BONTERRA

October 20, 2020

Mr. Marc Croteau, Deputy Minister
MINISTÈRE DE L'ENVIRONNEMENT
ET DE LA LUTTE CONTRE LES CHANGEMENTS CLIMATIQUES
Direction de l'évaluation environnementale des projets miniers
et nordiques et de l'évaluation environnementale stratégique
Marie Guyart Building, 6th floor, box 83
675 René-Lévesque Boulevard East
Québec, QC G1R 5V7

Subject: **Answers to questions and comments dated February 12, 2020, regarding the application for an attestation of exemption regarding site development and the sinking of an exploration ramp (Gladiator Project)**

Our ref.: **18-0696-0688**
Your ref.: **3214-14-065**

Dear Sir,

This document contains answers to your questions and comments regarding the project in question.

QC-1 – The promoter will be required to submit a revised schedule for the completion of the various stages of the project.

Bonterra is seeking all required approvals to begin surface work such as forest clearing and site preparation in the winter of 2021, and to continue with the sinking of the ramp in March 2021. Simultaneously with the sinking of the ramp, which is scheduled to take place over a one-year period, surface exploration drillings will be carried out and, depending on drilling results, it is not excluded to carry out a bulk sampling in the future.

QC-2 – The promoter will be required to present all community consultation activities carried out in 2019 and, if applicable, those planned for 2020.

Several project presentation meetings regarding the sinking of an exploration ramp as part of the Gladiator project were held in 2018 with the City of Lebel-sur-Quévillon and with the Cree community of Waswanipi. Alain Poirier, Mayor of Lebel-sur-Quévillon, and Anik Racicot, Director of Economic Development for Lebel-sur-Quévillon, were informed of the Gladiator project on Thursday, December 6, 2018, at the Bachelor mine during a COMEX meeting. They were very supportive of the project. The Cree community of Waswanipi was met on December 14, 2018, in Ottawa.

The purpose of these meetings was to inform the communities about the project and identify their concerns. In addition, Mr. Marshall Icebound, a machine operator who was then employed by Bonterra, was met on Friday, December 14, 2018, in Montreal by Maxime Douellou, Director of Exploration at Bonterra, to be informed of the Gladiator project.

Mr. Icebound agrees with the ramp project, provided that there is employment for the Cree community and that this project does not scare off walleye populations.

Discussions by the Waswanipi Natural Resources Team continued throughout 2019. Meetings were held on October 23 and November 12, 2019, with Ronnie Ottereyes, Vice-Chief of the Waswanipi community, and with Jack Blacksmith, negotiator between mining companies and the Waswanipi community. It should be noted that no environmental issues were raised by the Cree community during these meetings; only the socio-economic aspect concerns the community. As such, a new agreement will be reached in 2020 with Waswanipi to include the Barry and Gladiator mining projects. The Waswanipi negotiation team will contact Bonterra in the near future to arrange a future meeting.

A meeting between Bonterra and the Mayor of Lebel-sur-Quévillon was held on January 29, 2020, to present these projects.

QC-3 – The promoter indicated that forest roads will be used to access the exploration site and that it will construct a new 300-meter long road between the existing access road and the ramp. In order to ensure the safety of road users, the promoter must, after consulting the users of the territory, indicate whether access roads will be wide enough to allow passage for two vehicles passing each other and explain whether road signalling measures will be required.

The main road to the Gladiator site is controlled 24 hours a day by a security guard from the Osisko Mining Corporation (Osisko). In the event that Osisko removes their guard, Bonterra will set up a barrier to control access to the Gladiator site. The location map attached in Appendix A shows the Class 4 Forest Road connecting Route 6000 to the Gladiator site, via the Osisko Windfall site. A wetland and infrastructure map, also attached in Appendix A, shows the proposed access road to the Gladiator site. This road will be arranged to connect the access ramp and the existing forest path; it is planned to be approximately 300 meters long, with its width varying between 5 meters and 9 meters. The section between the ramp and pads will be 9 meters wide, while the access road to the offices will be 5 meters wide.

QC-4 – The promoter will be required to provide further details on the various underground exploration campaigns for the gold deposit under Lake Barry. The promoter must state its intentions and justifications for the exploration of this deposit.

Currently, the Gladiator deposit is outlined by diamond drillings 1,600 meters long and 1,100 meters deep. Table 1 below shows the indicated and presumed resources estimated in May 2019 for the Gladiator project.

Table 1. Gladiator Project Resources*

Deposit	Indicated Resources			Presumed Resources		
	Tonnes	**Au (g/t)**	**Au (ounces)**	**Tonnes**	**Au (g/t)**	**Au (ounces)**
Gladiator	743,000	8.46	202,000	3,065,000	9.10	897,000

*Taken from the Barry and Gladiator deposits resource estimation technical report (SGS, 2019)

Most of the known Gladiator deposit remains under Barry Lake. Bonterra will soon reach the lateral and depth access limits to drill the deposit from the surface via the lake or land. The exploration ramp at the Gladiator site would allow Bonterra to continue exploration drilling in depth.

A resource estimation technical report on the Barry and Gladiator deposits was completed by SGS in 2019. The following paragraphs summarize the history of the various Gladiator deposit exploration campaigns and are taken from the report (SGS, 2019) presented in Appendix B.

Prior to Bonterra's acquisition of the Eastern Extension property (now Gladiator), Xemac Resources conducted transects and geophysical surveys on the entire site in 1996. Electrical, magnetic and electromagnetic anomalies were detected, leading Xemac to drill 8,650 meters of cores in 59 holes. These drillings, carried out between 1997 and 2001, led to the discovery of the deposit.

Between 2012 and April 2019, Bonterra completed approximately 173,050 meters of diamond drill cores in 295 holes at the Gladiator site.

Since 2012, Bonterra's surface gold exploration at the Gladiator site, other than diamond drillings, has been limited to a high-resolution heliborne magnetic survey (MAG). On behalf of Bonterra, PROSPECTAIR conducted a MAG from April 6 to April 10, 2018, over a total distance of 2,097 I-km, covering both Main and SW survey blocks. Eleven flights were conducted from the Bonterra exploration camp located at the north end of Barry Lake, in the vicinity of the main block. The main block straddles the Bailly, Barry and Les Loutres lakes, while the SW block is east of Maseres Lake.

QC-5 – Page 5 of the application states that the portal and ramp will be 30 meters wide. Considering that the planned ramp will be 10 meters wide and 57 meters long, it seems that the planned width for the portal and ramp is oversized. The promoter will need to confirm the exact dimensions of the portal and ramp and the depth that will be reached.

To ensure stability, the portal will be 30 meters wide due to the slopes to be respected for the overburden. The plan and section view of the portal, attached in Appendix C, shows that the portal width in the rock is reduced to 9 meters. A depth of 13 meters will be reached at the ramp entrance. It should be noted that under ground, the ramp will be 4 meters wide.

QC-6 – The promoter will be required to seek approval for the location of the waste rock pile under section 241 of the Mining Act. It should be noted that if changes are made to waste rock pile location following the issuance of an attestation of exemption, the promoter will be required to apply for a new attestation of exemption under section 157 of the Environmental Quality Act (EQA), since the project must be carried out in accordance with the current description.

Bonterra will file an application under section 241 of the Mining Act for approval of the waste rock pile location. This will include, among other things, the condemnation drilling report and a survey plan. In the event that changes are made to the location of the waste rock pile, Bonterra will apply for a new attestation of exemption.

QC-7 – The promoter will be required to submit a revised map of Appendix A of the environmental characterization report including, among others, the infrastructure development plan, vegetation groupings and inventory stations.

The new wetland and infrastructure map is presented in Appendix A.

QC-8 – The promoter should explain how the project was optimized to avoid wetlands and reduce losses. It will also have to indicate whether it would be possible to move certain infrastructures and, if necessary, to define maximum areas where this would be possible.

The study area is in the bioclimatic domain of the spruce-moss stand and is located in the natural province of the Mistassini highlands. It consists of a plateau dotted with hills that generally range from 300 to 600 meters above sea level. On these soils, a cold and moderately humid climate favours the homogenized installation of the black spruce-moss stand and the black spruce-sphagnum stand.

According to the 2016 environmental survey, the Barry Lake area of interest is predominantly characterized by an abundance of thin to thick organic deposits interspersed with large fluvio-glacial gravel and sand deposits. In 2017, following an extensive study of the camp area, thick organic soils that were initially characterized as hydromorphic were then characterized as non-hydromorphic (folisol) by their proximity to rock.

Based on the wetland and infrastructure map provided in Appendix A, wetland groupings represent approximately 67% of the total study area, or approximately 38.6 hectares (ha). For terrestrial groupings within the study area, they cover approximately 33%, or 18.9 ha. Within the terrestrial groupings is a protective strip between Barry Lake and a minimum distance of 60 meters from the high-water line, as required by Directive 019 on the management of accumulation areas.

The design of the project and infrastructure therefore considered the impacts on wetlands. However, the ubiquity of wetlands in the area makes it difficult to plan the development of facilities solely in terrestrial environments. Because the terrestrial area is limited, it cannot contain all the accumulations areas planned for the project. In addition, the landform of the land grouping and thus the direction of waterflow to nearby Barry Lake reduces the flexibility for water management.

Analysis of the area's topography revealed that the site was divided by two sub-watersheds. Plan INF0668-5502 presented in technical note “Gestion et traitement des eaux pour l'aménagement du site et fonçage d'une rampe d'exploration”, attached in Appendix D, shows the watersheds and proposed water management. On the wetland and infrastructure map attached in Appendix A, the sub-watershed boundary has been superimposed on the habitat type, and it can be observed that the T1b grouping (black spruce stand) as well as woodland bog MH1b occur in different watersheds. As a result, Bonterra proposes to consolidate all the infrastructure that could have a potential impact on the environment within the same watershed.

Of the total land area (18.9 ha), about 2.3 ha are occupied by the camp, 8.5 ha by the 60-meter protection strip and about 0.17 ha are planned for the development of offices and a parking lot. This means that almost 8 ha are available in dry areas for infrastructure development. Part of this area is located on a topographically high point, which is not desirable for the development of water collection basins and accumulation areas. In addition, the main access road also crosses the T1b (black spruce) stand, further limiting the available space by fragmenting the terrestrial grouping.

In total, approximately 7.5 ha of wetlands would be affected by infrastructure development; approximately 6.8 ha in wooded peat bogs and 0.7 ha in vegetation marshes. However, these environments are abundant, homogeneous and vast in the region. In addition, a wetland characterization study also demonstrated the presence of non-hydromorphic soils and the proximity of rock (folisol). Due to the lack of status species, the abundance and homogeneity of wetlands in the region, and the presence of folisols, the ecological value of the wetlands that will be affected by project infrastructure is considered low.

QC-9 – The promoter states that the sizing of the sedimentation and polishing ponds is based on the knowledge that Bonterra acquired at the Barry mine site. The promoter will need to identify this knowledge and explain the basis for the sizing of these basins.

Following discussions, Bonterra commissioned GCM Consultants Inc. (GCM) to conduct a surface water assessment in order to develop an adequate water management plan specific to the Gladiator exploration site. To do this, an analysis of the drainage network of the region and of its watershed, as well as of the precipitation under average, wet and dry weather conditions, was first conducted; then, hydrological calculations were carried out in order to estimate the water flows to be treated and thus to size the sedimentation and polishing basins. Finally, depending on the position and size of the future site infrastructure, a network of collection ditches has been designed to collect the water and transport it to the basins where the water will be treated by sedimentation and polishing, to be sent to the final effluent in accordance with the discharge standards of Directive 019.

The water management and treatment technical note prepared by GCM is presented in Appendix D.

QC-10 – The promoter will be required to provide a portrait of contaminants that may be released into the environment. No geochemical residue characterization report was submitted. In this regard, the application mentions that a preliminary geochemical characterization of waste rock is being carried out according to Directive 019 on the mining industry. In addition, the results of total extractable metal analyses on sterile rock and the results of TCLP, SPLP and CTEU-9 leaching are currently being compiled.

The proponent will be required to submit a tailings geochemical characterization report including waste rock, in accordance with the requirements of Directive 019 on the mining industry. It must also specify how they are to be managed, particularly as regards the sealing of accumulation areas.

A preliminary geochemical characterization of the waste rock according to Directive 019 was conducted by GCM in order to better identify the economic and environmental risks associated with waste rock management and to determine the use category of the mine waste rock at the site Gladiator according to the *Guide de valorisation des matières résiduelles inorganiques non dangereuses de source industrielle comme matériau de construction* (MDDEP, 2002). Three samples of each of the identified lithological units (5) of waste rock were selected from drill cores to uniformly cover the space occupied by the potentially extracted waste rock. The results of this study are presented in the paragraphs below, while the full report is attached in Appendix E.

Determining the acid generation potential

Analysis of the results of the acid generation potential test (AGP) shows that 93% of the waste rock samples analyzed (14 out of 15 samples) are not potentially acid generating (NAGP) according to Directive 019. Basalt lithology is the only PGA sample.

It should be noted that according to Bussières and Benzaazoua (1997), 20% of the waste rock samples analyzed (3 out of 15 samples) are in the uncertainty zone. These samples correspond to waste rock from basalt lithologies and felsic intrusives.

Metal content

Approximately 73% of waste rock samples analyzed for total metal contents have concentrations above criterion A of the *Guide d'intervention Protection des sols et réhabilitation des terrains contaminés* (MDDELCC, 2016) (hereafter referred to as the Intervention Guide) for at least one of the following metals: arsenic, chromium, cobalt, copper, manganese, nickel and zinc. It should be noted that all three samples from the lithological unit of ultramafic volcanites had a chromium concentration above Criterion C of the Intervention Guide.

Leaching tests

The leachate resulting from the TCLP test of all samples has a manganese concentration higher than the surface water resurgence (RES) criteria in the Intervention Guide. In addition, 40% of the samples were above the RES criteria for at least one of the following metals: barium, nickel and zinc.

However, it should be noted that the leachate from the SPLP and CTEU-9 tests did not show any exceedances of the RES criteria. The acid rain conditions of the SPLP test are more realistic than the conditions induced by the TCLP test, which is conducted at a pH slightly below 5. It is therefore more realistic to assume that the waste rock is not leachable under current site conditions, although the criteria in Directive 019 tend to indicate risk.

According to Directive 019, the waste rock samples tested are not considered to be high risk since all leachate samples resulting from the test have a concentration lower than the criteria in Table 1 of Appendix 2 (Directive 019).

QC-11 – The promoter indicates that the final effluent will flow to Barry Lake and that the water quality monitoring program for that effluent will follow the requirements of Directive 019 on the Mining Industry. However, no studies on industrial water treatment are presented.

The proponent must specify the water treatment measures that will be implemented based namely on the results of the geochemical characterization.

Runoff that has not been in contact with the Gladiator site will be diverted into the environment without treatment. A network of catchment ditches around the facilities will collect contact water. Water from the site will pass through a sedimentation pond and a polishing pond, where it will be treated by sedimentation and polishing before being released to the effluent (Lac Barry). Bonterra does not currently plan to install an additional water treatment system. In the event that water quality does not meet the criteria of Directive 019, a supplementary treatment system will be added.

I hope that these answers have met your expectations.

Sincerely,

Pascal Hamelin, Eng., Interim CEO
Ressources Bonterra Inc.

APPENDICES

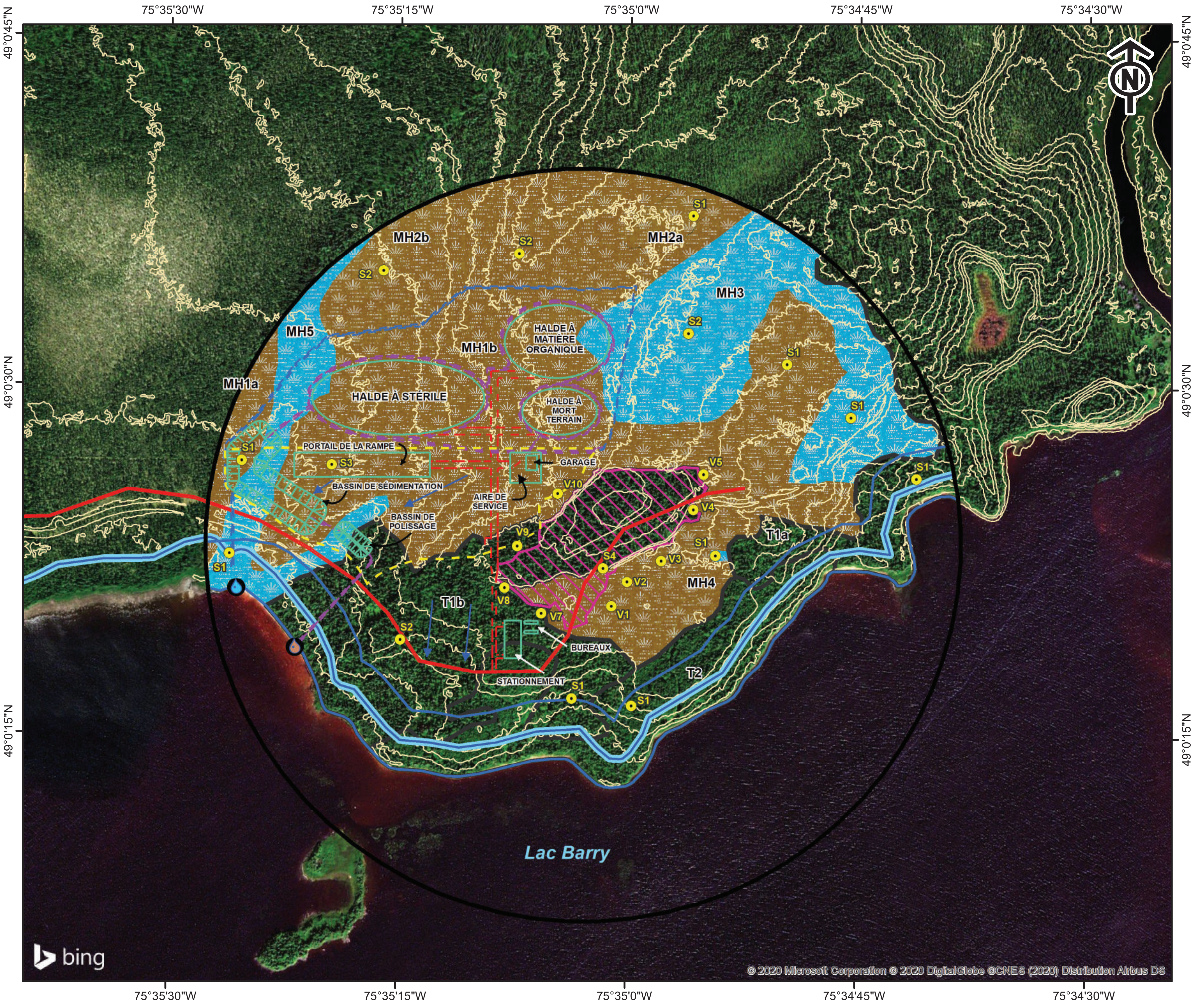
A. Maps:
    1. Location Map
    2. Map of Wetlands and Infrastructure
B. Technical report on resource estimates of the Barry and Gladiator deposits
C. Plan and Sections of the Portal
D. Technical Note on Water Management and Treatment
E. Preliminary Geochemical Characterization of Waste Rock

APPENDIX A

MAPS:

1. Location map
2. Map of wetlands and infrastructure

BONTERRA
Projet Gladiator
Carte de localisation
Légende
Projets miniers
MRC
Municipalités
Cantons
Ruisseaux
Intermittents
Permanents
Réseau routier
CL_CHEMIN
ASPHALTE
Classe 1
Classe 2
Classe 3
Classe 4
Classe 5
Classe 6
HIVER
LIGNE ÉLECTRIQUE
OLEODUC
PISTE D'AVION
PONT
SENTIER
VOIE FERREE
1:75 000
NAD 1983 MTM 9
0 410 820 1 640 2 460
M.
N
S
E
W
Francis Martin
Préparé par: Francis Martin, B.Sc.
Date: 06/12/2018
75°51'0"W
75°50'0"W
75°49'0"W
75°48'0"W
75°47'0"W
75°46'0"W
75°45'0"W
75°44'0"W
75°43'0"W
75°42'0"W
75°41'0"W
75°40'0"W
75°39'0"W
75°38'0"W
75°37'0"W
75°36'0"W
75°35'0"W
75°34'0"W
75°33'0"W
75°32'0"W
75°31'0"W
49°7'0"N
49°6'0"N
49°5'0"N
49°4'0"N
49°3'0"N
49°2'0"N
49°1'0"N
49°0'0"N
48°59'0"N
48°58'0"N
48°57'0"N
Urban
Windfall
Rte 6000
Carpiquet
Jamésie
Baie-James
Gladiator
Lac Barry
Barry
BARRY
SOUART
La Vallée-de-l'Or
Senneterre
Bailly
La Tuque
La Tuque
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Chapais
Métanor Projet Bachelor
Lebel-sur-Quévillon
Métanor Projet Barry
Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN,



BONTERRA

Demande d'attestation de non-assujettissement - Projet Gladiator

Carte des milieux humides et des infrastructures

1 : 5 000

Système de coordonnées : UTM Zone 18 NAD83

0 50 100 200 Mètres

Légende

- Exutoire des eaux propres
- Effluent final
- Station d'inventaire
- Zone d'étude
- Infrastructures
- Sous-bassin naturel
- Fossé de collecte des eaux
- Fossé de déviation des eaux propres
- Sens d'écoulement des eaux de surface
- Zone de protection de 60m
- Bande de protection 20m
- Chemin d'accès existant
- Chemin d'accès projeté
- Élévation
- Site du campement

__Milieux humides__

- Tourbière
- Marécage

Code	Groupement humide		Superficie (ha)
MH1	Tourbière boisée	a	1.11
		b	25.39
MH2	Tourbière ombrotrophe ouverte	a	0.63
		b	0.92
MH3	Pessière noire humide		7.53
MH4	Cédrière tourbeuse à sapin		0.03
MH5	Sapinière à bouleau blanc inondée		2.95
	Total humide		38.57
Code	**Groupement terrestre**		**Superficie (ha)**
T1	Pessière noire	a	2.91
		b	10.23
T2	Sapinière à épinette noire		5.78
	Total terrestre		18.92
	GRAND TOTAL DES SUPERFICIES		57.50

Réalisé par : Robert LeBrun
23 mars 2020

18-0698-0688

GCM CONSULTANTS

APPENDIX B

TECHNICAL REPORT ON RESOURCE ESTIMATES OF THE BARRY AND GLADIATOR DEPOSITS

TECHNICAL REPORT

ON THE

RESOURCE ESTIMATES FOR THE BARRY AND GLADIATOR DEPOSITS, URBAN BARRY PROPERTY LEBEL-SUR-QUÉVILLON, QUEBEC, CANADA

UTM NAD83 18U 450,000 m E; 5,427,700 m N
LATITUDE 49° 00’ N, LONGITUDE 75° 41’ W

Prepared for:

Bonterra Resources Inc.
2872 Sullivan Road Suite No. 2
Val-d’Or QC
J9P 0B9

Report Date: July 11, 2019
Effective Date: May 24, 2019

Qualified Persons	**Company**
Allan Armitage, Ph. D., P. Geo.	SGS Geological Services (“SGS”)
Olivier Vadnais-Leblanc, B.Sc., géo.	SGS Geological Services (“SGS”)

SGS Project # P2018-27 and P2018-28

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1 SUMMARY

SGS Canada Inc. ("SGS") was contracted by Bonterra Resources Inc. ("Bonterra") to complete Mineral Resource Estimates for the Gladiator and Barry Deposits of the Urban Barry Property ("Property"), located approximately 185 km northeast of the community of Val-d'Or, Quebec, Canada, and to prepare a technical report written in support of the updated Mineral Resource Estimates. The reporting of the Mineral Resource Estimates comply with all disclosure requirements for Mineral Resources set out in the NI 43-101 Standards of Disclosure for Mineral Projects. The classification of the updated Mineral Resource is consistent with current CIM Definition Standards - For Mineral Resources and Mineral Reserves (2014).

