- A polygonal mineral resource estimate for the zones outside of the Kiena Area (the “polygonal MRE”) which was prepared by Turcotte et al. (2015) and reviewed and modified by Pierre-Luc Richard, P. Geo., Qualified Person of BBA.

The methodology for the block model MRE was the following:

- Geological wireframes were constructed in Leapfrog Geo 4.5™. Geovia® GEMS 6.8.2.2 was used for the compositing, 3D block modelling, interpolation and classification. Statistical studies were conducted using Excel and Snowden Supervisor v. 8.11.

The methodology for the estimation of the mineral resources involved the following steps:

- Database verification and validation;
- Review of the 3D modelling;
- Drillhole intercept;
- Basic statistics and composite generation for each unit;
- Capping;
- Geostatistical analysis including variography;
- Block modelling and grade interpolation;
- Block model validation;
- Resource classification;
- Cut-off grade calculation
- Preparation of the mineral resource statement.



The Polygonal MRE was prepared by Turcotte and Pelletier in 2009, validated in 2015 by Turcotte et al. using AutoCAD, Microsoft Excel and Microsoft Access using the polygonal method on longitudinal sections. The Polygonal MRE was herein validated using Microsoft Excel, AutoCAD, and historical longitudinal sections. For the herein Polygonal MRE, the following steps were carried-out:

- Confirmation of the lack of new material information;
- Review and validation of the resource with Excel;
- Review of the classification in long section;
- Review of the underground cut-off grade.

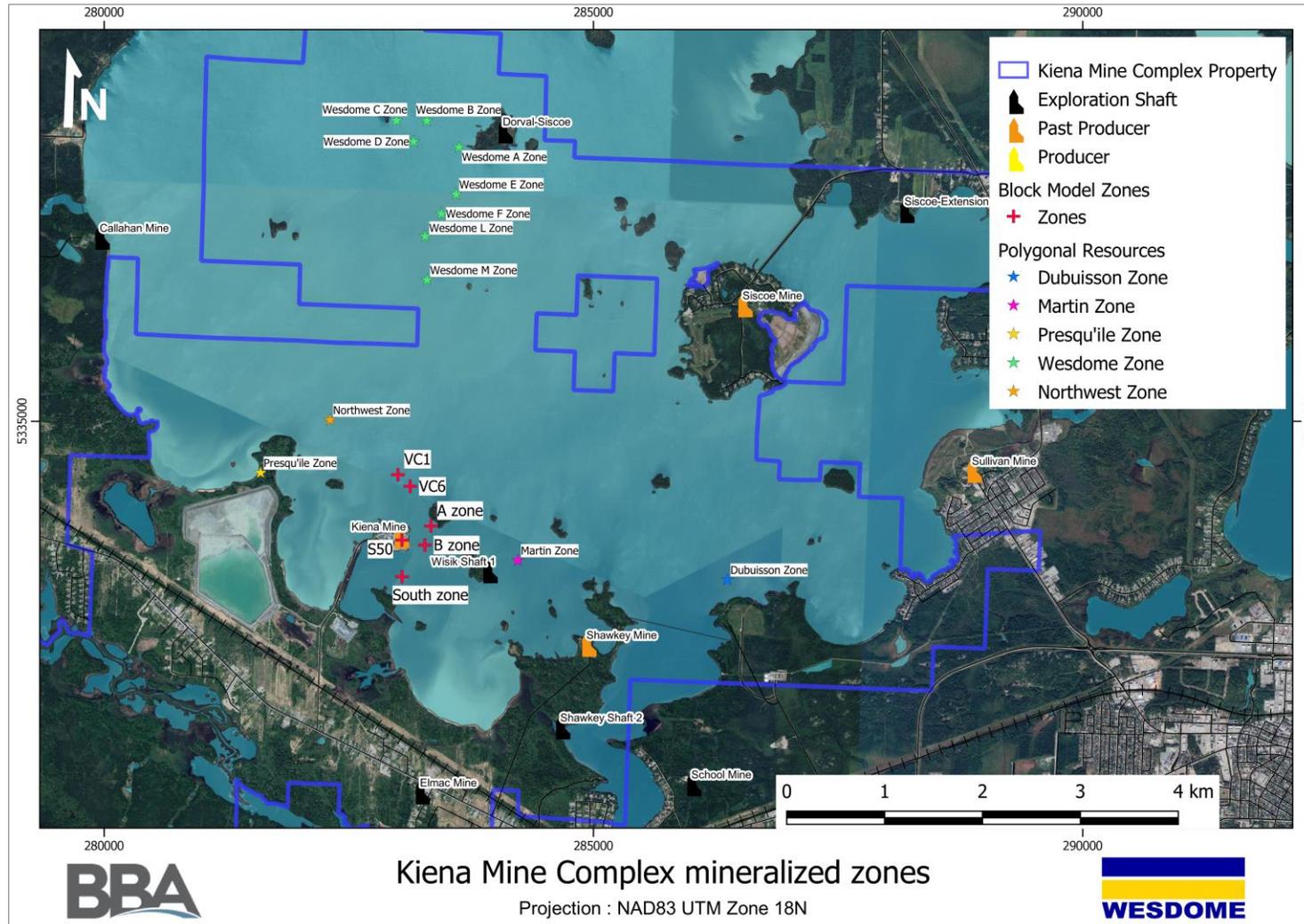


Figure 14-1: 2019 MRE block model and polygonal resources location

14.3 Resource Database

The block model resource database for the Kiena Mine Area, as of August 6, 2019, consisted of 349 surface and 6,267 underground drillholes with a cumulative length of 893,318.52 m (Figure 14-2). The average length of a drillhole is 135 m. Of these 6,616 drillholes, a subset of 714 holes cut across the mineralized zones. A total of 36,050 m in 140 drillholes was added to the block model resource database since the last mineral resource estimate announced on December 12, 2018.

The polygonal resource database consisted of 216 drillholes cutting across the mineralized zones. No new information was added to the polygonal resource database since 2015.

The resource estimation for the Project relies on historical and recent drilling programs. BBA included the historical drillhole information into the resource estimation for the following reasons: 1) historical information was validated as part of the mandate and no discrepancies were found; and 2) recent drillholes were drilled in the vicinity of historical drillholes and the results show comparable geology and mineralization outlines.

The resource database was validated before proceeding to the resource estimation. The validation steps are detailed in Chapter 12 of this Report. Minor variations have been noted during the validation process but have no material impact on the 2019 MRE.

The QP is of the opinion that the database is appropriate for the purposes of the Mineral Resource Estimation and that the sample density allows a reliable estimate to be made of the size, tonnage and grade of the mineralization in accordance with the level of confidence established by the mineral resource categories as set forth in the CIM Standards.

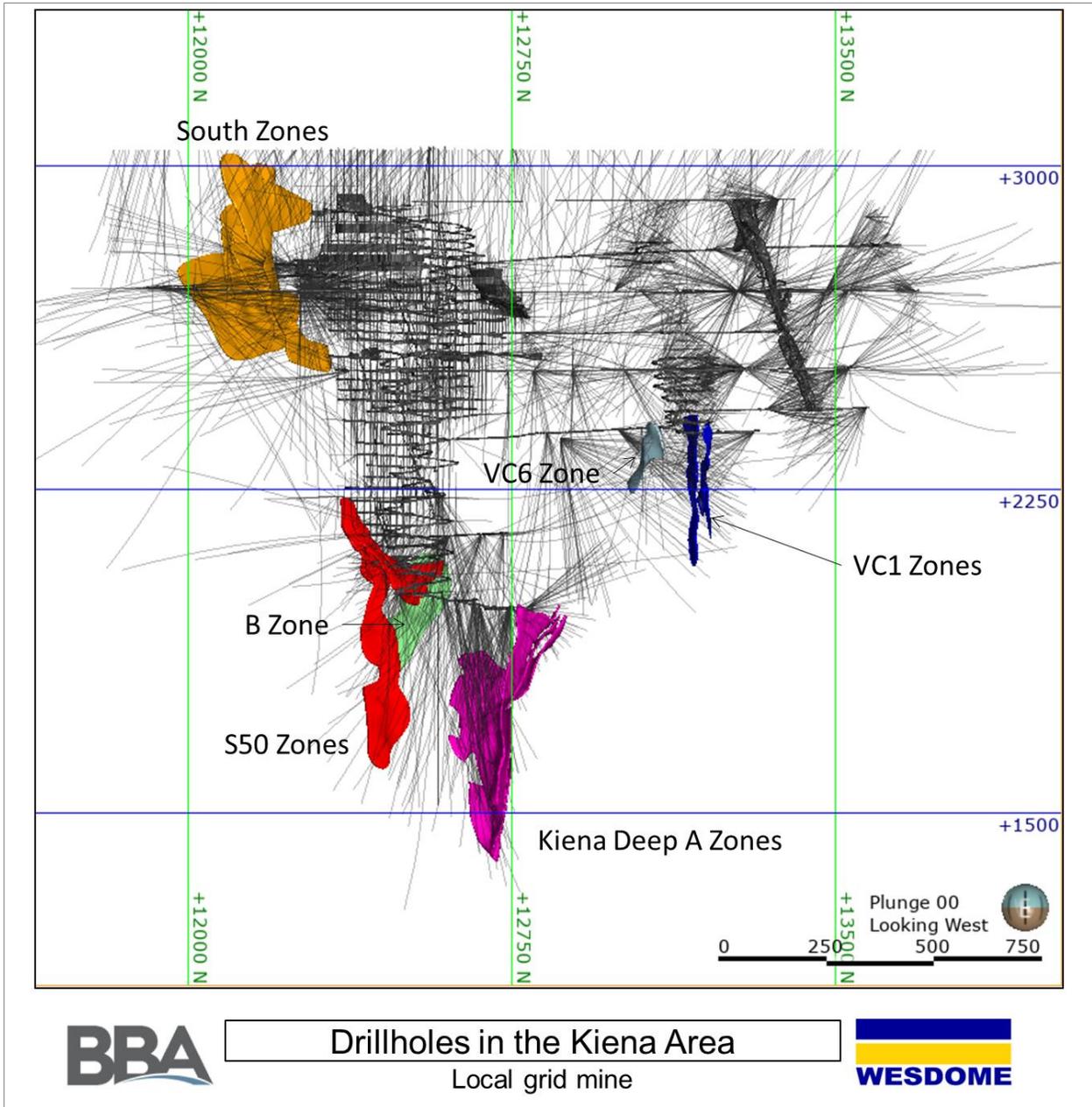


Figure 14-2: 3D view looking west of the 3D model and of the drillholes included in this resource estimate

14.4 Geological Interpretation and Modelling

A total of 48 zones was interpreted for the purpose of this MRE (Table 14-1).

Table 14-1: Mineralized zones of the 2019 MRE

Polygonal MRE		Block model MRE	
Domain	Zone	Domain	Zone
Martin	Martin	Zone S50	S50_100
Dubuisson	Dubuisson		S50_101
	Dubuisson North 1		S50_102
	Dubuisson North 2		S50_103
NorthWest	NorthWest		S50_104
Presqu'île	Zone 1	Zone VC1	VC1_111
	Zone 2		VC1_112
Wesdome	A		VC1_113
	A1		VC1_114
	AF	Zone VC6	VC6_123
	AH	Zone South	ZS_130
	AH1		ZS_131
	AH2		ZS_132
	AH3		ZS_133
	B		ZS_135
	C	Zone B	ZB_140
	D	Kiena Deep Zone A	ZA
	E		ZA1
	E0		ZA2
	E1		H1ZA
	E3		
	E4		
	F		
F1			
F2			
F4			
F6			
L			

14.4.1 Geological Model

14.4.1.1 Polygonal MRE

For the polygonal MRE, 28 mineralized zones, grouped in 5 deposits, were interpreted outside of the Kiena Area (Table 14-1). The Wesdome Deposit was interpreted in 2009 (Turcotte and Pelletier, 2009) and validated in 2015 (Turcotte et al., 2015). The other deposits were interpreted by the Wesdome exploration team and published for year-end 2014 and validated in Turcotte et al. (2015).

The interpretations of these zones were made on cross and longitudinal sections and validated in GEMS with a minimum true thickness of 1.5 m for the Wesdome deposit and 2.5 m for the 7 other zones. As no new information has become available through recent exploration or drilling programs, the QP is of opinion that the interpretation remains valid.

14.4.1.2 Block Model MRE

For the Block Model MRE, geological wireframes were constructed in Leapfrog Geo™ by Charlotte Athurion of BBA and Karine Brousseau of Wesdome with the help of Bruno Turcotte of Wesdome. The model comprises 20 mineralized zones which have a minimum thickness of 3 m (Figure 14-3 and Figure 14-4). They were modelled using geological knowledge of the deposit, grade continuity and geological information provided in the DDH logs (i.e.: lithology, alteration and structure) and in the historical underground mappings. Geological interpretation of the basalt and schists units was also carried-out for the purpose of better constraining the mineralized zones. These zones are further described in Section 7.3 of this report.

As the Kiena Deep A zones are folded, they were subdivided in three subdomains representing the two limbs and the hinge for each mineralized zone.

The QP reviewed the geological model in 3D view, plan view and cross-section and is of the opinion that the level of detail to which the geology model was constructed represents adequately the Complexity of the deposit. In the QP's opinion, the geological model is appropriate for the size, grade distribution and geometry of the mineralized zones and is suitable for the resource estimation of the Kiena Mine Area.

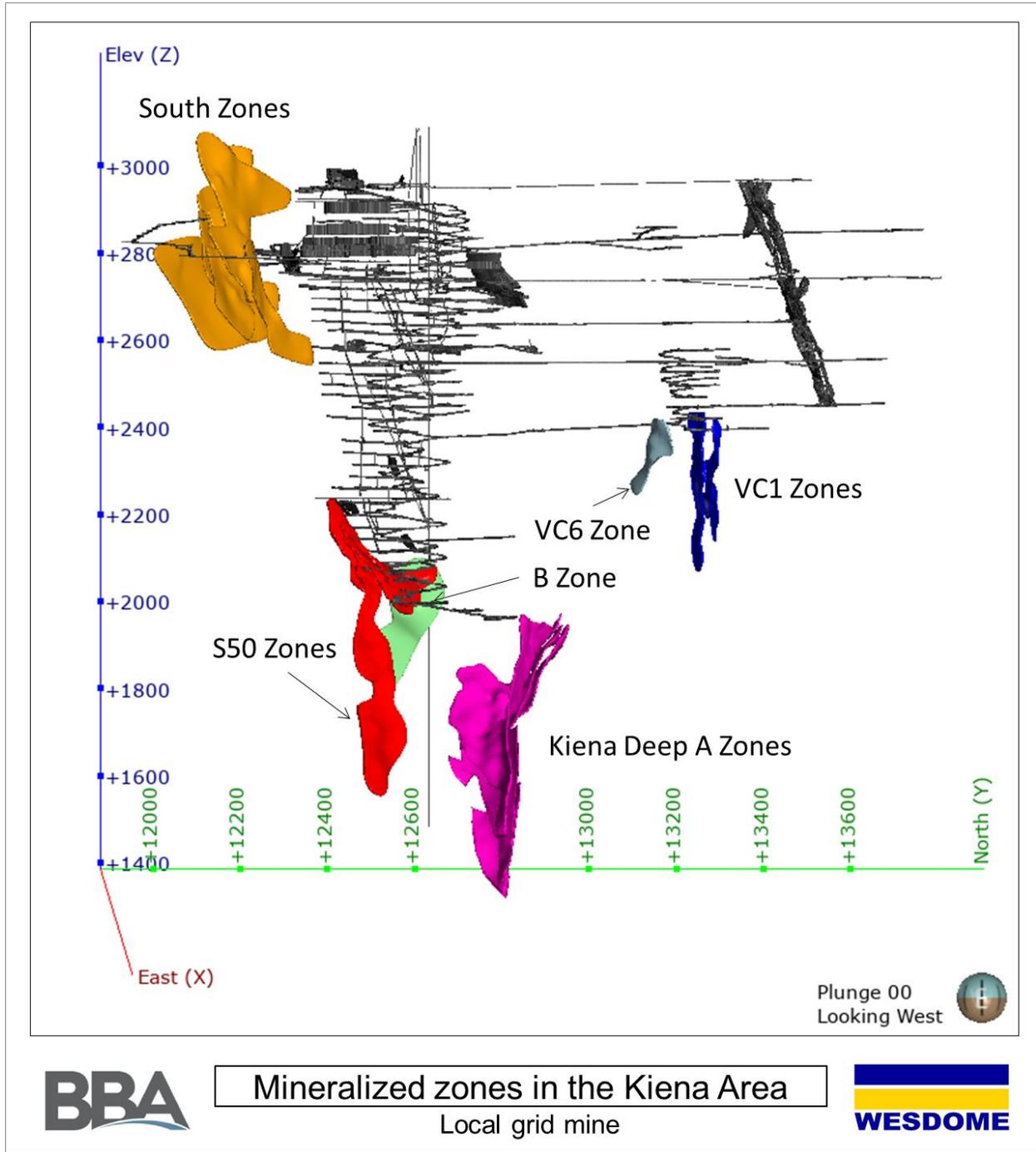


Figure 14-3: 3D view showing the mineralized zones and undergrounds voids in the Kiena Area looking west

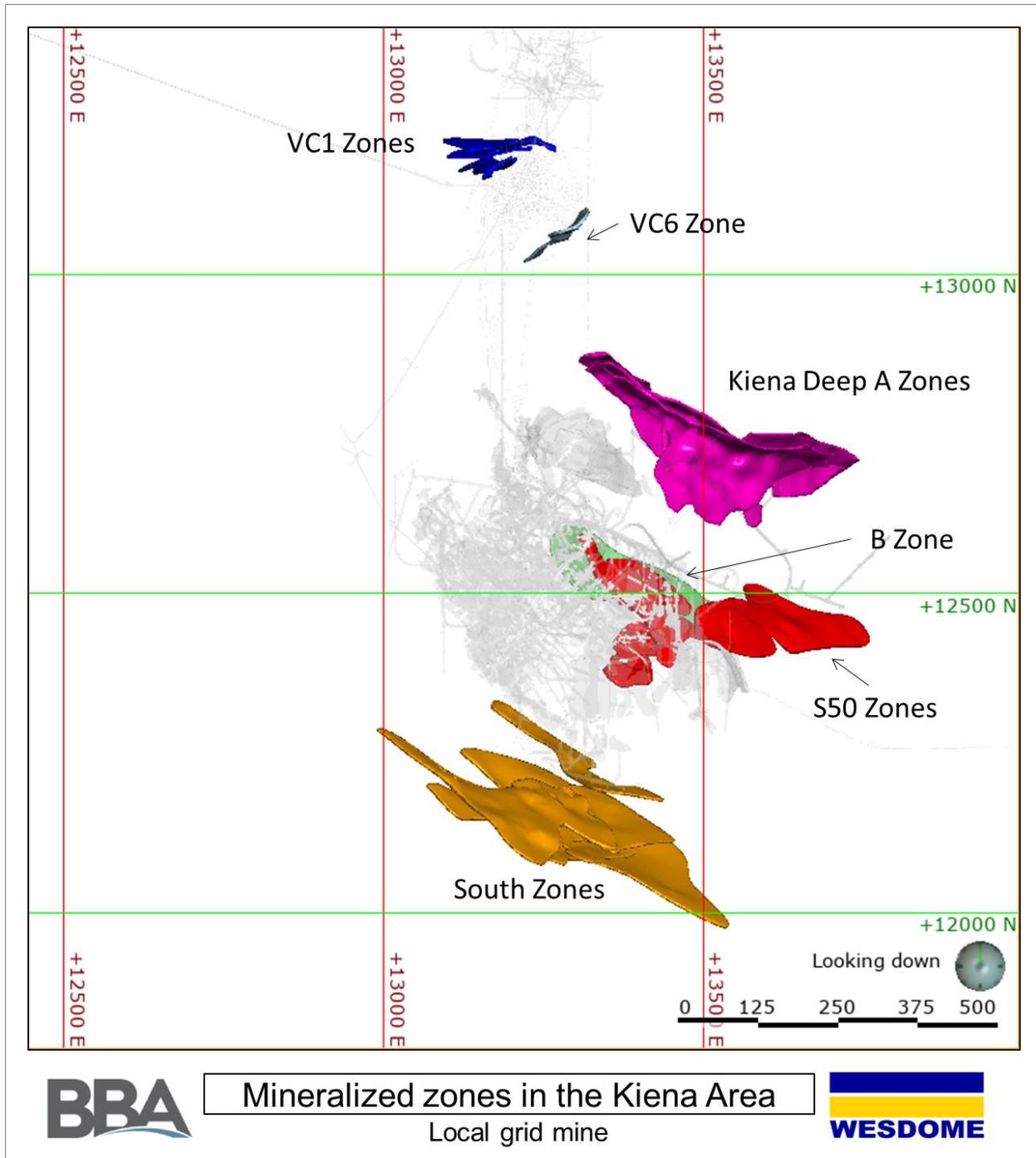


Figure 14-4: Plan view showing the mineralized zones and undergrounds drifts in the Kiena Area looking down

14.4.2 Voids Model

The void model for this MRE was provided by Wesdome. Figure 14-3 presents a 3D view of the underground voids used for the 2019 MRE. Validations were made to make sure that any new developments were considered for this new MRE.

14.4.3 Overburden and Topography

The topographic surface and the overburden-rock interface were created by Wesdome in Leapfrog Geo™ and are based on the drillholes collar coordinates and elevation and the lithological description.

14.5 Data Analysis - Block Model MRE

14.5.1 Raw Assay Statistics

All raw assay data that intersected the mineralized zones were assigned individual rock codes. These coded intercepts were used to produce basic statistics on sample lengths and grades. A total of 7,749 assays is included in the modelled wireframe.

Basic statistics on the raw assays are presented in Table 14-2.

Table 14-2: Basic statistics on raw assays for each domain

Sector	RAW ASSAYS						
	Count sample	Uncut mean (g/t Au)	Std. dev.	COV	Max (g/t Au)	Min (g/t Au)	Uncut median (g/t Au)
S50_100	478	1.99	2.84	1.43	42.17	0.005	1.27
S50_101	516	2.19	3.65	1.67	52.64	0.005	1.49
S50_102	830	3.64	11.11	3.06	256.67	0.005	1.66
S50_103	311	1.95	7.83	4.03	134.46	0.005	0.84
S50_104	237	2.25	7.25	3.23	72.37	0.005	0.32
VC1_111	209	4.08	12.54	3.07	147.57	0.010	1.23
VC1_112	73	8.32	49.65	5.97	424.01	0.005	0.14
VC1_113	96	34.97	262.85	7.52	2,578.56	0.005	0.07
VC1_114	358	2.83	6.74	2.38	57.10	0.005	0.59
VC6_123	206	3.28	6.72	2.05	54.93	0.002	1.14
ZS_130	547	1.57	4.63	2.94	96.62	0.005	0.69
ZS_131	460	2.36	4.57	1.94	43.50	0.005	0.69

Sector	RAW ASSAYS						
	Count sample	Uncut mean (g/t Au)	Std. dev.	COV	Max (g/t Au)	Min (g/t Au)	Uncut median (g/t Au)
ZS_132	554	1.60	2.65	1.65	28.80	0.005	0.60
ZS_133	161	1.99	8.57	4.30	105.60	0.005	0.61
ZS_135	153	1.39	4.01	2.88	36.50	0.005	0.04
ZB_140	175	2.40	7.23	3.01	58.96	0.005	0.09
ZA	1,270	25.02	118.76	4.75	2,769.58	0.002	0.28
ZA1	627	14.02	62.99	4.49	704.00	0.002	0.27
ZA2	412	26.52	94.77	3.57	886.84	0.002	0.63
H1ZA	76	5.05	23.44	4.64	191.00	0.005	0.04

14.5.2 Compositing

Compositing of drillhole samples was conducted in order to homogenize the database for the statistical analysis and remove any bias associated to the sample length that may exist in the original database. The composite length was determined using original sample length statistics and the thickness of the mineralized zones.

Inside the mineralized zones, the average sample length is 1.01 m and the median is 1.00 m. Figure 14-5 shows the sample length distribution within the mineralized zones.

As a result, 8,402 composites were generated with a length of 1 m but ranging from 0.60 m to 1.45 m when necessary after redistributing the tails.

Grades of 0.00g/t Au were assigned to all missing intervals during the compositing process.

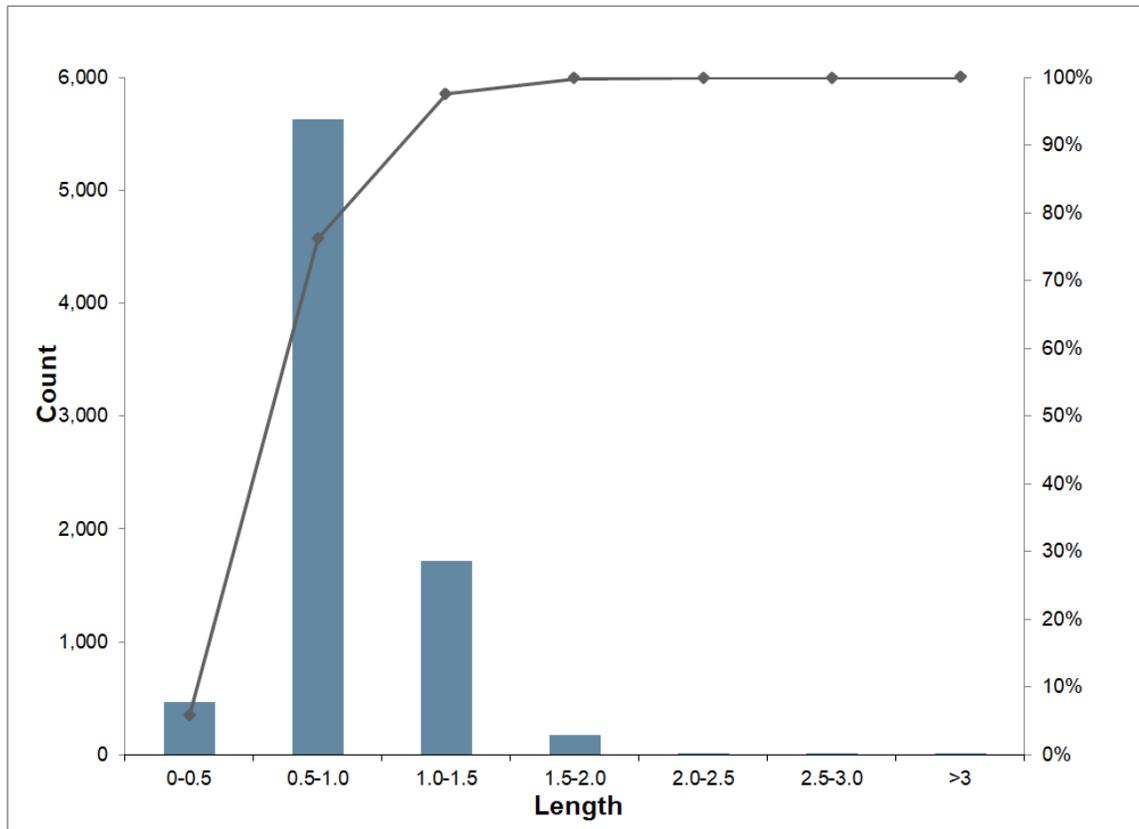


Figure 14-5: Sample length distribution within the mineralized zones

14.5.3 Outlier Handling

An outlier is an observation that appears to be inconsistent with the majority of the data. It is common practice to statistically examine the higher grades within a population and to trim the outlier to a lower grade value based on the results of a statistical study. The capping is performed on high-grade values considered to be outliers. High-grade capping was done on the composited assay data and established on a per deposit or zone type basis.

In addition, a high grade limit or second capping value was used for the second and third pass grade interpolation to restrict high grade impact at greater distance from the drillhole intersect for some zones (Table 14-8). It should be noted that this restriction approach is not a capping method per say, but rather a way to exclude higher grades to be used during the interpolation process when estimating blocks outside this restricted search ellipsoid.

The capping values were defined by searching for abnormal breaks or change of slope on the grade distribution probability plot while making sure that the coefficient of variation of the capped data was ideally lower than, or around 2.00 and no more than 10% of the total contained metal was enclosed within the first 1% of the highest-grade samples. The use of various statistical methods allows for a selection of the capping threshold in a more objective and justified manner. In any cases where the coefficient of variation was higher than 2.00, a restrictive search ellipsoid was used at a value allowing to reach that coefficient of variation of 2.00.

Basic statistics for composited assays and capped composites are summarized in Table 14-3. Figure 14-6 to Figure 14-15 show graphs supporting the capping threshold decisions.

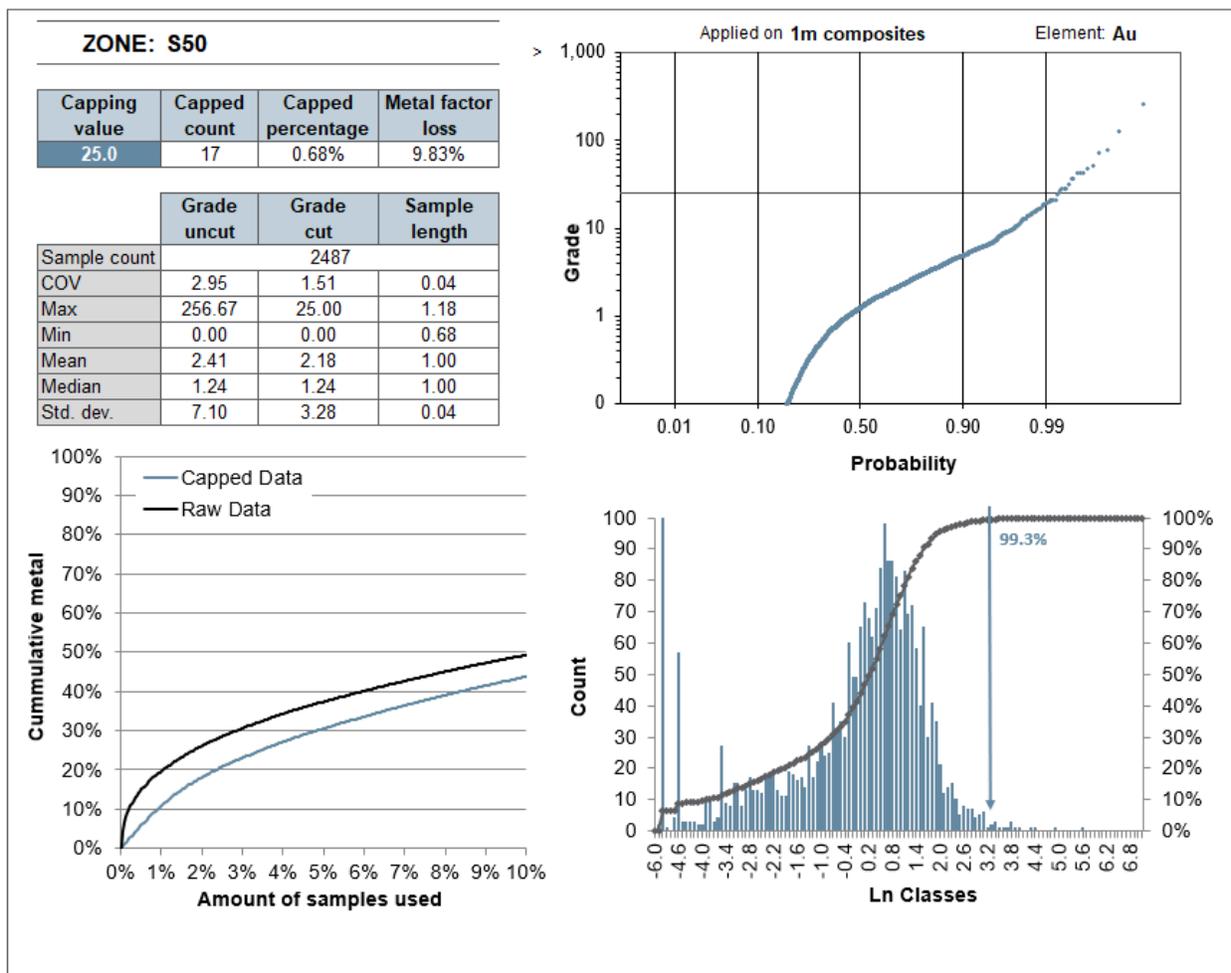


Figure 14-6: Graphs supporting capping threshold decisions on composites for the S50 deposit (blockcodes 100 to 104)

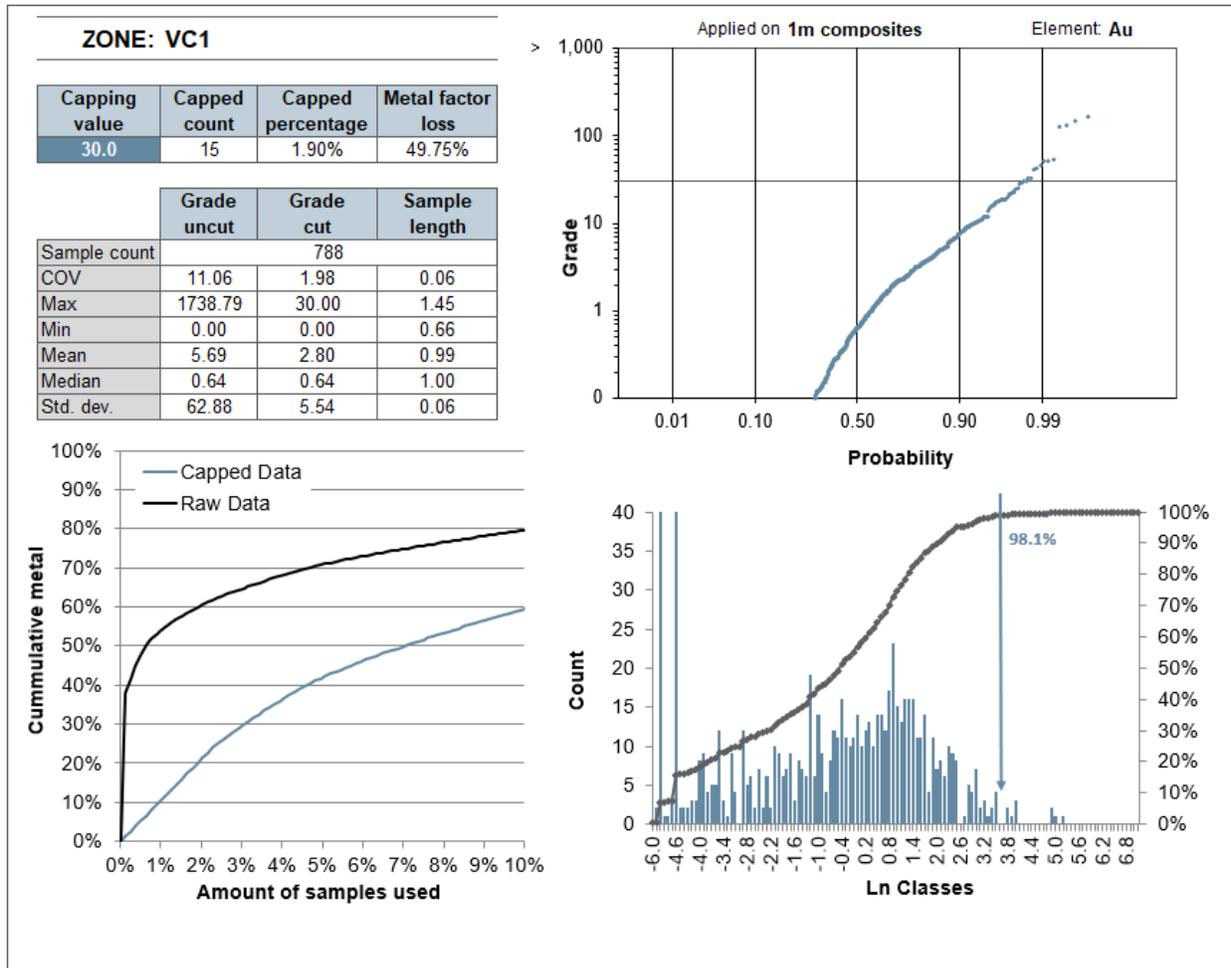


Figure 14-7: Graphs supporting capping threshold decisions on composites for the VC1 deposit (blockcodes 111 to 114)

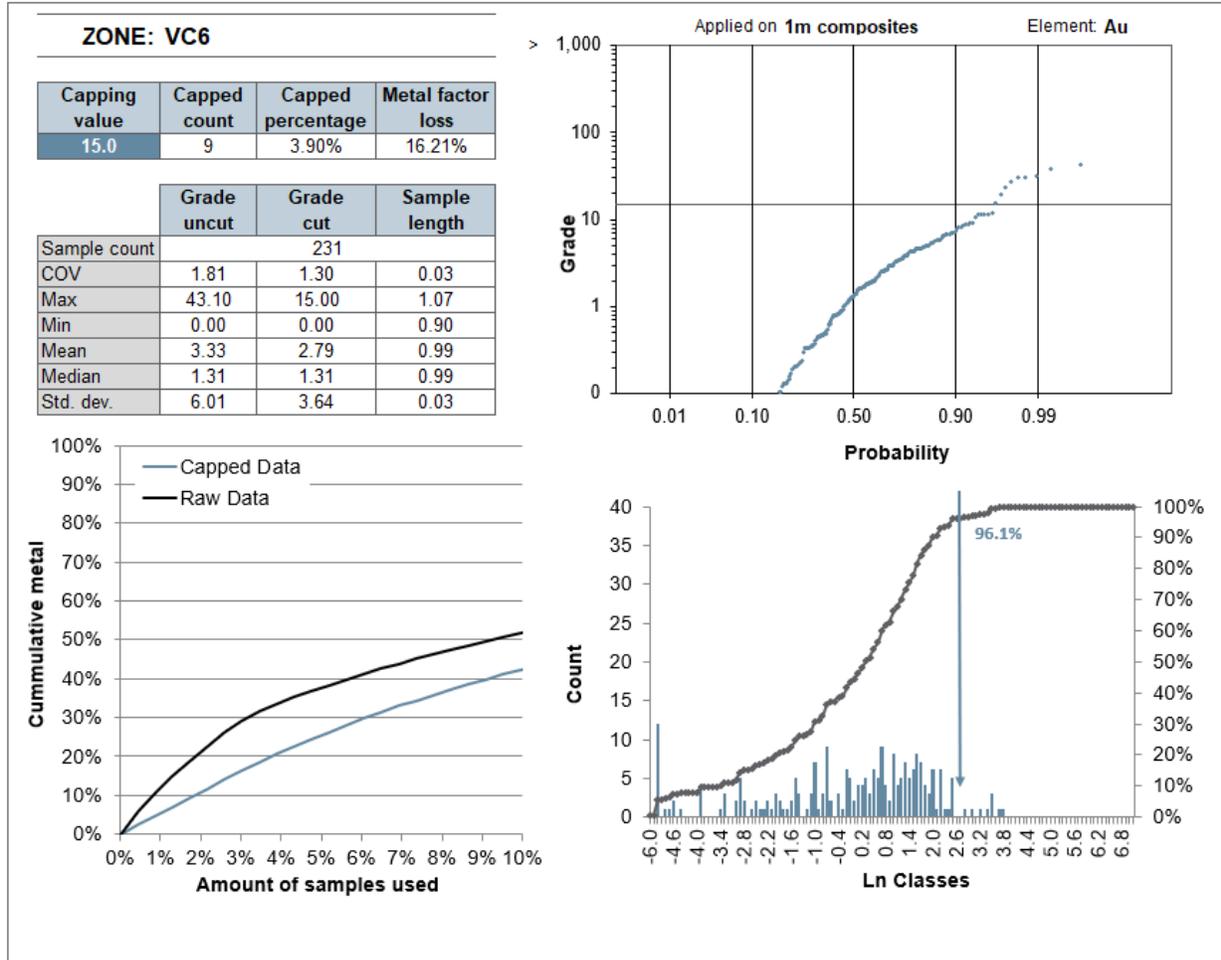


Figure 14-8: Graphs supporting capping threshold decisions on composites for the VC6 Zone (blockcode 123)

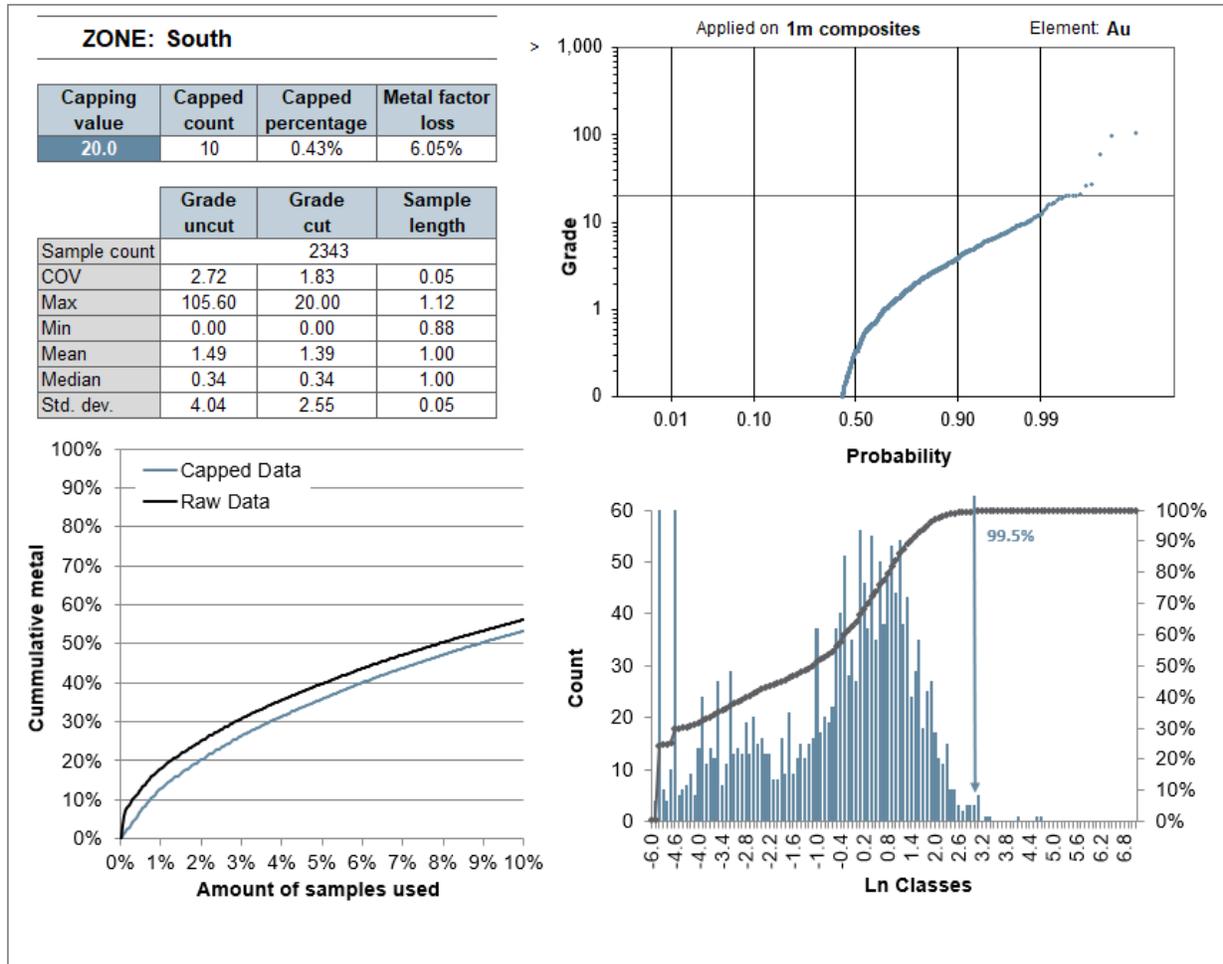


Figure 14-9: Graphs supporting capping threshold decisions on composites for the South Zone (blockcodes 130 to 133 and 135)

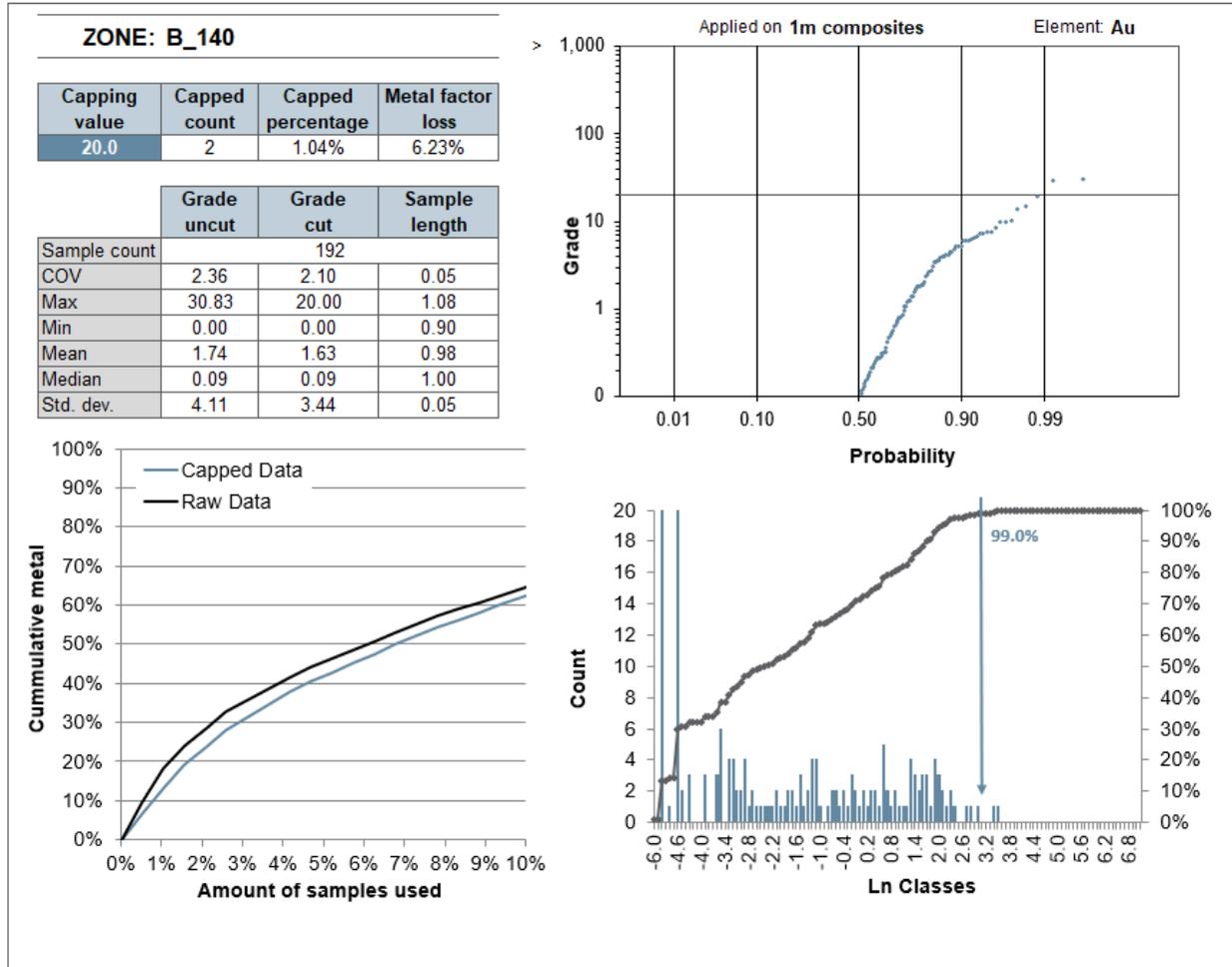


Figure 14-10: Graphs supporting capping threshold decisions on composites for the B Zone (blockcode 140)

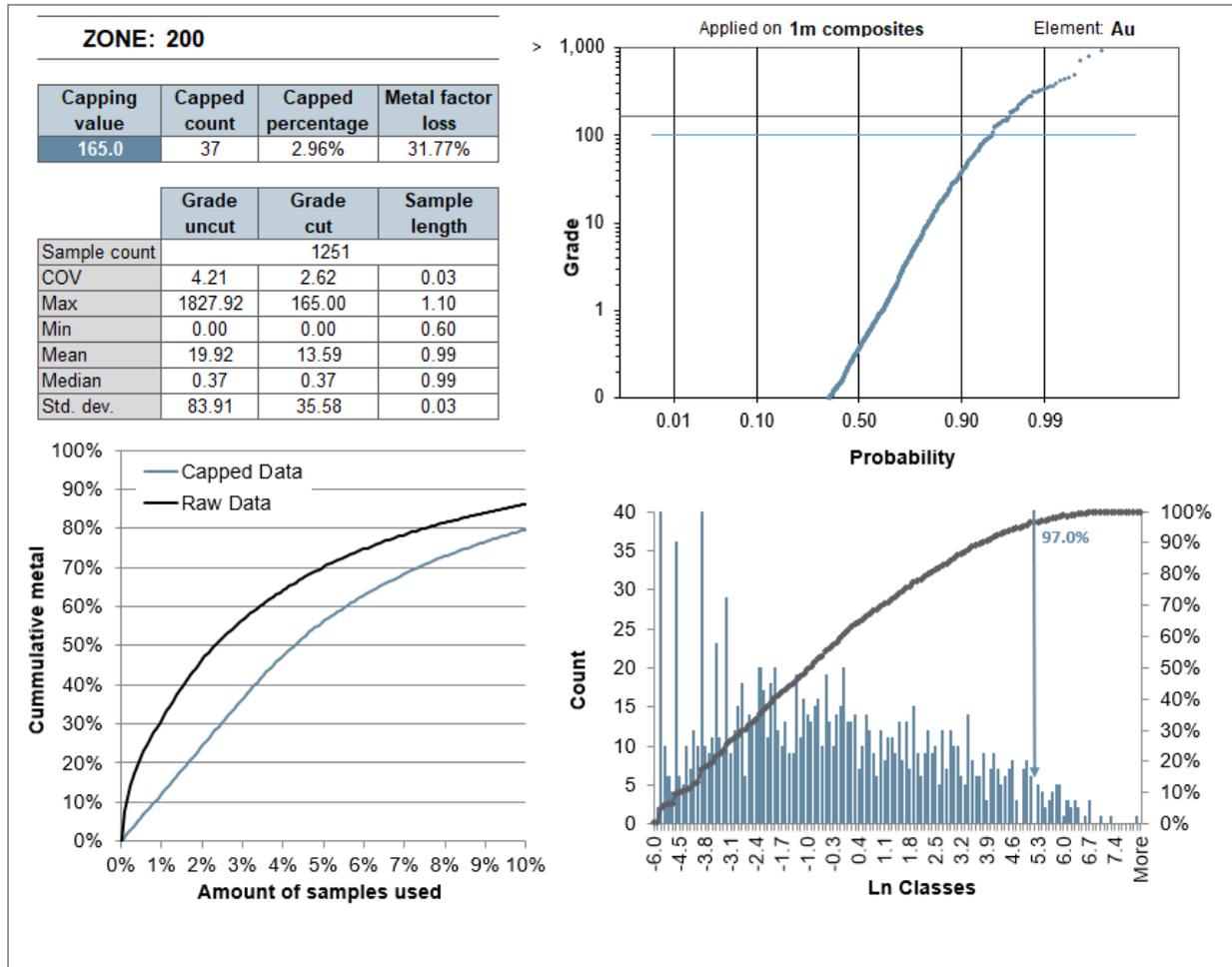


Figure 14-11: Graphs supporting capping threshold decisions on composites for the Kiena Deep A Zone A subzones (blockcodes 202, 204, 206)

Note that a second capping applied as a restricted search ellipsoid was set at 100g/t Au and that any grade above said threshold was discarded during the interpolation process when estimating blocks outside this restricted search ellipsoid. The restricted search ellipsoids for these zones vary from 20x15x10 to 30x26x10m.

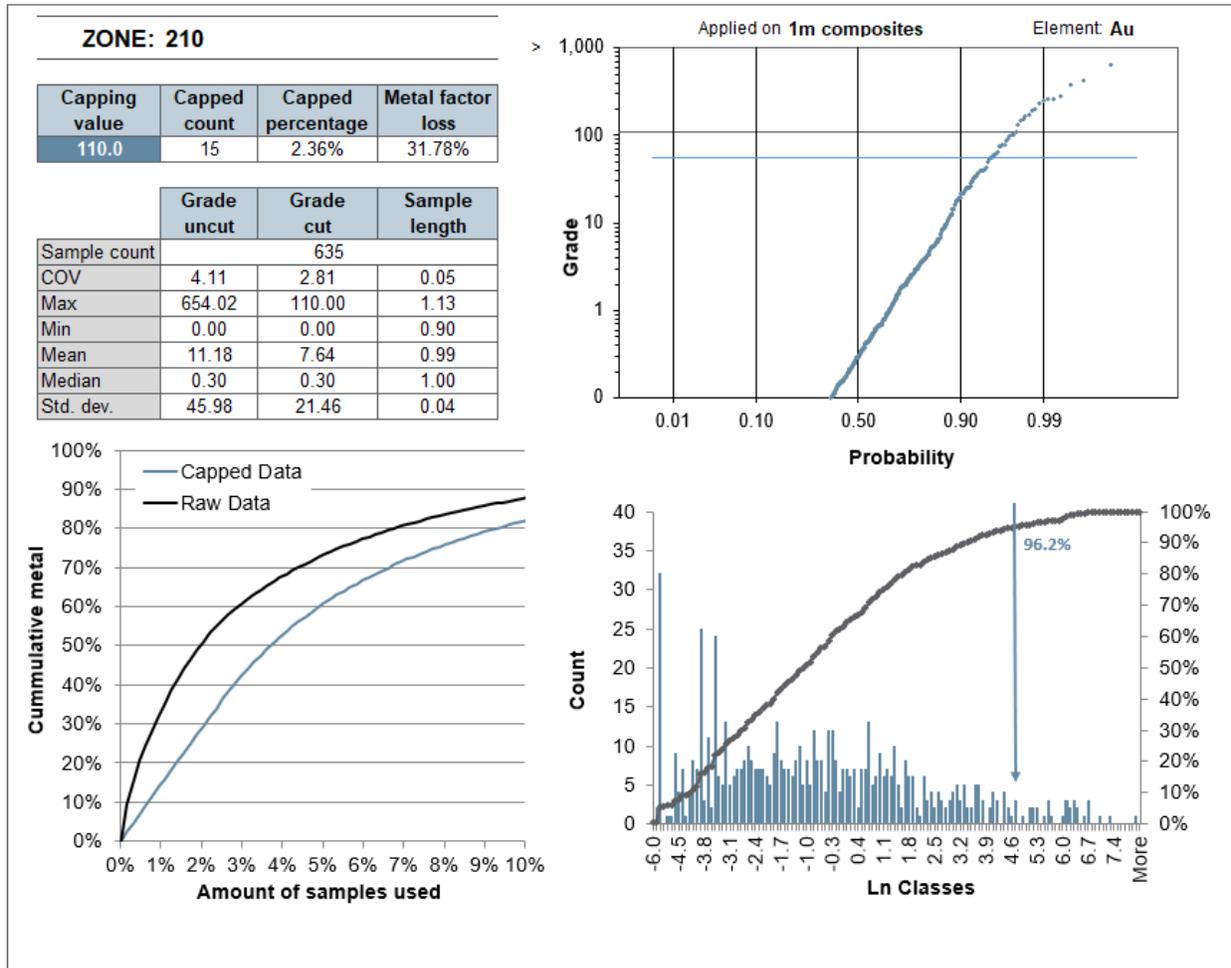


Figure 14-12: Graphs supporting capping threshold decisions on composites for the Kiena Deep A Zone A1 (blockcodes 212, 214, 218)

Note that a second capping applied as a restricted search ellipsoid was set at 55g/t Au and that any grade above said threshold was discarded during the interpolation process when estimating blocks outside this restricted search ellipsoid. The restricted search ellipsoids for these zones vary from 20x15x10, and 30x26x10m.