The updated Mineral Resource Estimates presented in this report were estimated by Allan Armitage, Ph.D., P. Geo, ("Armitage"). The current report is authored by Armitage and Olivier Vadnais-Leblanc, B.Sc., géo. ("Vadnais-Leblanc"), both of SGS. Armitage and Vadnais-Leblanc are independent Qualified Persons as defined by NI 43-101.

1.1 Property Description, Location, Access, and Physiography

The Property is located in the province of Quebec, Canada, centered approximately 420 km north-northwest of Montréal and 185 km northeast of Val-d'Or. The Property lies approximately 115 km east from the town of Lebel-sur-Quévillon. The current Property is divided into two main blocks, The Barry Property, which contains the Barry Deposit, and the Gladiator Property, which contains the Gladiator Deposit.

The Property is easily accessible using major and secondary roads developed in recent decades due to the forestry and mining industries in the well-known Urban Barry mining camp. The Property is accessible by heading eastbound from Val-d'Or on the paved Québec TransCanada Highway 117 for about 30 km to provincial Highway 113, then northbound for approximately 125 km on paved Highway 113 to the town of Lebel-sur-Quévillon. From the town of Lebel-sur-Quévillon, turn-off to logging road 1000 at the Chantier Chibougamau mill. From here the Property can be reached by well-maintained and well labelled un-paved logging roads. When the weather conditions allow it, forest roads connect the Barry and Gladiator Deposit areas to the Bachelor lake mill located approximately 110 km to the north.

The property is located within the Canadian Shield and is characterized by many lakes, swamps, rivers, and low-lying terrain. The Project is located in the boreal forest where forest fires are common. Vegetation is typical of taiga, including areas dominated by sparse black spruce, birch, and poplar forests, in addition to large areas of peat bog devoid of trees.

Overburden is typically 3 to 4 metres thick, with the exception of isolated areas where overburden thickness can reach 30 metres. Only a few natural outcrops are present on the Property.

Elevations on the Property are approximately 400 m above sea level. Topographic relief is low and generally does not exceed 15 m, typical of the glaciated Canadian Shield in that low ridges of rock, gravel or sand interrupted by with areas of muskeg along drainages.

The regional resources concerning labour force, supplies and equipment are sufficient, the area being well served by geological and mining service firms. The closest town, Lebel-sur-Quevillon provides the workforce for minor services. Full infrastructure and an experienced mining workforce are also available in a number of well-established mining towns nearby, such as Val-d'Or, Rouyn-Noranda, Chibougamau, Amos, La Sarre, and Matagami.

There are well established and well serviced camps at both the Barry and Gladiator Project sites to provide living facilities for the current work force. Other infrastructures include core logging and splitting facilities, core storage facilities, garages, diesel generators and surface, fuel tanks etc. Bonterra completed the construction of a new camp at Barry to accommodate more workers in order to proceed with an underground bulk sample in 2018.

A major hydroelectric power line crosses through the center of the Property, between the Barry and Gladiator Deposits.

The Urban-Barry Mill, located at Bonterra's Bachelor Mine site and Moroy Project, is the only permitted mill in the region, with more than 15 high-grade gold deposits within a 110 kilometre radius of the mill site. The mill is accessible by a paved highway from the town of Lebel-sur-Quévillon, and is accessible with a network of logging roads to the Barry and Gladiator Deposits. Bonterra plans to feed the Urban-Barry Mill with feed from the Barry and Gladiator Deposits. Bonterra will undertake a mill expansion project in order to increase the production capacity of the Urban-Barry Mill from 1,200 tpd to 2,400 tpd. The mill is connected to the provincial electrical grid.

The Barry Property consists of a mining lease (BM 886) covering an area of 112.04 hectares delivered in August 27, 2008 by the Ministry of natural resources and Fauna (includes the Barry Deposit). The mining lease is surrounded by 207 claims covering an area of 8,718.78 hectares.

Bonterra acquired the Barry Property through a plan of arrangement with Metanor Resources inc. ("Metanor"). On September 24, 2018, Bonterra and Metanor announced the closing of their plan of arrangement. Pursuant to the arrangement, Bonterra spun out certain assets, including the Larder Lake Property and approximately $7 million in cash, into a newly-incorporated exploration company, Gatling Exploration Inc.

Sandstorm Gold Ltd. ("Sandstorm") has a Gold Stream to purchase 20% of the gold produced from Bonterra's Bachelor Lake gold mine for a per ounce cash payment equal to the lesser of $500 and the then prevailing market price of gold. Once a cumulative 12,000 ounces of gold have been purchased by the Company, during the period between October 1, 2017 and October 1, 2019, the Gold Stream will convert into a 3.9% NSR (during the nine month period ending February 28, 2019, Bonterra sold 2,500 ounces). In the previous calendar year, Metanor delivered 6,000 oz. As of May 28 2019, there is 3,000 oz left to deliver.

When combined with Sandstorm's existing royalties, Sandstorm will then hold a total 4.9% NSR on the Bachelor Lake Mine, a 3.9% – 4.9% NSR on Bonterra's Barry gold project and a 1% NSR on a portion of Bonterra's Gladiator gold project.

Bonterra has the option to reduce the respective NSRs on the Bachelor Lake Mine or the Barry gold project by making a $2.0 million payment to Sandstorm in each case (the "Purchase Option"). Upon exercising either of the Purchase Options, the respective NSR will decrease by 2.1%.

The Gladiator Property consists of 279 claims covering an area of 13,223.12 hectares. The list of mining titles of the Gladiator Property is shown below (Figure 4 2, Table 4 1). Certain claims are subject to Option Agreements with Golden Valley Mines Ltd (Bonterra 85%, 35 claims totaling 1,431.65 ha) and Beaufield Resources inc. (Bonterra 70%, 81 claims totaling 3,601.61 ha) (Duke Option recently acquired by Osisko Mining Inc.). Bonterra owns a 100% interest in the remaining 163 claims, with certain claims subject to certain NSR royalties.

All claims for the Gladiator and Barry Properties are in good standing.

1.2 History

1.2.1 Barry Property

The area surrounding the Murgor Resources Inc. ("Murgor") property (Barry Property) was first mapped in the 1940's, but it was not until 1962 that exploration work on the property was first recorded. Exploration in the area has progressed significantly in the last 20 years due to the increased access provided by the expanding network of logging roads.

The following is a summary of previous work completed on the Barry Property. Table 6 1 summarizes the drilling completed on the Barry Property.

1943	Area mapped by Mimer.
1946-47	Area mapped by Fairbairn and Graham.
1958	Geological survey performed by Geological Survey of Canada.
1961	An airborne MAG-EM survey was performed by Claims Ostiguy.
1962-65	Geology, geophysics and 5 drillholes were completed by Fab Metal Mines LTD.
1981-84	An airborne MAG-EM survey was performed by Questor Surveys LTD. for the Quebec Ministry of Energy and Resources.
1981-83	Prospecting and Geological Mapping was carried out by SDBJ followed by three drillholes.
1983	Mines Camchib completed one hole of 146 meters (MB-83-1 1) at the western edge of the property. No significant assays were reported.
1988-89	Ground MAG and EM surveys were completed by Cominco-Agnico Eagle. Nine drillholes followed.
1990	An evaluation of this property was carried out by Albanel Minerals LTD. and Somine.
1995	Overburden stripping, trench and channel sampling by Murgor.
1995	Detailed mapping and geophysical works realized on the discovery showing.
1995-1996	Murgor drilled 56 holes on the property and sent 167 channel samples for assay.
1997	IP survey, geological mapping, lithogeochemical sampling and drilling of 4,456 meters of core by Teck Exploration, mainly on the Barry I Main property.
2004-2005	Geological interpretation and drilling (61 holes) on the property by Osisko Resources Inc.
2005	Writing of a preliminary assessment study on the Barry property by George McIsaac, eng., M. eng.
2005	Murgor realised one drilling campaign of six holes for 225 m. and a new geological interpretation of the Barry deposit by Murgor's staff.
2006	Drilling by Murgor of 32 drillholes for 1,409 m. and survey of the visible drillholes collars of the Main Zone.
2006-2007	Drilling of 58 drillholes totalling 5,076 m.
2008	Drilling of 79 drillholes totalling 9,413 m.
2009	Drilling of 167 drillholes totalling 19,557 m.
2009	52 kilometers of a complementary resistivity/induced polarization survey.
2010	Drilling of 15 drillholes totalling 4,127 meters.
2009-2011	223 km of magnetic survey and 195 km of IP survey.
2013-2014	Drilling of 38 drillholes totalling 12,197 m.

1.2.2 Gladiator Property

There has been little significant exploration on the Gladiator Property (formerly the Eastern Extension property) prior to Bonterra. In the late 1990's to early 2000's, work was conducted on the Gladiator Property by Xemac Resources. In 1996, Xemac commenced work with line cutting and geophysical surveys covering the entire Gladiator Property. These surveys revealed there are distinct magnetic, electromagnetic and electrical anomalies on the Gladiator Property. Xemac drilled the Gladiator Property which led to the discovery gold anomalies. Xemac drilled 8,650 metres of core in 59 holes (1997 to 2001)

1.3 Geology, Mineralization and Deposit Type

The Urban-Barry Property lies in the heart of the 200 km long, east-west trending, Urban-Barry Greenstone Belt. The Urban-Barry belt is a narrow E-W belt comprising mafic volcanic rock units in the Northern Volcanic Zone (NVZ) of the Abitibi greenstone belt.

The Urban-Barry belt comprises mainly mafic volcanic rocks and isolated felsic volcanic rocks with ages ranging from 2791 Ma to 2707 Ma (Rhéaume and Bandyayera, 2006) interbedded with, or overlain by, volcanoclastic sedimentary rocks. The Lac aux Loutres region, containing the Barry and Gladiator Deposits, is comprised of mafic volcanic flows, co-magmatic gabbro sills, local felsic flows, lapilli and welded tuffs, and sedimentary rocks intruded by tonalite to granodiorite plutons, diorite dikes, and feldspar and/or quartz porphyry dikes (Figure 7 2). The mafic volcanic rocks are basaltic to andesitic, and form part of the Urban, Macho (which hosts the Barry and Gladiator Deposits), and Roméo formations. Mafic volcanic rocks consist of massive and pillowed flows that are commonly vesicular, porphyritic, brecciated, and locally contain phenocrysts of plagioclase. Co-magmatic gabbro sills can form bodies measuring 100-600 metres wide and 400-3000 metres long. Felsic flows are dacitic to rhyolitic in composition, equigranular and locally porphyritic. They form thin horizons that vary over 50-200 metres in width and 300-1000 metres in length. Felsic volcanic rocks from the Windfall member of the Macho Formation yield a U-P b zircon age of 2716.9 ± 2 Ma. Sedimentary rocks in the region include conglomerates composed of volcanic and intrusive rock fragments, and locally siltstone, argillite, and wacke. Intrusive rocks consist of the Archean Father, Hébert, and Souart plutons, and the Barry complex, which are locally cut by Proterozoic diabase dikes.

Rocks in the region were deformed during the 2.71-2.66 Ga Kenoran orogeny, giving them a dominant east-west trend. The regional foliation generally strikes NE to ENE with a variable dip from 30 to 85º SE. Associated regional folds are generally isoclinal with steeply plunging axes. The three main fault sets present in the region are oriented NE-SW, E-W, NNE-SSW. The NE- trending faults, are characterized by an intense, and locally mylonitic, foliation with associated minor brecciated and silicified wall-rocks and contain subvertical stretching lineations. This set of structures is cross-cut by E-trending shear zones. The NNE-trending faults are generally brittle structures cross-cutting the other two fault sets and they are interpreted as late features. These faults have a sinistral sense of offset (from several centimetres to metres), with lineations plunging 45º to the NE. Rocks are generally metamorphosed to the greenschist facies, but locally conditions reached the amphibolite facies in zones of intense deformation or adjacent to intrusions.

Gold mineralization in the Gladiator and Barry Deposits is structurally controlled and exhibits similar geological, structural and metallogenic characteristics to Archean Greenstone-hosted quartz-carbonate vein (lode) deposits. These deposits are also known as mesothermal, orogenic, lode gold, shear-zone-related quartz-carbonate or gold-only deposits.

1.3.1 Barry Property

Gold mineralization in the Barry deposit occurs in albite-carbonate-quartz veins and in altered host rocks, which are exposed in a trenched surface 50 m (NW to SE) by 200 m (NE to SW). The mineralized veins are hosted mainly in volcanic rocks of the Macho Formation, which have been locally pervasively altered to carbonate. The generally N60ºE-striking, 45ºSE dipping volcanic units are folded, foliated, and cut by intermediate to felsic intrusions of various geometries and ages. The main mineralized zone is bound by an early N55-60ºE-striking, 58ºSE-dipping shear zone to the north and by a quartz monzonite intrusion to the south and is truncated and offset by various late brittle faults.

Although the volcanic units generally strike northeast and dip to the southeast (approximately N55-60ºE/40ºSE), the envelope containing economic gold grades (>2 g/t) is constrained from surface to a depth of 30m. In northwest-southeast vertical cross sections, the outline of the mineralized zone has an antiformal/domal shape and both Types A and B volcanic rock types are hosts for the mineralization.

The gold mineralization is constrained to zones containing 5-15% albite-carbonate-quartz veins and their associated hydrothermally altered wall rocks. Albite-carbonate-quartz veins are typically 1-5cm wide (1-2 cm wide on average), and comprise euhedral albite (20-50%), carbonate (30-40%), and quartz (20-40%). Albite identification was confirmed using XRD and microprobe analysis. In addition to albite, carbonate, and quartz, these veins locally contain trace biotite +/- sericite, chlorite (fine-grained anhedral), pyrite (fine-grained anhedral, or coarse-grained euhedral), pyrrhotite, rare euhedral magnetite, and fine-grained visible gold as inclusions or fracture infill in pyrite, or in sharp contact with carbonate crystals in the vein. Biotite and chlorite are present along vein selvages. Veins locally pinch and swell or are boudinaged with biotite generally filling the cusps. Gold grades in mineralized veins and altered mafic volcanic rocks range from <2 g/t to >100 g/t.

1.3.2 Gladiator Property

The different exploration campaign conducted on the Gladiator Property by Bonterra permitted to establish a local geologic background. Most of the rock encountered on the properties is mafic volcanics from the Lacroix and Chanceux Formations. Those are huge massive lavas flows, locally pillowed and glomeroporphyritic with a weak to moderate carbonate alteration. This unit is most of the time foliated by an S1 deformation oriented N60-70. Local veining can occurs.

Inside the mafic units from the Chanceux Formation, some gabbroic massive bodies appear. This gabbroic rock is interpreted as interbedded sills. It looks like medium to coarse grained mafic rocks with significant amount of disseminated magnetite and homogenous chloritization of the matrix. Locally, 2mm blue quartz eyes can be observed. These gabbroic sills can have 50 to 100 m thickness and their contacts are oriented along the main deformation pattern (N60°) and sub verticals.

Through the mafic units, a felsic porphyritic system takes place. These felsic intrusive units occur specially on the Gladiator deposit. This unit can be divided into two different injection, a porphyritic and an aphanitic felsic intrusion. The porphyritic one has plagioclase phenocrysts with a pale grey siliceous matrix. Most of the time, a strong pinkish alkali feldspar alteration occurs. This intrusive is interpreted as a Syenite, and oriented along N60° with a 70° deg depth to the South-East. The veins are essentially smoky quartz. The aphanitic felsic intrusion is strongly sericitized and foliated. Locally, up to 10% fine grained disseminated chloritized amphiboles can be observed.

An intermediate tuff, representing the Chanceux Formation, can be observed at the North-East of the property. It contains up to 15% polylithic lapillis. It can also be appearing like a bedded ash tuff. The colour is pale to medium grey and the alteration is essentially weak to moderate pervasive sericite and carbonates veins and weak to moderate disseminated biotite. The alteration become stronger approaching the veins.

Finally, a band of ultramafic lavas interpreted as komatiite is located at the South-East part of the property. This unit appears in the Lacroix formation and has been identified in the historical hole BA-98-06 and is interpreted at approximately N70° by the geophysics airborne survey.

Gold is found primarily in Smoky quartz-carbonate ± tourmaline veins on the Gladiator Property. These veins range from 20 cm to 4 m in width. These veins are mineralized in variable amounts (from 1 to 15%) of Pyrite, Chalcopyrite, Sphalerite (Brown and Yellow) and locally Galena. Visible gold as free grains from 1 mm to 1 cm has been observed. A clear correlation exists between the presence of Sphalerite and the gold grade.

The smoky quartz veins are altered. The primary alteration types seen on the property are silica, carbonate, sericite, ankerite, tourmaline and epidote. The secondary vein system is also altered, although not to the same degree as the smoked quartz.

The local East-northeast trending geology consists of variably foliated basalts, intercalated with a thick sequence of weakly foliated gabbro(s) and late sub-conformable narrow felsic porphyritic dykes. The veins hosting the gold occur along the sheared contacts between rocks of differing hardness, where an increase in intensity of deformation and resulting foliation is noted. A spatial association between the gold concentrations and syenite porphyritic dykes is noted. The association is both spatial and genetic, that emplacement of gold is contemporaneous with that of the dykes. The dykes will typically be emplaced along planes of weakness.

The mineralization discovered to date consists of gold bearing smoky quartz veins along the contact(s) of a single sheared and altered syenite porphyry dyke. The dyke and associated mineralized zones have been defined over a strike length of 1000 m, to a vertical depth of 800 m. The structural controls to the higher-grade shoots within the contact are not yet defined. The gold-bearing structure limits have not yet been defined. Strike and dip extents to the mineralised structure suggest further gold mineralization is possible subject to definition with drilling.

1.4 Exploration and Drilling

1.4.1 Barry Property

Exploration on the Barry Property is restricted to underground development. In May 2018, an underground exploration ramp was began to allow access to the mineralized zones for future bulk sample programs and underground drill stations. The plan is to collect a 50,000 tonne underground bulk sample. To date, a total of 1,172 m of underground development has been completed and includes an 822.8 m ramp.

Bonterra has recently completed a drilling campaign consisting of 25 sub-horizontal drill holes totaling 7,548 metres (MB18-01 to MB19-25), mainly on Level 100 (see section 10.2.4 below).

Between 2016 and, 2019, 200 surface diamond drill holes have been completed on the Barry Property for a total of 82,590.95 m of drill core.

1.4.2 Gladiator Property

Recent surface exploration work, other than diamond drilling, completed on the Gladiator Property since 2012 is restricted to a High-Resolution Heliborne Magnetic Survey.

PROSPECTAIR conducted a heliborne high-resolution magnetic (MAG) survey for the mineral exploration company Bonterra Resources Inc. on its Gladiator Property. The survey was flown from April 6th to 10th 2018.

Two survey blocks, referred to as Main and SW, were flown for a total of 2097 l-km. A total of 11 production flights were performed using PROSPECTAIR's Eurocopter EC120B, registration C-GEDI. The helicopter and survey crew operated out of Bonterra's exploration Camp located at the north end of Barry Lake, just besides the Main block. The Lebel-sur-Quévillon Airport is located about 100 km to the west of the block.

The Gladiator blocks were flown with traverse lines at 50 m spacing and control lines spaced every 500 m. The survey lines were oriented N157 for the Main block and N140 for the SW block. The control lines were oriented perpendicular to traverse lines. The average height above ground of the helicopter was 42 m and the magnetic sensor was at 21 m. The average survey flying speed (calculated equivalent ground speed) was 39.7 m/s. The survey area is covered by forest, lakes and wetlands, and, aside from a few isolated hills, the topography is mostly flat, which are fairly typical characteristics of the area near Lebel-sur-Quévillon. The elevation is ranging from 383 to 473 m above mean sea level (MSL). The Main block overlaps with three major lakes, namely the Bailly, Bary and Aux Loutres Lakes. The SW block is located just east of the Maseres Lake. Coordinates outlining the survey blocks are given in Appendix A, with respect to NAD-83 datum, UTM projection zone 18N.

The strongest magnetic anomaly of the entire Property occurs at the north end of the Barry Lake, to the south of Bonterra's exploration Camp, and relates to rocks mapped as komatiite by Québec's Ministère de l'Énergie et des Ressources Naturelles (MERN). Most of the surveyed area is affected by strong linear magnetic features characteristic of alternating sequences of mafic volcanic rocks with sedimentary or intermediate to felsic volcanics, with possibly some small size intrusive stocks or dykes. In a general sense, areas with lower background values and decreased signal variability are likely to be dominated by sedimentary or felsic intrusive/volcanic rocks. In a few areas, such as in the center of the Main block, strings of elongated alternating series of magnetic highs and lows are occurring. This type of feature possibly belongs to mafic intrusive or volcanic rocks affected by boudinage effects which could explain the alternating sequence of magnetic highs and lows. In the eastern half of the Main block, towards the south, two wide areas depict much lower background values and settled magnetic signal and could relate to large felsic intrusions, as suggested by MERN's databases which mention tonalite rock occurrences in these areas.

The vast majority of magnetic lineaments found in both survey blocks are trending from ENE-WSW to NNE-SSW, except near the postulated large intrusions of the Main block, where lineaments are rather organized parallel to their contact, which depict a complex geometry. Several lineaments are also locally curved, and even heavily folded in a few areas, attesting that the area underwent strong deformation events in the past. In general terms, magnetic lineaments are related to rock formations that are enriched in magnetic minerals (magnetite and/or pyrrhotite).

In some areas, it is possible to detect structural features offsetting observed magnetic lineaments and causing abrupt interruption or changes of the magnetic response. These features are typically caused by faults, fractures and shear zones. If they are thought to be favorable structures in the exploration context of the Gladiator project, they should be paid particular attention and should be the object of a comprehensive structural interpretation, which is beyond the scope of this report.

Shorter wavelength anomalies are greatly enhanced on the FVD and on the TILT products. Since the FVD attenuates longer wavelength anomalies, and the TILT enhances very weak amplitude anomalies, they are the preferred products for structural interpretation.

It should be noted that the high-resolution magnetic data is locally disturbed by human infrastructures. This is clearly the case along 2 separate high-tension power lines running across the Main block. The power lines themselves induce noise in the local magnetic data. In addition, since the helicopter had to climb up above the power lines for obvious safety reasons, the magnetic response appears somewhat attenuated, blurred and noisier within about 100 m on either sides of the power line.

Between 2012 and April 4, 2019, 295 diamond drill holes have been completed on the Gladiator Property for a total of 173,050.7 m of drill core. In 2013 and 2014 no drill holes were completed. Since 2016 an intensive drilling campaign has provided 275 drill holes that are considered in the current Mineral Resource Estimation.

1.5 Mineral Processing and Metallurgical Testing

1.5.1 Barry Deposit

Previous metallurgical tests made on the Barry Deposit samples have given a recovery rate of 94% (prior to 2008).

From July 2008 to October 10, 2010, a total of 617,489 metric tons of ore from the Barry Deposit have been processed at the Bachelor mill, and 123 gold bars totalling 43,682 oz of gold and 5,727 oz of silver have been sold to Royal Canadian Mint. Consequently, the average grade for that period was of 2.2 g/t Au.

The average gold recovery for the whole period is not known, but from July 2008 to May 2009, a total of 487,970 tonnes of ore was processed at the Bachelor mill for an average head grade of 2.38 g/t Au and an average gold recovery of 92.55%.

In January 2010, the average feed rate to the mill was 24.7 t/h. The gold recovery for that month was 95.4%. In April 2010, the average mill feed rate was 40.1 t/h and the gold recovery dropped to 89.4%.

At that time, milling at Bachelor was via a Merril Crowe type circuit and there was no gravity machinery. The grinding circuit had a total electric power of 578 kW and the cyanide leaching tanks had a capacity of 1,292 m3 for a total leaching time of approximately 42 hours without counting the leaching that took place directly in the ball mills.

An Investigation into the determination of total gold in three composite samples from the Barry Deposit was completed by SGS Canada inc.in July 2016.

The purpose of the metallurgical test program was to determine the head grade of three composite samples from Ressources Métanor Inc.'s Barry project and incidentally determine the possible gold recovery. The samples were processed using gravity separation followed by cyanide leaching of the gravity tailings. An overall gravity separation plus cyanidation metallurgical gold balance was performed to calculate the head grade of each sample. A summary of the testwork results is shown in Table 1-1. Total gold recoveries ranged from 93.8% to 94.8%.

Table 1-1 Overall Gold Recovery Test Results Summary, Barry Deposit

Sample	Overall Gold Recovery (%)			CN Residue Au Assay (g/t)	Calculated Heas Grade Au (g/T)
	Gravity	Cyanidation	Gravity + CN		
Comp A	30.4	63.4	93.8	0.20	3.22
Comp B	17.7	77.2	94.8	0.11	2.13
Comp C	22.8	71.4	94.2	0.04	0.69

1.5.2 Gladiator Deposit

Preliminary metallurgical testing of a Gladiator Deposit sample was completed in early 2018 by ALS Metallurgy of Kamloops, BC. This work is described below. No other mineral processing and metallurgical testing was previously completed on the Gladiator Deposit.

The primary objectives of the 2018 test program were to investigate the effect of primary grind sizing on gravity, flotation, and cyanidation leach performance on a single composite.

The main work completed under this program to achieve the objectives can be summarized as follows:

- Conduct a series of grind calibrations on the provided composite targeting primary grind sizings of 75, 125 and 175µm K80.
- Establish gravity performance of the provided composite at three different grind sizes.
- Determine flotation response of the gravity tailings at three different grind sizings.
- Determine cyanidation leach response of the gravity tailings at three different grind sizings.

The sample used to construct the Gladiator composite tested in the current program was received at ALS Metallurgy Kamloops under a single shipment on February 28, 2018. The sample was received in the form of half core. The total received weight was estimated to be around 35 kilograms.

Composite 1 measured a head grade of about 8.7 g/tonne gold, 0.8 percent iron, and 0.5 percent sulphur. The gold content was measured using a screened metallic method and indicated that a significant portion of the gold in the sample was coarser than 106µm after pulverization; this should indicate that a high percentage of the gold should be recoverable by gravity concentration.

Metallurgical testing was conducted at three target grind sizings of 75, 125, and 175µm K_{80} to determine the effect of primary grind sizing on metallurgical performance. Gravity testing was conducted using a Knelson concentrator followed by hand panning of the Knelson concentrate. Gold recovery to the pan concentrate ranged from 68 to 76 percent and graded between 2860 to 6461 g/tonne; over the three grind sizes tested. Finer primary grind sizings led to improved gravity gold recovery over the range of grind sizings tested.

A bulk rougher flotation circuit was applied to the combined gravity tailings in Tests 4-6, rougher flotation recovery of the gold appeared to be unaffected by the primary grind sizing. Combined gravity and rougher flotation recovery to a bulk concentrate was about 97 percent over the range of primary grind sizings tested. The combined gravity and bulk rougher concentrate graded between 250 to 341 g/tonne.

Cyanidation leaching was conducted on the combined gravity tailings produced in Tests 1-3. Cyanidation leach gold extraction from the combined gravity tailings was excellent and measured between 97 and 98 percent. The combined gravity and cyanidation leach recovery measured about 99 percent over the range of primary grind sizings tested.

Additional testing is strongly recommended by ALS with samples from other zones and deposits within the Gladiator Project to investigate the variability in gold recovery. Testing should include coarser primary grind sizing to determine the effect upon gravity, flotation, and cyanidation leach performance. A coarser primary grind sizing would have implications for a reduction in comminution energy requirements. Bond ball mill work index tests should also be carried out within the variability test program.

Excellent overall gold recovery was recorded for the sample with a gravity and rougher flotation flowsheet, and with a gravity and cyanidation leach flowsheet. A trade off study should be performed to compare the CAPEX/OPEX of each flowsheet once variability testing is complete.

1.6 Resource Estimate

Completion of the current Mineral Resource Estimates for the Barry and Gladiator Deposits involved the assessment of drill hole databases, which included all data for drilling completed through early 2019, updated three-dimensional (3D) grade-controlled wireframe models, review of the classification of the mineral resource estimate (Measured, Indicated and Inferred) and review of available written reports.

Inverse Distance Squared (“ID^2”) restricted to grade-controlled wireframe models was used to Interpolate gold grades (g/t Au) into block models. The Mineral Resource Estimates for the Barry and Gladiator Deposits take into consideration that the current Barry and Gladiator Deposit mineralization are amenable for underground extraction.

Highlights of the *Barry Deposit* Mineral Resource Estimate are as follows (Table 1-2):

- The underground mineral resource includes, at a cut-off grade of 3.5 g/t Au, 385,000 ounces of gold (2.05 million tonnes at an average grade of 5.84 g/t Au) in the Indicated category, and 453,000 ounces of gold (2.74 million tonnes at an average grade of 5.14 g/t Au) in the Inferred category.

Highlights of the *Gladiator Deposit* Mineral Resource Estimate are as follows (Table 1-3):

- The underground mineral resource includes, at a cut-off grade of 3.5 g/t Au, 202,000 ounces of gold (0.74 million tonnes at an average grade of 8.46 g/t Au) in the Indicated category, and 897,000 ounces of gold (3.07 million tonnes at an average grade of 9.10 g/t Au) in the Inferred category.

Table 1-2 Barry Deposit 2019 Mineral Resource Estimate, May 24, 2019

Category	Tonnes	Grade (g/t Au)	Contained Au (oz)
Indicated	2,052,000	5.84	385,000
Inferred	2,740,000	5.14	453,000

Table 1-3 Gladiator Deposit 2019 Mineral Resource Estimate, May 24, 2019

Category	Tonnes	Grade (g/t Au)	Contained Au (oz)
Indicated	743,000	8.46	202,000
Inferred	3,065,000	9.10	897,000

(1) *The classification of the current Mineral Resource Estimates into Indicated and Inferred is consistent with current 2014 CIM Definition Standards - For Mineral Resources and Mineral Reserves*

(2) *Mineral resources which are not mineral reserves do not have demonstrated economic viability. An Inferred Mineral Resource has a lower level of confidence than that applying to a Measured and 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.*

(3) *All figures are rounded to reflect the relative accuracy of the estimate. Composites have been capped where appropriate.*

(4) *Resources are presented undiluted and in situ and are considered to have reasonable prospects for economic extraction.*

(5) *Underground mineral resources are reported at a cut-off grade of 3.5 g/t Au. Cut-off grade is based on a gold price of US$1,300 per ounce, a foreign exchange rate of US$0.75, and a gold recovery of 95%.*

(6) *High grade capping was done on composite data. A capping value of 40 g/t Au for Barry and 55 g/t Au for Gladiator was applied to all 3D grade controlled wireframe models.*

(7) *A fixed specific gravity value of 2.82 for Barry and 2.78 for Gladiator was used to estimate the tonnage from block model volumes.*

(8) Mineral Resources are exclusive of material that has been mined (Barry Deposit).

(9) The Authors are not aware of any known environmental, permitting, legal, title-related, taxation, socio-political or marketing issues, or any other relevant issue not reported in the technical report, that could materially affect the mineral resource estimate.

The Mineral Resource Estimates for the Barry and Gladiator Deposits were prepared and disclosed in compliance with all current disclosure requirements for mineral resources set out in the NI 43-101 Standards of Disclosure for Mineral Projects. The classification of the current Mineral Resource Estimate into Indicated and Inferred is consistent with current 2014 CIM Definition Standards - For Mineral Resources and Mineral Reserves, including the critical requirement that all mineral resources "have reasonable prospects for eventual economic extraction".

The general requirement that all mineral resources have "reasonable prospects for economic extraction" implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade taking into account extraction scenarios and processing recoveries.

In order to determine the quantities of material offering "reasonable prospects for economic extraction" by underground mining methods, reasonable mining assumptions to evaluate the proportions of the block model (Indicated and Inferred blocks) that could be "reasonably expected" to be mined from underground are used. The underground parameters used are summarized in Table 1-4. A selected cut-off grade of 3.5 g/t Au is used to determine the Mineral Resource of the Barry and Gladiator Deposits.

Table 1-4 Parameters Used to Estimate the Underground Cut-off Grade for the 2019 Barry Mineral Resource Estimate

Parameter	Value	Unit
Gold Price	$1,300/$1733	US$/CDN$ per ounce
Exchange Rate	0.75	$US/$CDN
Gold Recovery	95	Percent (%)
Assumed Mining and Processing Costs		
Mining Cost	$69.00/$92.00	US$/CDN$ per tonne mined
Processing Cost	$18.75/$25.00	US$/CDN$ per tonne milled
General and Administrative	$22.50/$30.00	US$/CDN$ per tonne milled
Transportation Cost	$15.00/$20.00	US$/CDN$ per tonne milled
Mining Recovery	90	Percent (%)
Cut-Off Grade	3.50	g/t Au

All geological data for the Barry and Gladiator Deposits was reviewed and verified by the Authors as being accurate to the extent possible and to the extent possible all geologic information was reviewed and confirmed. The Authors are of the opinion that the assay sampling and extensive QA/QC sampling of core by Bonterra provides adequate and good verification of the data. The Authors believe the data is of sufficient quality to be used for the current resource estimate.

There is no other relevant data or information available that is necessary to make the technical report understandable and not misleading. The Authors are not aware of any known mining, processing, metallurgical, environmental, infrastructure, economic, permitting, legal, title, taxation, socio-political, or marketing issues, or any other relevant factors not reported in this technical report, that could materially affect the current Mineral Resource Estimate.

1.7 Recommendations

The Authors consider that the Gladiator and Barry Deposits contain significant underground Mineral Resources that are associated with well-defined gold mineralized trends and models.

The Authors consider that both the Barry and Gladiator Properties of the Urban-Barry Property have significant potential for delineation of additional Mineral Resources and that further exploration is warranted. Bonterra's intentions are to continue to drill the Barry and Gladiator Deposits through the second half of 2019 and plan to direct their exploration efforts towards resource growth (underground), with a focus on extending the limits of known mineralization along strike and at depth, as well as infill drill the existing deposit in order to convert portions of Inferred mineral resources into Indicated or Measured.

Given the prospective nature of the Urban-Barry Property, it is the Author's opinion that the Urban-Barry Property merits further exploration and that a proposed plan for further work by Bonterra are justified. A proposed work program by Bonterra will help advance the Deposits toward a pre-development stage and will provide key inputs required to evaluate the economic viability of a mining project (underground) at a Preliminary Economic Assessment ("PEA") or Pre-feasibility ("PFS") level.

SGS is recommending Bonterra conduct further exploration, subject to funding and any other matters which may cause the proposed exploration program to be altered in the normal course of its business activities or alterations which may affect the program as a result of exploration activities themselves.

For the second half of 2019, a total of 17,000 metres of drilling is being budgeted for the Gladiator Property. The focus of the drilling on the Gladiator Deposit will be on extending the limits of known mineralization along strike and at depth, as well as infill drill the existing deposit in order to convert portions of Inferred mineral resources into Indicated or Measured. The total cost of the recommended work program on the Gladiator Deposit is estimated at C$2,300,896 million (Table 26-1).

Infill drilling on both the Gladiator Deposit will provide additional information to better define the vein structures (mineralized domains) which host the current Mineral Resource. Definition may help define with more precision the shapes of the zones and confirm the geological and grade continuities of the zones.

There are currently no litho-structural models for the Gladiator Deposit. A detailed litho-structural study and development of detailed litho-structural models may help interpretation of the current mineralization models for the Gladiator Deposit and help better define Mineral Resources.

A total of 18,000 metres of surface drilling is being budgeted for the Barry Property. The focus of the drilling on the Barry Deposit will be on extending the limits of known mineralization along strike. The total cost of the recommended work program on the Barry Property is estimated at C$2,135,550 million (Table 26-2).

2 INTRODUCTION

SGS Canada Inc. ("SGS") was contracted by Bonterra Resources Inc. ("Bonterra") to complete Mineral Resource Estimates for the Gladiator and Barry Deposits of the Urban Barry Property ("Property"), located approximately 185 km northeast of the community of Val-d'Or, Quebec, Canada, and to prepare a technical report written in support of the updated Mineral Resource Estimates. The reporting of the Mineral Resource Estimates comply with all disclosure requirements for Mineral Resources set out in the NI 43-101 Standards of Disclosure for Mineral Projects. The classification of the updated Mineral Resource is consistent with current CIM Definition Standards - For Mineral Resources and Mineral Reserves (2014).

Bonterra is a Canadian public company involved in mineral exploration and development. Bonterra's common shares are listed on the Toronto Stock Exchange Venture Exchange ("TSX-V") under the symbol "BTR". Their current business address is 2872 Sullivan Road Suite No. 2 Val-d'Or QC, J9P 0B9

This technical report will be used by Bonterra in fulfillment of their continuing disclosure requirements under Canadian securities laws, including National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101"). The technical report is written in support of updated resource estimates for the Barry and Gladiator Deposits released by Bonterra on May 28, 2019. Bonterra reported that the Gladiator Deposit contains an Indicated Resource of 743,000 tonnes at an average grade of 8.46 grams per tonne Au totaling 202,000 ounces Au, and an Inferred resource of 3,065,000 tonnes at an average grade of 9.10 grams per tonne Au totaling 897,000 ounces. Bonterra reported that the Barry Deposit contains an Indicated Resource of 2,052,000 tonnes at an average grade of 5.84 grams per tonne Au totaling 385,000 ounces Au, and an Inferred resource of 2,740,000 tonnes at an average grade of 5.14 grams per tonne Au totaling 453,000 ounces. Both resources are reported at a base case cut-off grade of 3.5 g/t Au. The effective date of the resource estimates is May 24, 2019.

The updated Mineral Resource Estimates presented in this report were estimated by Allan Armitage, Ph.D., P. Geo, ("Armitage"). The current report is authored by Armitage and Olivier Vadnais-Leblanc, B.Sc., géo. ("Vadnais-Leblanc"), both of SGS. Armitage and Vadnais-Leblanc are independent Qualified Persons as defined by NI 43-101.

2.1 Sources of Information

The data used in the estimation of the current resource estimates and the development of this report was provided to SGS by Bonterra. Some information including the property history and regional and property geology has been sourced from previous technical reports and revised or updated as required. Previous Technical reports include:

- NI 43-101 Technical Report Resources Evaluation of March 2006 on the Barry I Project, Barry Township, Murgor Resources Inc., March 31, 2006. Ghislain Deschênes, P. Geo. Consultant, February 6, 2006.
- NI 43-101 Technical Report Resources Evaluation of March 2006 on the Barry I Project, Barry Township, Murgor Resources Inc., March 31, 2006. Ghislain Deschênes, P. Geo. Consultant, March 31, 2006.
- NI 43-101 Technical Report, Mineral Resource Estimation 2010 Update Barry Deposit, Barry Property Metanor Resources Inc. November 4, 2010. SGS Canada Inc.-Geostat: Claude Duplessis and Yann Camus, 2010.
- NI 43-101 Technical Report, Updated Mineral Resource Estimate Barry Gold Deposit, Quebec, Canada Metanor Resources Inc., September 20, 2016. GoldMinds Geoservices Inc.: Claude Duplessis and Gilbert Rousseau, 2016.
- NI 43-101 Technical Report, Preliminary Economic Assessment (PEA) Barry Gold Project, Quebec, Canada Metanor Resources Inc., November 03, 2016. GoldMinds Geoservices: Claude Duplessis, Gaston Gagnon and Gilbert Rousseau, 2016.