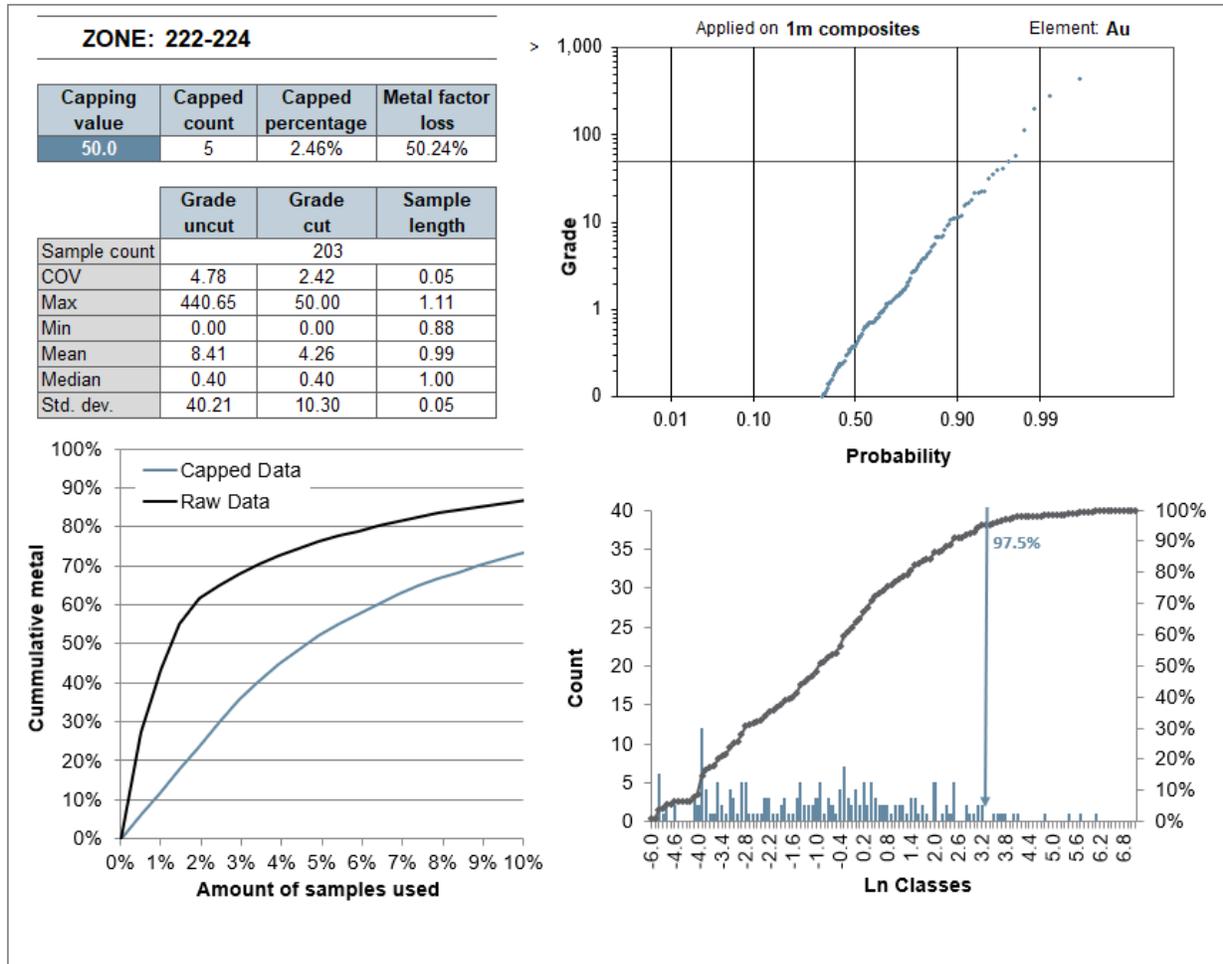


Figure 14-13: Graphs supporting capping threshold decisions on composites for the Kiena Deep A Zone A2 – upper domain (blockcodes 222-224)

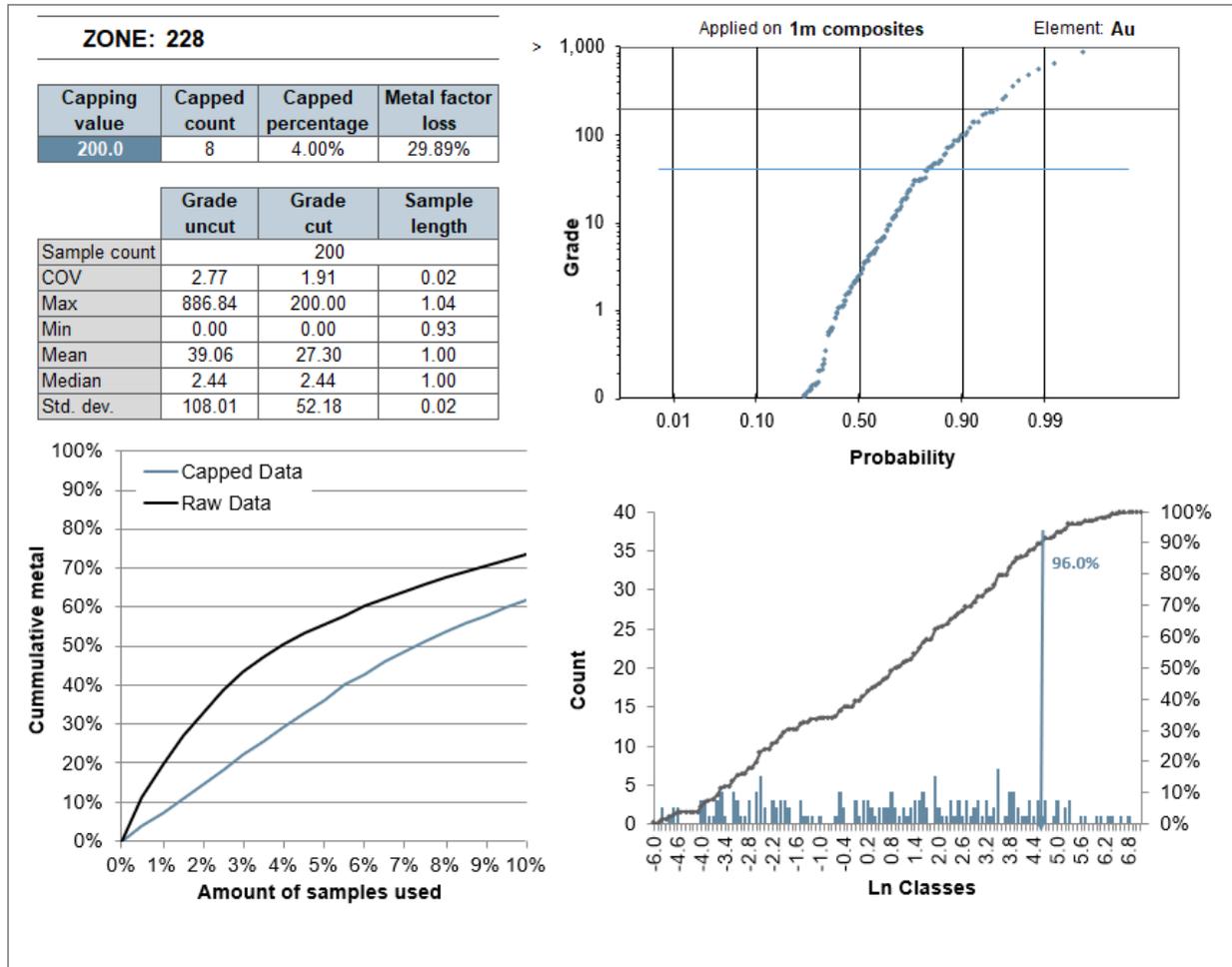


Figure 14-14: Graphs supporting capping threshold decisions on composites for the Kiena Deep A Zone A2 – lower domain (blockcode 228)

Note that a second capping applied as a restricted search ellipsoid was set at 50g/t Au and that any grade above said threshold was discarded during the interpolation process when estimating blocks outside this restricted search ellipsoid. The restricted search ellipsoid for this zone was set at 28x20x10m.

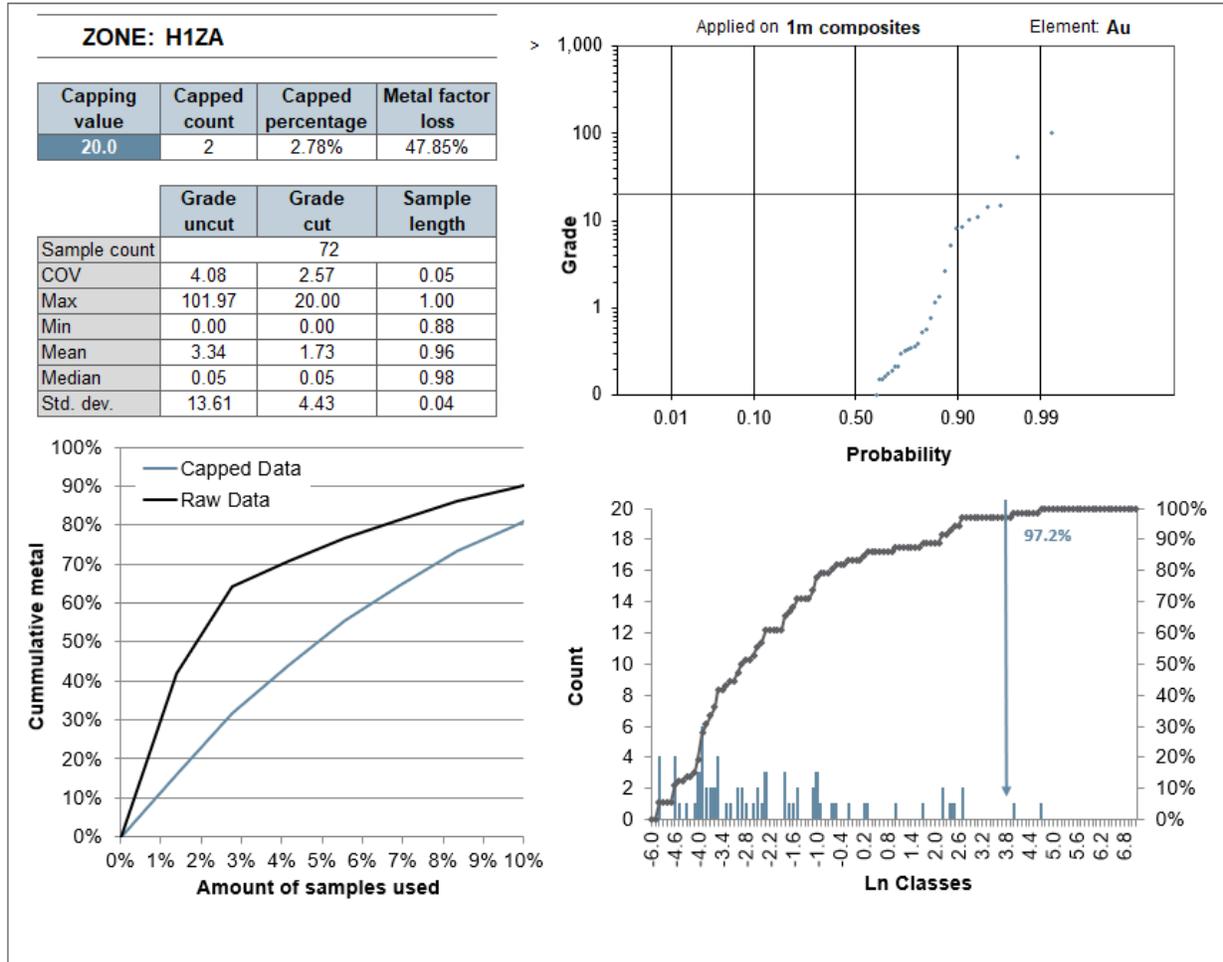


Figure 14-15: Graphs supporting capping threshold decisions on composites for the H1ZA Zone (blockcode 300)

Table 14-3: Basic statistics on composites and high-grade capping value for each deposit

Sector	COMPOSITES (1m) - Au (g/t)												
	Count sample	Uncut mean	Std. dev.	COV	Max	Min	Uncut median	2019 capping value	Number capped	% capped	Metal loss (%)	Cut mean	Cut COV
Zone S50	2,487	2.41	7.10	2.946	256.67	0.00	1.24	25	17	0.68	9.83	2.18	1.51
Zone VC1	788	5.69	62.88	11.06	1,738.79	0.00	0.64	30	15	1.90	49.75	2.80	1.98
Zone VC6	231	3.33	6.01	1.81	43.10	0.00	1.31	15	9	3.90	16.21	2.79	1.30
Zone South	2,343	1.49	4.04	2.72	105.60	0.01	0.34	20	10	0.43	6.05	1.39	1.83
Zone B	192	1.74	4.11	2.36	30.83	0.01	0.09	20	2	1.04	6.23	1.63	2.10
Kiena Deep Zone A	1,251	19.92	83.91	4.21	1,827.92	0.00	0.37	165	37	2.96	31.77	13.59	2.62
Kiena Deep Zone A1	635	11.18	45.98	4.11	654.02	0.01	0.30	110	15	2.36	31.78	7.64	2.81
Kiena Deep Zone A2 W and H	203	8.41	40.21	4.78	440.65	0.00	0.40	50	5	2.46	50.24	4.26	2.42
Kiena Deep Zone A2 L	200	39.06	108.01	2.77	886.84	0.00	2.44	200	8	4.00	29.89	27.30	1.91
Hanging Wall 1 - Zone A	72	3.34	13.61	4.08	101.97	0.00	0.05	20	2	2.78	47.85	1.73	2.57

14.5.4 Density

Bulk density is an important parameter used to calculate tonnages for the estimated volumes derived from the resource-grade block model.

A total of 82 density measurements was conducted on the Project by Wesdome. The samples selected were from a variety of lithologies located across the Property and also included a range of associated gold grades. The specific gravity (“SG”) measurement was determined by the water displacement method. A summary of the SG data is presented in Table 14-4.

Table 14-4: Summary of the density measurements

Lithology	Count	SG (mean)
Prophyry Dyke	4	2.72
Mafic Dyke	3	2.73
Gabbro	9	2.83
Amphibolite	5	2.91
Schist	27	2.81
Flow breccia	1	3.00
Basalt	23	2.83
Komatiite	3	2.94
Quartz vein	7	2.80
TOTAL	82	2.82

For this MRE, a fixed density value of 2.80 was used for all the mineralized zones of the Kiena Complex corresponding to the mean of the SG data of the schist unit which host the majority of the mineralized zones and the density value used when the Mine was operating.

A fixed density of 2.00 g/cm³ was assigned to the overburden and 0.00 g/cm³ was assigned to underground workings.

14.5.5 Variogram Analysis

A semi-variogram is a common tool used to measure the spatial variability within a zone. Typically, samples taken far apart will vary more than samples taken close to each other. A variogram gives a measure of how much two samples taken from the same mineralized zone will vary in grade depending on the distance between those samples, and therefore allowing building search ellipsoids to be used during interpolation.

Three dimensional directional variography using the Snowden Supervisor v8.11 software was carried out on the composites. Variograms were modelled in the three orthogonal directions to define a 3D ellipsoid for each unit. The most representative zone was used for each deposit. The three directions of ellipsoid axes were set by using the variogram fans and visually confirmed with geological knowledge of the deposit. Lag distances were set according to drillhole grid spacing specific to the structural domain analyzed.

Then, a mathematical model was interpreted in order to best-fit the shape of the calculated variogram for each direction. Three components were defined for the mathematical model: the nugget effect, the sill, and the range.

All variography tests were modelled with a nugget effect, as determined from the downhole semi-variograms and two spherical structures.

Table 14-5 presents the chosen variogram model parameters for each zone and Figure 14-16 illustrates an example of the variography results.

The nugget effect values range from zero to 38% and are typical of gold deposits.

Table 14-5: Variogram model parameters for each mineralized zone

Sector	Blockcode	Nugget	Sill	First structure			Second structure			
				Range X (m)	Range Y (m)	Range Z (m)	Sill	Range X (m)	Range Y (m)	Range Z (m)
Zone S50	101	0.23	0.23	20	10	5	0.54	28	20	10
Zone VC1	114	0.38	0.11	35	12	5	0.51	50	25	10
Zone VC6	123	0.00	0.46	15	11	5	0.54	30	20	10
Zone South	132	0.05	0.64	15	15	5	0.31	45	32	8
Zone B	140	0.26	0.12	16	14	5	0.62	30	29	10
ZA_W	202	0.10	0.12	26	30	5	0.78	43	40	10
ZA_H	204	0.10	0.45	20	15	5	0.45	36	18	10
ZA_V	206	0.00	0.12	25	10	5	0.88	45	21	10
ZA1_W	202	0.10	0.12	26	30	5	0.78	43	40	10
ZA1_H	204	0.10	0.45	20	15	5	0.45	36	18	10
ZA1_L	206	0.00	0.12	25	10	5	0.88	45	21	10
ZA2_W	202	0.10	0.12	26	30	5	0.78	43	40	10
ZA2_H	204	0.10	0.45	20	15	5	0.45	36	18	10
ZA2_L	228	0.10	0.31	28	20	5	0.59	49	39	10
H1ZA	206	0.00	0.12	25	10	5	0.88	45	21	10

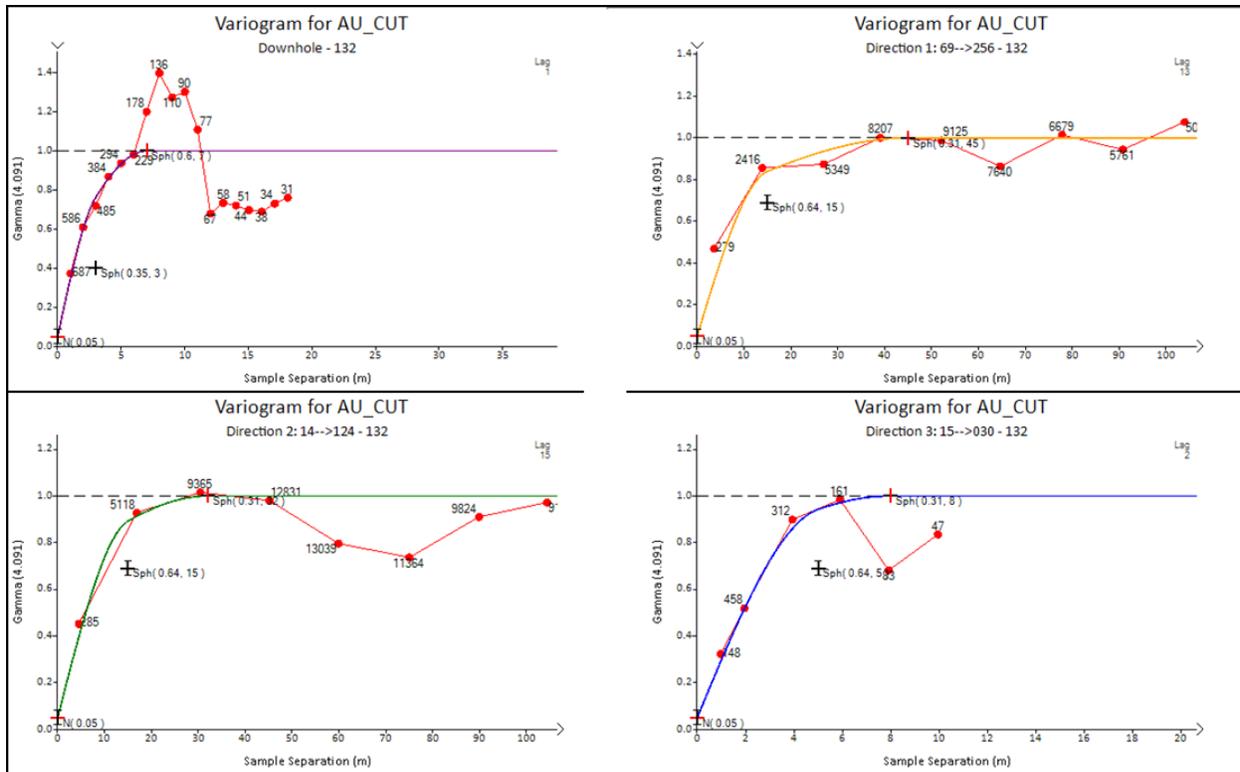


Figure 14-16: Example of the variography study for the South Zone 132

14.6 Data Analysis - Polygonal MRE

14.6.1 Outlier Handling

According to Turcotte and Pelletier (2009) the Wesdome deposit contains 2,940 samples grading more than 0.00 g/t Au within the boundaries of the 21 mineralized zones. The capping value used for the polygonal MRE was 67 g/t Au and was determined using a histogram plot and applied on raw assays. The QP believes that the 2009 high-grade capping value of 67 g/t Au remains valid and can be used for the 2019 MRE.

The capping value for the 7 other zones was set by Wesdome in 2014 at 34.28 g/t Au applied on raw assays. Wesdome had used this value in the past when operating the Kiena mine. The QP believes that the 2014 high-grade capping value established at 34.28 g/t Au is valid and can be used for the 2019 MRE.

14.6.2 Density

According to Turcotte and Pelletier (2009), a specific gravity of 2.80 t/m³ was used for the polygonal MRE which is consistent with the SG results obtained by water displacement method.

14.7 Block Modelling

The block model for the Kiena Mine Area was set in Geovia® GEMS 6.8.2.2.

14.7.1 Block Model Parameters

The parameters provided in Table 14-6 were used for the current mineral resource estimate. Individual block cells have dimensions of 5 m long (X-axis) by 5 m wide (Y-axis) by 5 m vertical (Z-axis).

The size of the blocks were chosen in order to best match the drilling pattern, thickness of the zones, complexity of the geology model and underground mine planning.

Table 14-6: Kiena Mine Area block model parameters

Properties	X (column)	Y (row)	Z (level)
Origin coordinates	12,600	11,800	3,100
Number of blocks	400	340	400
Block extent (m)	2,000	1,700	2,000
Block size (m)	5	5	5
Rotation	0		

The block model was coded using the percent model method typical of Geovia GEMS™, reflecting the proportion of each solid inside every block. All blocks falling within a solid were assigned the corresponding solid block code.

14.7.2 Search Ellipsoid Strategy

The ranges of the ellipsoids used for the interpolation were established using the variography study and correspond to the range of the first structure for the first pass, to the second structure for the second pass and to two times the second structure for the third pass. The third pass was designed to adequately populate all the block of the mineralized zones (Figure 14-17).



It is noteworthy to mention at this point that the classification was mostly based on drillhole spacing and, therefore, some interpolated blocks were not converted into the Inferred classification. Refer to section Mineral Resource Classification (Section 14.10) for more details.

Table 14-7 presents the orientation and ranges of the search ellipsoids for each pass.

In addition, a high grade limit or second capping value was used for the second and third pass grade interpolation to restrict high grade impact at greater distance from the drillhole intersect (Table 14-8).

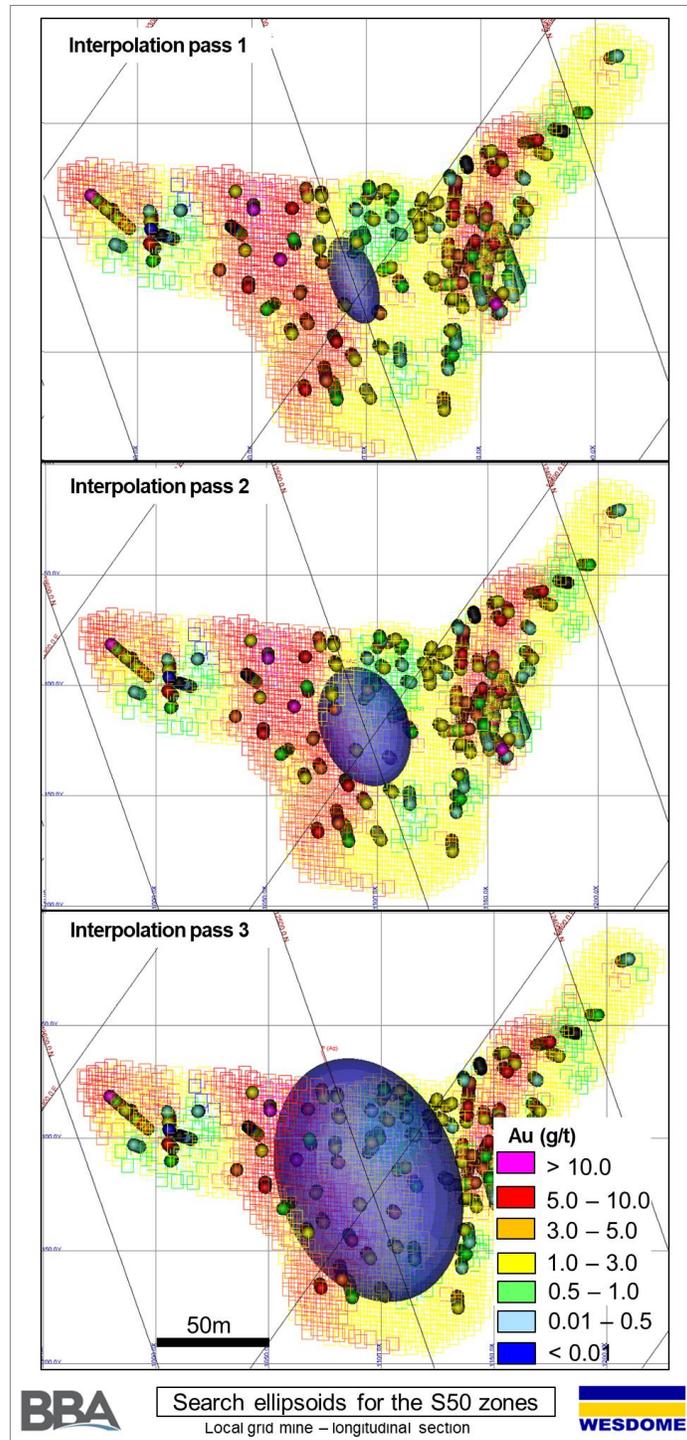


Figure 14-17: Example of search ellipsoids for the S50 zones for the three interpolation passes

Table 14-7: Search ellipsoid ranges by interpolation passes

Sector	Blockcode	GEMS orientation			Pass 1			Pass 2			Pass 3		
		GEMS orientation			Search ellipsoid ranges			Search ellipsoid ranges			Search ellipsoid ranges		
		Azimut	Dip	Azimut	X (m)	Y (m)	Z (m)	X (m)	Y (m)	Z (m)	X (m)	Y (m)	Z (m)
Zone S50	100 - 104	267	50	157	20	10	10	28	20	10	56	40	20
Zone VC1	111 - 114	105	83	239	35	12	10	50	25	10	100	50	20
Zone VC6	123	28	59	231	15	11	10	30	20	10	60	40	20
Zone South	130 - 135	256	69	124	15	15	10	45	32	10	90	64	20
Zone B	140	286	54	170	16	14	10	30	29	10	60	58	20
ZA_W	202	345	0	255	26	30	10	43	40	10	86	80	20
ZA_H	204	272.7	41.6	195.5	20	15	10	36	18	10	72	36	20
ZA_V	206	110	-40	110	25	10	10	45	21	10	90	42	20
ZA1_W	212	345	0	255	26	30	10	43	40	10	86	80	20
ZA1_H	214	272.7	41.6	195.5	20	15	10	36	18	10	72	36	20
ZA1_L	218	287.4	63.2	215.7	28	20	10	49	37	10	98	74	20
ZA2_W	222	345	0	255	26	30	10	43	40	10	86	80	20
ZA2_H	224	272.7	41.6	195.5	24	12	10	36	18	10	72	36	20
ZA2_L	228	287.4	63.2	215.7	28	20	10	49	39	10	98	78	20
H1ZA	300	110	-40	110	25	10	10	45	21	10	90	42	20

Table 14-8: Restricted search ellipsoid parameters

Rockcode	Blockcode	Restricted search ellipsoid parameters			
		Range 1	Range 2	Range 3	Threshold value (g/t)
ZA_W	202	26	30	10	100
ZA_H	204	20	15	10	100
ZA_V	206	25	10	10	100
ZA1_W	212	26	30	10	55
ZA1_H	214	20	15	10	55
ZA1_L	218	28	20	10	55
ZA2_L	228	28	20	10	50

14.7.3 Interpolation Parameters

Estimation and search parameters were evaluated through Kriging Neighbourhood Analysis (KNA) and contact analysis.

KNA was conducted on each unit and on the most representative shear zones with the Snowden Supervisor software. KNA provides a quantitative method of testing different estimation parameters (i.e. block size, discretization and min/max of composites used for the interpolation) by evaluating their impact on the quality of the results. The interpretation of these helps select the optimal value for each parameter.

Following this study, the parameters provided in Table 14-9 were chosen for the interpolation of the block model.

Table 14-9: Interpolation parameters

Interpolation parameters	Pass 1	Pass 2	Pass 3
Minimum number of composites used	12	8	4
Maximum number of composites used	24	24	24
Maximum number of composites per drillhole used	4	4	4
Minimum number of drillholes used	3	2	1

14.7.4 Interpolation Methodology

The interpolation was run on a set of points extracted from the capped composited data. The block model grades were estimated using ordinary kriging (OK) methods. Hard boundaries between the mineralized zones were used in order to prevent grades from adjacent zones being used during interpolation. As a block was estimated, it was tagged with the corresponding pass number.

For comparison purposes, additional grade models were generated using: 1) inverse distance squared (ID^2); 2) nearest neighbour (NN); and 3) OK on uncapped composited data.

14.8 Block Model Validation

Every step of the block modelling process was revised to ensure fair representation of the available data in the Block Model resource model.

More specific validations were completed on the block model including visual review of the interpolated grades in relation to the raw and composited data, checks for global and local bias, graphical validation (swath plots), statistical analysis of the model and comparison to other estimation methods.

14.8.1 Visual Validation

Block model grades were visually compared against drillhole composite grades and raw assays in cross-section, plan, longitudinal and 3D views (Figure 14-18). This visual validation process also included confirming that the proper coding was done within the various domains and checks for global and local bias.

The visual comparison shows that the block model is consistent and correlate well with the primary data without excessive smoothing.

Visual comparisons were also conducted between ID^2 , OK and NN interpolation scenarios. The OK scenario used for the resource estimate produced a grade distribution honouring drillhole data and the style of mineralization observed on the Kiena Mine Area.

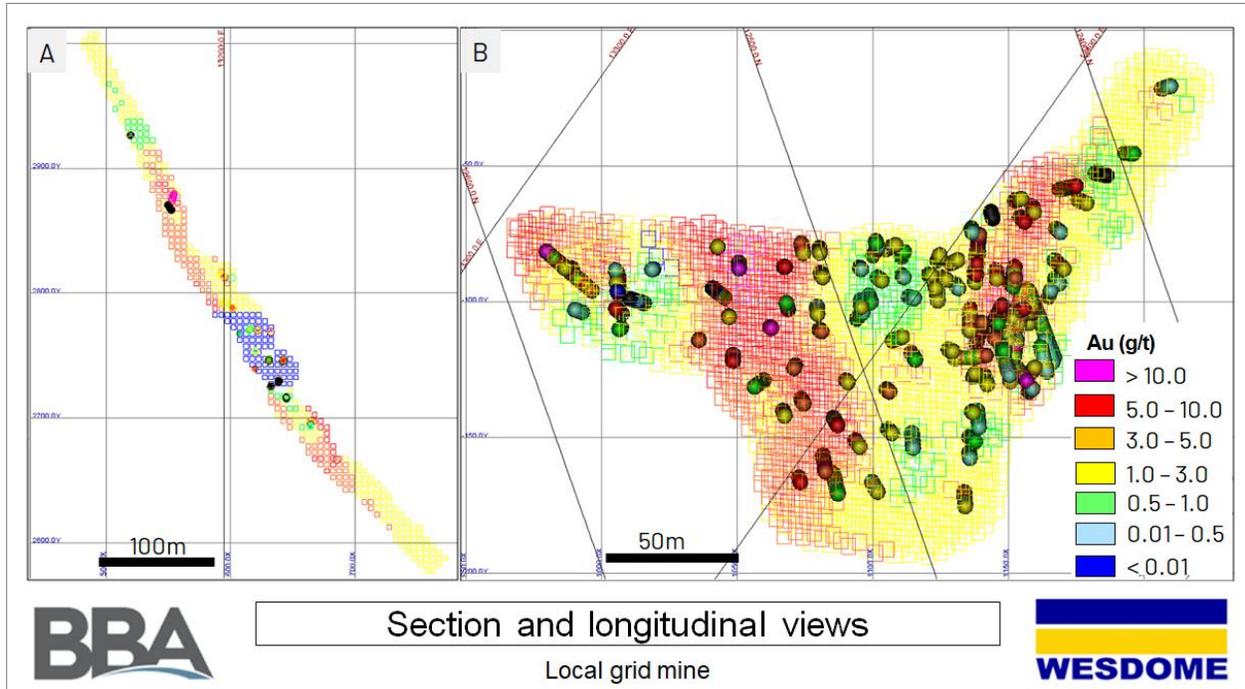


Figure 14-18: Comparative example of the grade distribution between the blocks and the composites in section (A) and longitudinal (B) views

14.8.2 Statistical Validation

Grade averages for the OK, NN and the ID² models were tabulated in Table 14-10. This comparison did not identify significant issues. As expected, block grade averages are generally lower than the composite grades and initial grades were well represented throughout the estimation process.