- NI 43-101 Technical Report, BonTerra Resources Inc.: Eastern Extension Property Project No. V1216, 26 July 2012. Snowden: Walter A Dzick and Abolfazl Ghayemghamian, 2012

In addition, the Authors have reviewed company news releases and Management's Discussions and Analysis ("MD&A") which are posted on SEDAR (www.sedar.com).

SEDAR, "The System for Electronic Document Analysis and Retrieval", is a filing system developed for the Canadian Securities Administrators to:

- facilitate the electronic filing of securities information as required by Canadian Securities Administrator;
- allow for the public dissemination of Canadian securities information collected in the securities filing process; and
- provide electronic communication between electronic filers, agents and the Canadian Securities Administrator

The Authors have carefully reviewed all of the Property information and assumes that all of the information and technical documents reviewed and listed in the "References" are accurate and complete in all material aspects. Information regarding the property history, regional property geology, deposit type and metallurgical test work (Sections 5-13) have been sourced from the previous technical reports and company filings on SEDAR and revised or updated as required.

2.2 Site Visit

The Authors conducted a site visit to the Barry Deposit on August 8 and 9, 2018. Armitage conducted a site visit to the Gladiator Deposit on September 18 and 19, 2018. Vadnais-Leblanc conducted a site visit to the Gladiator Deposit on May 14 and 15, 2019.

During the site visits, the Authors examined a number of core holes, drill logs and assay certificates. Assays were examined against drill core mineralized zones. The Authors inspected the offices, core logging and sampling facilities and core storage areas, and reviewed the core sampling and core security procedures. The Authors participated in field tours of the Gladiator project area conducted by Boris Artenian, currently the Chief geologist for the Gladiator project. The Authors participated in a field tour of the Barry Deposit area conducted by Cedric de Marneffe, currently the Chief Geologist for the Barry Project.

During the site visits, the Authors collected due diligence samples from recent drill holes. The results of the due diligence sampling is presented in Section 12.

3 Reliance on Other Experts

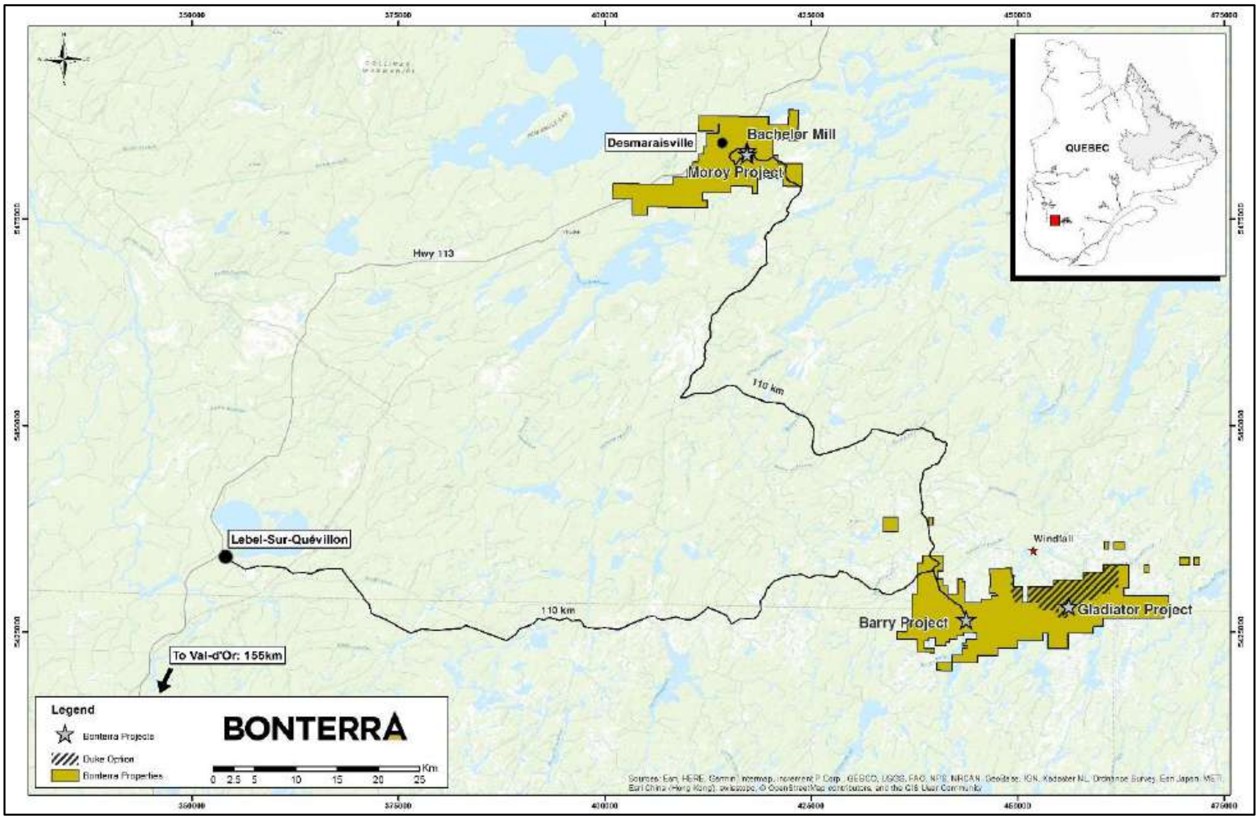
Information concerning claim status and ownership which are presented in Section 4 below have been provided to the Authors by Bonterra by way of E-mail on June 13, 2019 and revised on July 02, 2019 by way of e-mail. The Authors only reviewed the land tenure in a preliminary fashion, and has not independently verified the legal status or ownership of the property or any underlying agreements. However, the Authors have no reason to doubt that the title situation is other than what is presented in this technical report. The Authors are not qualified to express any legal opinion with respect to Property titles or current ownership.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Location

The Property is located in the province of Quebec, Canada, centered approximately 420 km north-northwest of Montréal and 185 km northeast of Val-d'Or. The Property lies approximately 115 km east from the town of Lebel-sur-Quévillon (Figure 4-1). The centre of the Property is centred at approximately 75° 41' longitudinal west and 49° 00 latitude north (UTM NAD83 18U 450,000 m E; 5,427,700 m N).

Figure 4-1 Location of the Barry and Gladiator Properties



4.2 Property Description, Ownership and Royalty

The current Property is divided into two main blocks, The Barry Property, which contains the Barry Deposit, and the Gladiator Property, which contains the Gladiator Deposit.

4.2.1 Barry Property

The Barry Property consists of a mining lease (BM 886) covering an area of 112.04 hectares delivered in August 27, 2008 by the Ministry of natural resources and Fauna (includes the Barry Deposit). The mining lease is surrounded by 207 claims covering an area of 8,718.78 hectares. The list of mining titles of the Barry property is shown below (Figure 4-2, Table 4-1). The mining lease and claims are 100 percent owned by Bonterra (subject to certain net smelter return ("NSR") royalties).

The property is in good standing based on Ministère de l'Énergie et des Ressources naturelles (MERN) GESTIM claim management system of Government of Quebec.

Figure 4-2 Barry Claim Block

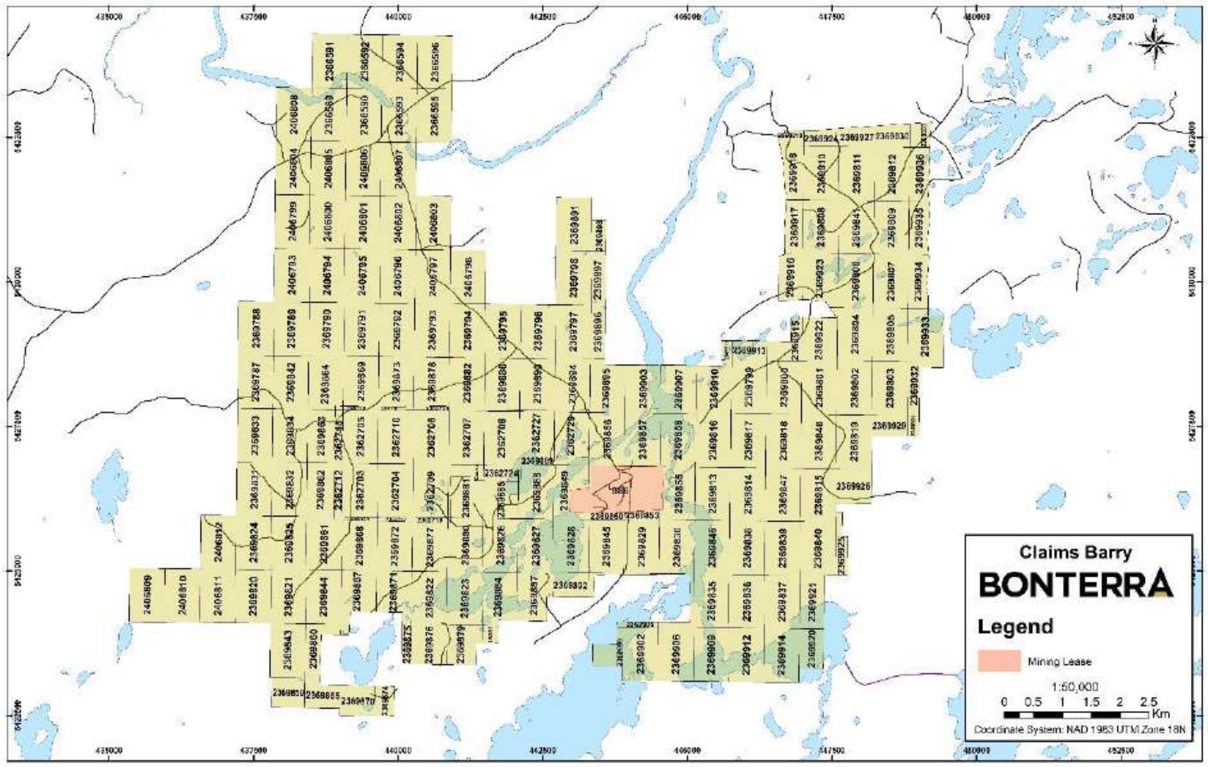


Table 4-1 Barry Lease and Claims List

NTS Sheet	Area (Ha)	Type	Title Number	Status	Date of Registration	Expiry Date
32B13	112.04	BM	886	Active	27/08/2008	26/08/2028
32B13	56.48	CDC	2362703	Active	26/09/2012	26/05/2021
32B13	56.48	CDC	2362704	Active	26/09/2012	26/05/2021
32B13	56.47	CDC	2362705	Active	26/09/2012	26/05/2021
32B13	56.47	CDC	2362706	Active	26/09/2012	26/05/2021
32B13	56.47	CDC	2362707	Active	26/09/2012	26/05/2021
32B13	56.47	CDC	2362708	Active	26/09/2012	26/05/2021
32B13	56.48	CDC	2362709	Active	26/09/2012	26/05/2021
32B13	56.47	CDC	2362710	Active	26/09/2012	26/05/2021
32B13	0.88	CDC	2362711	Active	26/09/2012	26/05/2021
32B13	13.82	CDC	2362712	Active	26/09/2012	26/05/2021
32B13	13.31	CDC	2362713	Active	26/09/2012	26/05/2021
32G04	0.88	CDC	2362714	Active	26/09/2012	26/05/2021
32B13	3.81	CDC	2362715	Active	26/09/2012	26/05/2021
32G04	3.7	CDC	2362716	Active	26/09/2012	26/05/2021
32B13	4.46	CDC	2362717	Active	26/09/2012	26/05/2021
32G04	3.78	CDC	2362718	Active	26/09/2012	26/05/2021
32B13	5.37	CDC	2362719	Active	26/09/2012	26/05/2021
32G04	4.82	CDC	2362720	Active	26/09/2012	26/05/2021
32B13	0.42	CDC	2362721	Active	26/09/2012	26/05/2021
32B13	17.32	CDC	2362722	Active	26/09/2012	26/05/2021
32G04	2.07	CDC	2362723	Active	26/09/2012	26/05/2021

NTS Sheet	Area (Ha)	Type	Title Number	Status	Date of Registration	Expiry Date
32B13	16.91	CDC	2362724	Active	26/09/2012	26/05/2021
32G04	2.15	CDC	2362725	Active	26/09/2012	26/05/2021
32B13	0.76	CDC	2362726	Active	26/09/2012	26/05/2021
32B13	47.58	CDC	2362727	Active	26/09/2012	26/05/2021
32G04	2.08	CDC	2362728	Active	26/09/2012	26/05/2021
32B13	45.39	CDC	2362729	Active	26/09/2012	26/05/2021
32G04	2.32	CDC	2362730	Active	26/09/2012	26/05/2021
32G04	56.42	CDC	2366589	Active	15/11/2012	16/04/2020
32G04	56.42	CDC	2366590	Active	15/11/2012	16/04/2020
32G04	56.41	CDC	2366591	Active	15/11/2012	16/04/2020
32G04	56.41	CDC	2366592	Active	15/11/2012	16/04/2020
32G04	56.42	CDC	2366593	Active	15/11/2012	16/04/2020
32G04	56.41	CDC	2366594	Active	15/11/2012	16/04/2020
32G04	56.42	CDC	2366595	Active	15/11/2012	16/04/2020
32G04	56.41	CDC	2366596	Active	15/11/2012	16/04/2020
32G04	56.47	CDC	2369787	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369788	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369789	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369790	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369791	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369792	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369793	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369794	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369795	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369796	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369797	Active	03/12/2012	21/08/2020
32G04	56.45	CDC	2369798	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369799	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369800	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369801	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369802	Active	03/12/2012	21/08/2020
32G04	56.46	CDC	2369803	Active	03/12/2012	21/08/2020
32G04	56.45	CDC	2369804	Active	03/12/2012	21/08/2020
32G04	56.45	CDC	2369805	Active	03/12/2012	21/08/2020
32G04	56.45	CDC	2369806	Active	03/12/2012	21/08/2020
32G04	56.44	CDC	2369807	Active	03/12/2012	21/08/2020
32G04	56.44	CDC	2369808	Active	03/12/2012	21/08/2020
32G04	56.44	CDC	2369809	Active	03/12/2012	21/08/2020
32G04	56.43	CDC	2369810	Active	03/12/2012	21/08/2020
32G04	56.43	CDC	2369811	Active	03/12/2012	21/08/2020
32G04	56.43	CDC	2369812	Active	03/12/2012	21/08/2020
32B13	56.48	CDC	2369813	Active	03/12/2012	21/08/2020
32B13	56.48	CDC	2369814	Active	03/12/2012	21/08/2020
32B13	56.48	CDC	2369815	Active	03/12/2012	21/08/2020
32B13	56.47	CDC	2369816	Active	03/12/2012	21/08/2020
32B13	56.47	CDC	2369817	Active	03/12/2012	21/08/2020
32B13	56.47	CDC	2369818	Active	03/12/2012	21/08/2020
32B13	56.47	CDC	2369819	Active	03/12/2012	21/08/2020
32B13	56.5	CDC	2369820	Active	03/12/2012	21/08/2020
32B13	56.5	CDC	2369821	Active	03/12/2012	21/08/2020
32B13	56.5	CDC	2369822	Active	03/12/2012	21/08/2020
32B13	56.5	CDC	2369823	Active	03/12/2012	21/08/2020
32B13	56.49	CDC	2369824	Active	03/12/2012	21/08/2020

NTS Sheet	Area (Ha)	Type	Title Number	Status	Date of Registration	Expiry Date
32B13	56.49	CDC	2369825	Active	03/12/2012	21/08/2020
32B13	56.49	CDC	2369826	Active	03/12/2012	21/08/2020
32B13	56.49	CDC	2369827	Active	03/12/2012	21/08/2020
32B13	56.49	CDC	2369828	Active	03/12/2012	21/08/2020
32B13	56.49	CDC	2369829	Active	03/12/2012	21/08/2020
32B13	56.49	CDC	2369830	Active	03/12/2012	21/08/2020
32B13	56.48	CDC	2369831	Active	03/12/2012	21/08/2020
32B13	56.48	CDC	2369832	Active	03/12/2012	21/08/2020
32B13	56.47	CDC	2369833	Active	03/12/2012	21/08/2020
32B13	56.47	CDC	2369834	Active	03/12/2012	21/08/2020
32B13	56.5	CDC	2369835	Active	03/12/2012	21/08/2020
32B13	56.5	CDC	2369836	Active	03/12/2012	21/08/2020
32B13	56.5	CDC	2369837	Active	03/12/2012	21/08/2020
32B13	56.49	CDC	2369838	Active	03/12/2012	21/08/2020
32B13	56.49	CDC	2369839	Active	03/12/2012	21/08/2020
32B13	56.49	CDC	2369840	Active	03/12/2012	21/08/2020
32G04	56.44	CDC	2369841	Active	03/12/2012	21/08/2020
32G04	56.47	CDC	2369842	Active	03/12/2012	21/08/2020
32B13	56.51	CDC	2369843	Active	03/12/2012	21/08/2020
32B13	56.5	CDC	2369844	Active	03/12/2012	21/08/2020
32B13	56.49	CDC	2369845	Active	03/12/2012	21/08/2020
32B13	56.49	CDC	2369846	Active	03/12/2012	21/08/2020
32B13	56.48	CDC	2369847	Active	03/12/2012	21/08/2020
32B13	56.47	CDC	2369848	Active	03/12/2012	21/08/2020
32B13	42.94	CDC	2369849	Active	03/12/2012	21/08/2020
32B13	7.6	CDC	2369850	Active	03/12/2012	21/08/2020
32B13	1.41	CDC	2369851	Active	03/12/2012	21/08/2020
32B13	0.03	CDC	2369852	Active	03/12/2012	21/08/2020
32B13	9.66	CDC	2369853	Active	03/12/2012	21/08/2020
32B13	0.23	CDC	2369854	Active	03/12/2012	21/08/2020
32B13	52.32	CDC	2369855	Active	03/12/2012	21/08/2020
32B13	56.41	CDC	2369856	Active	03/12/2012	21/08/2020
32B13	56.39	CDC	2369857	Active	03/12/2012	21/08/2020
32B13	56.41	CDC	2369858	Active	03/12/2012	21/08/2020
32B13	30.39	CDC	2369859	Active	03/12/2012	21/08/2020
32B13	30.99	CDC	2369860	Active	03/12/2012	21/08/2020
32B13	55.62	CDC	2369861	Active	03/12/2012	21/08/2020
32B13	42.66	CDC	2369862	Active	03/12/2012	21/08/2020
32B13	43.16	CDC	2369863	Active	03/12/2012	21/08/2020
32G04	55.58	CDC	2369864	Active	03/12/2012	21/08/2020
32B13	27.6	CDC	2369865	Active	03/12/2012	21/08/2020
32B13	2.74	CDC	2369866	Active	03/12/2012	21/08/2020
32B13	46.71	CDC	2369867	Active	03/12/2012	21/08/2020
32B13	52.68	CDC	2369868	Active	03/12/2012	21/08/2020
32G04	52.77	CDC	2369869	Active	03/12/2012	21/08/2020
32B13	31.23	CDC	2369870	Active	03/12/2012	21/08/2020
32B13	46.61	CDC	2369871	Active	03/12/2012	21/08/2020
32B13	52.04	CDC	2369872	Active	03/12/2012	21/08/2020
32G04	52.69	CDC	2369873	Active	03/12/2012	21/08/2020
32B13	17.04	CDC	2369874	Active	03/12/2012	21/08/2020
32B13	10.38	CDC	2369875	Active	03/12/2012	21/08/2020
32B13	41.74	CDC	2369876	Active	03/12/2012	21/08/2020
32B13	51.12	CDC	2369877	Active	03/12/2012	21/08/2020

NTS Sheet	Area (Ha)	Type	Title Number	Status	Date of Registration	Expiry Date
32G04	51.65	CDC	2369878	Active	03/12/2012	21/08/2020
32B13	38.16	CDC	2369879	Active	03/12/2012	21/08/2020
32B13	56.07	CDC	2369880	Active	03/12/2012	21/08/2020
32B13	39.17	CDC	2369881	Active	03/12/2012	21/08/2020
32G04	54.39	CDC	2369882	Active	03/12/2012	21/08/2020
32B13	8.49	CDC	2369883	Active	03/12/2012	21/08/2020
32B13	53.59	CDC	2369884	Active	03/12/2012	21/08/2020
32B13	39.58	CDC	2369885	Active	03/12/2012	21/08/2020
32G04	54.31	CDC	2369886	Active	03/12/2012	21/08/2020
32B13	46.78	CDC	2369887	Active	03/12/2012	21/08/2020
32B13	55.72	CDC	2369888	Active	03/12/2012	21/08/2020
32B13	8.9	CDC	2369889	Active	03/12/2012	21/08/2020
32G04	54.38	CDC	2369890	Active	03/12/2012	21/08/2020
32G04	56.44	CDC	2369891	Active	03/12/2012	21/08/2020
32B13	25.81	CDC	2369892	Active	03/12/2012	21/08/2020
32B13	11.09	CDC	2369893	Active	03/12/2012	21/08/2020
32G04	54.15	CDC	2369894	Active	03/12/2012	21/08/2020
32G04	52.75	CDC	2369895	Active	03/12/2012	21/08/2020
32G04	22.71	CDC	2369896	Active	03/12/2012	21/08/2020
32G04	22.68	CDC	2369897	Active	03/12/2012	21/08/2020
32G04	13.61	CDC	2369898	Active	03/12/2012	21/08/2020
32B13	23.32	CDC	2369899	Active	03/12/2012	21/08/2020
32B13	5.79	CDC	2369900	Active	03/12/2012	21/08/2020
32B13	0.94	CDC	2369901	Active	03/12/2012	21/08/2020
32B13	56.51	CDC	2369902	Active	03/12/2012	21/08/2020
32G04	50.22	CDC	2369903	Active	03/12/2012	21/08/2020
32B13	1.24	CDC	2369904	Active	03/12/2012	21/08/2020
32B13	5.79	CDC	2369905	Active	03/12/2012	21/08/2020
32B13	56.51	CDC	2369906	Active	03/12/2012	21/08/2020
32G04	50.59	CDC	2369907	Active	03/12/2012	21/08/2020
32B13	12.08	CDC	2369908	Active	03/12/2012	21/08/2020
32B13	56.51	CDC	2369909	Active	03/12/2012	21/08/2020
32G04	52.01	CDC	2369910	Active	03/12/2012	21/08/2020
32G04	5.85	CDC	2369911	Active	03/12/2012	21/08/2020
32B13	56.51	CDC	2369912	Active	03/12/2012	21/08/2020
32G04	20.75	CDC	2369913	Active	03/12/2012	21/08/2020
32B13	56.51	CDC	2369914	Active	03/12/2012	21/08/2020
32G04	28.3	CDC	2369915	Active	03/12/2012	21/08/2020
32G04	32.7	CDC	2369916	Active	03/12/2012	21/08/2020
32G04	29.04	CDC	2369917	Active	03/12/2012	21/08/2020
32G04	32.06	CDC	2369918	Active	03/12/2012	21/08/2020
32G04	11.61	CDC	2369919	Active	03/12/2012	21/08/2020
32B13	29.16	CDC	2369920	Active	03/12/2012	21/08/2020
32B13	39.11	CDC	2369921	Active	03/12/2012	21/08/2020
32G04	47.01	CDC	2369922	Active	03/12/2012	21/08/2020
32G04	51.2	CDC	2369923	Active	03/12/2012	21/08/2020
32G04	17.89	CDC	2369924	Active	03/12/2012	21/08/2020
32B13	17.14	CDC	2369925	Active	03/12/2012	21/08/2020
32B13	37.55	CDC	2369926	Active	03/12/2012	21/08/2020
32G04	20.69	CDC	2369927	Active	03/12/2012	21/08/2020
32B13	1.91	CDC	2369928	Active	03/12/2012	21/08/2020
32B13	22.16	CDC	2369929	Active	03/12/2012	21/08/2020
32G04	23.53	CDC	2369930	Active	03/12/2012	21/08/2020

NTS Sheet	Area (Ha)	Type	Title Number	Status	Date of Registration	Expiry Date
32B13	7.54	CDC	2369931	Active	03/12/2012	21/08/2020
32G04	23.43	CDC	2369932	Active	03/12/2012	21/08/2020
32G04	53.09	CDC	2369933	Active	03/12/2012	21/08/2020
32G04	30.91	CDC	2369934	Active	03/12/2012	21/08/2020
32G04	31.61	CDC	2369935	Active	03/12/2012	21/08/2020
32G04	31.87	CDC	2369936	Active	03/12/2012	21/08/2020
32G04	15.34	CDC	2369937	Active	03/12/2012	21/08/2020
32G04	56.45	CDC	2406793	Active	18/06/2014	17/06/2020
32G04	56.45	CDC	2406794	Active	18/06/2014	17/06/2020
32G04	56.45	CDC	2406795	Active	18/06/2014	17/06/2020
32G04	56.45	CDC	2406796	Active	18/06/2014	17/06/2020
32G04	56.45	CDC	2406797	Active	18/06/2014	17/06/2020
32G04	56.45	CDC	2406798	Active	18/06/2014	17/06/2020
32G04	56.44	CDC	2406799	Active	18/06/2014	17/06/2020
32G04	56.44	CDC	2406800	Active	18/06/2014	17/06/2020
32G04	56.44	CDC	2406801	Active	18/06/2014	17/06/2020
32G04	56.44	CDC	2406802	Active	18/06/2014	17/06/2020
32G04	56.44	CDC	2406803	Active	18/06/2014	17/06/2020
32G04	56.43	CDC	2406804	Active	18/06/2014	17/06/2020
32G04	56.43	CDC	2406805	Active	18/06/2014	17/06/2020
32G04	56.43	CDC	2406806	Active	18/06/2014	17/06/2020
32G04	56.43	CDC	2406807	Active	18/06/2014	17/06/2020
32G04	56.42	CDC	2406808	Active	18/06/2014	17/06/2020
32B13	56.5	CDC	2406809	Active	18/06/2014	17/06/2020
32B13	56.5	CDC	2406810	Active	18/06/2014	17/06/2020
32B13	56.5	CDC	2406811	Active	18/06/2014	17/06/2020
32B13	56.49	CDC	2406812	Active	18/06/2014	17/06/2020

4.2.1 Barry Ownership and Royalty History

The mining lease and claims are 100 percent owned by Bonterra (subject to certain net smelter return (“NSR”) royalties). Figure 4-3 presents the NSR applicable to all claims of the Barry Property.

Bonterra acquired the Barry Property through a plan of arrangement with Metanor Resources inc. (“Metanor”). On September 24, 2018, Bonterra and Metanor announced the closing of their plan of arrangement. Pursuant to the arrangement, Bonterra acquired all of the outstanding common shares of Metanor. Each Metanor Share was exchanged for 1.6039 common shares of Bonterra. Each outstanding option to acquire Metanor Shares was exchanged for an option to acquire 1.6039 common shares of Bonterra.

Pursuant to the arrangement, Bonterra spun out certain assets, including the Larder Lake Property and approximately $7 million in cash, into a newly-incorporated exploration company, Gatling Exploration Inc.

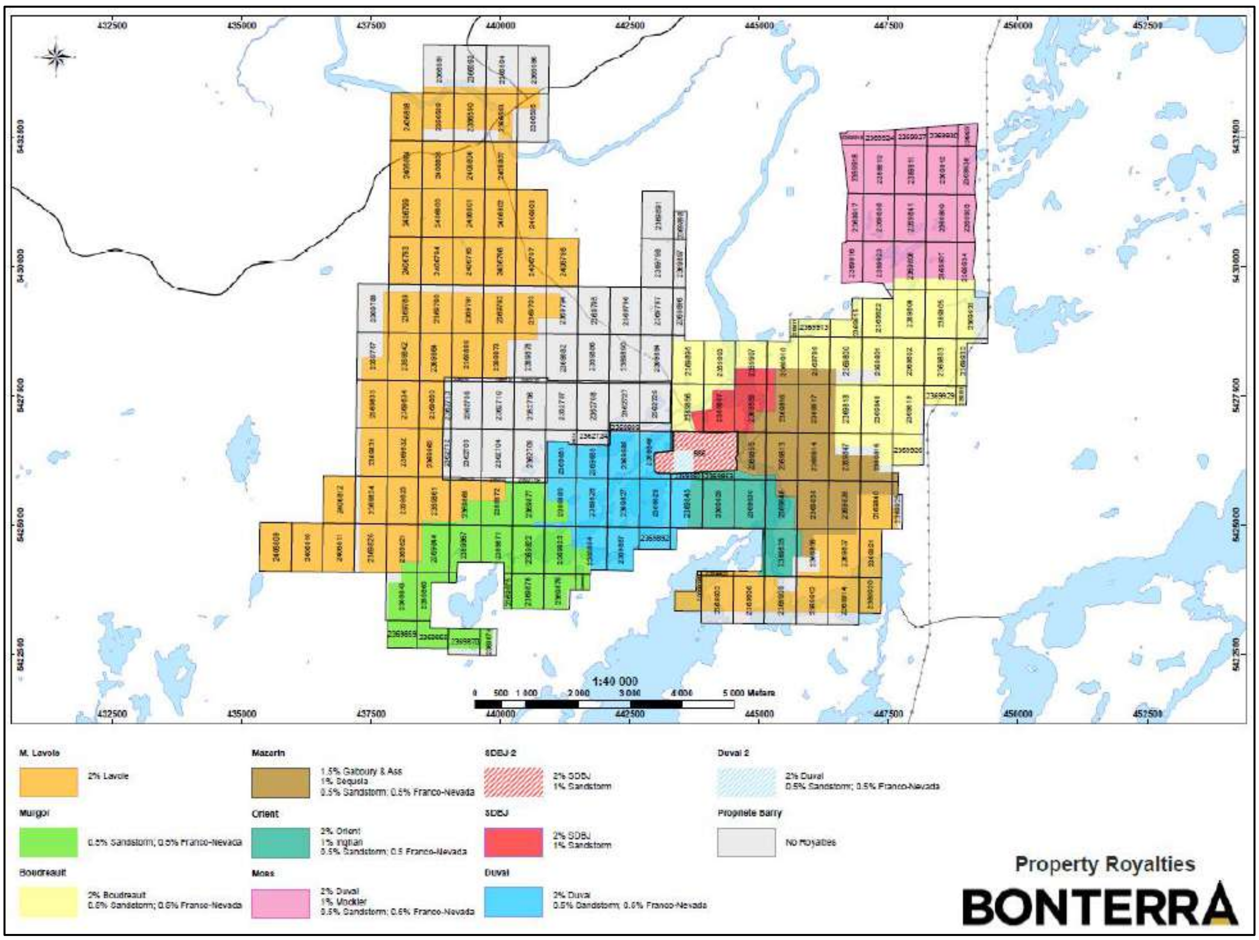
Sandstorm Gold Ltd. **(“Sandstorm”)** has a Gold Stream to purchase 20% of the gold produced from Bonterra’s Bachelor Lake gold mine for a per ounce cash payment equal to the lesser of $500 and the then prevailing market price of gold. Once a cumulative 12,000 ounces of gold have been purchased by the Company, during the period between October 1, 2017 and October 1, 2019, the Gold Stream will convert into a 3.9% NSR (during the nine month period ending February 28, 2019, Bonterra sold 2,500 ounces). In the previous calendar year, Metanor delivered 6,000 oz. As of May 28 2019, there is 3,000 oz left to deliver.

When combined with Sandstorm’s existing royalties, Sandstorm will then hold a total 4.9% NSR on the Bachelor Lake Mine, a 3.9% – 4.9% NSR on Bonterra’s Barry gold project and a 1% NSR on a portion of Bonterra’s Gladiator gold project.

Bonterra has the option to reduce the respective NSRs on the Bachelor Lake Mine or the Barry gold project by making a $2.0 million payment to Sandstorm in each case (the "Purchase Option"). Upon exercising either of the Purchase Options, the respective NSR will decrease by 2.1%.

On the claims hatched in red on Figure 4-3, SDBJ owns a 2% NSR and Sandstorm owns 1%. On the claim hatched in blue Duval owns a 2% NSR and Sandstorm-Franco-Nevada owns 1%. The author sought legal help to interpret the different contracts binding Metanor and the different parties involved. However, some of the contracts articles are open to interpretation and should be resolved before the completion of the prefeasibility study. GMG made assumption in its financial analysis that NSR could be lowered to 1.5% with purchase of portions of NSR.

Figure 4-3 Bonterra Block Ownership Map



4.2.2 Gladiator Property

The Gladiator Property consists of 279 claims covering an area of 13,223.12 hectares. The list of mining titles of the Gladiator Property is shown below (Figure 4-2, Table 4-1). Certain claims are subject to Option Agreements with Golden Valley Mines Ltd (Bonterra 85%, 35 claims totaling 1,431.65 ha) and Beaufield Resources inc. (Bonterra 70%, 81 claims totaling 3,601.61 ha) (Duke Option recently acquired by Osisko Mining Inc.). Bonterra owns a 100% interest in the remaining 163 claims, with certain claims subject to certain NSR royalties.

The property is in good standing based on MERN GESTIM claim management system of Government of Quebec.

4.2.3 Gladiator Ownership and Royalty History

The Gladiator block of claims are subject certain option agreements and NSR's as follows (Figure 4-5):

- ST-CYR AND LACROIX LAKE PROPERTIES

  On February 23, 2016, Bonterra acquired a 100% interest in the St-Cyr and Lacroix Lake Properties. Both vendors retain a 2% NSR, each of which 1% can be purchased by Bonterra for $1,000,000.

- MACHO, BARRY AND BAILLY PROPERTIES

  On March 11, 2016, the Company entered into option agreements to acquire 100% interests in the Macho Property, the Barry Property and the Bailly Property.

  On the Macho Property, the vendor retains a 2% NSR, of which 1% can be purchased by Bonterra for $1,000,000.

  On the Barry Property, the vendor retains a 2% NSR, of which 1% can be purchased by Bonterra for $1,000,000.

  On the Bailly Property, the vendor retains a 2% NSR, of which 1% can be purchased by Bonterra for $1,000,000.

- LAC MISTA PROPERTY

  On March 14, 2017, the Company acquired a 100% interest in the Lac Mista Property. The vendors retain a 2% gross overriding royalty reserve on the claim, of which 1% may be repurchased by the Company for $1,000,000.

- COLISEUM PROPERTY

  The property is subject to a 2% NSR, of which 0.5% can be purchased by the Company for $1,000,000.

- WEST ARENA PROPERTY

  The agreement is subject to a 2% NSR, of which 1% can be purchased for $500,000. A finder's fee of 285 shares was paid in connection with this acquisition. On November 7, 2013, Bonterra sold a an additional 1% NSR interest in the West Arena property to Sandstorm Gold Ltd.

- EAST EXTENSION (ARENA) PROPERTY
- On December 30, 2010, the Company acquired a 100% interest in 57 mineral claims east of the Urban-Barry
- Township in Québec. The agreement is subject to a 2% NSR, of which 1% may be purchased for $1,000,000.
- LAC BARRY (Option)

On March 10, 2016, and as amended March 30, 2017, the Company entered into an option agreement with Golden Valley Mines Ltd. ("Golden Valley") and acquired an 85% interest in Golden Valley's Lac Barry Property.

- DUKE PROPERTY (Option)

  On July 6, 2018, the Company entered into an agreement with Beaufield Resources Inc. to acquire a 70% interest in the Duke Property. In consideration, the Company must make payments as follows:

  - Cash payment of $250,000 (paid) and issue 400,000 common shares of the Company (issued on July 12, 2018 and valued at $1,600,000) upon acceptance by the TSX-V;
    - An additional $250,000 on or before July 6, 2019; and
    - An additional $250,000 on or before July 6, 2020.
  - The Company must also incur exploration expenditures as follows:
    - $1,500,000 on or before July 6, 2019;
    - An additional $1,500,000 on or before July 6, 2020; and
    - An additional $1,500,000 on or before July 6, 2021.
  - The Duke Property is subject to an underlying 2.3% NSR, of which 1% can be purchased for $1,000,000.

- On October 19, 2018, Osisko Mining Inc. ("Osisko") and Beaufield Resources Inc. ("Beaufield") announce the successful completion of their arrangement, pursuant to which, among other things, Osisko now holds all of the issued and outstanding common shares of Beaufield. The arrangement was completed by way of a statutory plan of arrangement under the provisions of the Canada Business Corporations Act and became effective at 12:01 (Montréal Time) on October 19, 2018.

Figure 4-4 Gladiator Block Ownership Map

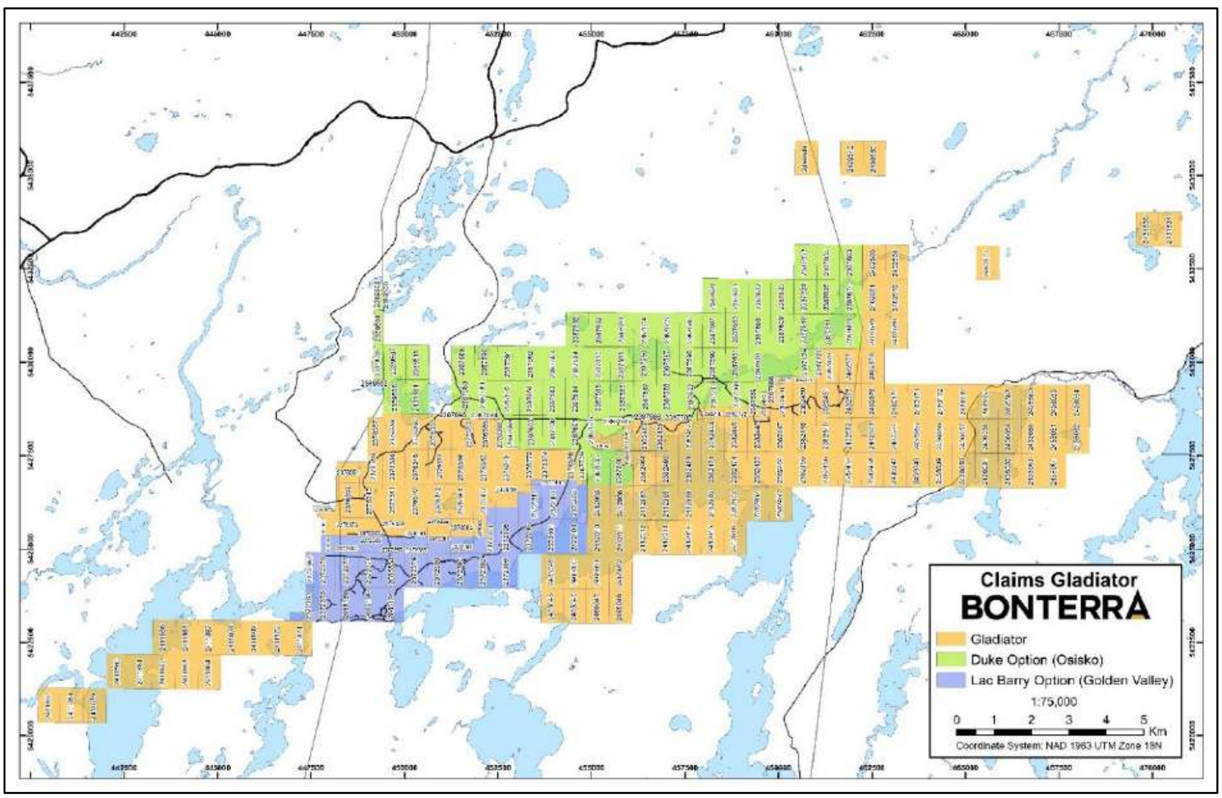


Figure 4-5 Map of the Gladiator Claim Block Identifying the Various Option Agreements and NSR Agreements