The average grades generated by the ID² interpolation method are very close to those reported from the OK interpolation method. This information provides a general indication that the resource model is reasonable.



Table 14-10: Comparison of the block and composite mean grades at a zero cut-off grade for Inferred and Indicated blocks (blocks >50% inside a mineralized zone)

Sector	Number of composites	Composite grade (g/t Au)	Number of blocks	OK grade model (g/t Au)	ID ² grade model (g/t Au)	NN grade model (g/t Au)
S50_100	522	1.77	543	0.71	1.86	1.89
S50_101	558	1.93	717	1.53	1.84	1.98
S50_102	844	2.97	686	2.92	2.84	3.05
S50_103	315	1.51	373	1.34	1.34	1.13
S50_104	248	1.75	1044	1.96	2.04	1.53
VC1_111	218	3.11	362	2.77	2.96	3.18
VC1_112	74	2.80	184	2.87	2.75	4.68
VC1_113	113	3.42	326	3.62	3.64	4.70
VC1_114	383	2.44	499	1.79	2.46	2.58
VC6_123	231	2.79	352	3.05	2.73	2.94
ZS_130	613	1.41	3271	1.22	1.29	1.47
ZS_131	600	1.70	2127	1.61	1.77	1.74
ZS_132	788	1.18	2389	1.43	1.50	1.61
ZS_133	170	1.33	988	1.44	1.46	1.26
ZS_135	172	1.28	500	1.32	1.41	1.19
ZB_140	192	1.63	1244	1.62	1.74	1.48
ZA	1251	13.59	2838	12.44	11.14	14.27
ZA1	635	7.64	1900	7.03	6.95	7.09
ZA2	403	15.69	1617	11.46	11.84	13.20
H1ZA	72	1.73	88	1.16	1.58	0.70

14.8.3 Swath Plots

Swath plots were also generated as part of the block model validation. A swath plot is a graphical display of the grade distribution derived from a series of bands (or swaths), generated in several directions throughout the deposit. Using the swath plots, grade variations from the OK model are compared to the distribution of grade interpolated with the NN and ID² methods and to the composite grades. This validation method also works as a visual mean to identify possible bias in the interpolation.

Figure 14-19 to Figure 14-21 illustrate a series of swath plots in the three directions. Generally, the grades estimated in the blocks are close to the average grades provided by the data source; no bias was found in the resource estimate in this regard.

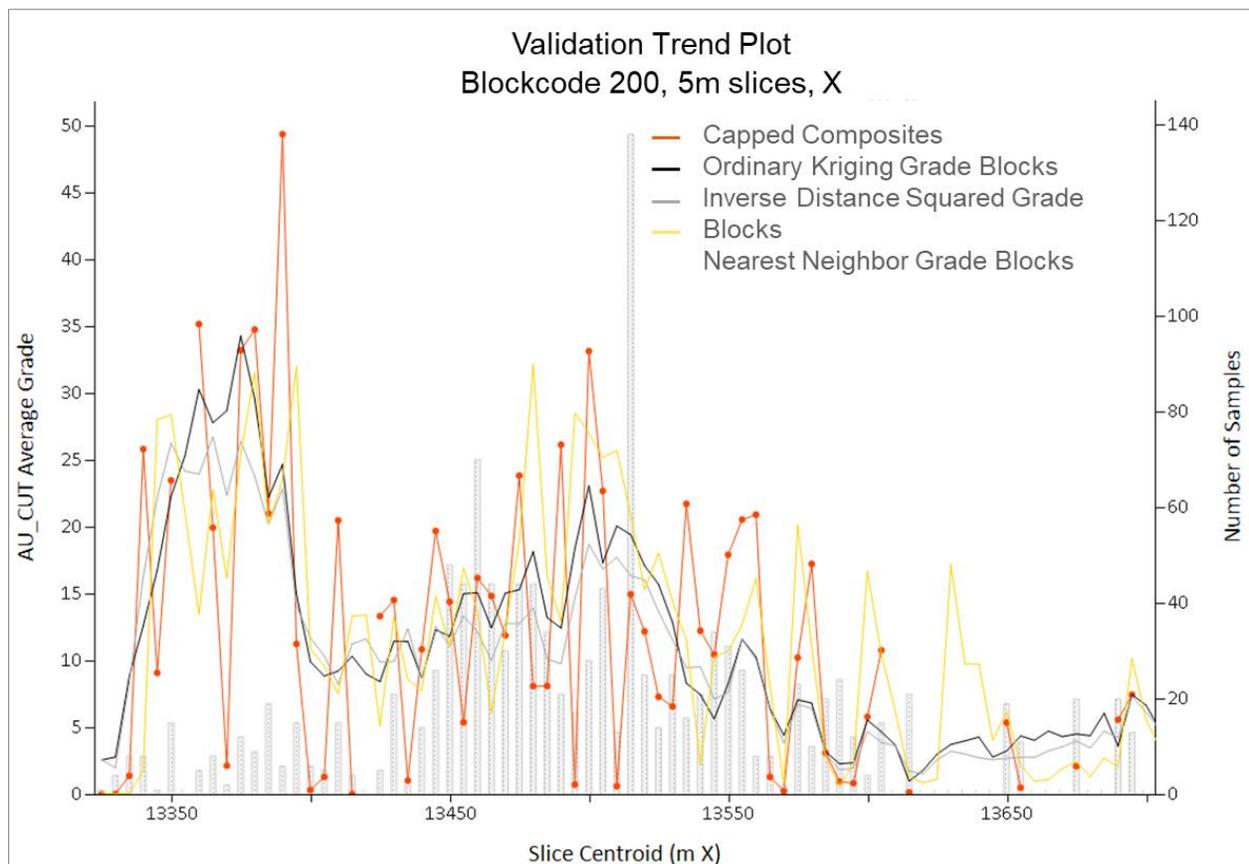


Figure 14-19: Block model validation swath plot along strike (X-direction) for the ZA Zone

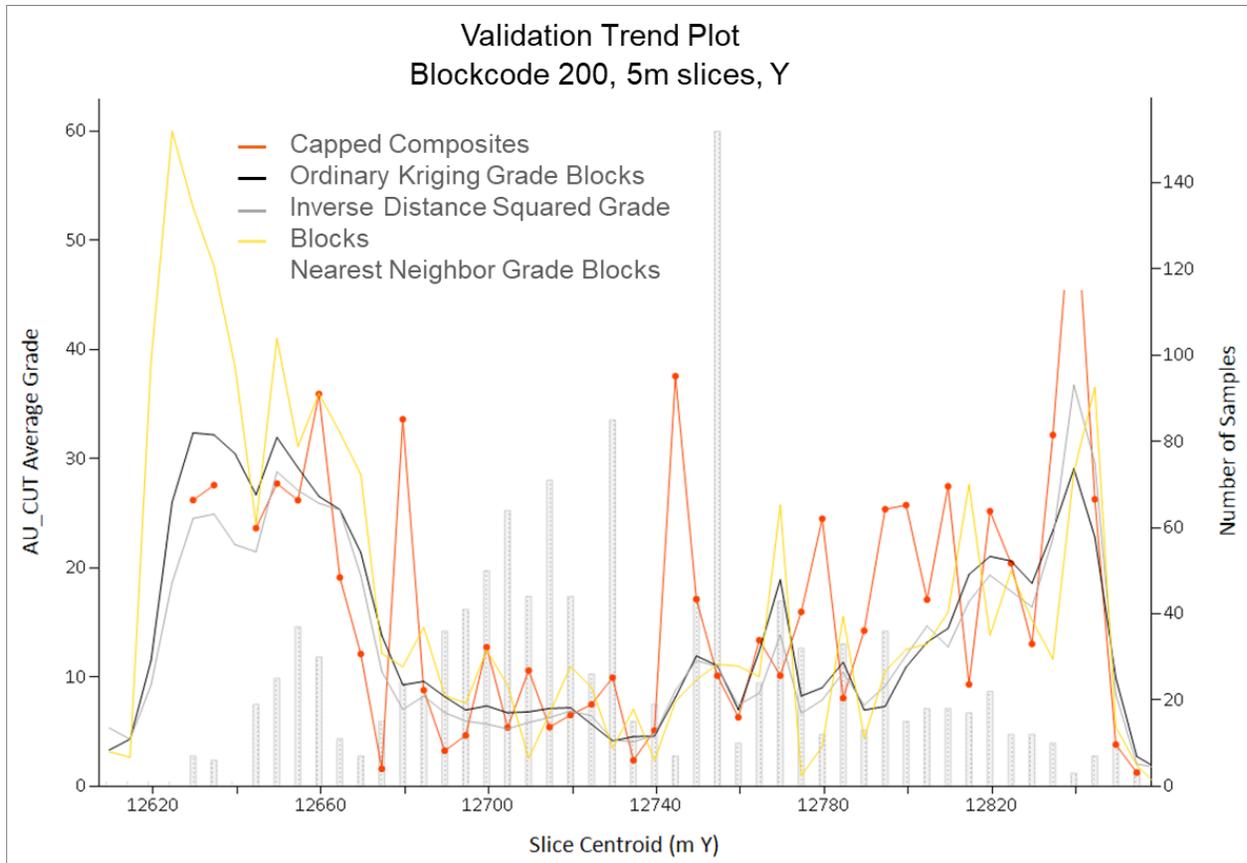


Figure 14-20: Block model validation swath plots across strike (Y-direction) for the ZA Zone

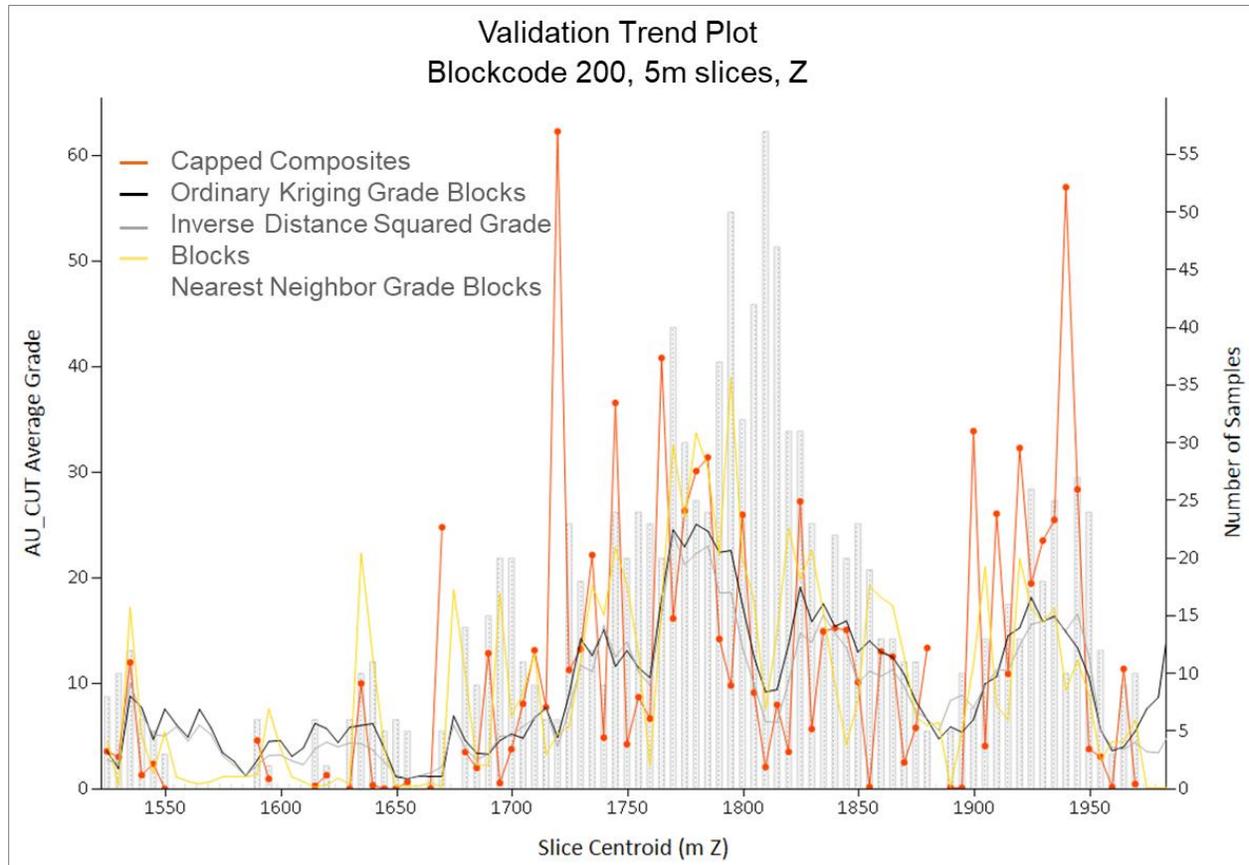


Figure 14-21: Block model validation swath plots along elevation (Z-direction)

Based on visual and statistical reviews, it is the QP's opinion that the Kiena Mine Area block model provides a reasonable estimate of in situ gold resources.

14.9 Polygonal Mineral Resource Estimate methodology

The polygons were created on inclined longitudinal sections for each individual zone. All drillholes intersecting gold-bearing zones (composites) were identified on the sections and assigned as the polygon grades. Each polygon was assigned a unique name. Polygon limits were defined by the mid-distance between two drillhole intercepts, or the maximum distance from the pierce point, defined as 30 m or 40 m for the Wesdome Deposit (Figure 14-22).

The polygon tonnage was estimated for each polygon using the area of the polygon on the inclined longitudinal section multiplied by the true thickness of each intercept and the specific gravity.

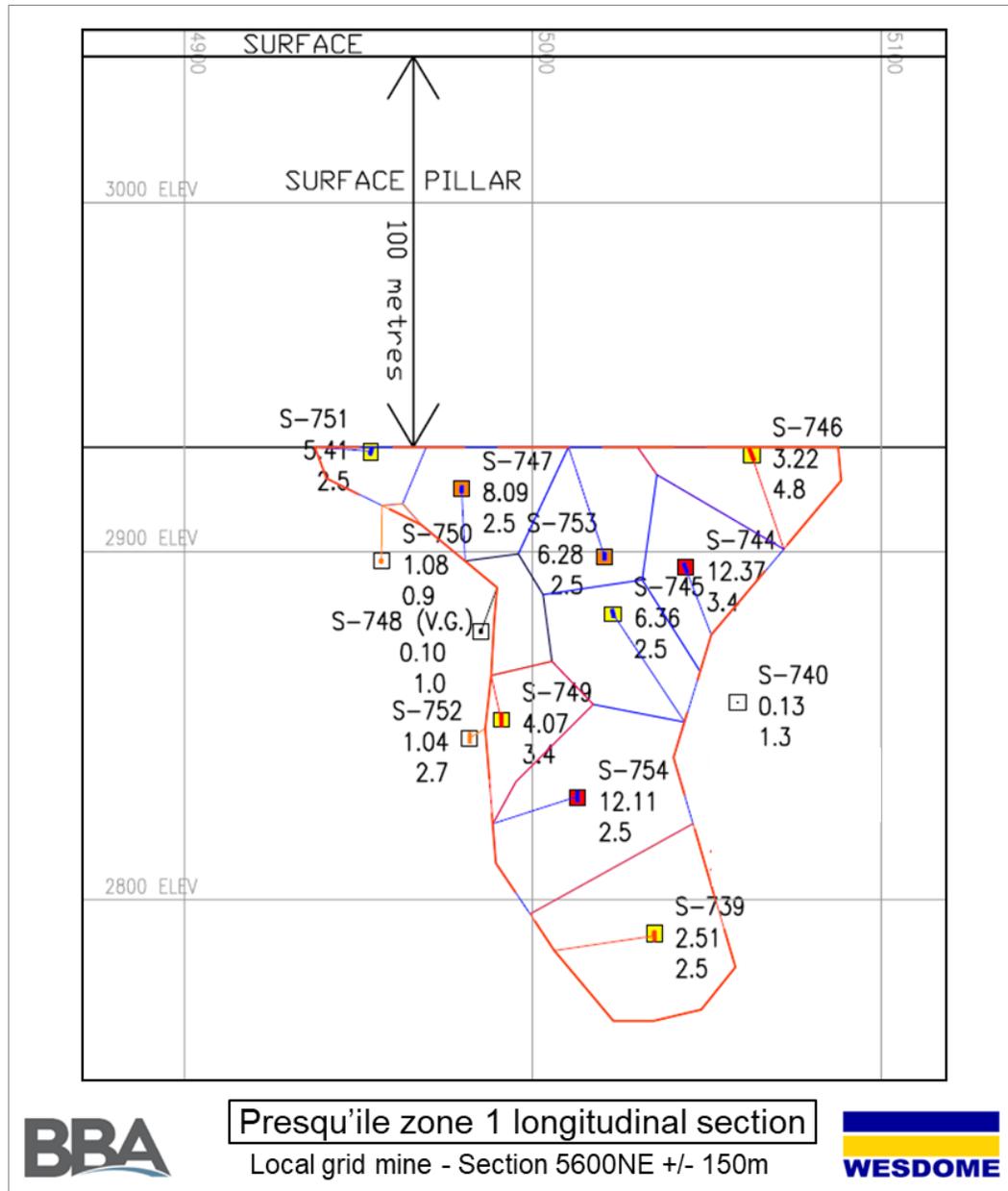


Figure 14-22: Longitudinal section 12200 N +/- 50m looking north of the Dubuisson zone showing the polygons for the 2019 MRE

14.10 Mineral Resource Classification

The mineral resources for the Kiena Mine Complex were classified in accordance with CIM Standards.

14.10.1 Mineral Resource Definition

The “CIM Definition Standards for Mineral Resources and Reserves” prepared by the CIM Standing Committee on Resource Definitions and adopted by the CIM council on May 10, 2014, provides standards for the classification of Mineral Resources and Mineral Reserves estimates as follows:

Inferred Mineral Resource:

*An **Inferred Mineral Resource** is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade or quality continuity.*

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Indicated Mineral Resource:

*An **Indicated Mineral Resource** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.*

Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

Measured Mineral Resource:

*A **Measured Mineral Resource** is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit.*

Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.

A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.

14.10.2 Mineral Resource Classification for the Block Model MRE

Following the previous definitions, the estimated block grades were classified into Inferred and Indicated Mineral Resource categories using drill spacing, a minimum number of drillhole and recognition of grade and geological continuity within the zones.

No Measured resources were defined for the Kiena Mine Area at this stage.

The following parameters were used for the classification:

- Inferred Mineral Resources were defined for blocks within the units that have been informed by a minimum of two drillholes within 40 m of a drillhole (80 m of drill spacing).
- Indicated Mineral Resources were defined for blocks within the units that have been informed by a minimum of three drillholes within 12.5 m of a drillhole (25 m of drill spacing).

When needed, a series of clipping boundaries were created manually in longitudinal views to either upgrade or downgrade classification in order to homogenize the groups of resources by removing artificial features and isolated blocks or group of blocks due to automatically generated classification. All remaining estimated but unclassified blocks were flagged as “Exploration Potential”.

Figure 14-23 shows an example of the classification.

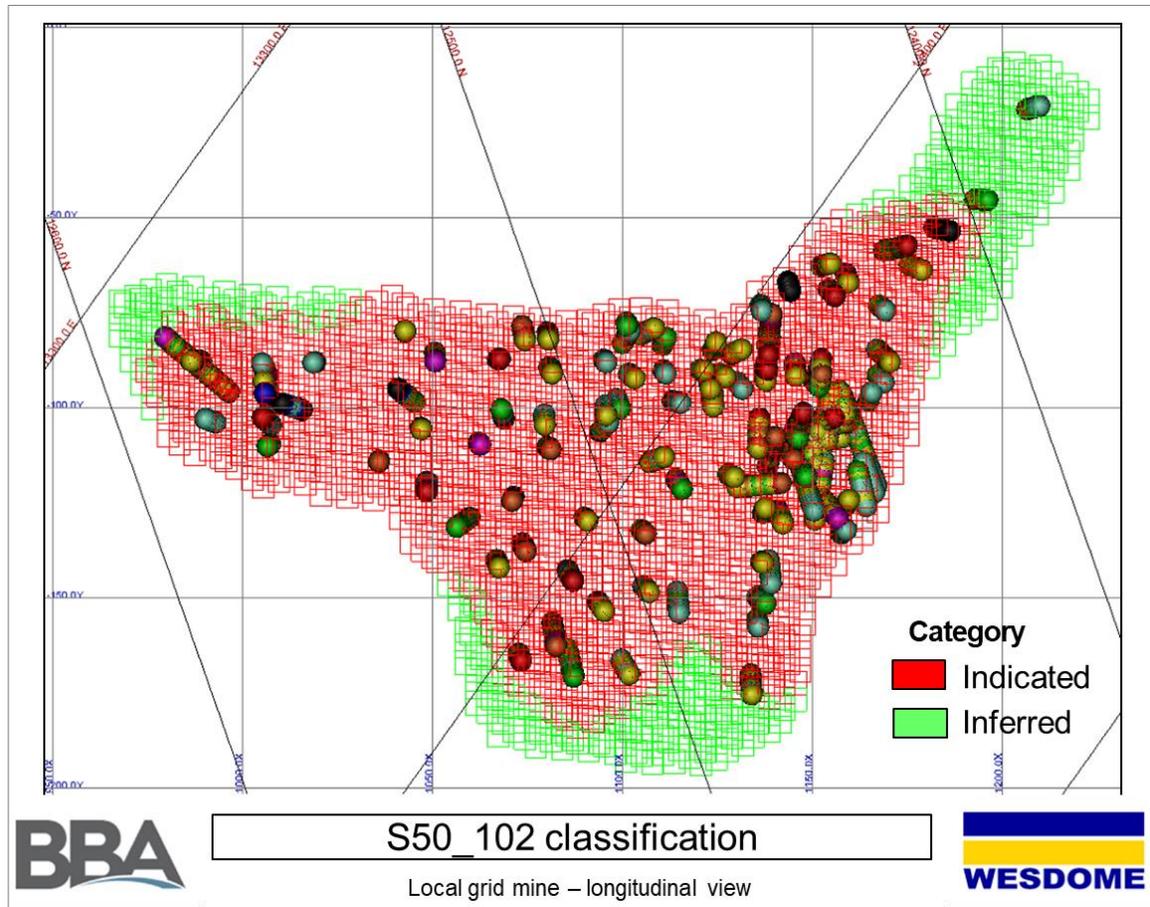


Figure 14-23: Mineral Resource classification example for the S50_102 Zone

14.10.3 Mineral Resource Classification for the Polygonal MRE

The classification for the Polygonal MRE was established in 2009 by Turcotte and Pelletier for the Wesdome deposit and by Turcotte et al. in 2015 for the 7 other zones.

For this MRE, the QP reviewed the classification and undertook the following changes since the last MRE:

- Removing isolated polygons for lack of plausible economic viability (Figure 14-24);
- Downgrading the measured resources into indicated resources as no recent drillholes nor drift resampling were conducted on this part of the property to assess the quality of the historical data;
- Discarding zones with less than three drillholes;
- Discarding the resources that were disclosed within a 100m crown pillar (Figure 14-24 and Figure 14-24).

For all remaining polygons, the classification was defined by the following rules:

For the Wesdome deposit:

- Indicated Mineral Resources were defined for polygons with a maximum radius of 15 m from drillhole intercepts (equivalent to a 30 m of drill spacing) where a cluster of DDH with similar results was observed;
- Inferred Mineral Resources were defined for polygons with a maximum radius of 40 m from drillhole intercepts (equivalent to 80 m of drill spacing) where a cluster of DDH with similar results was observed.

For the other zones:

- Indicated Mineral Resources were defined for polygon with a maximum radius of 30 m from drillholes intercepts (60 m of drill spacing) where a cluster DDH with similar results is present. The average radius from drillhole intercepts for the indicated resources is 14.81 m;
- No Inferred Mineral Resources were estimated.

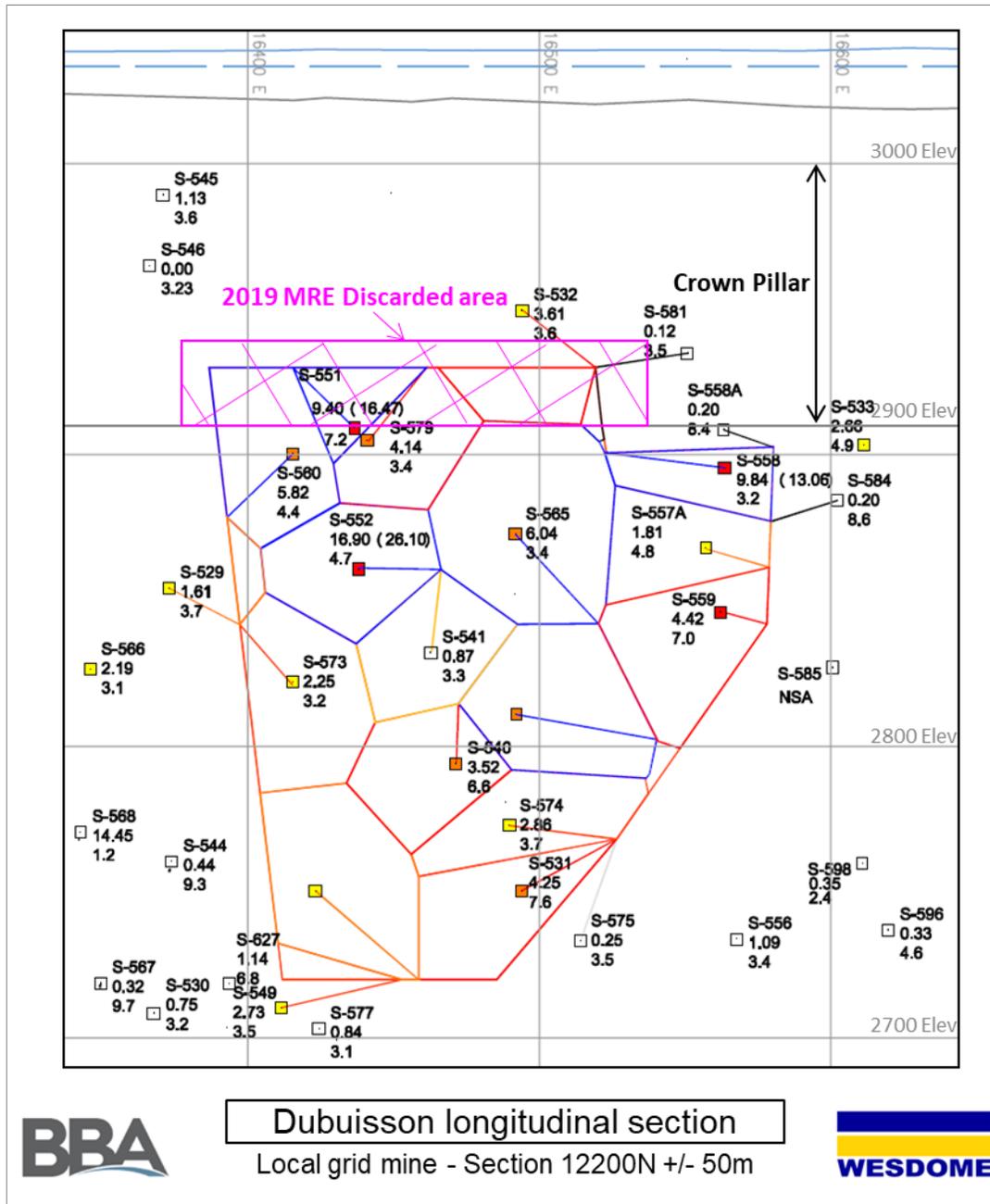


Figure 14-24: Polygonal MRE and discarded area example for the 2019 MRE Longitudinal section 12200 N +/- 50 m looking north of the Dubuison Zone

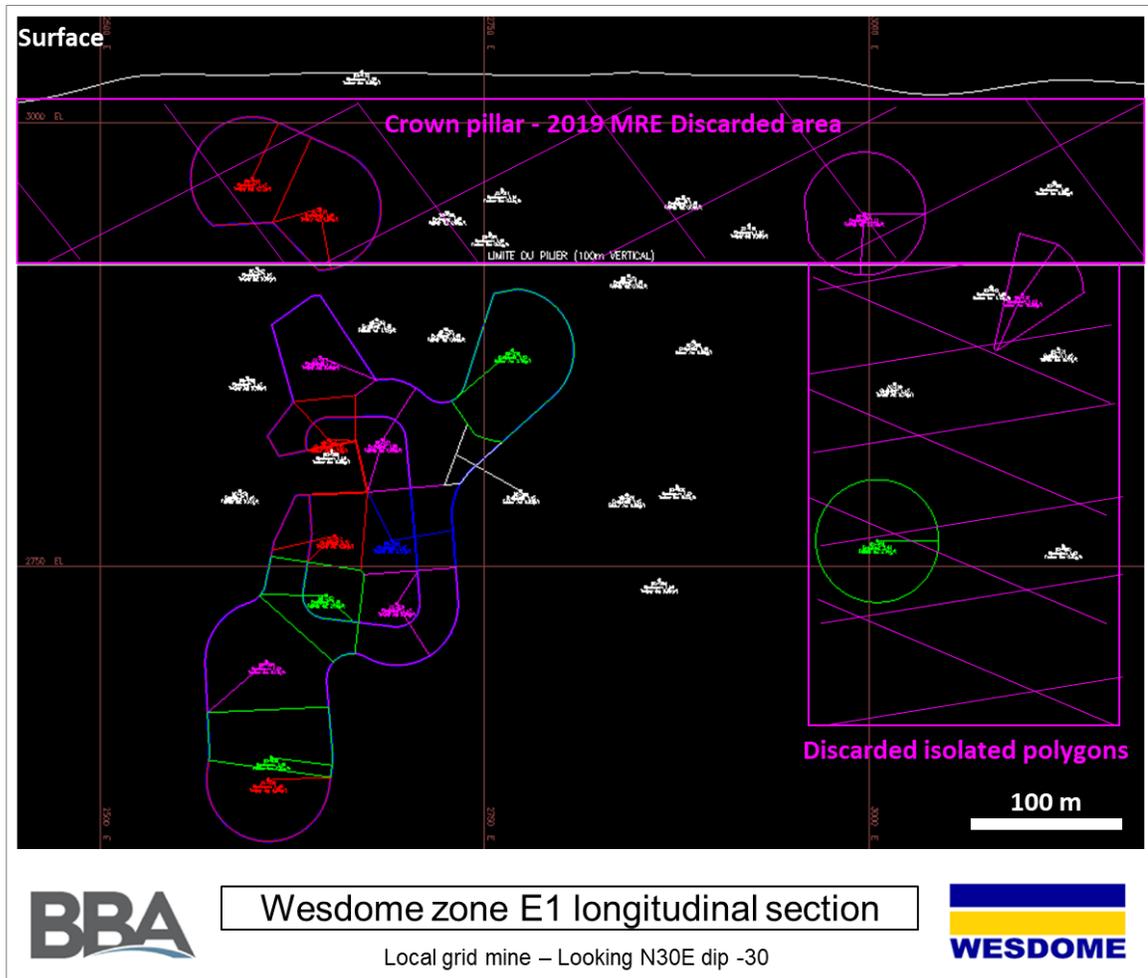


Figure 14-25: Polygons MRE and of discarded area example for the 2019 MRE
 Longitudinal section looking N30E of the Wesdome zone E1

14.11 Cut-off Grade

According to CIM's Definition Standards, in order for a deposit to be considered a Mineral Resource it must be proven that there are "reasonable prospects for eventual economic extraction". This requirement implies that the quantity and grade estimates meet certain economic thresholds and that the Mineral Resources are reported at an appropriate cut-off grade that takes into account extraction scenarios and processing recoveries.