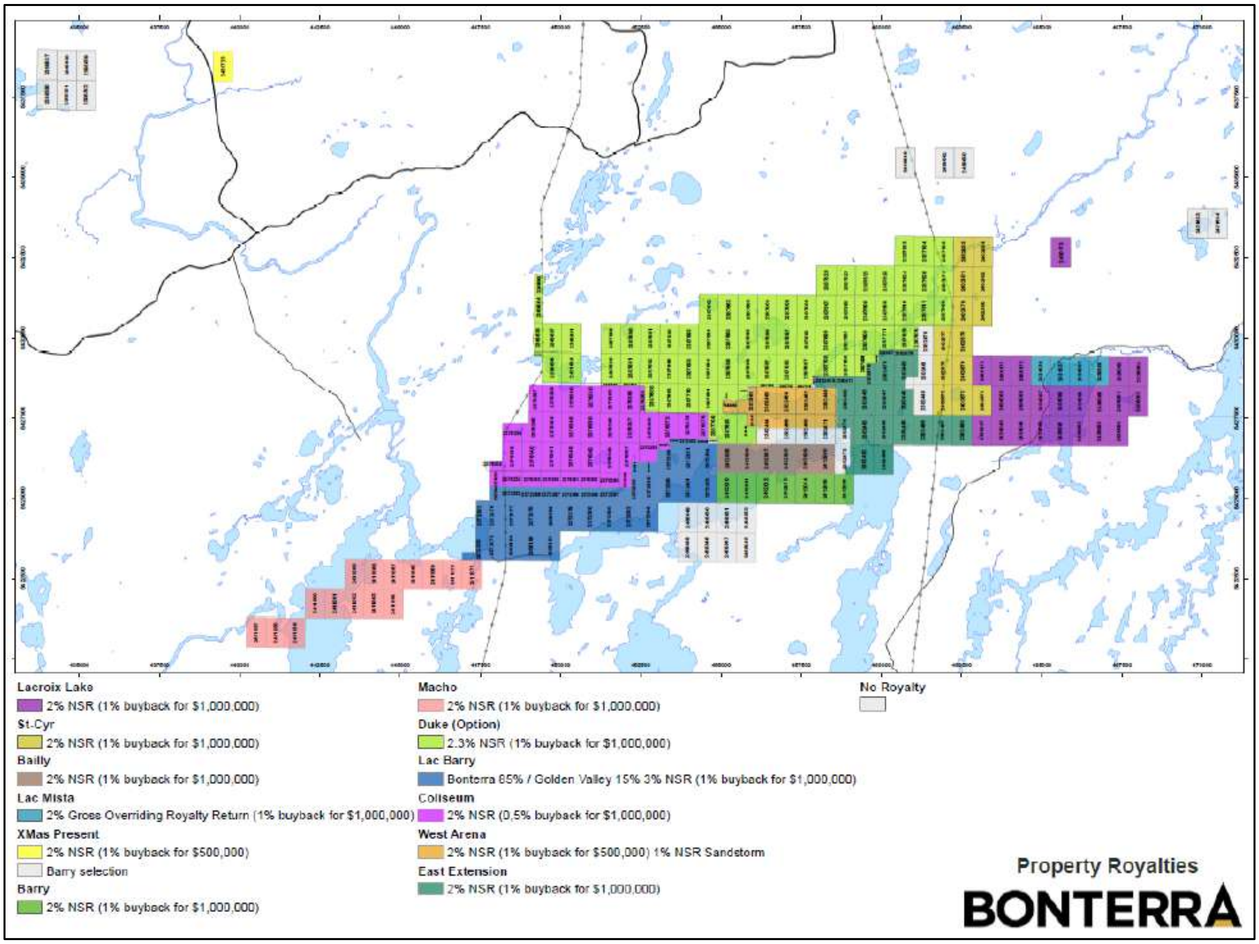


Table 4-2 Gladiator Claims List (Including the Duke Option Claims)

NTS Sheet	Area (Ha)	Type	Title Number	Status	Date of Registration	Expiry Date
Gladiator Claims						
LAC BARRY OPTION (Golden Valley)						
32B13	56,51	CDC	2085189	Active	23/05/2007	22/05/2021
32B13	56,51	CDC	2085190	Active	23/05/2007	22/05/2021
32B13	56,51	CDC	2085191	Active	23/05/2007	22/05/2021
32B13	56,5	CDC	2085554	Active	24/05/2007	23/05/2021
32B13	56,51	CDC	2372375	Active	21/01/2013	13/09/2019
32B13	56,5	CDC	2372376	Active	21/01/2013	13/09/2019
32B13	56,5	CDC	2372377	Active	21/01/2013	13/09/2019
32B13	56,5	CDC	2372378	Active	21/01/2013	13/09/2019
32B13	56,5	CDC	2372379	Active	21/01/2013	13/09/2019
32B13	56,5	CDC	2372380	Active	21/01/2013	13/09/2019
32B13	56,48	CDC	2372381	Active	21/01/2013	13/09/2019
32B13	17,39	CDC	2372382	Active	21/01/2013	13/09/2019
32B13	27,35	CDC	2372383	Active	21/01/2013	13/09/2019
32B13	17,71	CDC	2372384	Active	21/01/2013	13/09/2019
32B13	27,1	CDC	2372385	Active	21/01/2013	13/09/2019
32B13	27,11	CDC	2372386	Active	21/01/2013	13/09/2019
32B13	27,13	CDC	2372387	Active	21/01/2013	13/09/2019

NTS Sheet	Area (Ha)	Type	Title Number	Status	Date of Registration	Expiry Date
32B13	27,13	CDC	2372388	Active	21/01/2013	13/09/2019
32B13	27,14	CDC	2372389	Active	21/01/2013	13/09/2019
32B13	56,5	CDC	2372390	Active	21/01/2013	13/09/2019
32B13	27,14	CDC	2372391	Active	21/01/2013	13/09/2019
32B13	56,5	CDC	2372392	Active	21/01/2013	13/09/2019
32B13	39,06	CDC	2372393	Active	21/01/2013	13/09/2019
32B13	7,85	CDC	2372394	Active	21/01/2013	13/09/2019
32B13	56,5	CDC	2372395	Active	21/01/2013	13/09/2019
32B13	56,49	CDC	2372396	Active	21/01/2013	13/09/2019
32B13	21	CDC	2372397	Active	21/01/2013	13/09/2019
32B13	56,49	CDC	2372398	Active	21/01/2013	13/09/2019
32B13	49,38	CDC	2372399	Active	21/01/2013	13/09/2019
32B13	3,66	CDC	2372400	Active	21/01/2013	13/09/2019
32B13	56,49	CDC	2372401	Active	21/01/2013	13/09/2019
32B13	7,94	CDC	2372402	Active	21/01/2013	13/09/2019
32B13	56,49	CDC	2372403	Active	21/01/2013	13/09/2019
32B13	56,48	CDC	2372404	Active	21/01/2013	13/09/2019
32B13	4,1	CDC	2372405	Active	21/01/2013	13/09/2019
BONTERRA 100%						
32G04	56,37	CDC	2355350	Active	17/07/2012	16/07/2020
32G04	56,37	CDC	2355351	Active	17/07/2012	16/07/2020
32G04	56,37	CDC	2355352	Active	17/07/2012	16/07/2020
32G04	56,46	CDC	2376338	Active	27/02/2013	03/02/2020
32B13	56,48	CDC	2376339	Active	27/02/2013	03/02/2020
32B13	56,48	CDC	2376340	Active	27/02/2013	03/02/2020
32B13	56,48	CDC	2376341	Active	27/02/2013	03/02/2020
32B13	56,48	CDC	2376342	Active	27/02/2013	03/02/2020
32B13	56,48	CDC	2376343	Active	27/02/2013	03/02/2020
32B13	56,47	CDC	2376344	Active	27/02/2013	03/02/2020
32B13	56,47	CDC	2376345	Active	27/02/2013	03/02/2020
32B13	56,47	CDC	2376346	Active	27/02/2013	03/02/2020
32B13	56,47	CDC	2376347	Active	27/02/2013	03/02/2020
32B13	56,47	CDC	2376348	Active	27/02/2013	03/02/2020
32B13	56,48	CDC	2376349	Active	27/02/2013	03/02/2020
32B13	56,47	CDC	2376350	Active	27/02/2013	03/02/2020
32B13	19,22	CDC	2376351	Active	27/02/2013	03/02/2020
32B13	17,01	CDC	2376352	Active	27/02/2013	03/02/2020
32B13	29,39	CDC	2376353	Active	27/02/2013	03/02/2020
32B13	34,31	CDC	2376354	Active	27/02/2013	03/02/2020
32B13	29,38	CDC	2376355	Active	27/02/2013	03/02/2020
32B13	48,93	CDC	2376356	Active	27/02/2013	03/02/2020
32G04	33,03	CDC	2376357	Active	27/02/2013	03/02/2020
32G04	56,46	CDC	2376358	Active	27/02/2013	03/02/2020
32B13	29,37	CDC	2376359	Active	27/02/2013	03/02/2020
32G04	56,46	CDC	2376360	Active	27/02/2013	03/02/2020
32B13	29,36	CDC	2376361	Active	27/02/2013	03/02/2020
32B13	29,35	CDC	2376362	Active	27/02/2013	03/02/2020
32G04	50,46	CDC	2376363	Active	27/02/2013	03/02/2020
32B13	29,35	CDC	2376364	Active	27/02/2013	03/02/2020
32G04	50,42	CDC	2376365	Active	27/02/2013	03/02/2020
32B13	17,43	CDC	2376366	Active	27/02/2013	03/02/2020
32B13	48,63	CDC	2376367	Active	27/02/2013	03/02/2020
32G04	14,59	CDC	2376368	Active	27/02/2013	03/02/2020
32B13	35,48	CDC	2376369	Active	27/02/2013	03/02/2020
32G04	1,57	CDC	2376370	Active	27/02/2013	03/02/2020
32B13	7,1	CDC	2376371	Active	27/02/2013	03/02/2020
32B13	52,81	CDC	2376372	Active	27/02/2013	03/02/2020
32G04	1,53	CDC	2376373	Active	27/02/2013	03/02/2020
32B13	48,53	CDC	2376374	Active	27/02/2013	03/02/2020

NTS Sheet	Area (Ha)	Type	Title Number	Status	Date of Registration	Expiry Date
32G04	0,8	CDC	2376375	Active	27/02/2013	03/02/2020
32B13	28,9	CDC	2376376	Active	27/02/2013	03/02/2020
32B13	56,47	CDC	2436047	Active	20/01/2016	19/01/2020
32B14	56,47	CDC	2436048	Active	20/01/2016	19/01/2020
32B14	56,47	CDC	2436049	Active	20/01/2016	19/01/2020
32B14	56,47	CDC	2436050	Active	20/01/2016	19/01/2020
32B14	56,47	CDC	2436051	Active	20/01/2016	19/01/2020
32B14	56,47	CDC	2436052	Active	20/01/2016	19/01/2020
32B14	56,47	CDC	2436053	Active	20/01/2016	19/01/2020
32B14	56,47	CDC	2436054	Active	20/01/2016	19/01/2020
32G03	56,46	CDC	2436055	Active	20/01/2016	19/01/2020
32G03	56,46	CDC	2436056	Active	20/01/2016	19/01/2020
32G03	56,46	CDC	2436057	Active	20/01/2016	19/01/2020
32G03	56,46	CDC	2436058	Active	20/01/2016	19/01/2020
32G03	56,46	CDC	2436059	Active	20/01/2016	19/01/2020
32G03	56,46	CDC	2436060	Active	20/01/2016	19/01/2020
32G03	56,46	CDC	2436061	Active	20/01/2016	19/01/2020
32G03	56,46	CDC	2436062	Active	20/01/2016	19/01/2020
32G03	56,45	CDC	2436063	Active	20/01/2016	19/01/2020
32G03	56,45	CDC	2436064	Active	20/01/2016	19/01/2020
32G03	56,45	CDC	2431636	Active	29/07/2015	28/07/2019
32G03	56,45	CDC	2431637	Active	29/07/2015	28/07/2019
32G04	56,46	CDC	2382444	Active	18/02/2014	16/11/2020
32G04	56,46	CDC	2382445	Active	18/02/2014	16/11/2020
32G04	56,46	CDC	2382446	Active	18/02/2014	16/11/2020
32G04	56,46	CDC	2382447	Active	18/02/2014	16/11/2020
32G04	56,46	CDC	2382448	Active	18/02/2014	16/11/2020
32G04	56,46	CDC	2382449	Active	18/02/2014	16/11/2020
32G04	56,45	CDC	2382450	Active	18/02/2014	16/11/2020
32G04	56,45	CDC	2382451	Active	18/02/2014	16/11/2020
32B13	56,48	CDC	2382452	Active	18/02/2014	16/11/2020
32B13	56,47	CDC	2382453	Active	18/02/2014	16/11/2020
32B13	56,47	CDC	2382454	Active	18/02/2014	16/11/2020
32B13	56,47	CDC	2382455	Active	18/02/2014	16/11/2020
32B13	56,47	CDC	2382456	Active	18/02/2014	16/11/2020
32B13	56,47	CDC	2382457	Active	18/02/2014	16/11/2020
32B13	56,47	CDC	2382458	Active	18/02/2014	16/11/2020
32B13	56,48	CDC	2382459	Active	18/02/2014	16/11/2020
32G04	17,22	CDC	2382460	Active	18/02/2014	16/11/2020
32G04	37,05	CDC	2382461	Active	18/02/2014	16/11/2020
32B13	11,89	CDC	2382462	Active	18/02/2014	16/11/2020
32G04	50,15	CDC	2382463	Active	18/02/2014	16/11/2020
32B13	56,47	CDC	2382464	Active	18/02/2014	16/11/2020
32G04	50,1	CDC	2382465	Active	18/02/2014	16/11/2020
32B13	56,47	CDC	2382466	Active	18/02/2014	16/11/2020
32G04	51,41	CDC	2382467	Active	18/02/2014	16/11/2020
32G04	3,31	CDC	2382468	Active	18/02/2014	16/11/2020
32B13	56,47	CDC	2382469	Active	18/02/2014	16/11/2020
32G04	17,04	CDC	2382470	Active	18/02/2014	16/11/2020
32B13	56,47	CDC	2382471	Active	18/02/2014	16/11/2020
32G04	16,87	CDC	2382472	Active	18/02/2014	16/11/2020
32B13	56,48	CDC	2382473	Active	18/02/2014	16/11/2020
32B13	56,47	CDC	2382474	Active	18/02/2014	16/11/2020
32G04	27,12	CDC	2382475	Active	18/02/2014	16/11/2020
32G04	52,97	CDC	2382476	Active	18/02/2014	16/11/2020
32G04	7,95	CDC	2382477	Active	18/02/2014	16/11/2020
32G04	11,11	CDC	2382478	Active	18/02/2014	16/11/2020
32G04	46,9	CDC	2382479	Active	18/02/2014	16/11/2020
32G04	56,46	CDC	2402572	Active	15/04/2014	14/04/2020

NTS Sheet	Area (Ha)	Type	Title Number	Status	Date of Registration	Expiry Date
32G04	56,46	CDC	2402573	Active	15/04/2014	14/04/2020
32G04	56,46	CDC	2402574	Active	15/04/2014	14/04/2020
32G04	56,45	CDC	2402575	Active	15/04/2014	14/04/2020
32G04	56,45	CDC	2402576	Active	15/04/2014	14/04/2020
32G04	56,44	CDC	2402577	Active	15/04/2014	14/04/2020
32G04	56,44	CDC	2402578	Active	15/04/2014	14/04/2020
32G04	56,43	CDC	2402579	Active	15/04/2014	14/04/2020
32G04	56,43	CDC	2402580	Active	15/04/2014	14/04/2020
32G04	56,42	CDC	2402581	Active	15/04/2014	14/04/2020
32G04	56,42	CDC	2402582	Active	15/04/2014	14/04/2020
32G04	56,42	CDC	2402583	Active	15/04/2014	14/04/2020
32G04	56,42	CDC	2402584	Active	15/04/2014	14/04/2020
32G04	56,36	CDC	2395537	Active	06/12/2013	05/12/2019
32G04	56,36	CDC	2395538	Active	06/12/2013	05/12/2019
32G04	56,36	CDC	2395539	Active	06/12/2013	05/12/2019
32B13	56,54	CDC	2411857	Active	15/09/2014	14/09/2020
32B13	56,54	CDC	2411858	Active	15/09/2014	14/09/2020
32B13	56,54	CDC	2411859	Active	15/09/2014	14/09/2020
32B13	56,53	CDC	2411860	Active	15/09/2014	14/09/2020
32B13	56,53	CDC	2411861	Active	15/09/2014	14/09/2020
32B13	56,53	CDC	2411862	Active	15/09/2014	14/09/2020
32B13	56,53	CDC	2411863	Active	15/09/2014	14/09/2020
32B13	56,53	CDC	2411864	Active	15/09/2014	14/09/2020
32B13	56,52	CDC	2411865	Active	15/09/2014	14/09/2020
32B13	56,52	CDC	2411866	Active	15/09/2014	14/09/2020
32B13	56,52	CDC	2411867	Active	15/09/2014	14/09/2020
32B13	56,52	CDC	2411868	Active	15/09/2014	14/09/2020
32B13	56,52	CDC	2411869	Active	15/09/2014	14/09/2020
32B13	56,52	CDC	2411870	Active	15/09/2014	14/09/2020
32B13	56,52	CDC	2411871	Active	15/09/2014	14/09/2020
32B13	56,49	CDC	2412010	Active	17/09/2014	16/09/2020
32B13	56,49	CDC	2412011	Active	17/09/2014	16/09/2020
32B13	56,49	CDC	2412012	Active	17/09/2014	16/09/2020
32B13	56,49	CDC	2412013	Active	17/09/2014	16/09/2020
32B13	56,49	CDC	2412014	Active	17/09/2014	16/09/2020
32B13	56,49	CDC	2412015	Active	17/09/2014	16/09/2020
32B13	56,49	CDC	2412016	Active	17/09/2014	16/09/2020
32B13	56,48	CDC	2412985	Active	02/10/2014	01/10/2020
32B13	56,48	CDC	2412986	Active	02/10/2014	01/10/2020
32B13	56,48	CDC	2412987	Active	02/10/2014	01/10/2020
32B13	56,48	CDC	2412988	Active	02/10/2014	01/10/2020
32B13	56,48	CDC	2412989	Active	02/10/2014	01/10/2020
32B13	56,48	CDC	2412990	Active	02/10/2014	01/10/2020
32G03	56,45	CDC	2435587	Active	07/01/2016	06/01/2020
32G03	56,45	CDC	2435588	Active	07/01/2016	06/01/2020
32G03	56,41	CDC	2431633	Active	29/07/2015	28/07/2019
32G03	56,41	CDC	2431634	Active	29/07/2015	28/07/2019
32G03	56,41	CDC	2431635	Active	29/07/2015	28/07/2019
32B13	56,51	CDC	2465045	Active	03/10/2016	02/10/2020
32B13	56,51	CDC	2465046	Active	03/10/2016	02/10/2020
32B13	56,51	CDC	2465047	Active	03/10/2016	02/10/2020
32B13	56,51	CDC	2465048	Active	03/10/2016	02/10/2020
32B13	56,5	CDC	2465049	Active	03/10/2016	02/10/2020
32B13	56,5	CDC	2465050	Active	03/10/2016	02/10/2020
32B13	56,5	CDC	2465051	Active	03/10/2016	02/10/2020
32B13	56,5	CDC	2465052	Active	03/10/2016	02/10/2020
32G03	56,45	CDC	2480171	Active	21/02/2017	20/02/2021
32G03	56,45	CDC	2480172	Active	21/02/2017	20/02/2021
32G03	56,41	CDC	2480173	Active	21/02/2017	20/02/2021

NTS Sheet	Area (Ha)	Type	Title Number	Status	Date of Registration	Expiry Date
32G04	56,45	CDC	2480174	Active	21/02/2017	20/02/2021
32G04	56,39	CDC	2499642	Active	11/08/2017	10/08/2019
32G04	56,39	CDC	2499649	Active	11/08/2017	10/08/2019
32G04	56,39	CDC	2499650	Active	11/08/2017	10/08/2019
32G04	56,36	CDC	2431723	Active	30/07/2015	29/07/2019
Duke Option (Osisko)						
32G04	3.37	CDC	2369502	Active	03/12/2012	12/07/2020
32G04	25.53	CDC	2369503	Active	03/12/2012	12/07/2020
32G04	24.83	CDC	2369504	Active	03/12/2012	12/07/2020
32G04	15	CDC	2369505	Active	03/12/2012	12/07/2020
32G04	56.45	CDC	2369506	Active	03/12/2012	12/07/2020
32G04	56.44	CDC	2369507	Active	03/12/2012	12/07/2020
32G04	.037	CDC	2369508	Active	03/12/2012	12/07/2020
32G04	1.77	CDC	2369509	Active	03/12/2012	12/07/2020
32G04	4.97	CDC	2369510	Active	03/12/2012	12/07/2020
32G04	56.44	CDC	2369511	Active	03/12/2012	12/07/2020
32G04	4.98	CDC	2369512	Active	03/12/2012	12/07/2020
32G04	56.45	CDC	2387580	Active	18/07/2013	10/11/2020
32G04	56.45	CDC	2387581	Active	18/07/2013	10/11/2020
32G04	56.45	CDC	2387582	Active	18/07/2013	10/11/2020
32G04	56.45	CDC	2387583	Active	18/07/2013	10/11/2020
32G04	56.45	CDC	2387584	Active	18/07/2013	10/11/2020
32G04	56.45	CDC	2387585	Active	18/07/2013	10/11/2020
32G04	56.45	CDC	2387586	Active	18/07/2013	10/11/2020
32G04	56.45	CDC	2387587	Active	18/07/2013	10/11/2020
32G04	56.45	CDC	2387588	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387589	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387590	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387591	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387592	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387593	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387594	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387595	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387596	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387597	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387598	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387599	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387600	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387602	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387603	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387604	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387605	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387606	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387607	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387608	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387609	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387610	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387611	Active	18/07/2013	10/11/2020
32G04	56.42	CDC	2387620	Active	18/07/2013	10/11/2020
32G04	56.42	CDC	2387621	Active	18/07/2013	10/11/2020
32G04	56.42	CDC	2387622	Active	18/07/2013	10/11/2020
32G04	56.42	CDC	2387623	Active	18/07/2013	10/11/2020
32G04	56.42	CDC	2387624	Active	18/07/2013	10/11/2020
32G04	56.42	CDC	2387625	Active	18/07/2013	10/11/2020
32G04	56.42	CDC	2387633	Active	18/07/2013	10/11/2020
32G04	56.42	CDC	2387634	Active	18/07/2013	10/11/2020

NTS Sheet	Area (Ha)	Type	Title Number	Status	Date of Registration	Expiry Date
32G04	56.44	CDC	2387650	Active	18/07/2013	10/11/2020
32G04	56.44	CDC	2387651	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387652	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387653	Active	18/07/2013	10/11/2020
32G04	56.45	CDC	2387656	Active	18/07/2013	10/11/2020
32G04	54.9	CDC	2387663	Active	18/07/2013	10/11/2020
32G04	39.58	CDC	2387668	Active	18/07/2013	10/11/2020
32G04	56.43	CDC	2387669	Active	18/07/2013	10/11/2020
32G04	9.54	CDC	2387670	Active	18/07/2013	10/11/2020
32G04	56.42	CDC	2387674	Active	18/07/2013	10/11/2020
32G04	39.24	CDC	2387676	Active	18/07/2013	10/11/2020
32G04	45.34	CDC	2387679	Active	18/07/2013	10/11/2020
32B13	44.58	CDC	2387680	Active	18/07/2013	10/11/2020
32G04	56.42	CDC	2387683	Active	18/07/2013	10/11/2020
32G04	3.49	CDC	2387686	Active	18/07/2013	10/11/2020
32G04	40.4	CDC	2387688	Active	18/07/2013	10/11/2020
32G04	29.34	CDC	2387689	Active	18/07/2013	10/11/2020
32G04	55.67	CDC	2387691	Active	18/07/2013	10/11/2020
32B13	56.47	CDC	2387693	Active	18/07/2013	10/11/2020
32G04	6.04	CDC	2387694	Active	18/07/2013	10/11/2020
32G04	18.77	CDC	2387695	Active	18/07/2013	10/11/2020
32G04	6.01	CDC	2387696	Active	18/07/2013	10/11/2020
32G04	53.14	CDC	2387697	Active	18/07/2013	10/11/2020
32G04	6.32	CDC	2387698	Active	18/07/2013	10/11/2020
32G04	54.93	CDC	2387700	Active	18/07/2013	10/11/2020
32G04	6.36	CDC	2387705	Active	18/07/2013	10/11/2020
32G04	39.41	CDC	2387708	Active	18/07/2013	10/11/2020
32B13	23.47	CDC	2387709	Active	18/07/2013	10/11/2020
32G04	5.05	CDC	2387710	Active	18/07/2013	10/11/2020
32G04	48.5	CDC	2387711	Active	18/07/2013	10/11/2020
32G04	56.45	CDC	2431684	Active	29/07/2015	28/07/2021

4.3 Permits and Environmental Liabilities

Bonterra has obtained all necessary permits and certifications from government agencies to allow exploration on the Property. The Permis d'intervention forestière en vue d'activitiès minières (Forest management permit for mining activities) is issued by the Ministère des Resources Naturelles et de la Faune (MRNF) to support exploration drilling and are applied for and renewed annually as are required for exploration drilling sites and access roads and requirements.