The underground cut-off grade used for the Mineral Resource Estimate was 3.0 g/t Au for the zones with >40° dip and 4.0 g/t Au for the shallow-dipping zones (<40° dip). The cut-off grades were calculated using a gold price of USD1,300 per ounce, a CAD:USD exchange rate of 1.31, mining cost of \$110/t (>40° dip); \$150/t (<40° dip), processing cost of \$35/t, and G&A of \$15/t. The cut-off grades should be re-evaluated in light of future prevailing market conditions (metal prices, exchange rate, mining cost, etc.).

It is the QP's opinion that the cut-off grades are relevant to the grade distribution of this project and that the mineralization exhibits sufficient continuity for economic extraction under the cut-offs applied.

14.12 Kiena Mine Complex Mineral Resource Estimate

The total Indicated and Inferred Mineral Resource Estimate for the block model MRE and the polygonal MRE is presented in Table 14-11:

Table 14-11: Underground Indicated and Inferred Mineral Resource Estimate

	Indicated Resources			Inferred Resources		
	Tonnage (t)	Grade (g/t)	Ounces Au (oz)	Tonnage (t)	Grade (g/t)	Ounces Au (oz)
Block Model MRE	968,900	14.46	450,400	1,121,200	11.02	397,100
Polygonal MRE	1,859,300	5.65	337,800	1,796,900	6.94	401,000
TOTAL	2,828,200	8.67	788,100	2,918,100	8.51	798,100

Notes to Table 14-11:

1. These mineral resources are not mineral reserves as they do not have demonstrated economic viability.
2. The mineral resource estimate follows CIM definitions and guidelines for mineral resources.
3. Results are presented in situ and undiluted and considered to have reasonable prospects for economic extraction, below 100 m crown pillar.
4. The estimation combined two estimation methods, ordinary kriging in the Kiena Complex and polygonal for other deposits on the property.
5. The Kiena Complex resources encompasses for 20 zones with a minimum true thickness of 3.0 m using the grade of the adjacent material when assayed or a value of zero when not assayed. High-grade capping varies from 20 to 200g/t Au (when required) was applied to composited assay grades for interpolation using an Ordinary Kriging interpolation method based on 1.0 m composite and block size of 5 m x 5 m x 5 m, with bulk density values of 2.8 (g/cm³). In addition, a high grade limit or second capping value was used for the second and third pass grade interpolation to restrict high grade impact at greater distance from the drillhole intersect. Indicated resources are manually defined and encloses areas where drill spacing is generally less than 25 metres, blocks are informed by a minimum of three drillholes, and reasonable geological and grade continuity is shown.

6. The zone outside the Kiena Complex encompasses for eight zones with a minimum true thickness of 1.5 metre using a polygonal estimation method. Indicated resources were estimated from drillhole results using the mid distance between drillhole or a maximum of 30 metres, 12.5 metres in some areas. The high-grade capping was fixed at 34.28 g/t Au with a bulk density value of 2.8 (g/cm³).
7. The estimate is reported for potential underground scenario at cut-off grades of 3.0 g/t Au (> 40° dip) and 4.0 g/t Au (< 40° dip, Wesdome Zone). The cut-off grades were calculated using a gold price of US\$1,300 per ounce, a CAD:USD exchange rate of 1.31 (CAD1,700); mining cost \$110/t (> 40° dip); \$150/t (< 40° dip); processing cost \$35/t; G&A \$15/t. The cut-off grades should be re-evaluated in light of future prevailing market conditions (metal prices, exchange rate, mining cost, etc.).
8. The number of metric tons and ounces were rounded to the nearest hundred and the metal contents are presented in troy ounces (tonne x grade / 31.10348).
9. The QP, Pierre-Luc Richard, P. Geo., is not aware of any known environmental, permitting, legal, title-related, taxation, socio-political or marketing issues, or any other relevant issue not reported in this Technical Report that could materially affect the mineral resource estimate.

Table 14-12 and Table 14-13 show the breakdown of the polygonal and block model MRE at the selected cut-off grade of 3.0 g/t Au and at 4.0 g/t for the Wesdome deposit. All tables for the Polygonal MRE can be found in Appendix C.

Table 14-12: Indicated and Inferred block model Mineral Resource Estimate per zone

Zones	Cut-off grade	Indicated Resources			Inferred Resources		
		Tonnage (t)	Grade (g/t)	Ounces Au (oz)	Tonnage (t)	Grade (g/t)	Ounces Au (oz)
S50_100	3.0	9,906	4.13	1,315	-	-	-
S50_101	3.0	22,768	4.42	3,235	9,611	4.23	1,308
S50_102	3.0	89,151	4.95	14,182	8,326	4.70	1,259
S50_103	3.0	6,644	4.45	951	796	3.56	91
S50_104	3.0	4,384	3.67	517	62,282	3.84	7,679
VC1_111	3.0	43,833	5.21	7,348	3,338	4.03	433
VC1_112	3.0	12,818	5.01	2,065	13,134	5.89	2,487
VC1_113	3.0	25,741	5.93	4,909	24,801	7.47	5,954
VC1_114	3.0	5,650	4.91	892	30,172	6.92	6,713
VC6_123	3.0	30,851	4.59	4,552	22,617	4.78	3,476
ZS_130	3.0	5,821	3.64	681	43,921	4.58	6,466
ZS_131	3.0	9,885	4.26	1,355	86,744	4.02	11,215
ZS_132	3.0	4,006	4.21	543	32,056	3.34	3,438
ZS_133	3.0	6,267	4.68	943	25,088	4.43	3,574
ZS_135	3.0	11,975	4.68	1,804	15,476	4.06	2,022

Zones	Cut-off grade	Indicated Resources			Inferred Resources		
		Tonnage (t)	Grade (g/t)	Ounces Au (oz)	Tonnage (t)	Grade (g/t)	Ounces Au (oz)
ZB_140	3.0	-	-	-	66,581	4.24	9,067
ZA_200	3.0	430,771	20.97	290,366	166,213	18.99	101,470
ZA1_210	3.0	185,961	13.26	79,259	187,331	10.60	63,845
ZA2_220	3.0	59,620	18.31	35,105	322,650	16.06	166,637
H1ZA_300	3.0	2,847	4.38	401	-	-	-
Total block model MRE		968,900	14.46	450,400	1,121,200	11.02	397,100

Table 14-13: Indicated and Inferred Polygonal Mineral Resource Estimate per zone

Zones	Cut-off grade	Indicated Resources			Inferred Resources		
		Tonnage (t)	Grade (g/t)	Ounces Au (oz)	Tonnage (t)	Grade (g/t)	Ounces Au (oz)
Martin Zone	3.0	236,400	4.86	37,000	-	-	-
Dubuisson Zone	3.0	281,500	5.46	49,400	-	-	-
Dubuisson North 1 Zone	3.0	193,700	7.67	47,800	-	-	-
Dubuisson North 2 Zone	3.0	80,600	6.71	17,400	-	-	-
Northwest Zone	3.0	467,400	3.79	57,000	-	-	-
Presqu'île 1 Zone	3.0	91,800	6.64	19,600	-	-	-
Presqu'île 2 Zone	3.0	51,200	8.67	14,300	-	-	-
Wesdome deposit	4.0	456,700	6.49	95,300	1,796,900	6.94	401,000
Total polygonal MRE		1,859,300	5.65	337,700	1,796,900	6.94	401,000

Table 14-14 shows the sensitivity of the block model estimate to grade cut-off for the in situ underground MRE.

The reader is cautioned that the numbers presented in the following tables should not be misconstrued with a mineral resource statement.

Table 14-14 shows a 3D view of the grade distribution and classification of the Kiena Deep A Zone A.

Table 14-14: Kiena Mine A Indicated and Inferred Mineral Resource cut-off grade sensitivity table

Cut-off grade	Indicated Resources			Inferred Resources		
	Tonnage (000 t)	Grade (g/t)	Ounces Au (oz)	Tonnage (000 t)	Grade (g/t)	Ounces Au (oz)
> 5.00 g/t	666,652	19.28	413,133	6,51,808	16.24	340,277
> 4.50 g/t	717,200	18.25	420,841	716,675	15.20	350,163
> 4.00 g/t	781,013	17.11	429,549	808,615	13.95	362,694
> 3.50 g/t	860,071	15.88	439,064	930,947	12.61	377,395
> 3.00 g/t	968,899	14.46	450,420	1,121,198	11.02	397,140
> 2.50 g/t	1,104,691	13.02	462,375	1,379,812	9.46	419,884

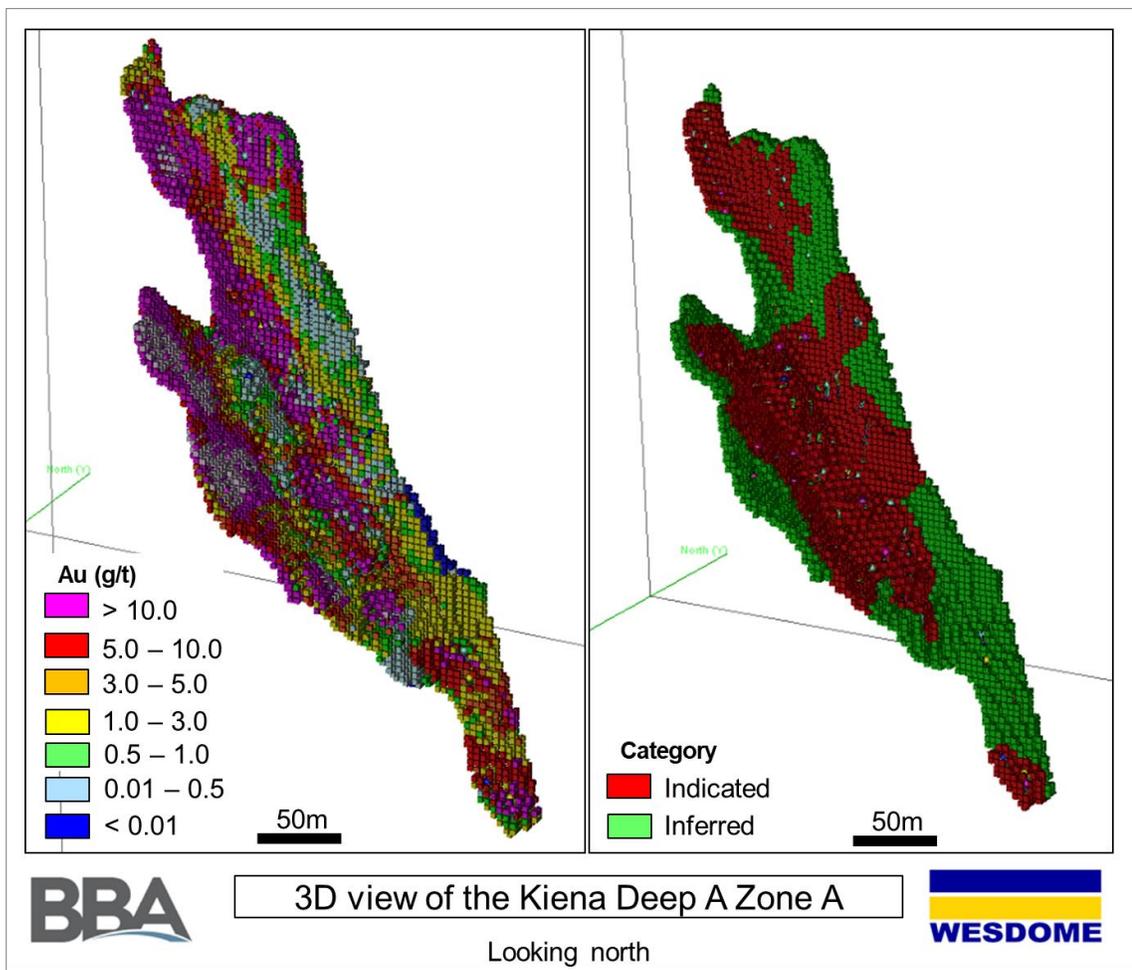


Figure 14-26: Example of 3D views showing grade distribution and classification of the Kiena Deep A Zone A



15. MINERAL RESERVE ESTIMATE

This chapter is not required for a Technical Report on Mineral Resources.



16. MINING METHODS

This chapter is not required for a Technical Report on Mineral Resources.



17. RECOVERY METHODS

This chapter is not required for a Technical Report on Mineral Resources.



18. PROJECT INFRASTRUCTURE

This chapter is not required for a Technical Report on Mineral Resources.



19. MARKET STUDIES AND CONTRACTS

This chapter is not required for a Technical Report on Mineral Resources.



20. ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

This chapter is not required for a Technical Report on Mineral Resources.



21. ECONOMIC ANALYSIS

This chapter is not required for a Technical Report on Mineral Resources.



22. CAPITAL AND OPERATING COSTS

This chapter is not required for a Technical Report on Mineral Resources.

23. ADJACENT PROPERTIES

The Kiena Mine Complex is located in the Val-d'Or mining camp as illustrated in Figure 23-1. Several mining and junior exploration companies are active in the area of the Kiena Mine Complex. Pierre-Luc Richard has not been able to verify the information presented below and the information is not necessarily indicative of the mineralization on the Kiena Mine Complex Property area (the subject of this Report). Some information was also taken from the previous technical report of Beausoleil et al. (2019).

23.1 Canadian Malartic Property

In June 2014, Yamana Gold and Agnico Eagle Mines bought all the common shares from Osisko. They created the Canadian Malartic Partnership. It is located approximately 6 km west of the Project. As of December 2018, proven and probable mineral reserves are estimated at 2.78 Moz Au (Agnico Eagle Mines – Canadian Malartic, 2019).

Pierre-Luc Richard, QP, has not been able to verify the information presented above and the information is not necessarily indicative of the mineralization on the Kiena Mine Complex Property area.

The Canadian Malartic Property lies at the southern margin of the eastern portion of the Archean Abitibi volcanic belt, mainly within the Pontiac Group of metasedimentary rocks. The property covers a 16-km-long section of the Larder Lake Cadillac Fault Zone (LLCFZ) and is underlain by mafic and ultramafic metavolcanic rocks of the Piché Group cut by intrusions, as well as metasediments of the Cadillac Group north of the fault zone.

The Canadian Malartic mine is a large-tonnage, low-grade Archean gold system, consisting of a broad shell of disseminated gold-bearing pyrite mineralization hosted by porphyritic felsic to intermediate intrusions and altered metasediments. The system is open to the west and to the south at depth. Mineralization in the Canadian Malartic Extension (Barnat deposit) is largely along the southern edge of the LLCFZ. The two deposits contain the bulk of the current reserves and are part of one large pit. The Jeffrey and Gouldie deposits, a few hundred metres east and south of the pit, respectively, contain some of the mineral resources (Agnico Eagle Mines – Canadian Malartic, 2019).

23.2 Dubuisson JV Property

The Dubuisson Property is a joint venture between Probe Metals Inc. and Agnico Eagle Mines. It is located in Dubuisson Township to the south of the Project and consists of 31 contiguous claims covering a surface area of approximately 748 ha.

The joint venture was announced in July 2010. Under the terms of the agreement, Agnico Eagle Mines acquired 51% of the rights, title and interest in the property for \$100,000 in cash and by issuing 15,000 shares of Agnico Eagle Mines for a total value of approximately \$1 million.

As part of the agreement and following the exercise of the option, Agnico Eagle Mines may acquire an additional interest, which would bring Agnico Eagle Mines share up to 70% and Probe Metals to 30% interest in the Property, by completing a bankable feasibility study. Agnico Eagle Mines will act as the operator for all exploration work carried out on the Property during the option period (Probe Metals-Dubuisson, 2019).

23.3 Agnico Eagle Mines Ltd. Properties

Agnico Eagle Mines Ltd. holds several properties and parts of historical properties northwest and south of the Project: Goldex, Joubi, Bigué, Callahan and School Mine.

The Goldex Property, adjacent to the southeast limit of the Project, has proven and probable reserves of 18.925 Mt at 1.58 g/t Au for 962,000 oz Au (Agnico Eagle Mines-Goldex 2019). It also encompasses the Quebec Explorers Gold Deposit. The property straddles a 5-km segment of the prolific LLCFZ. The gold system locally exceeds 20 m in thickness and can be traced for more than 800 m along strike. The mineralization is known to a depth of more than 1,500 m (Deep Zone 3).

Pierre-Luc Richard, QP, has not been able to verify the information presented above and the information is not necessarily indicative of the mineralization on the Kiena Mine Complex Property area.

The Goldex Property is located in the Dubuisson Township of Quebec in the southern Abitibi Greenstone Belt. The intermediate to mafic and ultramafic volcanic sequence that underlies the property dips steeply to the northeast. It is intruded by a large tabular-shaped quartz-diorite body known as the Goldex Granodiorite that also dips steeply northeast.

Goldex is a large, relatively low-grade body defined by the intensity of stockwork veins and gold grades rather than by individual veins. Most of the gold occurs as microscopic particles associated with pyrite, while the rest occurs as coarse native gold grains. There are several zones of gold mineralization with isolated mineralized intercepts over mineable widths on the property, and all of them, except the South Zone, are hosted by the Goldex Granodiorite. The M and E Zones and the Deep 1 Zone contain gold-bearing quart-tourmaline- pyrite veins and veinlets. The South Zone consists of quartz veins that have higher grades than those in the primary mineralized zones at Goldex (Agnico Eagle Mines – Goldex, 2019).

Past producers on the Goldex property include the Joubi Mine and some exploration shafts (Goldex Shaft 1 and the School Mine).

The Callahan Property, adjacent to the northwest limit of the Project, hosts the Callahan deposit in the Dubuisson Formation. In 1987, Falconbridge prepared a resource estimate. The latest major work was in 2010 when Kinross Gold Corp., as owner of the claims, conducted a diamond drilling campaign of 10,722 m (Beauregard and Gaudreault, 2010).

23.4 Tarmac Project Property

Globex Mining Enterprise holds six claims in the middle of the Project. Those claims are located west of the closed Siscoe Mine. The claims have an area of 94.1 ha.

23.5 Harricana River Mining (O3 Mining) Property

O3 Mining Inc. acquired Harricana River Mining Corporation as per press release August 23, 2019. O3 Mining Inc. holds 117 claims in the vicinity of the closed Sullivan Mine. Those claims are located approximately 6 km east of the Project.

During the period between 1934 and 1968, the Sullivan mine produced a total of 1,134,342 oz of gold and 293,857 oz of silver from 4,613,500 t of mineralized material grading an average 7.65 g/t Au and 1.98 g/t Ag. The veins mined at the Sullivan mine are found within the narrow west end of the Bourlamaque granodiorite batholith. The granodiorite is considerably altered, but chemically it is similar to the quartz-albite facies in the Siscoe stock (Sauvé et al., 1993).

23.6 Knick Exploration Property

Knick Exploration Inc. holds seven claims located 4 km west of the Project covering an area of 184.2 ha.

23.7 Metanor Resources (Bonterra) Property

Metanor Resources Ltd. (now Bonterra Resources Inc.) holds 21 claims located approximately 6 km southeast of the Project. The claims contain some showings and deposits (Nouvelle Zone Aurifère and Zone No. 5).

23.8 Marban Block Property

The Marban Block Property, held 100% by NioGold Mining Corporation (now Osisko Mining Inc.) is located about 15 km west of the town of Val-d'Or. The property consists of 42 claims and three mining concessions for a total surface area of 9.8 km². The Marban Block has three past producing mines: Marban, Norlartic and Kierens. Those deposits have NI 43-101 resource estimates effective as at June 1, 2013 (Gustin and Ronning, 2013), totalling 6.5 Mt at 1.4 g/t Au for 296,000 oz of gold in measured resources and 25.6 Mt at 1.5 g/t Au for 1,235,000 oz of gold in indicated resources (Osisko Mining – Marban Block, 2019).

Pierre-Luc Richard, QP, has not been able to verify the information presented above and the information is not necessarily indicative of the mineralization on the Kiena Mine Complex Property area.

The following description of the deposits is mostly modified and summarized from Trudel and Sauv  (1992), Gustin and Ronning (2013), and references therein.

During the period between 1961 and 1974, the Marban mine produced a total of 330,000 oz of gold from 1,983,000 t of mineralized material grading an average 5.27 g/t Au (Ducharme et al., 2009).

During the periods between 1959 and 1966 and between 1990 and 1992, the Norlartic mine produced a total of 188,000 oz of gold from 1.435 Mt of mineralized material at an average of 4.07 g/t Au (Ducharme et al., 2009).

During the period between 1965 and 1966, the Norlartic North Zone produced a total of 11,000 oz of gold from 81,000 t of mineralized material grading an average 4.35 g/t Au. The North-North Zone is located 500 m northeast of the Norbenite Fault. It is a near-surface intrusive-hosted deposit with mineralized quartz-tourmaline stockwork. Gold mineralization is confined to a conformable quartz-albite-carbonate-pyrite alteration envelope with a quartz-tourmaline-carbonate vein stockwork localized in the central to lower portions of a 60-m-wide granodiorite sill (Ducharme et al., 2009).

During the periods between 1965 and 1966 and between 1988 and 1992, the Kierens Mine produced a total of 52,000 oz of gold from 251,000 t of mineralized material from the Kierens Zone with an average grade of 6.30 g/t Au (Ducharme et al., 2009).

Three styles of gold mineralization were identified within the Kierens Zone by Aur Resources geologists: 1) high-grade single-vein structures; 2) sill stockworks; and 3) laminated veins in recrystallized mafic volcanic rocks.

A mineral resource estimate for the Kierens Zone was prepared by Gustin and Ronning (2013) on behalf of NioGold Mining. The estimate, as at June 1, 2013, established an indicated resource of 1.437 Mt at 2.19 g/t Au for a total of 101,000 oz of gold, and an inferred resource of 1.178 Mt at 1.73 g/t Au.

Pierre-Luc Richard, QP, has not been able to verify the information presented above and the information is not necessarily indicative of the mineralization on the Kiena Mine Complex Property area.

23.9 Siscoe East Property

The Siscoe East Property is located 3 km northwest of Val-d'Or between the former Siscoe and Sullivan mines. It hosts the former Stabell mine (Shaft No.1) that produced 13,629 oz of gold at an average grade of 0.21 oz/t and Shaft No.2 that produced 1,782 oz of gold at an average grade of 0.27 oz/t (Khobi and Frechette, 1987). The property is held 50% by NioGold Mining Corporation (now Osisko Mining Inc.) and 50% by Alexandria Minerals Corporation (now O3 Mining).

The Siscoe East Property is situated within the Malartic Group of mafic to ultramafic volcanic rocks north of the LLCFZ. The property is characterized by the contact between mafic to ultramafic volcanic rocks of the Dubuisson Formation (Lower Malartic Group) and the multi-phased granodiorite-diorite of the Bourlamaque Batholith. In the summer of 2008, Alexandria Minerals entered into a joint venture agreement with NioGold Mining allowing NioGold Mining to earn a 50% interest in the property by issuing 650,000 shares (issued) and completing \$750,000 of exploration work on the property.

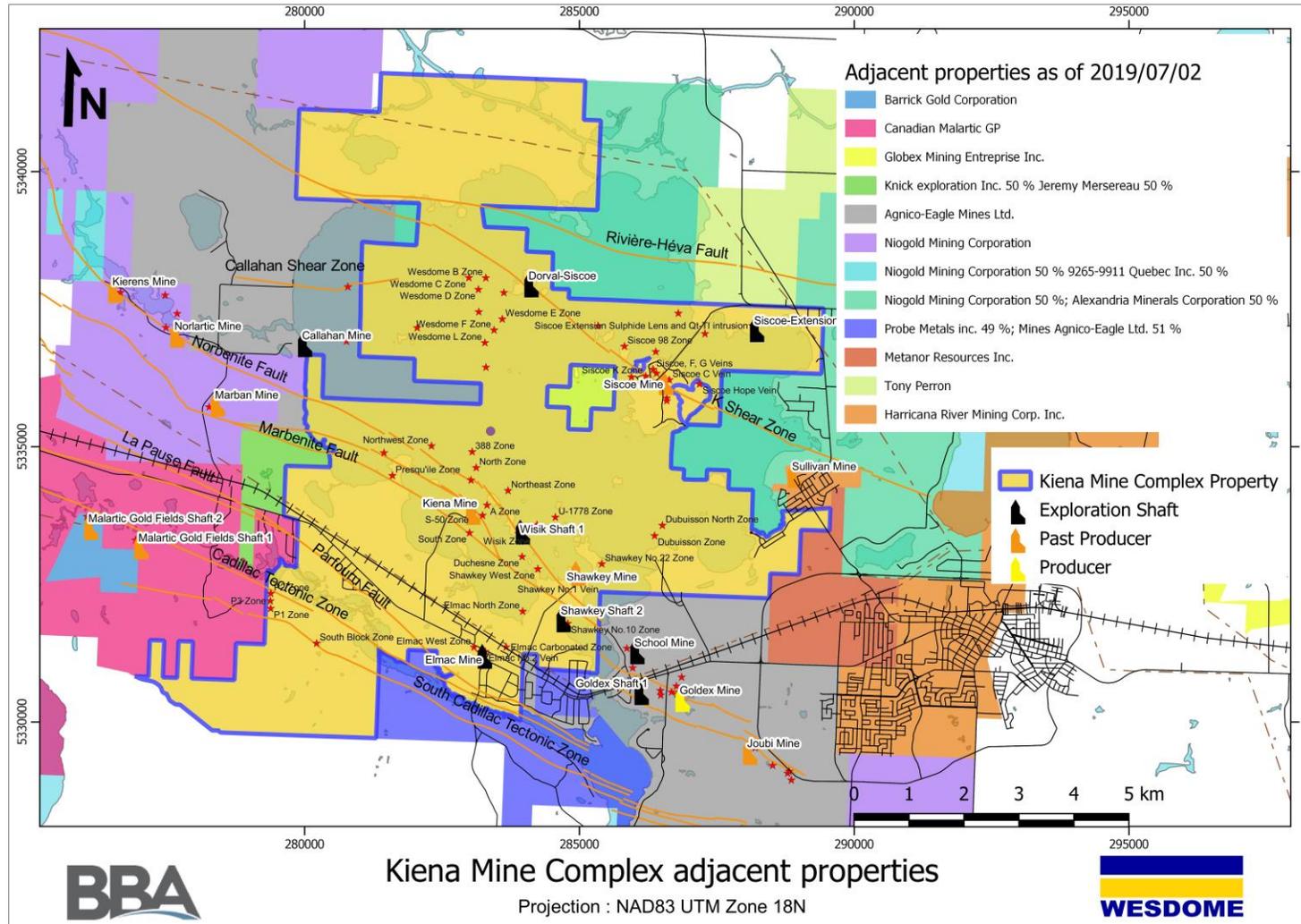


Figure 23-1: Kiena Mine Complex adjacent properties



24. OTHER RELEVANT DATA AND INFORMATION

BBA knows of no additional relevant data that might materially impact the interpretations and conclusions presented in this Technical Report.

25. INTERPRETATIONS AND CONCLUSIONS

25.1 Overview

The objective of BBA's mandate was to produce a Mineral Resource Estimate for the Kiena Mine Complex and a supporting NI 43-101 Technical Report. This Report and the 2019 MRE herein meet this objective.

Geological wireframes were constructed in Leapfrog Geo™ by Karine Brousseau of Wesdome and Charlotte Athurion of BBA, with the help of Bruno Turcotte of Wesdome. The mineral resource estimation parameters for the Project were established by Karine Brousseau and audited by the Qualified Person, Pierre-Luc Richard, of BBA.

25.2 Mineral Tenure, Surface Rights, Agreements and Royalties

The information provided by Wesdome supports the conclusion that the mining claims held are valid. The Project is held exclusively by Wesdome Gold Mines Ltd. ("Wesdome" or the "Company").

25.3 Environmental

The Project is not subject to any known environmental liabilities. As the area has a long history of exploration and mining, BBA does not anticipate any barriers to access the Project for work planned going forward.

25.4 Geology and Mineralization

25.4.1 Resources Database

The resource database for the Project, as of August 6, 2019, consisted of 6,616 DDH (976,170.3 m) with a cumulative length of 884,329.5 m including 187 DDH from the 2018-2019 drilling program. The overall Project database is 8,351 DDH.

The QP, Pierre-Luc Richard, reviewed the drilling, sample preparation, analytical and security procedures, as well as insertion rates and the performance of blanks, standards and duplicates for the 2018-2019 drilling programs, and concluded that the observed failure rates are within expected ranges and that no significant assay biases are present.

The QP is of the opinion that the protocols in place are adequate and followed. The database for the Project is of good overall quality and adequate to industry standards. The QP is of the opinion that the database is appropriate for the purpose of the MRE and that the sample density allows for a reliable estimate to be made of the size, tonnage and grade of the mineralization in accordance with the level of confidence established by the Mineral Resource categories in the CIM Standards.

25.4.2 2019 Kiena Mine Complex Resource Estimate

The October 2019 Kiena Mine Complex Mineral Resource Estimate (the “2019 MRE”) was prepared by Karine Brousseau, P. Eng., and audited by Pierre-Luc Richard, P. Geo., using all available information including historical and recent diamond drillholes.

The total Indicated and Inferred Mineral Resource Estimate for the block model MRE and the polygonal MRE is presented in Table 25-1:

Table 25-1: Underground Indicated and Inferred Mineral Resource Estimate

	Indicated Resources			Inferred Resources		
	Tonnage (t)	Grade (g/t)	Ounces Au (oz)	Tonnage (t)	Grade (g/t)	Ounces Au (oz)
Block Model MRE	968,900	14.46	450,400	1,121,200	11.02	397,100
Polygonal MRE	1,859,300	5.65	337,800	1,796,900	6.94	401,000
TOTAL	2,828,200	8.67	788,100	2,918,100	8.51	798,100

Notes to Table 25-1:

1. These mineral resources are not mineral reserves as they do not have demonstrated economic viability.
2. The mineral resource estimate follows CIM definitions and guidelines for mineral resources.
3. Results are presented in situ and undiluted and considered to have reasonable prospects for economic extraction, below 100 m crown pillar.
4. The estimation combined two estimation methods, ordinary kriging in the Kiena Complex and polygonal for other deposits on the property.
5. The Kiena Complex resources encompasses for 20 zones with a minimum true thickness of 3.0 m using the grade of the adjacent material when assayed or a value of zero when not assayed. High-grade capping varies from 20 to 200g/t Au (when required) was applied to composited assay grades for interpolation using an Ordinary Kriging interpolation method based on 1.0 m composite and block size of 5 m x 5 m x 5 m, with bulk density values of 2.8 (g/cm³). In addition, a high grade limit or second capping value was used for the second and third pass grade interpolation to restrict high grade impact at greater distance from the drillhole intersect. Indicated resources are manually defined and encloses areas where drill spacing is generally less than 25 metres, blocks are informed by a minimum of three drillholes, and reasonable geological and grade continuity is shown.
6. The zone outside the Kiena Complex encompasses for eight zones with a minimum true thickness of 1.5 metre using a polygonal estimation method. Indicated resources were estimated from drillhole results using the mid distance between drillhole or a maximum of 30 metres, 12.5 metres in some areas. The high-grade capping was fixed at 34.28 g/t Au with a bulk density value of 2.8 (g/cm³).
7. The estimate is reported for potential underground scenario at cut-off grades of 3.0 g/t Au (> 40° dip) and 4.0 g/t Au (< 40° dip, Wesdome Zone). The cut-off grades were calculated using a gold price of US\$1,300 per ounce, a CAD:USD exchange rate of 1.31 (CAD1,700); mining cost \$110/t (> 40° dip); \$150/t (< 40° dip); processing cost \$35/t; G&A \$15/t. The cut-off grades should be re-evaluated in light of future prevailing market conditions (metal prices, exchange rate, mining cost, etc.).

8. The number of metric tons and ounces were rounded to the nearest hundred and the metal contents are presented in troy ounces (tonne x grade / 31.10348).
9. The QP, Pierre-Luc Richard, P. Geo., is not aware of any known environmental, permitting, legal, title-related, taxation, socio-political or marketing issues, or any other relevant issue not reported in this Technical Report that could materially affect the mineral resource estimate.

It is the QP's opinion that the cut-off grades are relevant to the grade distribution of this project and that the mineralization exhibits sufficient continuity for economic extraction under the cut-offs applied.

25.5 Exploration Potential

Following an overall review of all pertinent information, including the MRE, BBA concluded the following:

- It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration;
- There is potential to add resources up and down plunge of the Kiena Deep A Zone;
- There is potential to add resources down plunge extensions of the VC6 and VC1 zones and the transition to the A Zone further down along the same structure;
- There might be potential to add resources in the vicinity of the Polygonal Resources, but further compilation work is needed.

25.6 Risk and Opportunities

As noted in Chapter 4, BBA is not aware of any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or relevant issues that could affect the reliability or confidence in the exploration information and Mineral Resource discussed herein or the right or ability to perform future work on Kiena Mine Complex.

As with all mineral projects, there is an inherent risk associated with mineral exploration. The mineral resources may be affected by a future conceptual study assessment of mining, processing, environmental, permitting, taxation, socio-economic and other factors. Additional technical factors that may impact the Mineral Resource estimate include:

- Metal prices, smelter terms and valuation assumptions;
- Changes to technical inputs used to estimate gold content (e.g. bulk density estimation and grade model methodology);
- Changes to geotechnical, hydrogeology and mining assumptions including the application of alternative mining methods;

- Changes to process plant recovery estimates if the metallurgical recovery in certain domains is less or greater than currently assumed, including the application of alternative processing methods;
- Social acceptability is an inherent risk for all mining projects. This could affect the Project's development;
- There is some uncertainty in the spatial location of drillhole sampling data for longer historical drillhole for which there is not much downhole survey data available;
- The mineralized zones might be of slightly variable shapes due to the complex geometry of the deposit. Definition drilling will help define with more precision the shapes of the zones;
- Presence of a nugget effect in the gold distribution of the deposit could lead to a change in the gold grades estimated inside the mineralized zones;
- The interpreted mineralized zones could be affected by some structures (faults or folds) that could displace or stop the mineralized zones. Definition drilling will improve the confidence in the interpretation.

26. RECOMMENDATIONS

26.1 Overview

Based on the results of the 2019 MRE, BBA recommends additional work on the Project and the initiation of a Preliminary Economic Assessment (PEA).

BBA recommends the two-phase work program described below in which Phase 2 is conditional to the success of Phase 1.

26.2 Phase 1 Recommended Activities

The following activities are recommended for the Phase 1.

26.2.1 Complete Additional Metallurgical Testwork on the Kiena Deep A Zones

Additional metallurgical tests should be conducted on material from the Kiena Deep A zones.

26.2.2 Preliminary Economic Assessment (PEA)

A Preliminary Economic Assessment is recommended based on the results of the MRE presented in the current Report.

26.2.3 Continue Ongoing Exploration and Definition Drilling Program of the Kiena Deep A Zones, VC Zones and S50 Zones

Exploration drilling program should be done to continue investigating any up and down plunge of the currently identified mineralization. A provision of approximately 50,000 m should be considered.

26.3 Phase 2 Recommended Activities

Contingent upon the success of Phase 1, the following activities are recommended for Phase 2.

26.3.1 Conversion of the Polygonal Resources to Block Model Resources

BBA recommends converting the current Polygonal Resource to Block Modelling Resources in order to better assess the potential economic viability. This should be preceded by a large database compilation and validation as well as the modelling in 3D of all zones.

26.3.2 Updated Mineral Resource Estimate and Pre-Feasibility Study

Contingent to a favourable PEA in Phase 1, and success in the definition drilling program above, an updated Mineral Resource Estimate should be completed and form the basis of a pre-feasibility study (PFS).

26.3.3 Compilation of Historic Geological Data Adjacent to Kiena Mine Area and Across the Entire Property

A compilation of historic geological data adjacent to Kiena Mine area and across the entire Property is recommended to identify additional targets.

26.4 Work Plan Budget

The recommendations are budgeted based on current site costs with details provided in Table 26-1.

Table 26-1: Work program budget

Description	Unit	Cost (\$)
Phase 1 – Work Program		
Additional metallurgical testworks		100,000
Preliminary Economic Assessment		500,000
Continue ongoing exploration and definition drilling	50,000 m	5,000,000
<i>Contingency (20%)</i>		1,120,000
Total Phase 1		6,720,000
Phase 2 – Work Program		
Conversion of the Polygonal Resources to Block Model		150,000
Mineral Resource Estimate and Pre-Feasibility Study		1,000,000
Compilation of historic geological data across the entire Property		100,000
<i>Contingency (20%)</i>		250,000
Total Phase 2		1,500,000
Total Phase 1 and Phase 2 (CAD)		8,220,000

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Wesdome Gold Mines Ltd.

NI 43-101 – Technical Report and Mineral Resource Estimate

Kiena Mine Complex



Appendix A: Detailed List of Mineral Claims (verified on July 2, 2019)

**Mineral claims detailed list (verified on July 2, 2019)**

Claim No.	Claim status	Issue date	Anniversary date	Area Ha	Owner	Claim name	Land claim
403635183	Active	2014-11-26	2021-06-22	11.06	Wesdome Gold Mines Ltd. (84889) 100 %	2415481	CDC
403645224	Active	2014-11-26	2021-06-22	36.43	Wesdome Gold Mines Ltd. (84889) 100 %	2415482	CDC
403633306	Active	2014-10-14	2021-06-15	1.98	Mines Dynacor inc. (2146) 50 %; Wesdome Gold Mines Ltd. (84889) 50 %	2411926	CDC
403633307	Active	2014-10-14	2021-06-15	16.28	Mines Dynacor inc. (2146) 50 %; Wesdome Gold Mines Ltd. (84889) 50 %	2411927	CDC
403633308	Active	2014-10-14	2021-06-15	3.02	Mines Dynacor inc. (2146) 50 %; Wesdome Gold Mines Ltd. (84889) 50 %	2411928	CDC
403633309	Active	2014-10-14	2021-06-15	1.09	Mines Dynacor inc. (2146) 50 %; Wesdome Gold Mines Ltd. (84889) 50 %	2411929	CDC
403633310	Active	2014-10-14	2021-06-15	9.6	Mines Dynacor inc. (2146) 50 %; Wesdome Gold Mines Ltd. (84889) 50 %	2411930	CDC
403633311	Active	2014-10-14	2021-06-15	12.9	Mines Dynacor inc. (2146) 50 %; Wesdome Gold Mines Ltd. (84889) 50 %	2411931	CDC
403637064	Active	2015-03-13	2021-04-24	32.63	9264-7890 Québec inc. (95234) 25 %; Wesdome Gold Mines Ltd. (84889) 75 %	2421972	CDC
403637065	Active	2015-03-13	2021-04-24	41.29	9264-7890 Québec inc. (95234) 25 %; Wesdome Gold Mines Ltd. (84889) 75 %	2421973	CDC
403637066	Active	2015-03-13	2021-04-24	7.95	9264-7890 Québec inc. (95234) 25 %; Wesdome Gold Mines Ltd. (84889) 75 %	2421974	CDC
403637067	Active	2015-03-13	2021-04-24	9.55	9264-7890 Québec inc. (95234) 25 %; Wesdome Gold Mines Ltd. (84889) 75 %	2421975	CDC
403637068	Active	2015-03-13	2021-04-24	32.84	9264-7890 Québec inc. (95234) 25 %; Wesdome Gold Mines Ltd. (84889) 75 %	2421976	CDC
403637069	Active	2015-03-13	2021-04-24	11.93	9264-7890 Québec inc. (95234) 25 %; Wesdome Gold Mines Ltd. (84889) 75 %	2421977	CDC
403637070	Active	2015-03-13	2021-04-24	9.99	9264-7890 Québec inc. (95234) 25 %; Wesdome Gold Mines Ltd. (84889) 75 %	2421978	CDC



Claim No.	Claim status	Issue date	Anniversary date	Area Ha	Owner	Claim name	Land claim
403637071	Active	2015-03-13	2021-04-24	41.38	9264-7890 Québec inc. (95234) 25 %; Wesdome Gold Mines Ltd. (84889) 75 %	2421979	CDC
400083335	Active	2015-07-16	2021-03-05	57.51	Wesdome Gold Mines Ltd. (84889) 100 %	2428771	CDC
400083339	Active	2015-07-16	2021-03-05	57.51	Wesdome Gold Mines Ltd. (84889) 100 %	2428772	CDC
400084305	Active	2015-07-16	2021-03-05	57.51	Wesdome Gold Mines Ltd. (84889) 100 %	2428774	CDC
400084306	Active	2015-07-16	2021-03-05	57.51	Wesdome Gold Mines Ltd. (84889) 100 %	2428775	CDC
400084307	Active	2015-07-16	2021-03-05	57.51	Wesdome Gold Mines Ltd. (84889) 100 %	2428776	CDC
400084308	Active	2015-07-16	2021-03-05	57.52	Wesdome Gold Mines Ltd. (84889) 100 %	2428777	CDC
400084313	Active	2015-07-16	2021-03-05	57.51	Wesdome Gold Mines Ltd. (84889) 100 %	2428778	CDC
400084660	Active	2015-07-16	2021-03-05	57.45	Wesdome Gold Mines Ltd. (84889) 100 %	2428779	CDC
400084685	Active	2015-07-16	2021-03-05	57.5	Wesdome Gold Mines Ltd. (84889) 100 %	2428780	CDC
400084686	Active	2015-07-16	2021-03-05	57.5	Wesdome Gold Mines Ltd. (84889) 100 %	2428781	CDC
400084688	Active	2015-07-16	2021-03-05	57.5	Wesdome Gold Mines Ltd. (84889) 100 %	2428782	CDC
400085134	Active	2015-07-16	2021-03-05	57.49	Wesdome Gold Mines Ltd. (84889) 100 %	2428783	CDC
400085139	Active	2015-07-16	2021-03-05	57.48	Wesdome Gold Mines Ltd. (84889) 100 %	2428784	CDC
400085140	Active	2015-07-16	2021-03-05	57.48	Wesdome Gold Mines Ltd. (84889) 100 %	2428785	CDC
400085141	Active	2015-07-16	2021-03-05	57.48	Wesdome Gold Mines Ltd. (84889) 100 %	2428786	CDC
400085145	Active	2015-07-16	2021-03-05	57.47	Wesdome Gold Mines Ltd. (84889) 100 %	2428787	CDC
400085146	Active	2015-07-16	2021-03-05	57.47	Wesdome Gold Mines Ltd. (84889) 100 %	2428788	CDC
400085147	Active	2015-07-16	2021-03-05	57.47	Wesdome Gold Mines Ltd. (84889) 100 %	2428789	CDC
400085148	Active	2015-07-16	2021-03-05	57.47	Wesdome Gold Mines Ltd. (84889) 100 %	2428790	CDC
400085149	Active	2015-07-16	2021-03-05	57.47	Wesdome Gold Mines Ltd. (84889) 100 %	2428791	CDC
400085155	Active	2015-07-16	2021-03-05	57.46	Wesdome Gold Mines Ltd. (84889) 100 %	2428792	CDC
400085156	Active	2015-07-16	2021-03-05	57.46	Wesdome Gold Mines Ltd. (84889) 100 %	2428793	CDC
402977033	Active	2015-07-16	2021-03-05	57.52	Wesdome Gold Mines Ltd. (84889) 100 %	2428794	CDC



Claim No.	Claim status	Issue date	Anniversary date	Area Ha	Owner	Claim name	Land claim
403638122	Active	2015-07-16	2021-03-05	2.26	Wesdome Gold Mines Ltd. (84889) 100 %	2428795	CDC
403638123	Active	2015-07-16	2021-03-05	4.81	Wesdome Gold Mines Ltd. (84889) 100 %	2428796	CDC
403638124	Active	2015-07-16	2021-03-05	54.9	Wesdome Gold Mines Ltd. (84889) 100 %	2428797	CDC
403638126	Active	2015-07-16	2021-03-05	57.53	Wesdome Gold Mines Ltd. (84889) 100 %	2428799	CDC
403638129	Active	2015-07-16	2021-03-05	3.54	Wesdome Gold Mines Ltd. (84889) 100 %	2428802	CDC
403638130	Active	2015-07-16	2021-03-05	57.43	Wesdome Gold Mines Ltd. (84889) 100 %	2428803	CDC
403638131	Active	2015-07-16	2021-03-05	45.47	Wesdome Gold Mines Ltd. (84889) 100 %	2428804	CDC
403638132	Active	2015-07-16	2021-03-05	49.58	Wesdome Gold Mines Ltd. (84889) 100 %	2428805	CDC
403638133	Active	2015-07-16	2021-03-05	57.08	Wesdome Gold Mines Ltd. (84889) 100 %	2428806	CDC
403638134	Active	2015-07-16	2021-03-05	40.82	Wesdome Gold Mines Ltd. (84889) 100 %	2428807	CDC
403638135	Active	2015-07-16	2021-03-05	57.51	Wesdome Gold Mines Ltd. (84889) 100 %	2428808	CDC
403638136	Active	2015-07-16	2021-03-05	57.45	Wesdome Gold Mines Ltd. (84889) 100 %	2428809	CDC
403638137	Active	2015-07-16	2021-03-05	13.5	Wesdome Gold Mines Ltd. (84889) 100 %	2428810	CDC
403638138	Active	2015-07-16	2021-03-05	1.58	Wesdome Gold Mines Ltd. (84889) 100 %	2428811	CDC
403638140	Active	2015-07-16	2021-03-05	53.96	Wesdome Gold Mines Ltd. (84889) 100 %	2428813	CDC
403638141	Active	2015-07-16	2021-03-05	57.52	Wesdome Gold Mines Ltd. (84889) 100 %	2428814	CDC
403638142	Active	2015-07-16	2021-03-05	29.94	Wesdome Gold Mines Ltd. (84889) 100 %	2428815	CDC
403638143	Active	2015-07-16	2021-03-05	18.37	Wesdome Gold Mines Ltd. (84889) 100 %	2428816	CDC
403638144	Active	2015-07-16	2021-03-05	57.22	Wesdome Gold Mines Ltd. (84889) 100 %	2428817	CDC
403638145	Active	2015-07-16	2021-03-05	13.96	Wesdome Gold Mines Ltd. (84889) 100 %	2428818	CDC
403638146	Active	2015-07-16	2021-03-05	57.44	Wesdome Gold Mines Ltd. (84889) 100 %	2428819	CDC
403638147	Active	2015-07-16	2021-03-05	28.11	Wesdome Gold Mines Ltd. (84889) 100 %	2428820	CDC
403638148	Active	2015-07-16	2021-03-05	57.53	Wesdome Gold Mines Ltd. (84889) 100 %	2428821	CDC
403638149	Active	2015-07-16	2021-03-05	57.52	Wesdome Gold Mines Ltd. (84889) 100 %	2428822	CDC
403638150	Active	2015-07-16	2021-03-05	57.53	Wesdome Gold Mines Ltd. (84889) 100 %	2428823	CDC



Claim No.	Claim status	Issue date	Anniversary date	Area Ha	Owner	Claim name	Land claim
403638151	Active	2015-07-16	2021-03-05	2.23	Wesdome Gold Mines Ltd. (84889) 100 %	2428824	CDC
403638152	Active	2015-07-16	2021-03-05	54.7	Wesdome Gold Mines Ltd. (84889) 100 %	2428825	CDC
403638153	Active	2015-07-16	2021-03-05	57.52	Wesdome Gold Mines Ltd. (84889) 100 %	2428826	CDC
403638154	Active	2015-07-16	2021-03-05	29.97	Wesdome Gold Mines Ltd. (84889) 100 %	2428827	CDC
403638155	Active	2015-07-16	2021-03-05	0.14	Wesdome Gold Mines Ltd. (84889) 100 %	2428828	CDC
403638156	Active	2015-07-16	2021-03-05	15.78	Wesdome Gold Mines Ltd. (84889) 100 %	2428829	CDC
403638157	Active	2015-07-16	2021-03-05	38.02	Wesdome Gold Mines Ltd. (84889) 100 %	2428830	CDC
403638158	Active	2015-07-16	2021-03-05	47.79	Wesdome Gold Mines Ltd. (84889) 100 %	2428831	CDC
403638160	Active	2015-07-16	2021-03-05	57.43	Wesdome Gold Mines Ltd. (84889) 100 %	2428833	CDC
403638161	Active	2015-07-16	2021-03-05	19.17	Wesdome Gold Mines Ltd. (84889) 100 %	2428834	CDC
403638162	Active	2015-07-16	2021-03-05	54.6	Wesdome Gold Mines Ltd. (84889) 100 %	2428835	CDC
403638163	Active	2015-07-16	2021-03-05	6.78	Wesdome Gold Mines Ltd. (84889) 100 %	2428836	CDC
403638164	Active	2015-07-16	2021-03-05	57.54	Wesdome Gold Mines Ltd. (84889) 100 %	2428837	CDC
403638165	Active	2015-07-16	2021-03-05	57.52	Wesdome Gold Mines Ltd. (84889) 100 %	2428838	CDC
403638166	Active	2015-07-16	2021-03-05	50.83	Wesdome Gold Mines Ltd. (84889) 100 %	2428839	CDC
403645865	Active	2015-07-16	2021-03-05	41.68	Wesdome Gold Mines Ltd. (84889) 100 %	2428840	CDC
403638168	Active	2015-07-16	2021-03-05	35.74	Wesdome Gold Mines Ltd. (84889) 100 %	2428841	CDC
403638169	Active	2015-07-16	2021-03-05	12.49	Wesdome Gold Mines Ltd. (84889) 100 %	2428842	CDC
403638171	Active	2015-07-16	2021-03-05	57.53	Wesdome Gold Mines Ltd. (84889) 100 %	2428844	CDC
403638172	Active	2015-07-16	2021-03-05	2.12	Wesdome Gold Mines Ltd. (84889) 100 %	2428845	CDC
403638173	Active	2015-07-16	2021-03-05	33.25	Wesdome Gold Mines Ltd. (84889) 100 %	2428846	CDC
403638174	Active	2015-07-16	2021-03-05	40.48	Wesdome Gold Mines Ltd. (84889) 100 %	2428847	CDC
403638175	Active	2015-07-16	2021-03-05	57.53	Wesdome Gold Mines Ltd. (84889) 100 %	2428848	CDC
403638176	Active	2015-07-16	2021-03-05	37.4	Wesdome Gold Mines Ltd. (84889) 100 %	2428849	CDC
403638179	Active	2015-07-16	2021-03-05	19.78	Wesdome Gold Mines Ltd. (84889) 100 %	2428852	CDC



Claim No.	Claim status	Issue date	Anniversary date	Area Ha	Owner	Claim name	Land claim
403638180	Active	2015-07-16	2021-03-05	1.05	Wesdome Gold Mines Ltd. (84889) 100 %	2428853	CDC
403638181	Active	2015-07-16	2021-03-05	54.33	Wesdome Gold Mines Ltd. (84889) 100 %	2428854	CDC
403638182	Active	2015-07-16	2021-03-05	51.35	Wesdome Gold Mines Ltd. (84889) 100 %	2428855	CDC
403638183	Active	2015-07-16	2021-03-05	32.68	Wesdome Gold Mines Ltd. (84889) 100 %	2428856	CDC
403638184	Active	2015-07-16	2021-03-05	57.44	Wesdome Gold Mines Ltd. (84889) 100 %	2428857	CDC
403638185	Active	2015-07-16	2021-03-05	57.53	Wesdome Gold Mines Ltd. (84889) 100 %	2428858	CDC
403638186	Active	2015-07-16	2021-03-05	50.94	Wesdome Gold Mines Ltd. (84889) 100 %	2428859	CDC
403638187	Active	2015-07-16	2021-03-05	57.45	Wesdome Gold Mines Ltd. (84889) 100 %	2428860	CDC
403638189	Active	2015-07-16	2021-03-05	15.86	Wesdome Gold Mines Ltd. (84889) 100 %	2428862	CDC
403638190	Active	2015-07-16	2021-03-05	5.59	Wesdome Gold Mines Ltd. (84889) 100 %	2428863	CDC
403638191	Active	2015-07-16	2021-03-05	23.96	Wesdome Gold Mines Ltd. (84889) 100 %	2428864	CDC
403645222	Active	2015-07-16	2021-03-05	56.76	Wesdome Gold Mines Ltd. (84889) 100 %	2428865	CDC
403638193	Active	2015-07-16	2021-03-05	57.45	Wesdome Gold Mines Ltd. (84889) 100 %	2428866	CDC
403638194	Active	2015-07-16	2021-03-05	57.53	Wesdome Gold Mines Ltd. (84889) 100 %	2428867	CDC
403638195	Active	2015-07-16	2021-03-05	28.72	Wesdome Gold Mines Ltd. (84889) 100 %	2428868	CDC
403638197	Active	2015-07-16	2021-03-05	8.79	Wesdome Gold Mines Ltd. (84889) 100 %	2428870	CDC
403638198	Active	2015-07-16	2021-03-05	22.64	Wesdome Gold Mines Ltd. (84889) 100 %	2428871	CDC
403638199	Active	2015-07-16	2021-03-05	4.81	Wesdome Gold Mines Ltd. (84889) 100 %	2428872	CDC
403638201	Active	2015-07-16	2021-03-05	44.62	Wesdome Gold Mines Ltd. (84889) 100 %	2428874	CDC
403638204	Active	2015-07-16	2021-03-05	14.98	Wesdome Gold Mines Ltd. (84889) 100 %	2428877	CDC
403638206	Active	2015-07-16	2021-03-05	57.55	Wesdome Gold Mines Ltd. (84889) 100 %	2428879	CDC
403638207	Active	2015-07-16	2021-03-05	57.45	Wesdome Gold Mines Ltd. (84889) 100 %	2428880	CDC
403638209	Active	2015-07-16	2021-03-05	57.44	Wesdome Gold Mines Ltd. (84889) 100 %	2428882	CDC
403638210	Active	2015-07-16	2021-03-05	25.48	Wesdome Gold Mines Ltd. (84889) 100 %	2428883	CDC
403638211	Active	2015-07-16	2021-03-05	14.89	Wesdome Gold Mines Ltd. (84889) 100 %	2428884	CDC