Other than the renewal of the Permis d'intervention forestière en vue d'activités minières, SGS is unaware of any other significant factors and risks that may affect access, title, or the right, or ability to perform the exploration work recommended for the Clearwater property.

The Barry Deposit is fully permitted to develop, extract 1.2 millions tonnes of mineralized materials by underground and/or surface mining method, and to ship to a mill.

The Authors are unaware of any other significant factors and risks that may affect access, title, or the right, or ability to perform the exploration work recommended for the Property. As far as the Authors are aware, environmental liabilities related to the Property, if any, are negligible.

4.4 Mining Rights in Quebec

As defined by the Ministère de l'Énergie et des Ressources naturelles (MERN) website (www.mrn.gouv.qc.ca) a claim is the only valid exploration right in Quebec. The claim gives the holder an exclusive right to search for mineral substances in the public domain, except within sand, gravel, clay and other loose deposits on the land subjected to the claim.

A claim can be obtained by map designation, henceforth the principal method for acquiring a claim, or by staking on lands that have been designated for this purpose. The accepted means to submit a notice of map designation for a claim is through GESTIM Plus (www.gestim.mines.gouv.qc.ca).

The term of a claim is two years from the day the claim is registered, and it can be renewed indefinitely providing the holder meets all the conditions set out in the Mining Act, including the obligation to invest a minimum amount required in exploration work determined by the regulation. The Act includes provisions to allow any amount disbursed to perform work in excess of the prescribed requirements to be applied to the subsequent terms of the claim.

Any claim holder to specific mineral substances as described under Section 5 of the Mining Act can obtain a mining lease. The application must demonstrate that the deposit is mineable to a standard acceptable to the Province (feasibility or similar). The surface area of a mining lease must not exceed 100 hectares unless the circumstances warrant an exception deemed acceptable by the MERN. A written application must be submitted that includes a report certified by a geologist or engineer describing the nature and extent of the deposit and its likely value. Mining leases have a duration of 20 years and are renewable by 10-year periods.

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

5.1 Accessibility

The Property is centered approximately 420 km north-northwest of Montréal and 185 km northeast of Val-d'Or. Val-d'Or has the closest commercial airport with regularly scheduled direct flights to Montreal.

The Property is easily accessible using major and secondary roads developed in recent decades due to the forestry and mining industries in the well-known Urban-Barry mining camp. The Property is accessible by heading eastbound from Val-d'Or on the paved Québec TransCanada Highway 117 for about 30 km to provincial Highway 113, then northbound for approximately 125 km on paved Highway 113 to the town of Lebel-sur-Quévillon. From the town of Lebel-sur-Quévillon, turn-off to logging road 1000 at the Chantier Chibougamau mill. From here the Property can be reached by well-maintained and well labelled un-paved logging roads. When the weather conditions allow it, forest roads connect the Barry and Gladiator Deposit areas to the Bachelor lake mill located approximately 110 km to the north (Figure 4-1).

5.2 Local Resources and Infrastructure

The regional resources concerning labour force, supplies and equipment are sufficient, the area being well served by geological and mining service firms. The closest town, Lebel-sur-Quevillon provides the workforce for minor services. Full infrastructure and an experienced mining workforce are also available in a number of well-established mining towns nearby, such as Val-d'Or, Rouyn-Noranda, Chibougamau, Amos, La Sarre, and Matagami.

There are well established and well serviced camps at both the Barry and Gladiator Project sites to provide living facilities for the current work force. Other infrastructures include core logging and splitting facilities, core storage facilities, garages, diesel generators and surface, fuel tanks etc. Bonterra completed the construction of a new camp at Barry to accommodate more workers in order to proceed with an underground bulk sample in 2018.

The Urban-Barry Mill, located at Bonterra's Bachelor Mine site and Moroy Project, is the only permitted mill in the region, with more than 15 high-grade gold deposits within a 110 kilometre radius of the mill site. The mill is accessible by a paved highway from the town of Lebel-sur-Quévillon, and is accessible with a network of logging roads to the Barry and Gladiator Deposits. Bonterra plans to feed the Urban-Barry Mill with feed from the Barry and Gladiator Deposits. Bonterra will undertake a mill expansion project in order to increase the production capacity of the Urban-Barry Mill from 1,200 tpd to 2,400 tpd. The mill is connected to the provincial electrical grid.

5.3 Climate

Climate is typical of temperate continental conditions with moderately long, cold winters and shorter, warm summers. Winter temperatures may drop below minus 20º C for extended periods and, in summer, maximum daily temperatures may exceed 25º C for extended periods (June to August). From November through March, daily mean temperatures typically are below 0º C. Precipitation is moderate. The wettest months are between May and November. Estimated average annual precipitation is in the 940 mm range with 650 mm falling as rain and the balance (290 mm water equivalent) as snow.

5.4 Physiography

The property is located within the Canadian Shield and is characterized by many lakes, swamps, rivers, and low-lying terrain. The Project is located in the boreal forest where forest fires are common. Vegetation is typical of taiga, including areas dominated by sparse black spruce, birch, and poplar forests, in addition to large areas of peat bog devoid of trees.

Overburden is typically 3 to 4 metres thick, with the exception of isolated areas where overburden thickness can reach 30 metres. Only a few natural outcrops are present on the Property.

Elevations on the Property are approximately 400 m above sea level. Topographic relief is low and generally does not exceed 15 m, typical of the glaciated Canadian Shield in that low ridges of rock, gravel or sand interrupted by with areas of muskeg along drainages.

6 HISTORY

6.1 Barry Property

Exploration history for the Barry property presented here was extracted from a previous technical report for Metanor by GoldMinds Geoservices (“GoldMinds”) (Duplessis, et al., 2016) and updated.

6.1.1 Summary of previous work

The following is a summary of previous work completed on the Barry Property. Table 6-1 summarizes the drilling completed on the Barry Property.

1943	Area mapped by Mimer.
1946-47	Area mapped by Fairbairn and Graham.
1958	Geological survey performed by Geological Survey of Canada.
1961	An airborne MAG-EM survey was performed by Claims Ostiguy.
1962-65	Geology, geophysics and 5 drillholes were completed by Fab Metal Mines LTD.
1981-84	An airborne MAG-EM survey was performed by Questor Surveys LTD. for the Quebec Ministry of Energy and Resources.
1981-83	Prospecting and Geological Mapping was carried out by SDBJ followed by three drillholes.
1983	Mines Camchib completed one hole of 146 meters (MB-83-1 1) at the western edge of the property. No significant assays were reported.
1988-89	Ground MAG and EM surveys were completed by Cominco-Agnico Eagle. Nine drillholes followed.
1990	An evaluation of this property was carried out by Albanel Minerals LTD. and Somine.
1995	Overburden stripping, trench and channel sampling by Murgor.
1995	Detailed mapping and geophysical works realized on the discovery showing.
1995-1996	Murgor drilled 56 holes on the property and sent 167 channel samples for assay.
1997	IP survey, geological mapping, lithogeochemical sampling and drilling of 4,456 meters of core by Teck Exploration, mainly on the Barry I Main property.
2004-2005	Geological interpretation and drilling (61 holes) on the property by Osisko Resources Inc.
2005	Writing of a preliminary assessment study on the Barry property by George McIsaac, eng., M. eng.
2005	Murgor realised one drilling campaign of six holes for 225 m. and a new geological interpretation of the Barry deposit by Murgor’s staff.
2006	Drilling by Murgor of 32 drillholes for 1,409 m. and survey of the visible drillholes collars of the Main Zone.
2006-2007	Drilling of 58 drillholes totalling 5,076 m.
2008	Drilling of 79 drillholes totalling 9,413 m.
2009	Drilling of 167 drillholes totalling 19,557 m.
2009	52 kilometers of a complementary resistivity/induced polarization survey. (Press release 2010-02-24).
2010	Drilling of 15 drillholes totalling 4,127 meters (Press release 2011-05-31).
2009-2011	223 km of magnetic survey and 195 km of IP survey (Press release 2011-10-04).
2013-2014	Drilling of 38 drillholes totalling 12,197 m. (Press release 2014-10-08).

Table 6-1 Summary of Previous Drilling on the Barry property

Fab Metal Mines	1962-65	5 drillholes	114 m
SDBJ	1981-83	3 drillholes	264 m
Mines Camchib	1983	1 drillhole	146 m
Cominco-Agnico Eagle	1988-89	9 drillholes	1,461 m
Murgor Resources	1994-96	74 drillholes	7,703 m
Murgor Resources	1995	167 channels	1,203 m
Teck Exploration	1997	15 drillholes	4,456 m
Osisko	2004-05	61 drillholes	2,580 m
Murgor Resources	2005	6 drillholes	225 m
Murgor Resources	2006	32 drillholes	1,409 m
Murgor Resources	2006-2007	58 drillholes	5,076 m
Metanor Resources	2008	79 drillholes	9,412 m
Metanor Resources	2009	167 drillholes	19,557 m
Metanor Resources	2009-2011	Ip survey	195 km
Metanor Resources	2009-2011	Magnetic survey	223 km
Metanor Resources	2010	15 drillholes	4,127 m
Metanor Resources	2013-2014	38 drillholes	12,197m
Metanor Resources	2016-2018	186 drillholes	81,221 m

6.2 Details of Previous Work on Barry and Area

The area surrounding the Murgor Resources Inc. ("Murgor") property (Barry Property) was first mapped in the 1940's, but it was not until 1962 that exploration work on the property was first recorded. Exploration in the area has progressed significantly in the last 10 years due to the increased access provided by the expanding network of logging roads.

6.2.1 Work by Fab Metals Mines in 1962-1964

In 1962, Fab Metal Mines, owned by Fred A. Boylen, drilled three short holes totalling 87 meters on the eastern shore of the Macho River outside of the "Main Showing" area. Basalts and feldspar porphyry were intersected, which contained sparse pyrite mineralization and the odd quartz veins.

In 1964, Boylen drilled two additional short holes totalling 37 meters on a zone of strong quartz veining on the west shore of the Macho River. Boylen's drill logs referred to sheared volcanics with quartz tourmaline veins and visible gold. No follow-up work has been done to date on that area.

6.2.2 Work done by Questor Surveys Ltd in 1981-1984

In 1981 and 1984, Questor Surveys Ltd. completed an airborne EM-INPUT and magnetometer survey over the area for the Quebec Ministry of Energy and Resources. This survey (DP 83-08 and DP 85-19A and B) identified several EM anomalies on the Murgor property associated with a strong magnetic conductor.

6.2.3 Work done by SDBJ in 1982-1984

The discovery of the "Main Showing" ("Barry Deposit") dates back to 1982 when grab samples taken by SDBJ assayed up to 35 g/t Au. Between 1982 and 1983, SDBJ completed prospecting, line cutting, geological mapping, magnetometer and horizontal loop EM surveys. Three diamond drillholes (83-9, 83-10 and 83-11) totalling 264.5 meters were drilled in the area of the "Main Zone" to test geophysical targets. All the drillholes intersected anomalous gold mineralization, with drillhole 83-9 assaying 4.l g/t over 1.4 meters.

6.2.4 Work done by Mines Camchib in 1983

In 1983, Mines Camchib completed one hole of 146 meters (MB-83-1 1) at the western edge of the property. No significant assays were reported.

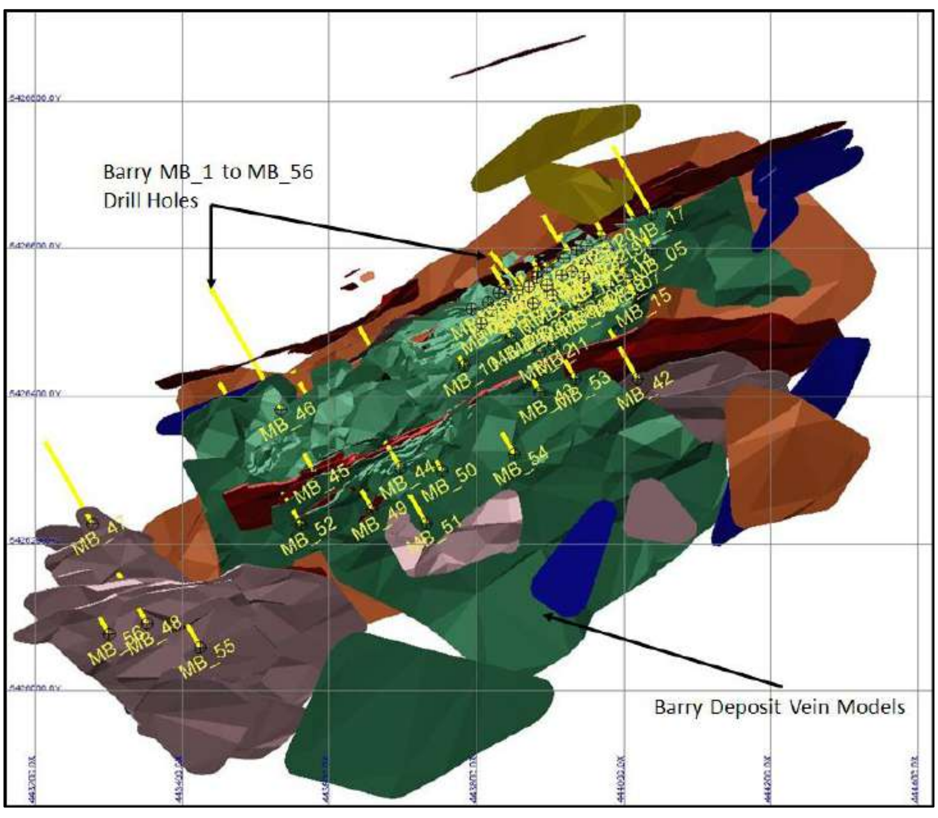
6.2.5 Work done by Cominco-Agnico Eagle in 1989-89

In 1988-89, a Cominco-Agnico Eagle joint venture completed magnetic, EM, IP and soil geochemical surveys along with overburden trenching. Nine diamond drillholes (LON-88-l, -2, -3 & LON-89-4, -5, -6, -7, -8 and -9), totalling 1,461 meters, were drilled on the property. The best assay was from drillhole LON-88-3 with an assay of 6.45 g/t over 1.8 meters.

6.2.6 Work done by Murgor resources in 1994

In November of 1994, Murgor optioned the SDBJ claim block as well as the Duval and Boudreault claim blocks. The property was surveyed with magnetic, IP and basal till surveys along with an extensive overburden stripping and channel-sampling program. Diamond drilling completed by Murgor concentrated on the Barry I Main Zone Area and totaled 56 holes (MB-1 to 56) for 5,918 meters (Figure 6-1). The Barry I Main Zone Area had been drilled over a strike length of 800 meters and down to a vertical depth of 250 meters. Multiple gold bearing zones were identified with intersections as high as 9.7 g/t Au over 7.7 meters. A mineral inventory was calculated on the Barry I Main by Murgor, which totalled 610,000 t grading 6.8 g/t Au (Tessier, 1996).

Figure 6-1 Distribution of 1994 Drill Holes in the Barry Deposit Area



6.2.7 Work done by Murgor in 1995

A program of 18 drillholes was completed on the Barry I property between February 20 to April 2 1995. A total of 1,785 meters of NQ core were drilled and 1,516 samples were assayed for gold.

The drilling confirmed the presence of gold. A typical gold zone is composed of alternating sections of auriferous altered volcanics and unaltered volcanics.

The drill results indicate that the mineralized zones are very complicated, and it is impossible to tie together the mineralization on strike and on section. Some features which may help in localizing the gold mineralization could be the folding, contacts, fractures, flexures or intersecting structures.

The conclusions of the work done by Murgor are the following:

The Barry I property is located within a major deformation zone created by overlapping strain aureoles related to the emplacement of two large plutons. The two large plutons flank the greenstone rocks to the northwest and southeast.

The strike orientation of the gold associated deformation zone is 060º (east-northeast). Several gold showings in this area are also associated with this orientation. The dip of the units on the property is 60° south, whereas the plunge is 45° - 50° to the east.

The gold mineralization is typical of an Archean lode gold style with auriferous quartz-carbonate-albite veinlets hosted within highly carbonatized pillowed basalts and basaltic flows. The gold usually occurs as the native element or as inclusions within the pyrite. Hydrothermal fluids have been deposited within fractures rather than shear zones. Very little shearing is evident. 90% of the veinlets have the same dip as the foliation, which is 060° to the south.

Broad zones of Fe carbonate exist, zoned away from the veinlets. Biotite alteration also exists at the immediate contact with the volcanics and sometimes along fractures at right angles within the veinlets. The presence of biotite and the hornfelsic appearance of the volcanics locally suggest a very high fluid deposition temperatures.

Some drillholes did not encounter the expected gold mineralization, as the results of previous surface works, suggesting a possible plunge of the main showing.

The same style of veinlets and sulphides observed in the quartz feldspar porphyries did not carry gold mineralization even though they did in the volcanics. This suggested that the QFP was not chemically correct to allow for gold precipitation.

The initial showing corresponds to a coinciding MAG high and IP anomaly.

The greater the vein frequency, the stronger the alteration, the higher the percentage of pyrite and therefore the higher the gold assays.

The veinlets are bulged suggesting a stretching deformation, while the pillows are flattened suggesting a compression deformation.