Claim No.	Claim status	Issue date	Anniversary date	Area Ha	Owner	Claim name	Land claim
403638212	Active	2015-07-16	2021-03-05	57.51	Wesdome Gold Mines Ltd. (84889) 100 %	2428885	CDC
403638213	Active	2015-07-16	2021-03-05	50.43	Wesdome Gold Mines Ltd. (84889) 100 %	2428886	CDC
403638214	Active	2015-07-16	2021-03-05	29.97	Wesdome Gold Mines Ltd. (84889) 100 %	2428887	CDC
403638215	Active	2015-07-16	2021-03-05	7.43	Wesdome Gold Mines Ltd. (84889) 100 %	2428888	CDC
403638216	Active	2015-07-16	2021-03-05	33.96	Wesdome Gold Mines Ltd. (84889) 100 %	2428889	CDC
403638217	Active	2015-07-16	2021-03-05	33.99	Wesdome Gold Mines Ltd. (84889) 100 %	2428890	CDC
403638218	Active	2015-07-16	2021-03-05	57.53	Wesdome Gold Mines Ltd. (84889) 100 %	2428891	CDC
403638219	Active	2015-07-16	2021-03-05	20.91	Wesdome Gold Mines Ltd. (84889) 100 %	2428892	CDC
403638220	Active	2015-07-16	2021-03-05	29.99	Wesdome Gold Mines Ltd. (84889) 100 %	2428893	CDC
403638221	Active	2015-07-16	2021-03-05	33.94	Wesdome Gold Mines Ltd. (84889) 100 %	2428894	CDC
403638224	Active	2015-07-16	2021-03-05	57.45	Wesdome Gold Mines Ltd. (84889) 100 %	2428897	CDC
403638225	Active	2015-07-16	2021-03-05	57.52	Wesdome Gold Mines Ltd. (84889) 100 %	2428898	CDC
403638226	Active	2015-07-16	2021-03-05	34.56	Wesdome Gold Mines Ltd. (84889) 100 %	2428899	CDC
403638228	Active	2015-07-16	2021-03-05	54.26	Wesdome Gold Mines Ltd. (84889) 100 %	2428901	CDC
403638229	Active	2015-07-16	2021-03-05	10.55	Wesdome Gold Mines Ltd. (84889) 100 %	2428902	CDC
403645227	Active	2015-07-16	2021-03-05	55.6	Wesdome Gold Mines Ltd. (84889) 100 %	2428904	CDC
403638232	Active	2015-07-16	2021-03-05	0.22	Wesdome Gold Mines Ltd. (84889) 100 %	2428905	CDC
403638233	Active	2015-07-16	2021-03-05	43.02	Wesdome Gold Mines Ltd. (84889) 100 %	2428906	CDC
403638234	Active	2015-07-16	2021-03-05	57.44	Wesdome Gold Mines Ltd. (84889) 100 %	2428907	CDC
403638235	Active	2015-07-16	2021-03-05	57.44	Wesdome Gold Mines Ltd. (84889) 100 %	2428908	CDC
403638237	Active	2015-07-16	2021-03-05	19.55	Wesdome Gold Mines Ltd. (84889) 100 %	2428910	CDC
403638238	Active	2015-07-16	2021-03-05	37.4	Wesdome Gold Mines Ltd. (84889) 100 %	2428911	CDC
403638239	Active	2015-07-16	2021-03-05	41.22	Wesdome Gold Mines Ltd. (84889) 100 %	2428912	CDC
403638240	Active	2015-07-16	2021-03-05	11.53	Wesdome Gold Mines Ltd. (84889) 100 %	2428913	CDC
403638242	Active	2015-07-16	2021-03-05	49.74	Wesdome Gold Mines Ltd. (84889) 100 %	2428915	CDC



Claim No.	Claim status	Issue date	Anniversary date	Area Ha	Owner	Claim name	Land claim
403638243	Active	2015-07-16	2021-03-05	1.98	Wesdome Gold Mines Ltd. (84889) 100 %	2428916	CDC
403638244	Active	2015-07-16	2021-03-05	56.54	Wesdome Gold Mines Ltd. (84889) 100 %	2428917	CDC
403638245	Active	2015-07-16	2021-03-05	31.08	Wesdome Gold Mines Ltd. (84889) 100 %	2428918	CDC
403638247	Active	2015-07-16	2021-03-05	57.55	Wesdome Gold Mines Ltd. (84889) 100 %	2428920	CDC
403638248	Active	2015-07-16	2021-03-05	52.79	Wesdome Gold Mines Ltd. (84889) 100 %	2428921	CDC
403638249	Active	2015-07-16	2021-03-05	32.74	Wesdome Gold Mines Ltd. (84889) 100 %	2428922	CDC
403638250	Active	2015-07-16	2021-03-05	57.52	Wesdome Gold Mines Ltd. (84889) 100 %	2428923	CDC
403638251	Active	2015-07-16	2021-03-05	57.55	Wesdome Gold Mines Ltd. (84889) 100 %	2428924	CDC
403638252	Active	2015-07-16	2021-03-05	13.47	Wesdome Gold Mines Ltd. (84889) 100 %	2428925	CDC
403638253	Active	2015-07-16	2021-03-05	20.41	Wesdome Gold Mines Ltd. (84889) 100 %	2428926	CDC
403638254	Active	2015-07-16	2021-03-05	57.54	Wesdome Gold Mines Ltd. (84889) 100 %	2428927	CDC
403645873	Active	2015-07-16	2021-03-05	32.99	Wesdome Gold Mines Ltd. (84889) 100 %	2428929	CDC
403638257	Active	2015-07-16	2021-03-05	57.55	Wesdome Gold Mines Ltd. (84889) 100 %	2428930	CDC
403638258	Active	2015-07-16	2021-03-05	55.52	Wesdome Gold Mines Ltd. (84889) 100 %	2428931	CDC
403638260	Active	2015-07-16	2021-03-05	56.77	Wesdome Gold Mines Ltd. (84889) 100 %	2428933	CDC
403638262	Active	2015-07-16	2021-03-05	57.44	Wesdome Gold Mines Ltd. (84889) 100 %	2428935	CDC
403638263	Active	2015-07-16	2021-03-05	57.54	Wesdome Gold Mines Ltd. (84889) 100 %	2428936	CDC
403638264	Active	2015-07-16	2021-03-05	2.08	Wesdome Gold Mines Ltd. (84889) 100 %	2428937	CDC
403638266	Active	2015-07-16	2021-03-05	21.87	Wesdome Gold Mines Ltd. (84889) 100 %	2428939	CDC
403638267	Active	2015-07-16	2021-03-05	57.44	Wesdome Gold Mines Ltd. (84889) 100 %	2428940	CDC
403638268	Active	2015-07-16	2021-03-05	11.86	Wesdome Gold Mines Ltd. (84889) 100 %	2428941	CDC
403645228	Active	2015-07-16	2021-03-05	54.48	Wesdome Gold Mines Ltd. (84889) 100 %	2428942	CDC
403638270	Active	2015-07-16	2021-03-05	1.85	Wesdome Gold Mines Ltd. (84889) 100 %	2428943	CDC
403638271	Active	2015-07-16	2021-03-05	57.53	Wesdome Gold Mines Ltd. (84889) 100 %	2428944	CDC
403638272	Active	2015-07-16	2021-03-05	33.98	Wesdome Gold Mines Ltd. (84889) 100 %	2428945	CDC



Claim No.	Claim status	Issue date	Anniversary date	Area Ha	Owner	Claim name	Land claim
403638273	Active	2015-07-16	2021-03-05	30.07	Wesdome Gold Mines Ltd. (84889) 100 %	2428946	CDC
403638274	Active	2015-07-16	2021-03-05	10.6	Wesdome Gold Mines Ltd. (84889) 100 %	2428947	CDC
403649342	Active	2016-09-20	2020-06-22	12.19	Wesdome Gold Mines Ltd. (84889) 100 %	2459317	CDC
403649343	Active	2016-09-20	2020-06-22	48.76	Wesdome Gold Mines Ltd. (84889) 100 %	2459318	CDC
403649344	Active	2016-09-20	2020-06-22	21.6	Wesdome Gold Mines Ltd. (84889) 100 %	2459319	CDC
403649345	Active	2016-09-20	2020-06-22	11.86	Wesdome Gold Mines Ltd. (84889) 100 %	2459320	CDC
403649346	Active	2016-09-20	2020-06-22	5.29	Wesdome Gold Mines Ltd. (84889) 100 %	2459321	CDC
403649347	Active	2016-09-20	2020-06-22	1.61	Wesdome Gold Mines Ltd. (84889) 100 %	2459322	CDC
403649348	Active	2016-09-20	2020-06-22	5.6	Wesdome Gold Mines Ltd. (84889) 100 %	2459323	CDC
403652165	Active	2016-12-22	2020-12-21	18.92	Wesdome Gold Mines Ltd. (84889) 100 %	2471205	CDC
403645862	Active	2016-12-22	2020-12-21	12.21	Wesdome Gold Mines Ltd. (84889) 100 %	2471206	CDC
403652162	Active	2016-12-22	2020-12-21	50.29	Wesdome Gold Mines Ltd. (84889) 100 %	2471207	CDC
403652166	Active	2016-12-22	2020-12-21	56.42	Wesdome Gold Mines Ltd. (84889) 100 %	2471208	CDC
403652167	Active	2016-12-22	2020-12-21	50.93	Wesdome Gold Mines Ltd. (84889) 100 %	2471209	CDC
403645864	Active	2016-12-22	2020-12-21	31.43	Wesdome Gold Mines Ltd. (84889) 100 %	2471210	CDC
403645869	Active	2016-12-22	2020-12-21	41.65	Wesdome Gold Mines Ltd. (84889) 100 %	2471211	CDC
403645868	Active	2016-12-22	2020-12-21	41.29	Wesdome Gold Mines Ltd. (84889) 100 %	2471212	CDC
403645867	Active	2016-12-22	2020-12-21	41.49	Wesdome Gold Mines Ltd. (84889) 100 %	2471213	CDC
403645863	Active	2016-12-22	2020-12-21	29.53	Wesdome Gold Mines Ltd. (84889) 100 %	2471214	CDC
403542101	Active	1962-11-30		184.35	Wesdome Gold Mines Ltd. (84889) 100 %	494	CM



Wesdome Gold Mines Ltd.

NI 43-101 – Technical Report and Mineral Resource Estimate

Kiena Mine Complex



Appendix B: List of Drillholes on the Kiena Mine Complex Property



**List of drillholes of the 2018-2019 Program on the Kiena Mine Complex Property included in this MRE
(UTM NAD 83 Zone 18N)**

Survey	Easting	Northing	Elevation	Azimuth (°)	Dip (°)	Length (m)	Status
6382	283221.64	5333993.22	-770.02	339.0	0.5	145.6	In MRE
6383	283579.08	5333823.37	-733.16	314.0	-73.0	594.0	In MRE
6384	283482.06	5333855.86	-741.98	12.1	-80.5	586.8	In MRE
6385	283578.17	5333822.79	-734.14	314.0	-67.0	534.3	In MRE
6386	283225.03	5333991.63	-770.29	46.0	-10.0	80.3	In MRE
6387	283224.81	5333991.49	-770.99	44.0	-41.0	100.0	In MRE
6388	283224.69	5333991.41	-771.30	37.0	-62.0	134.1	In MRE
6389	283136.76	5334114.16	-374.65	317.0	-9.0	350.0	In MRE
6390	283579.20	5333823.76	-733.14	315.0	-63.0	555.0	In MRE
6391	283320.07	5333988.63	-766.75	212.0	-48.0	251.5	In MRE
6392	283320.25	5333987.99	-766.82	209.0	-58.0	260.3	In MRE
6393	283320.62	5333988.32	-767.32	212.0	-65.0	284.3	In MRE
6394	283319.62	5333989.21	-767.07	225.0	-61.0	279.0	In MRE
6395	283319.69	5333989.25	-767.32	225.0	-70.0	285.0	In MRE
6396	283319.61	5333989.89	-767.12	248.0	-80.0	300.1	In MRE
6397	283482.49	5333856.37	-741.71	15.5	-76.0	452.3	In MRE
6398	283201.82	5334044.03	-769.79	315.0	-35.0	97.4	In MRE
6399	283201.88	5334044.07	-768.58	315.0	3.0	122.0	In MRE
6400	283201.63	5334044.26	-767.04	315.0	29.0	265.9	In MRE
6401	283578.54	5333823.53	-733.81	315.0	-59.0	460.0	In MRE
6402	283201.88	5334044.00	-770.08	315.0	-67.0	117.2	In MRE
6403	283201.85	5334044.07	-769.94	317.0	-52.5	140.0	In MRE
6404	283201.86	5334044.06	-769.27	318.0	-16.0	185.0	In MRE
6405	283202.00	5334044.02	-768.90	315.0	-5.0	188.3	In MRE
6406	283202.15	5334044.31	-770.13	333.0	-60.0	136.3	In MRE



Survey	Easting	Northing	Elevation	Azimuth (°)	Dip (°)	Length (m)	Status
6407	283578.50	5333823.58	-733.82	315.0	-55.0	239.4	In MRE
6408	283479.76	5333857.03	-741.87	315.0	-77.0	454.0	In MRE
6409	283578.56	5333823.22	-733.83	315.0	-72.0	659.3	In MRE
6410	283479.89	5333856.89	-741.87	313.0	-80.0	533.0	In MRE
6411	283578.59	5333823.15	-733.85	317.0	-76.0	673.7	In MRE
6412	283319.74	5333989.85	-767.13	254.0	-71.0	302.0	In MRE
6413	283357.35	5334016.62	-761.50	311.0	18.0	59.0	In MRE
6414	283357.14	5334016.93	-761.39	317.0	18.0	86.7	In MRE
6415	283136.64	5334114.38	-373.14	300.0	26.0	315.0	In MRE
6416	283136.76	5334114.39	-373.14	303.0	21.0	325.0	In MRE
6417	283648.68	5333859.62	-731.61	310.0	-76.0	40.5	In MRE
6418	283480.24	5333857.39	-742.15	315.0	-72.0	27.7	In MRE
6419	283202.14	5334044.39	-769.80	335.0	-50.0	89.0	In MRE
6420	283202.69	5334044.75	-769.58	348.0	-45.0	49.8	In MRE
6421	283202.71	5334044.75	-770.21	353.0	-61.0	58.0	In MRE
6422	283201.66	5334043.75	-769.58	325.0	-30.0	68.5	In MRE
6423	283200.96	5334043.00	-769.88	295.0	-46.0	98.3	In MRE
6424	283200.90	5334042.77	-770.22	286.0	-60.0	148.4	In MRE
6425	283324.59	5333992.27	-765.54	45.0	2.0	82.0	In MRE
6426	283323.58	5333993.41	-765.62	15.0	2.0	77.8	In MRE
6427	283578.45	5333823.06	-733.85	315.0	-74.0	699.4	In MRE
6428	283320.44	5333988.24	-767.15	225.0	-69.0	66.0	In MRE
6429	283320.43	5333988.19	-767.00	225.0	-65.0	255.0	In MRE
6430	283320.56	5333988.05	-766.77	225.0	-55.0	221.0	In MRE
6431	283320.50	5333988.66	-767.21	225.0	-77.0	273.7	In MRE
6432	283318.34	5333990.53	-767.14	160.0	-83.0	302.1	In MRE
6433	283200.96	5334043.29	-768.64	299.0	3.0	200.4	In MRE



Survey	Easting	Northing	Elevation	Azimuth (°)	Dip (°)	Length (m)	Status
6434	283201.03	5334043.45	-767.62	302.0	24.0	152.0	In MRE
6435	283200.94	5334043.02	-769.67	290.0	-27.0	99.5	In MRE
6436	283201.00	5334043.15	-768.69	288.0	3.0	117.7	In MRE
6437	283139.59	5334113.91	-375.49	46.0	-75.0	377.2	In MRE
6438	283480.13	5333857.57	-742.15	315.0	-69.0	25.7	In MRE
6439	283479.90	5333857.76	-742.15	315.0	-65.0	427.7	In MRE
6440	283479.97	5333857.63	-742.06	315.0	-61.0	346.0	In MRE
6441	283139.85	5334113.51	-375.51	63.0	-74.0	392.3	In MRE
6442	283137.04	5334114.47	-374.64	302.0	-1.0	326.7	In MRE
6443	283136.83	5334114.19	-374.88	302.0	-30.0	335.3	In MRE
6444	283136.89	5334114.14	-375.30	298.0	-50.0	319.6	In MRE
6445	283137.12	5334113.74	-375.54	285.0	-72.0	349.7	In MRE
6446	283171.67	5334034.94	-769.54	340.0	-25.0	152.7	In MRE
6447	283171.63	5334034.79	-769.54	340.0	-8.0	170.3	In MRE
6448	283172.24	5334035.38	-769.01	338.0	7.0	151.0	In MRE
6449	283172.07	5334035.04	-770.37	345.0	-38.0	112.0	In MRE
6450	283172.35	5334034.92	-770.75	358.0	-54.0	128.2	In MRE
6451	283647.91	5333859.07	-731.73	336.0	-85.0	58.0	In MRE
6452	283137.22	5334113.91	-375.31	304.0	-76.0	395.2	In MRE
6453	283137.07	5334114.10	-375.31	313.0	-60.0	377.3	In MRE
6454	283136.95	5334114.25	-374.96	313.0	-43.0	350.4	In MRE
6455	283319.82	5333989.97	-767.14	268.0	-81.0	232.0	In MRE
6456	283319.70	5333992.10	-767.22	315.0	-85.0	234.6	In MRE
6457	283321.43	5333992.99	-766.88	19.4.0	-85.0	165.5	In MRE
6458	283321.83	5333989.61	-767.22	138.1	-81.0	263.9	In MRE
6459	283319.22	5333989.70	-767.01	240.6	-65.5	273.1	In MRE
6460	283480.30	5333857.75	-742.10	322.0	-73.0	392.0	In MRE



Survey	Easting	Northing	Elevation	Azimuth (°)	Dip (°)	Length (m)	Status
6461	283480.41	5333857.72	-742.06	322.0	-75.0	452.0	In MRE
6462	283480.33	5333858.25	-742.14	322.3	-75.0	222.2	In MRE
6463	283480.33	5333858.25	-742.14	322.4	-81.3	485.0	In MRE
6464	283174.63	5334032.78	-771.00	45.0	-78.0	94.0	In MRE
6465	283174.86	5334033.06	-770.88	45.0	-61.0	139.1	In MRE
6466	283174.95	5334033.09	-770.46	45.0	-45.0	85.0	In MRE
6467	283174.93	5334033.10	-770.09	45.0	-33.0	86.0	In MRE
6468	283174.96	5334033.12	-769.84	45.0	-19.0	83.7	In MRE
6469	283174.90	5334033.01	-769.48	45.0	-4.0	95.0	In MRE
6470	283174.81	5334032.89	-768.90	45.0	10.0	101.5	In MRE
6471	283174.48	5334032.64	-770.25	45.0	-87.0	140.3	In MRE
6472	283651.98	5333854.32	-729.98	135.0	2.0	54.6	In MRE
6473	283651.80	5333854.52	-730.49	135.0	-30.0	30.5	In MRE
6474	283651.71	5333854.60	-731.28	135.0	-60.0	44.0	In MRE
6475	283651.54	5333854.83	-731.40	135.0	-80.0	32.2	In MRE
6476	283650.46	5333852.85	-729.45	180.0	2.0	32.0	In MRE
6477	283650.49	5333853.49	-731.57	180.0	-60.0	28.8	In MRE
6478	283653.38	5333858.17	-729.65	45.0	2.0	148.9	In MRE
6479	283579.20	5333823.66	-734.00	325.0	-72.0	567.2	In MRE
6480	283136.99	5334113.98	-375.45	297.5	-64.9	377.4	In MRE
6481	283136.80	5334113.77	-375.38	283.8	-75.4	377.4	In MRE
6482	283139.99	5334113.62	-375.53	42.4	-77.3	385.0	In MRE
6483	283139.68	5334114.10	-375.52	29.7	-77.0	389.4	In MRE
6484	283139.42	5334113.79	-375.50	20.1	-79.4	415.0	In MRE
6485	283173.13	5334034.29	-767.19	5.0	33.0	287.9	In MRE
6493	283173.24	5334034.35	-767.44	5.0	25.0	248.9	In MRE
6494	283173.13	5334034.13	-766.70	5.0	40.0	251.0	In MRE



Survey	Easting	Northing	Elevation	Azimuth (°)	Dip (°)	Length (m)	Status
6495	283319.18	5333989.76	-766.82	239.9	-59.4	255.3	In MRE
6496	283319.25	5333989.54	-766.62	233.6	-47.9	225.7	In MRE
6497	283319.13	5333989.57	-766.46	234.5	-38.3	227.1	In MRE
6500	283320.75	5333987.94	-767.14	234.1	-64.1	242.1	In MRE
6501	283319.19	5333989.76	-766.94	241.1	-72.2	23.7	In MRE
6510	283579.32	5333823.95	-734.15	315.4	-71.4	539.8	In MRE
6511	283137.97	5334114.70	-374.50	334.5	-19.3	275.7	In MRE
6512	283137.98	5334114.70	-374.64	334.6	-25.3	300.1	In MRE
6513	283137.96	5334114.70	-374.71	328.1	-29.1	410.7	In MRE
6514	283138.46	5334114.88	-374.35	345.9	-9.0	326.8	In MRE
6515	283138.42	5334114.93	-374.47	345.6	-14.7	326.6	In MRE
6516	283138.41	5334114.94	-374.63	343.9	-21.2	350.5	In MRE
6517	283173.55	5334034.1	-767.32	17.3	29.9	251.3	In MRE
6518	283173.55	5334034.21	-767.66	15.6	23.9	251.3	In MRE
6519	283173.55	5334034.09	-766.78	15.3	38.7	251.4	In MRE
6521	283137.84	5334114.65	-374.84	329.0	-28.4	18.3	In MRE
6522	283137.84	5334114.65	-374.84	329.6	-33.4	500.6	In MRE
6523	283137.84	5334114.65	-374.84	326.3	-34.2	500.6	In MRE
6524	283172.89	5334034.37	-767.19	354.8	32.3	243.5	In MRE
6527	283174.02	5334033.56	-767.26	30.8	31.6	251.8	In MRE
6529	283174.07	5334033.71	-767.01	31.4	36.0	251.0	In MRE
6531	283137.91	5334114.54	-375.17	325.9	-50.2	542.3	In MRE
6532	283137.93	5334114.53	-375.26	334.1	-62.0	377.3	In MRE
6533	283138.17	5334114.52	-375.37	342.1	-71.7	403.0	In MRE
6384A	283501.77	5333909.11	-1,041.96	13.7	-79.3	336.9	In MRE
6418A	283479.90	5333857.18	-742.06	315.0	-72.0	430.0	In MRE
6428A	283320.64	5333988.21	-767.08	215.0	-70.0	262.7	In MRE



Survey	Easting	Northing	Elevation	Azimuth (°)	Dip (°)	Length (m)	Status
6438A	283480.10	5333857.55	-742.15	315.0	-69.0	389.4	In MRE
6462A	283480.33	5333858.25	-742.14	322.4	-77.8	449.0	In MRE
6479A	283546.17	5333880.97	-961.04	320.1	-75.2	100.0	In MRE
6501A	283319.45	5333990.04	-767.11	240.6	-73.2	23.9	In MRE
6501B	283319.46	5333989.83	-767.80	239.6	-74.5	274.8	In MRE
6510A	283524.03	5333894.75	-1,010.85	324.1	-73.3	287.6	In MRE
6521A	283137.84	5334114.65	-374.84	331.2	-30.2	461.0	In MRE



**List of drillholes not included in this MRE (Aug. 6, 2019 to Sept. 25, 2019) on the Kiena Mine Complex Property
(UTM NAD 83 Zone 18N)**

Survey	Easting	Northing	Elevation	Azimuth (°)	Dip (°)	Length (m)	Status
6486	283172.72	5334034.94	-769.96	356.9	-46.7	100.5	Post-MRE
6487	283172.95	5334034.66	-769.66	5.0	-37.9	90.5	Post-MRE
6488	283171.66	5334034.93	-769.54	349.9	-23.7	101.4	Post-MRE
6489	283171.81	5334034.92	-769.64	323.7	-28.4	80.1	Post-MRE
6490	283171.76	5334034.98	-769.35	324.4	-15.9	122.6	Post-MRE
6491	283172.00	5334034.97	-769.86	327.7	-36.7	88.3	Post-MRE
6492	283172.15	5334034.91	-770.13	331.1	-55.6	77.5	Post-MRE
6498	283320.75	5333987.94	-767.14	222.5	-48.8	227.3	Post-MRE
6499	283320.75	5333987.94	-767.14	225.8	-41.3	227.6	Post-MRE
6502	283320.41	5333989.01	-767.18	197.2	-78.1	272.8	Post-MRE
6503	283320.48	5333989.18	-767.26	208.1	-72.8	240.6	Post-MRE
6504	283320.75	5333987.94	-767.14	211.0	-68.1	250.8	Post-MRE
6505	283480.70	5333856.73	-741.77	337.7	-81.6	518.5	Post-MRE
6506	283481.46	5333857.43	-739.63	8.1	-83.1	595.1	Post-MRE
6507	283480.70	5333856.62	-741.96	329.8	-80.5	529.2	Post-MRE
6508	283480.87	5333856.87	-741.75	337.1	-76.9	450.4	Post-MRE
6509	283481.11	5333856.87	-741.79	335.5	-76.5	455.0	Post-MRE
6520	283518.81	5333719.12	-735.25	351.5	-65.6	619.9	Post-MRE
6525	283173.25	5334034.14	-767.14	354.9	23.4	238.8	Post-MRE
6526	283172.90	5334034.30	-766.88	353.9	37.1	247.6	Post-MRE
6528	283174.11	5334033.63	-767.79	34.4	22.4	186.0	Post-MRE
6530	283172.88	5334034.62	-767.96	4.3	16.7	231.0	Post-MRE
6534	283172.22	5334034.94	-766.61	341.4	38.6	233.0	Post-MRE
6535	283172.20	5334034.98	-767.29	343.8	30.5	245.4	Post-MRE
6536	283172.14	5334035.12	-767.55	343.8	24.5	278.0	Post-MRE



Survey	Easting	Northing	Elevation	Azimuth (°)	Dip (°)	Length (m)	Status
6537	283172.16	5334035.16	-767.92	344.1	17.5	302.5	Post-MRE
6538	283332.36	5333919.48	-760.14	359.7	-84.8	400.0	Post-MRE
6539	283331.82	5333919.95	-761.52	359.1	-73.7	269.3	Post-MRE
6540	283331.58	5333920.18	-761.63	358.5	-75.1	301.3	Post-MRE
6541	283331.72	5333920.05	-761.63	19.3	-82.9	287.3	Post-MRE
6542	283332.36	5333919.47	-760.13	21.5	-75.0	266.0	Post-MRE
6546	283139.00	5334113.41	-376.14	325.2	-41.1	502.5	Post-MRE
6547	283137.47	5334114.48	-374.93	334.8	-40.1	527.7	Post-MRE
6548	283139.00	5334113.40	-376.13	322.1	-36.4	512.5	Post-MRE
6549	283462.04	5333840.18	-741.99	314.5	-50.8	331.0	Post-MRE
6550	283462.18	5333840.05	-742.23	313.8	-62.6	339.6	Post-MRE
6555	283519.26	5333718.89	-735.06	2.9	-67.2	719.0	Post-MRE
6556	283139.00	5334113.40	-376.13	320.5	-29.0	517.0	Post-MRE
6557	283139.00	5334113.40	-376.13	319.5	-34.0	503.7	Post-MRE
6558	283180.59	5334026.58	-770.63	39.5	-79.1	108.4	Post-MRE
6559	283179.24	5334027.73	-770.69	40.6	-64.0	135.2	Post-MRE
6560	283179.44	5334027.86	-770.36	43.9	-51.9	101.4	Post-MRE
6561	283179.38	5334027.88	-769.91	44.4	-38.6	89.5	Post-MRE
6562	283180.59	5334026.58	-770.63	43	-24.8	81.7	Post-MRE
6563	283180.59	5334026.58	-770.63	44.5	-11.2	87.0	Post-MRE
6564	283180.59	5334026.58	-770.83	42.9	11.7	100.1	Post-MRE
6565	283180.69	5334026.57	-770.63	43.2	29.2	104.5	Post-MRE
6579	283519.44	5333718.97	-735.17	8.3	-66.1	555.6	Post-MRE
6520A	283510.02	5333850.48	-1,027.63	354	-64.3	361.7	Post-MRE
6555A	283535.37	5333840.45	-1,036.26	7.7	-68.2	270.2	Post-MRE



Wesdome Gold Mines Ltd.

NI 43-101 – Technical Report and Mineral Resource Estimate

Kiena Mine Complex



Appendix C: Polygonal Resources Summary



Martin Zone Indicated Resources

ZONE GROUP	ZONE	Polygone Name	TRUE WIDTH (m)	Cut Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Martin	Martin	A' (up)	3.00	6.53	1,050.00	220.53	Indicated
Martin	Martin	A (up)	3.00	3.71	9,872.02	1,178.06	Indicated
Martin	Martin	B (up)	3.00	4.67	8,290.54	1,245.54	Indicated
Martin	Martin	D (up)	3.00	3.73	12,627.33	1,515.05	Indicated
Martin	Martin	A' (down)	3.00	6.53	1,050.00	220.53	Indicated
Martin	Martin	A (down)	3.00	3.71	9,872.02	1,178.06	Indicated
Martin	Martin	B (down)	3.00	4.67	8,290.54	1,245.54	Indicated
Martin	Martin	D (down)	3.00	3.73	12,627.33	1,515.05	Indicated
Martin	Martin	S698	2.81	2.20	1,574.31	111.35	Indicated
Martin	Martin	U-1838	2.85	4.64	756.01	112.78	Indicated
Martin	Martin	U-1884	3.04	7.99	1,791.59	460.23	Indicated
Martin	Martin	U-1986	3.39	5.51	1,937.67	343.26	Indicated
Martin	Martin	U-1987	2.50	3.80	1,856.12	226.77	Indicated
Martin	Martin	U-3845	4.98	3.26	3,653.14	382.89	Indicated
Martin	Martin	U-4038	3.77	3.86	4,082.43	506.64	Indicated
Martin	Martin	U-4040	2.63	2.96	1,118.87	106.48	Indicated
Martin	Martin	U-4041	9.69	4.87	9,548.62	1,495.07	Indicated
Martin	Martin	U-4042	3.26	8.00	3,198.58	822.70	Indicated
Martin	Martin	U-4048	2.50	14.51	2,363.63	1,102.65	Indicated
Martin	Martin	U-4091	2.76	2.89	1,656.57	153.92	Indicated
Martin	Martin	U-4092	2.54	0.68	1,662.16	36.34	Indicated
Martin	Martin	U-4094	3.78	5.42	0.41	0.07	Indicated
Martin	Martin	U-4095	2.85	1.60	2,212.36	113.81	Indicated
Martin	Martin	U-4098	4.06	4.79	3,968.82	611.21	Indicated
Martin	Martin	U-4099	5.20	18.39	6,456.30	3,817.30	Indicated
Martin	Martin	U-4101	3.38	3.65	2,669.56	313.27	Indicated



Martin Zone Indicated Resources

ZONE GROUP	ZONE	Polygone Name	TRUE WIDTH (m)	Cut Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Martin	Martin	U-4102	3.20	3.03	2,229.05	217.15	Indicated
Martin	Martin	U-4111	2.62	0.38	1,145.43	13.99	Indicated
Martin	Martin	U-4121	2.56	6.28	2,061.04	416.14	Indicated
Martin	Martin	U-4122	2.63	0.64	2,083.39	42.87	Indicated
Martin	Martin	U-4135	2.50	5.66	1,725.07	313.92	Indicated
Martin	Martin	U-4136	2.80	3.85	1,022.31	126.54	Indicated
Martin	Martin	U-4176	2.80	1.84	1,481.67	87.65	Indicated
Martin	Martin	U-4249	2.50	3.23	1,233.43	128.09	Indicated
Martin	Martin	U-4726	3.12	12.28	30.53	12.05	Indicated
Martin	Martin	U-4728	2.93	2.68	2,813.94	242.46	Indicated
Martin	Martin	U-4746	3.30	7.22	1,357.19	315.04	Indicated
Martin	Martin	U-4840	2.95	0.15	718.54	3.47	Indicated
Martin	Martin	U-4841	2.50	8.07	2,233.18	579.41	Indicated
Martin	Martin	U-4842	3.01	0.07	666.80	1.50	Indicated
Martin	Martin	U-4843	2.71	6.17	2,058.08	408.26	Indicated
Martin	Martin	U-5127	3.17	11.06	375.18	133.41	Indicated
Martin	Martin	U-5128	2.50	2.65	1,202.39	102.44	Indicated
Martin	Martin	U-5237	4.52	3.80	3,458.64	422.55	Indicated
Martin	Martin	U-5459	2.50	4.52	611.25	88.83	Indicated
Martin	Martin	U-5462	2.54	3.30	142.03	15.07	Indicated
Martin	Martin	U-5463	2.50	3.70	1,498.60	178.27	Indicated
Martin	Martin	U-5465	2.79	0.86	983.05	27.18	Indicated
Martin	Martin	U-5466	2.50	7.44	927.47	221.85	Indicated
Martin	Martin	U-5471	2.77	4.83	901.01	139.92	Indicated
Martin	Martin	U-5474	3.09	1.73	1,889.13	105.08	Indicated
Martin	Martin	U-5475	2.50	4.83	1,775.16	275.66	Indicated



Martin Zone Indicated Resources

ZONE GROUP	ZONE	Polygone Name	TRUE WIDTH (m)	Cut Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Martin	Martin	U-5477	2.86	0.67	1,354.06	29.17	Indicated
Martin	Martin	U-5479	2.50	5.39	2,453.03	425.09	Indicated
Martin	Martin	U-5481	2.51	6.11	2,188.06	429.82	Indicated
Martin	Martin	U-5483	4.55	0.80	2,680.85	68.95	Indicated
Martin	Martin	U-5484	3.31	1.65	1,826.01	96.87	Indicated
Martin	Martin	U-5485	2.74	3.14	2,353.34	237.58	Indicated
Martin	Martin	U-5786	4.81	3.18	3,137.80	320.81	Indicated
Martin	Martin	U-5787	2.50	5.05	1,921.03	311.90	Indicated
Martin	Martin	U-1989	4.27	4.87	4,905.16	768.02	Indicated
Martin	Martin	U-4073	5.03	6.92	3,588.77	798.44	Indicated
Martin	Martin	U-4074	5.03	4.88	8,648.46	1,356.91	Indicated
Martin	Martin	U-4075	2.51	9.57	4,384.49	1,349.03	Indicated
Martin	Martin	U-4077	2.74	4.68	2,610.10	392.73	Indicated
Martin	Martin	U-4103	2.51	1.30	2,159.62	90.26	Indicated
Martin	Martin	U-4113	2.63	4.65	1,524.35	227.89	Indicated
Martin	Martin	U-4186	2.59	3.22	4,290.80	444.21	Indicated
Martin	Martin	U-4191	2.50	9.13	4,277.06	1,255.47	Indicated
Martin	Martin	U-5581	2.50	3.16	916.87	93.15	Indicated
Martin	Martin	U-5582	2.50	2.91	4,462.38	417.49	Indicated
Martin	Martin	U-5583	2.50	4.76	3,712.37	568.13	Indicated
Martin	Martin	U-5584	2.50	6.21	1,422.84	284.08	Indicated
Martin	Martin	U-5588	2.50	4.29	3,736.87	515.41	Indicated
Martin	Martin	U-5600	2.50	2.81	858.26	77.54	Indicated
Martin	Martin	U-5601	2.50	8.20	5,701.71	1,503.18	Indicated
Martin	Martin	U-5606	3.74	7.64	205.57	50.49	Indicated
Martin	Martin	U-5607	2.50	4.18	3,969.55	533.47	Indicated



Martin Zone Indicated Resources

ZONE GROUP	ZONE	Polygone Name	TRUE WIDTH (m)	Cut Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Martin	Martin	U-5609	4.51	2.58	869.74	72.14	Indicated
Martin	Martin	U-5610	7.36	4.32	3,423.98	475.56	Indicated
Martin	Martin	U-5783	3.32	1.72	1,982.05	109.61	Indicated
TOTAL Indicated				4.86	236,375.68	36,957.28	
TOTAL Inferred				-	-	-	



Dubuisson Zone Indicated Resources

ZONE GROUP	ZONE	Polygone Name	TRUE WIDTH (m)	Cut Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Dubuisson	Dubuisson	S531	7.60	4.25	48,228.57	6,589.98	Indicated
Dubuisson	Dubuisson	S540	6.58	3.52	31,231.75	3,534.52	Indicated
Dubuisson	Dubuisson	S541	3.32	0.87	15,793.26	441.76	Indicated
Dubuisson	Dubuisson	S551	7.18	9.40	2,402.95	726.21	Indicated
Dubuisson	Dubuisson	S552	4.66	16.90	26,123.06	14,193.90	Indicated
Dubuisson	Dubuisson	S557A	4.78	1.81	20,815.59	1,211.32	Indicated
Dubuisson	Dubuisson	S558	3.61	9.84	8,320.12	2,632.18	Indicated
Dubuisson	Dubuisson	S559	4.88	4.42	28,511.86	4,051.72	Indicated
Dubuisson	Dubuisson	S560	4.39	5.82	16,452.18	3,078.49	Indicated
Dubuisson	Dubuisson	S565	3.37	6.04	33,609.88	6,526.72	Indicated
Dubuisson	Dubuisson	S570	3.04	4.81	22,000.99	3,402.35	Indicated
Dubuisson	Dubuisson	S574	3.72	2.86	18,048.41	1,659.57	Indicated
Dubuisson	Dubuisson	S579	3.37	4.14	9,981.92	1,328.63	Indicated
TOTAL Indicated				5.46	281,520.56	49,377.35	
TOTAL Inferred				-	-	-	



Dubuisson North1 Indicated Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Cut Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Dubuisson North1	Dubuisson North1	U5941	9.62	11.97	52,201.77	20,089.56	Indicated
Dubuisson North1	Dubuisson North1	U5947	7.13	2.22	43,728.32	3,121.09	Indicated
Dubuisson North1	Dubuisson North1	S755	2.90	22.58	22,457.35	16,303.22	Indicated
Dubuisson North1	Dubuisson North1	S756	2.50	3.36	8,317.89	898.55	Indicated
Dubuisson North1	Dubuisson North1	S759	4.43	1.80	20,917.28	1,210.51	Indicated
Dubuisson North1	Dubuisson North1	S760	3.50	3.75	18,143.61	2,187.49	Indicated
Dubuisson North1	Dubuisson North1	S761	2.58	5.62	13,030.65	2,354.47	Indicated
Dubuisson North1	Dubuisson North1	S763	2.50	3.36	14,936.06	1,613.49	Indicated
TOTAL Indicated				7.67	193,732.94	47,778.39	
TOTAL Inferred				-	-	-	

Dubuisson North2 Indicated Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Cut Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Dubuisson	Dubuisson North2	U5941	3.66	10.68	16,603.92	5,701.29	Indicated
Dubuisson	Dubuisson North2	U5947	2.97	7.26	17,471.21	4,078.03	Indicated
Dubuisson	Dubuisson North2	S763	4.58	4.81	24,484.25	3,786.37	Indicated
Dubuisson	Dubuisson North2	S765A	3.59	5.41	22,044.08	3,834.25	Indicated
TOTAL Indicated				6.71	80,603.45	17,399.94	
TOTAL Inferred				-	-	-	



Northwest Indicated Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Cut Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
NorthWest	NorthWest	S194	3.90	3.50	20,567.57	2,314.42	Indicated
NorthWest	NorthWest	S198	3.00	2.31	22,079.93	1,639.84	Indicated
NorthWest	NorthWest	S199	3.23	3.48	23,061.49	2,580.23	Indicated
NorthWest	NorthWest	S263	16.24	3.52	107,976.46	12,219.76	Indicated
NorthWest	NorthWest	S276	9.67	3.32	56,319.00	6,011.52	Indicated
NorthWest	NorthWest	S278	4.92	3.55	27,802.23	3,173.21	Indicated
NorthWest	NorthWest	S281A	3.00	5.56	15,256.59	2,727.24	Indicated
NorthWest	NorthWest	S283	3.74	6.56	20,913.69	4,410.88	Indicated
NorthWest	NorthWest	S716	3.25	8.57	17,353.52	4,781.45	Indicated
NorthWest	NorthWest	S718	3.83	3.99	22,776.20	2,921.76	Indicated
NorthWest	NorthWest	S720	8.37	2.94	43,255.56	4,088.65	Indicated
NorthWest	NorthWest	S721	3.00	4.57	19,219.97	2,823.97	Indicated
NorthWest	NorthWest	S723	4.16	2.07	18,271.16	1,215.98	Indicated
NorthWest	NorthWest	U1633	4.07	4.20	19,083.42	2,576.89	Indicated
NorthWest	NorthWest	U1681	6.41	3.28	33,421.53	3,524.45	Indicated
TOTAL Indicated				3.79	467,358.33	57,010.26	
TOTAL Inferred				-	-	-	

**Presqu'ile Zone 1 Indicated Resources**

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Cut Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Presqu'ile	Zone1	S-739	2.50	2.51	14,131.73	1,140.41	Indicated
Presqu'ile	Zone1	S-744	3.35	12.37	10,569.11	4,203.38	Indicated
Presqu'ile	Zone1	S-745	2.50	6.36	8,822.13	1,803.94	Indicated
Presqu'ile	Zone1	S-746	4.82	3.22	13,796.81	1,428.32	Indicated
Presqu'ile	Zone1	S-747	2.51	8.09	7,744.29	2,014.29	Indicated
Presqu'ile	Zone1	S-748	2.50	0.04	3,367.64	4.33	Indicated
Presqu'ile	Zone1	S-749	3.37	4.07	6,901.76	903.12	Indicated
Presqu'ile	Zone1	S-751	2.50	5.41	2,621.31	455.94	Indicated
Presqu'ile	Zone1	S-753	2.50	6.28	8,803.58	1,777.50	Indicated
Presqu'ile	Zone1	S-754	2.50	12.11	15,045.75	5,857.99	Indicated
TOTAL Indicated				6.64	91,804.11	19,589.22	
TOTAL Inferred				-	-	-	

Presqu'ile Zone 2 Indicated Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Cut Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Presqu'ile	Zone2	S-748	3.13	23.28	12,658.41	9,475.49	Indicated
Presqu'ile	Zone2	S-750	3.80	3.57	17,345.50	1,991.11	Indicated
Presqu'ile	Zone2	S-753	6.05	4.11	21,160.94	2,796.51	Indicated
TOTAL Indicated				8.67	51,164.85	14,263.11	
TOTAL Inferred				-	-	-	

**Wesdome Zone A Indicated and Inferred Resources**

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	A	82-054	1.67	11.40	4,444.00	1,628.81	Indicated
Wesdome	A	82-055	1.76	5.50	7,288.00	1,288.73	Indicated
Wesdome	A	82-059	2.34	5.40	2,220.00	385.42	Indicated
Wesdome	A	82-061	2.72	5.00	3,021.00	485.64	Indicated
Wesdome	A	82-064	1.50	4.60	621.00	91.84	Indicated
Wesdome	A	82-076	1.70	4.50	3,574.00	517.08	Indicated
Wesdome	A	82-079	4.63	6.10	7,926.00	1,554.44	Indicated
Wesdome	A	82-081	1.77	5.10	3,851.00	631.44	Indicated
Wesdome	A	82-088	2.03	10.40	3,719.00	1,243.51	Indicated
Wesdome	A	82-089	1.92	4.30	5,211.00	720.41	Indicated
Wesdome	A	82-090	4.09	8.50	9,132.00	2,495.61	Indicated
Wesdome	A	82-102	2.52	4.90	6,269.00	987.61	Indicated
Wesdome	A	82-109	2.69	8.40	4,464.00	1,205.58	Indicated
Wesdome	A	82-123	1.50	4.30	2,691.00	372.03	Indicated
Wesdome	A	DS-037	1.66	5.50	3,130.00	553.48	Indicated
Wesdome	A	WD-281	1.50	6.00	1,639.00	316.17	Indicated
Wesdome	A	WD-281A	3.06	6.40	3,579.00	736.43	Indicated
Wesdome	A	WD-285	3.15	5.30	2,588.00	440.99	Indicated
Wesdome	A	WD-286	1.93	6.20	5,053.00	1,007.24	Indicated
Wesdome	A	WD-289	2.06	6.20	4,065.00	810.30	Indicated
Wesdome	A	WD-292	1.50	5.60	6,015.00	1,082.97	Indicated
Wesdome	A	WD-302	4.56	9.90	14,147.00	4,502.88	Indicated
Wesdome	A	WD-321	1.50	4.50	644.00	93.17	Indicated
Wesdome	A	WD-322	5.47	6.40	732.00	150.62	Indicated
Wesdome	A	WQ-76	4.51	15.30	5,617.00	2,763.04	Indicated
Wesdome	A	WQ-83	4.85	7.70	11,638.00	2,881.11	Indicated
Wesdome	A	WQ-87	1.50	6.90	2,973.00	659.53	Indicated

**Wesdome Zone A Indicated and Inferred Resources**

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	A	82-050	2.01	7.80	13,946.00	3,497.32	Inferred
Wesdome	A	82-055	1.76	5.50	6,028.00	1,065.93	Inferred
Wesdome	A	82-062	3.40	4.00	36,690.00	4,718.44	Inferred
Wesdome	A	82-064	1.50	4.60	1,109.00	164.01	Inferred
Wesdome	A	82-066A	2.40	7.30	24,446.00	5,737.49	Inferred
Wesdome	A	82-067A	1.50	4.10	5,117.00	674.51	Inferred
Wesdome	A	82-073	1.82	17.00	12,458.00	6,809.08	Inferred
Wesdome	A	82-076	1.70	4.50	2,236.00	323.50	Inferred
Wesdome	A	82-079	4.63	6.10	173.00	33.93	Inferred
Wesdome	A	82-084	1.50	5.60	20,381.00	3,669.48	Inferred
Wesdome	A	82-102	2.52	4.90	1,365.00	215.04	Inferred
Wesdome	A	82-105	1.50	4.70	17,191.00	2,597.71	Inferred
Wesdome	A	82-109	2.69	8.40	5,645.00	1,524.52	Inferred
Wesdome	A	82-123	1.50	4.30	3,207.00	443.36	Inferred
Wesdome	A	82-124	1.97	11.20	29,978.00	10,794.73	Inferred
Wesdome	A	82-131	1.50	8.80	29,490.00	8,343.50	Inferred
Wesdome	A	82-211	1.68	7.20	31,712.00	7,340.86	Inferred
Wesdome	A	WD-248	2.68	4.00	23,380.00	3,006.74	Inferred
Wesdome	A	WD-260	2.96	5.50	60,240.00	10,652.19	Inferred
Wesdome	A	WD-269	2.19	4.10	57,458.00	7,574.00	Inferred
Wesdome	A	WD-274	4.10	6.10	10,025.00	1,966.10	Inferred
Wesdome	A	WD-279	3.77	5.00	27,124.00	4,360.28	Inferred
Wesdome	A	WD-280	1.50	6.10	37,732.00	7,399.98	Inferred
Wesdome	A	WD-281	1.50	6.00	168.00	32.41	Inferred
Wesdome	A	WD-281	1.50	6.00	153.00	29.51	Inferred
Wesdome	A	WD-281A	3.06	6.40	11,115.00	2,287.08	Inferred
Wesdome	A	WD-283	1.50	5.10	13,909.00	2,280.64	Inferred



Wesdome Zone A Indicated and Inferred Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	A	WD-288	1.50	6.90	28,363.00	6,292.05	Inferred
Wesdome	A	WD-296	1.50	4.70	8,153.00	1,231.99	Inferred
Wesdome	A	WD-303	1.50	8.00	12,741.00	3,277.06	Inferred
Wesdome	A	WD-306	1.50	7.70	6,897.00	1,707.43	Inferred
Wesdome	A	WD-312	1.50	5.80	32,117.00	5,989.00	Inferred
Wesdome	A	WD-316	2.27	6.80	25,588.00	5,594.18	Inferred
Wesdome	A	WD-322	5.47	6.40	5,488.00	1,129.24	Inferred
Wesdome	A	WD-324	5.24	8.10	44,186.00	11,506.96	Inferred
TOTAL Indicated				7.29	126,251.00	29,606.08	
TOTAL Inferred				6.46	646,009.00	134,270.26	

**Wesdome Zone AF Indicated and Inferred Resources**

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	AF	82-088	1.50	6.30	2,686.00	544.05	Indicated
Wesdome	AF	82-100	1.50	4.00	3,364.00	432.62	Indicated
Wesdome	AF	WD-302	2.52	11.80	5,923.00	2,247.06	Indicated
Wesdome	AF	WQ-83	3.71	7.50	7,339.00	1,769.66	Indicated
Wesdome	AF	82-059	1.87	4.50	4,916.00	711.24	Inferred
Wesdome	AF	82-088	1.50	6.30	743.00	150.49	Inferred
Wesdome	AF	82-100	1.50	4.00	6,316.00	812.26	Inferred
Wesdome	AF	WD-302	2.52	11.80	7,098.00	2,692.83	Inferred
Wesdome	AF	WQ-83	3.71	7.50	19,823.00	4,779.93	Inferred
Wesdome	AF	WQ-89	1.50	4.80	5,389.00	831.65	Inferred
TOTAL Indicated				8.04	19,312.00	4,993.39	
TOTAL Inferred				7.01	44,285.00	9,978.40	

Wesdome Zone AH Indicated and Inferred Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	AH	WD-286	1.50	10.00	7,089.00	2,279.17	Inferred
Wesdome	AH	82-065	2.33	10.90	7,558.00	2,648.65	Indicated
Wesdome	AH	82-079	1.50	13.90	3,056.00	1,365.71	Indicated
Wesdome	AH	WD-263	1.50	10.80	3,375.00	1,171.89	Indicated
Wesdome	AH	WD-286	1.50	10.00	3,774.00	1,213.37	Indicated
TOTAL Indicated				11.21	17,763.00	6,399.63	
TOTAL Inferred				10.00	7,089.00	2,279.17	



Wesdome Zone AH2 Inferred Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	AH2	82-139	2.95	4.40	5,180.00	732.78	Inferred
Wesdome	AH2	82-154	1.50	5.40	6,110.00	1,060.78	Inferred
Wesdome	AH2	82-183	1.50	13.10	22,913.00	9,650.38	Inferred
TOTAL Indicated				-	-	-	
TOTAL Inferred				10.41	34,203.00	11,443.94	

Wesdome Zone A1 Indicated and Inferred Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	A1	82-071	1.50	4.60	6,159.00	910.88	Indicated
Wesdome	A1	WD-314	1.50	6.20	6,121.00	1,220.13	Indicated
Wesdome	A1	WD-261	3.88	24.90	11,659.00	9,333.65	Inferred
Wesdome	A1	WD-314	1.50	6.20	3,947.00	786.77	Inferred
TOTAL Indicated				5.40	12,280.00	2,131.00	
TOTAL Inferred				20.17	15,606.00	10,120.43	

**Wesdome Zone B Indicated and Inferred Resources**

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	B	82-064	2.13	6.10	10,990.00	2,155.35	Indicated
Wesdome	B	82-067A	1.50	5.50	5,307.00	938.43	Indicated
Wesdome	B	WD-302	1.50	4.30	11,066.00	1,529.85	Indicated
Wesdome	B	WQ-76	1.50	6.10	8,408.00	1,648.97	Indicated
Wesdome	B	WQ-83	1.50	11.20	7,907.00	2,847.22	Indicated
Wesdome	B	82-063	1.66	6.00	2,179.00	420.34	Inferred
Wesdome	B	82-064	2.13	6.10	1,480.00	290.26	Inferred
Wesdome	B	82-067A	1.50	5.50	11,835.00	2,092.77	Inferred
Wesdome	B	WD-274	1.50	10.80	16,735.00	5,810.86	Inferred
Wesdome	B	WD-302	1.50	4.30	12.00	1.66	Inferred
Wesdome	B	WD-311	1.50	8.70	25,076.00	7,014.05	Inferred
TOTAL Indicated				6.49	43,678.00	9,119.83	
TOTAL Inferred				8.48	57,317.00	15,629.93	

Wesdome Zone D Indicated and Inferred Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	D	82-070	1.50	4.90	8,104.00	1,276.69	Indicated
Wesdome	D	WD-314	3.05	4.80	13,211.00	2,038.77	Indicated
Wesdome	D	82-073	1.50	4.60	16,052.00	2,373.99	Inferred
Wesdome	D	CB-055	1.50	4.90	4,280.00	674.27	Inferred
Wesdome	D	WD-283	1.50	4.00	16,540.00	2,127.09	Inferred
TOTAL Indicated				4.84	21,315.00	3,315.46	
TOTAL Inferred				4.37	36,872.00	5,175.34	



Wesdome Zone E Indicated and Inferred Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	E	82-213	1.50	4.90	6,520.00	1,027.15	Indicated
Wesdome	E	82-216	4.53	5.10	25,848.00	4,238.27	Indicated
Wesdome	E	82-217	1.50	4.50	11,822.00	1,710.39	Indicated
Wesdome	E	82-227	1.96	5.70	4,340.00	795.35	Indicated
Wesdome	E	WD-258	2.17	4.50	18,657.00	2,699.26	Indicated
Wesdome	E	WD-260	1.85	8.00	19,621.00	5,046.64	Indicated
Wesdome	E	WD-269	1.67	4.40	9,776.00	1,382.95	Indicated
Wesdome	E	82-126	1.50	4.50	18,882.00	2,731.82	Inferred
Wesdome	E	82-143	1.50	4.30	17,224.00	2,381.19	Inferred
Wesdome	E	82-177	1.94	12.50	25,323.00	10,176.92	Inferred
Wesdome	E	82-207	2.98	9.20	34,135.00	10,096.68	Inferred
Wesdome	E	82-209	1.50	6.10	21,689.00	4,253.64	Inferred
Wesdome	E	82-210	1.50	6.60	26,813.00	5,689.58	Inferred
Wesdome	E	82-211	1.50	14.60	23,620.00	11,087.25	Inferred
Wesdome	E	82-213	1.50	4.90	10,430.00	1,643.13	Inferred
Wesdome	E	82-216	4.53	5.10	52,788.00	8,655.59	Inferred
Wesdome	E	82-217	1.50	4.50	8,985.00	1,299.94	Inferred
Wesdome	E	82-220	1.50	5.80	30,540.00	5,694.93	Inferred
Wesdome	E	82-221	1.50	4.40	1,535.00	217.15	Inferred
Wesdome	E	82-222	1.50	5.20	6,387.00	1,067.80	Inferred
Wesdome	E	82-224	2.40	5.90	63,677.00	12,078.85	Inferred
Wesdome	E	82-227	1.96	5.70	17,039.00	3,122.55	Inferred
Wesdome	E	WD-258	2.17	4.50	14,814.00	2,143.27	Inferred
Wesdome	E	WD-264	3.13	7.30	53,013.00	12,442.17	Inferred
Wesdome	E	WD-269	1.67	4.40	8,056.00	1,139.63	Inferred
TOTAL Indicated				5.44	96,584.00	16,900.00	
TOTAL Inferred				6.86	434,950.00	95,922.07	

**Wesdome Zone E0 Indicated and Inferred Resources**

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	E0	82-208	1.50	10.50	5,451.00	1,840.16	Indicated
Wesdome	E0	82-180	1.50	12.50	30,753.00	12,359.15	Inferred
Wesdome	E0	82-208	1.50	10.50	11,188.00	3,776.88	Inferred
Wesdome	E0	WD-270	10.83	5.10	160,762.00	26,359.95	Inferred
TOTAL Indicated				10.50	5,451.00	1,840.16	
TOTAL Inferred				6.52	202,703.00	42,495.98	

Wesdome Zone E1 Indicated and Inferred Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	E1	82-212	9.86	4.90	46,067.00	7,257.33	Indicated
Wesdome	E1	82-227	1.60	8.00	6,437.00	1,655.63	Indicated
Wesdome	E1	82-229	1.50	5.30	5,231.00	891.36	Indicated
Wesdome	E1	WD-265	1.50	4.70	2,325.00	351.33	Indicated
Wesdome	E1	82-212	9.86	4.90	21,534.00	3,392.44	Inferred
Wesdome	E1	82-213	1.50	4.90	186.00	29.30	Inferred
Wesdome	E1	82-215	1.81	5.40	14,563.00	2,528.34	Inferred
Wesdome	E1	82-227	1.60	8.00	11,946.00	3,072.58	Inferred
Wesdome	E1	82-228	1.50	4.10	12,976.00	1,710.47	Inferred
Wesdome	E1	82-229	1.50	5.30	9,483.00	1,615.89	Inferred
Wesdome	E1	WD-254	1.50	6.50	19,233.00	4,019.31	Inferred
Wesdome	E1	WD-265	1.50	4.70	4,485.00	677.72	Inferred
TOTAL Indicated				5.26	60,060.00	10,155.65	
TOTAL Inferred				5.62	94,406.00	17,046.06	

**Wesdome Zone E3 Indicated and Inferred Resources**

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	E3	82-215	2.40	6.10	14,730.00	2,888.84	Indicated
Wesdome	E3	WD-258	1.50	4.20	10,185.00	1,375.31	Indicated
Wesdome	E3	WD-260	1.50	4.40	8,852.00	1,252.23	Indicated
Wesdome	E3	WD-262	1.50	8.00	5,348.00	1,375.54	Indicated
Wesdome	E3	82-210	1.50	4.90	16,381.00	2,580.64	Inferred
Wesdome	E3	82-228	1.50	9.00	24,705.00	7,148.56	Inferred
Wesdome	E3	WD-258	1.50	4.20	10,126.00	1,367.35	Inferred
Wesdome	E3	WD-260	1.50	4.40	6,995.00	989.54	Inferred
Wesdome	E3	WD-262	1.50	8.00	7,488.00	1,925.96	Inferred
TOTAL Indicated				5.48	39,115.00	6,891.92	
TOTAL Inferred				6.63	65,695.00	14,012.04	

Wesdome Zone E4 Inferred Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	E4	82-206	1.50	5.00	8,406.00	1,351.30	Inferred
Wesdome	E4	82-208	1.50	4.90	17,778.00	2,800.72	Inferred
Wesdome	E4	82-209	2.26	8.90	39,386.00	11,269.97	Inferred
Wesdome	E4	82-210	1.50	12.80	11,511.00	4,737.12	Inferred
Wesdome	E4	WD-260	1.50	14.20	9,512.00	4,342.61	Inferred
TOTAL Indicated				-	-	-	
TOTAL Inferred				8.80	86,593.00	24,501.72	



Wesdome Zone F Inferred Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	F	82-208	1.50	5.80	19,289.00	3,596.90	Inferred
Wesdome	F	WD-268	1.50	6.40	16,555.00	3,406.44	Inferred
TOTAL Indicated				-	-	-	
TOTAL Inferred				6.08	35,844.00	7,003.34	

Wesdome Zone F2 Indicated and Inferred Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	F2	CB-071	2.17	12.80	3,015.00	1,240.76	Indicated
Wesdome	F2	WD-262	2.60	4.20	5,742.00	775.36	Indicated
Wesdome	F2	82-228	1.50	10.10	20,715.00	6,726.63	Inferred
TOTAL Indicated				7.16	8,757.00	2,016.12	
TOTAL Inferred				10.10	20,715.00	6,726.63	

Wesdome Zone F4 Indicated and Inferred Resources

ZONE GROUP	ZONE	Polygone Name	HORIZONTAL THICKNESS (m)	Au (g/t)	TONNES	OUNCES (CUT)	CLASSIFICATION 2019
Wesdome	F4	82-212	1.50	11.20	3,693.00	1,329.81	Indicated
Wesdome	F4	WD-266	1.50	8.00	2,445.00	628.87	Indicated
Wesdome	F4	82-229	1.50	7.90	5,420.00	1,376.63	Inferred
Wesdome	F4	WD-264	3.68	10.10	9,150.00	2,971.21	Inferred
TOTAL Indicated				9.93	6,138.00	1,958.67	
TOTAL Inferred				9.28	14,570.00	4,347.84	