6.2.8 Work done by Teck option during 1997

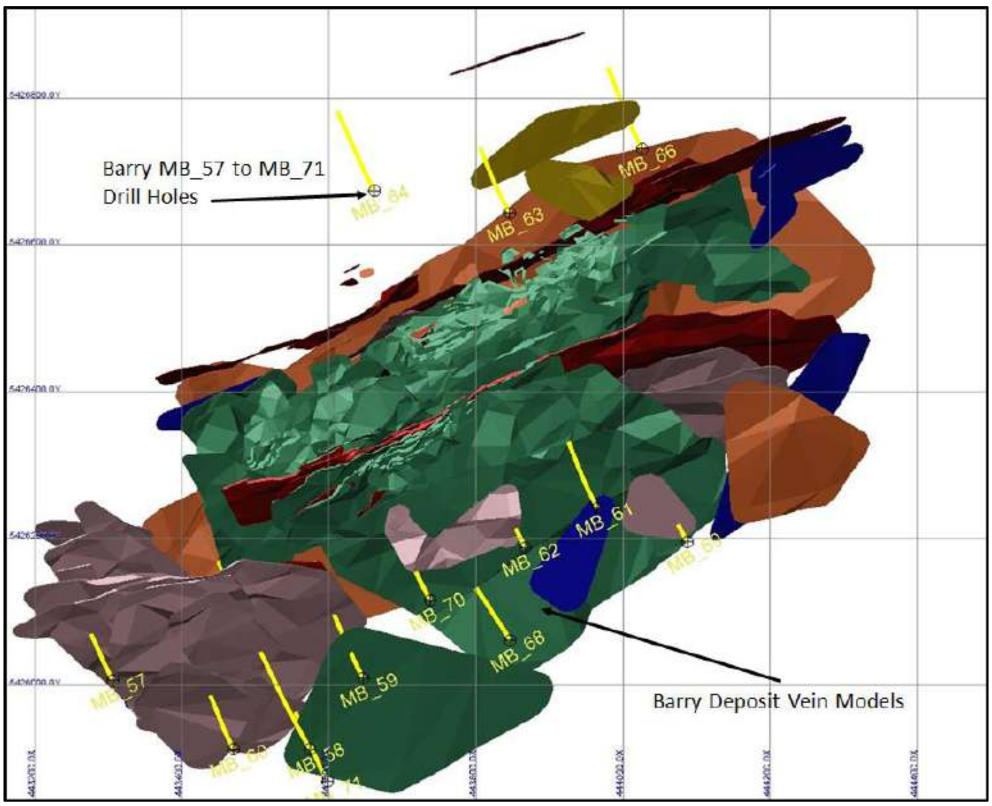
A total of 4,456 meters of diamond drilling in 15 drillholes were completed on the Murgor property between June and August of 1997. This drilling tested the extensions of the auriferous Barry I Main Zone and parallel or faulted off structures to the north.

- Drilling

A total of six holes were drilled by Teck (MB-57 to MB-62 and MB-68 to MB-71) (Figure 6-2) on the property. These holes tested the extension of the gold mineralization hosted in the Barry I Main Zone, along a strike of 800 meters and down to a vertical depth of 325 meters below surface. The gold mineralization was intersected in mineralized corridors in a variety of stratigraphic units. The most significant areas in order of importance include:

- Altered basalts at the hanging wall contact of the quartz-feldspar-porphyry.
- Basalts at the footwall contact of the quartz-feldspar-porphyry.
- Basalt-gabbro to the north of the quartz-feldspar porphyry.
- Quartz-feldspar porphyry.
- Massive basalt unit to the south of the quartz-feldspar porphyry.
- Brecciated basalt unit.

Figure 6-2 Distribution of 1997 Drill Holes in the Barry Deposit Area



Sections with anomalous gold mineralization were identified in the quartz-feldspar-porphyry unit, the brecciated basalt unit, the more massive basalt unit to the south of the quartz- feldspar-porphyry and in the massive basalt-gabbro unit to the north of the quartz-feldspar-porphyry. Assay results for these zones were as high as 3.49 g/t Au over 1.8 meters. The gold mineralization in these corridors was commonly present as sheared and altered zones close to small quartz-feldspar-porphyry sills.

The diamond drilling did confirmed that the mineralized system at the Barry I Main Zone Area is large, and the zone was intersected in virtually every hole. Although the mineralization remains open in all directions, the drilling shows that on a detailed scale the gold bearing zones are represented by numerous smaller lenses. Based on previous surface stripping and close spaced shallow drilling the size of individual mineralized lenses may only be in the order of 45 meters in strike.

The diamond drillholes MB-63 to MB-67 targeted a chargeability anomaly and associated magnetic high parallel and to the north of the Barry I Main Zone. The only significant assay from this shallow diamond drilling was from hole MB-64, which assayed 1.73 g/t Au over a core length of 1.6 meters. The gold mineralization encountered in this area is similar in style to that encountered at the Barry I Main Zone, and is associated with biotite-carbonate alteration, quartz-carbonate veining and disseminated pyrite. The assay quoted above in drillhole MB-64 is from the contact of a small quartzfeldspar - porphyry unit.

- Surface Mapping and Sampling

A program of surface mapping and outcrop sampling was completed on the property concurrently with the diamond-drilling program in the summer of 1997. A total of 52 samples were analyzed for gold. Of these, 27 samples were also analyzed for major and minor elements. The highest gold assay from a surface grab sample outside of the Barry I Main Zone Area was 2.01 g/t Au. This sample was taken from a small pit, located approximately 150 meters to the north of the Barry I Main Zone, which corresponds to the northern IP conductor drill tested with holes MB-63 to 67. The IP anomalies are due to the presence of disseminated pyrite and local stringers of magnetite.

A significant amount of quartz veining with rare pyrite mineralization was located in outcrops close to IP chargeability anomalies in the northern part of the property at L23+85E, l2+75N and in the eastern part of the property at L4l+85E, 7+105. The quartz veins in the northern part of the property on L23+85E were also found to contain up to 5% of a mineral identified as geikielite ($MgTiO_3$), which has been found to be locally associated with gold mineralization in the Val d'Or mining camp.

- Geophysical IP survey

A dipole-dipole array IP survey was realized over 53 km, covering portions of the property not covered by previous surveys. Several moderate to strong chargeability anomalies were outlined in the northern and eastern parts of the property.

Two of the 12 anomalies defined by previous surveys correspond to the known sulphide mineralization; i.e. the Barry I Main Zone Area and the zone 150-200 meters to the north. These 17 anomalies are characterized by strong chargeability, background resistivity signatures and are associated with magnetic highs. Both of these anomalies, each approximately 1,000 meters in length, appear to have been offset by an E-W trending structure with a sinistral movement. The chargeability highs are due to finely disseminated pyrite (3-7%) and lesser pyrrhotite and magnetite.

Based on the recent IP survey, there exists up to six separate IP (chargeability) anomalies in the northern and eastern parts of the property. Individual IP anomalies can be traced over strike lengths of up to 2,000 meters. All are untested by diamond drilling and no outcrops are present in the area of the anomalies.

IP surveying has proven to be the most useful geophysical technique in the Urban-Barry Volcanic Belt. It works well in identifying and locating the disseminated style of the sulphide mineralization associated with the gold mineralization.

- Litho-geochemistry results

Systematic core sampling at 30 meters intervals, for 160 samples, was completed on all drillholes. The samples were analyzed for 10 major oxides, loss on ignition and a 32 elements package by ICP.

Alteration trends were appraised through bulk chemistry methods designed to monitor relative enrichment-depletion patterns of mobile elements typical of gold deposits.

The basaltic rocks are of tholeiitic to transitional affinity as defined by immobile element plots. Three populations of chemically different rock units were identified from various X-Y plots using AL2O3, Ti02, and Zr concentrations. These included quartz-feldspar porphyry, basalts and plagioclase-phyric basalts or feldspar porphyries. No significant geochemical difference could be established amongst the various subunits of basalts and gabbros.

Though the most significant gold intersections were hosted within the basalts, the quartz-feldsparporphyry unit commonly showed a higher background concentration of gold. Median gold levels in the basalts are of 6 ppb while, in the quartz-feldspar-porphyry, the values were almost four times higher at 23 ppb. The mineralized zones within the basalts do not show any significantly large alteration haloes identifiable by geochemical anomalous gold values or associated pathfinder elements. The gold mineralization is restricted to the quartz veins and their borders.

- The conclusions on the work done by Teck option during 1997 are the following:

The mineralized corridors do however remain open in all directions. The continuity and size of these individual higher-grade zones are difficult to establish and appears erratic. No significant increase in the gold grade was observed along strike or at depth.

The Murgor property covers iron rich basalts intruded by quartz-feldspar porphyry, both of which are favourable hosts for gold mineralization. Mineralization at the Barry I Main consists mainly of sheeted auriferous quartz-carbonate-albite veins aligned parallel to the regional foliation at 060°. A second set of contemporaneous quartz-carbonate-albite veins is also present, oriented at 020° parallel to the Milner Shear Zone.

6.2.9 Work done by Osisko option during 2004-2005

A total of 61 drillholes, for 2,580 meters, were drilled mainly on the Barry I Main Zone Area by Osisko Resources Inc. during the June 2004 and February 2005 periods (Figure 6-3). A partial survey of the drillhole collars was carried out during this period. Only the computerized version of the drill logs was available for this study. One database including all the computerized data on the Barry property was prepared and kept up to date. No other document prepared by Osisko was given to Murgor.

The staff of Osisko described a new interpretation of the mineralized deposit according to the information retrieved from the new drillholes. Following their study of the gold potential for that deposit, they released their option to concentrate their efforts on another deposit of larger tonnage. The size of the Barry deposit does not fulfill their requirement for a large deposit to exploit.

6.2.10 Work done by Murgor during 2005-2006

Six drillholes (MB05-162 to MB05-167) totalling 225 meters were drilled mostly on the Barry I Main Zone by Murgor during December 2005 (Figure 6-4). A new geological model interpretation was developed according to the new data and tested by three drillholes, as required by Geostat Systems International. These drillholes confirmed the presence of gold mineralization. The three others aimed to add tonnage to the Barry I Main and to test a high-grade target in the southwest part of the Barry I Main Zone. One database was created and verified by Geostat's staff. The position of the collars had to be surveyed. The data of five of the previously drillholes were not found. All the assays greater than 1 g/t Au were checked when the assay certificates were available. A new resource estimate was calculated from the new geological interpretation and aimed at defining resources possibly mined by open-pit (see Section 6.3 below).

Figure 6-3 Distribution of 2004-2005 Drill Holes in the Barry Deposit Area

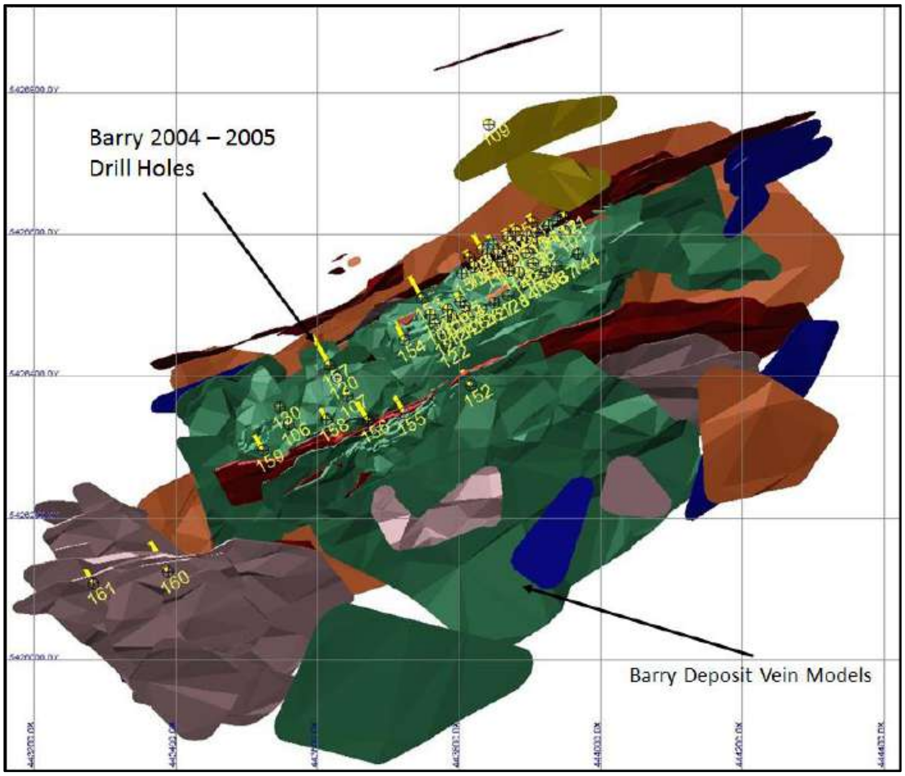
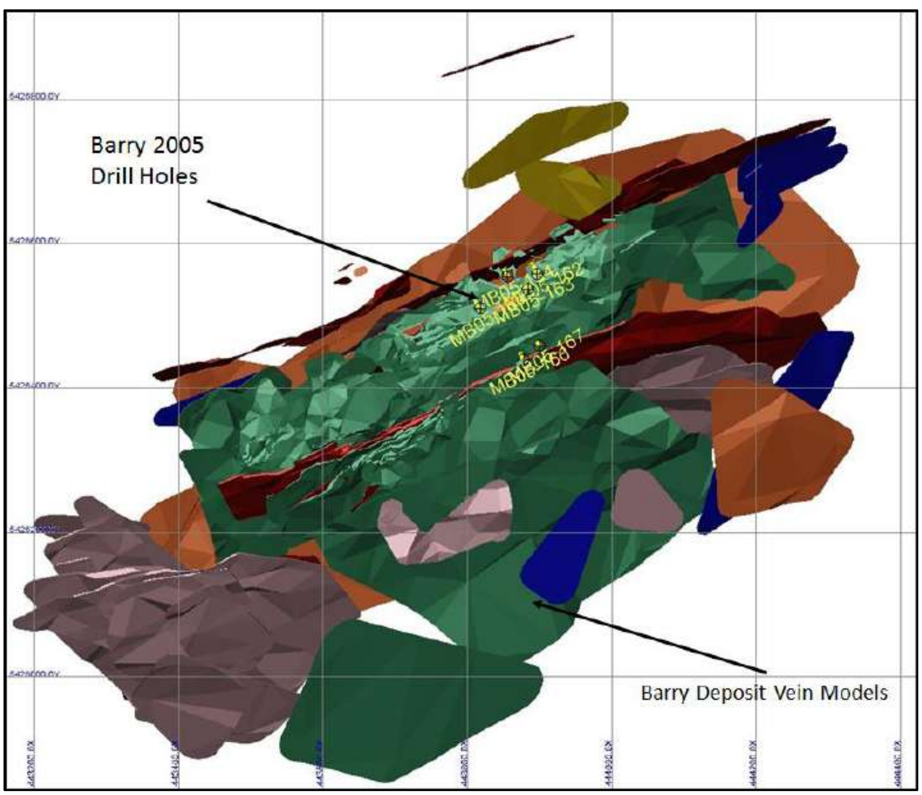


Figure 6-4 Distribution of 2005 Drill Holes in the Barry Deposit Area



6.2.11 Work done by Murgor during 2006

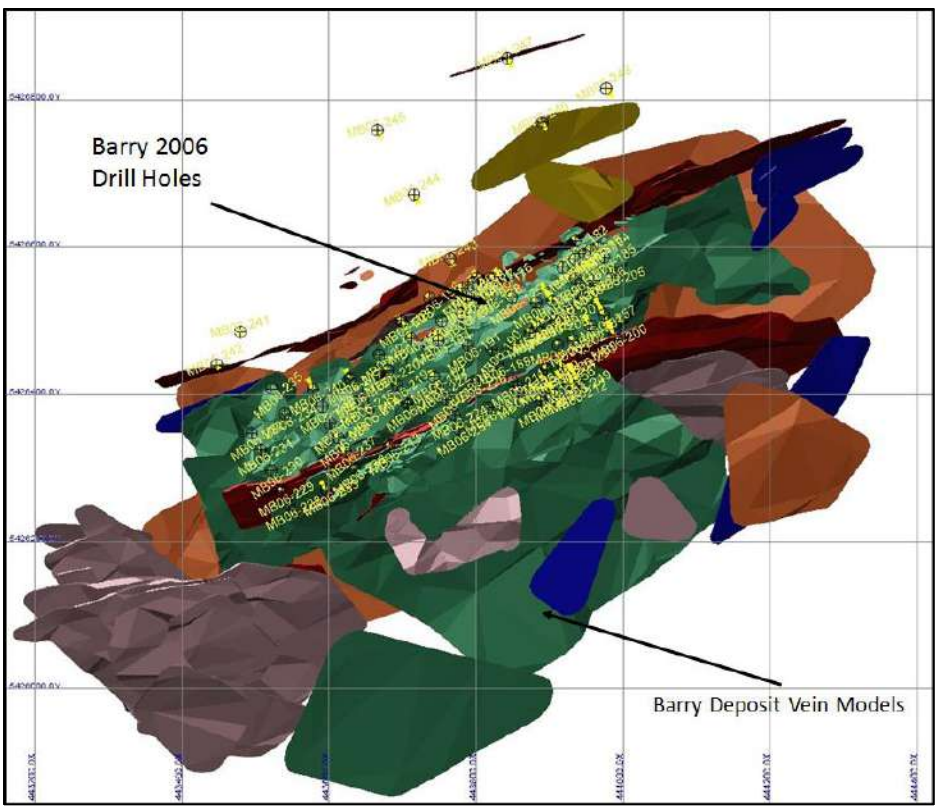
A second drilling campaign was executed in the first months of 2006. A total of 32 holes (MB06-168 to MB06-199) (Figure 6-5) were drilled (totalling 1,409 m) on the Main Zone and tested the SW extension of the Main Zone Area and the Zone 43.

This new drilling campaign permitted to better define the extension of the mineralized zone inside the Main Zone Area and to verify the southwest and northwest extensions of the Main Zone. Some of the holes drilled tested the extension of the Zone 43 located southwest of the Main Zone. They intersected this zone at a depth of up to 50 meters and the known southwest - northeast extension is 130 meters long.

A new interpretation of the mineralized zones and an update of the previously estimated resources were performed. The resource estimate aimed to define mineralization exploitable by open-pit mining (see Section 6.3 below). This new design included the mineralized zones from the Main Zone, the zones 43 and 45, and the southwest extension of the Main Zone.

On December 14, 2006, Métanor announce the signing of an agreement whereby Métanor acquired a 100% interest in the Barry gold deposit of Murgor (see Metanor news release December 14, 2006, which is filed on SEDAR under Metanor's profile).

Figure 6-5 Distribution of 2006 Drill Holes in the Barry Deposit Area



6.2.12 Work done during 2006-2007

A new drilling campaign was completed with a total of 58 holes (total of 5,076 m) (MB06-200 to MB06-257) (Figure 6-5) drilled on the Main Zone and tested the east, north and south deeper extensions of the Main Zone Area and the Zone 43. A total of 4,988 samples were sent to the lab for gold analysis.

This new drilling campaign permitted to better define the extension of the mineralized zone inside the Main Zone Area and to verify the extensions of the Main Zone.

A new interpretation of the mineralized zones and an update of the previously estimated resources were performed. The resource estimate aimed to define mineralization exploitable by open-pit mining. This design comprised of the mineralized zones from the Main Zone, the zones 43 and 45, and the southwest extension of the Main Zone (see Section 6.3 below).

6.2.13 Work done during 2008-2009

In 2008, Metanor completed a drilling campaign of 79 holes (MB-08-258 to MB-08-337) (Figure 6-6) for a total of 9,412 m on the property in order to increase the geological resources of the main mineralized zone and to evaluate the potential at shallow depth of mineralized zones located in the extension towards west of the open pit (Main zone). The majority of those diamond drillholes intersected the extensions of the gold bearing zones of the East zone and the West zone. A total of 5954 samples was taken and analyzed for gold.

Metanor also extended the stripped zone towards the west over a distance towards west of approximately 270 m and over a width of approximately 80 m, between the sections 1015 E and 745 E, allowing to expose on surface approximately 21,500 m^2 of volcanic rocks and an intrusive granitic unit which host the known gold bearing zones. A systematic channel sampling of the new exposed area with spacing of 5m of the north-south lines resulted in a total of 2,280 samples taken and analyzed for gold.

In 2009, 167 holes (MB-09-338 to MB-09-504) (Figure 6-7) were drilled for a total of 19,557 m. This drilling program investigated certain sectors of the Main zone, particularly in the extensions at depth of the Main zone, of the Center zone which represents the extension towards the west of zone 43, the extension of the mineralized zones occurring to the south and between the Main zone (current Pit) and the West zone.

A total of 14,336 samples were sent to the lab for gold assay. In this program, 62 holes were drilled (MB-09-344 with MB-09-399) for a total of 6,550m. This allowed to extend the West zone up to the surface and to consider its extraction by mining with open pit, and also allowed to extend the Main zone of several tens of meters towards the west in the direction of the granitic intrusion.

Then, a bulk sample of 50,000 tonnes was completed in 2007-2008 and a stage of pre-production began on the East zone of the Barry deposit with an aim of evaluating certain mining parameters of the mineralized zones and the profitability of mining these zones according with the choice of mining methods. Given the lack of information at a shallow depth on many sections, the advance in the open pit continued towards the west on several benches at the same time in order to check the continuity at depth of mineralized zones.

During the period of April to June 2010, Metanor engaged SGS-Geostat Engineering to produce a NI 43-101 Report on the promising Barry Open Pit (see Section 6.3 below).

Figure 6-6 Distribution of 2008 Drill Holes in the Barry Deposit Area

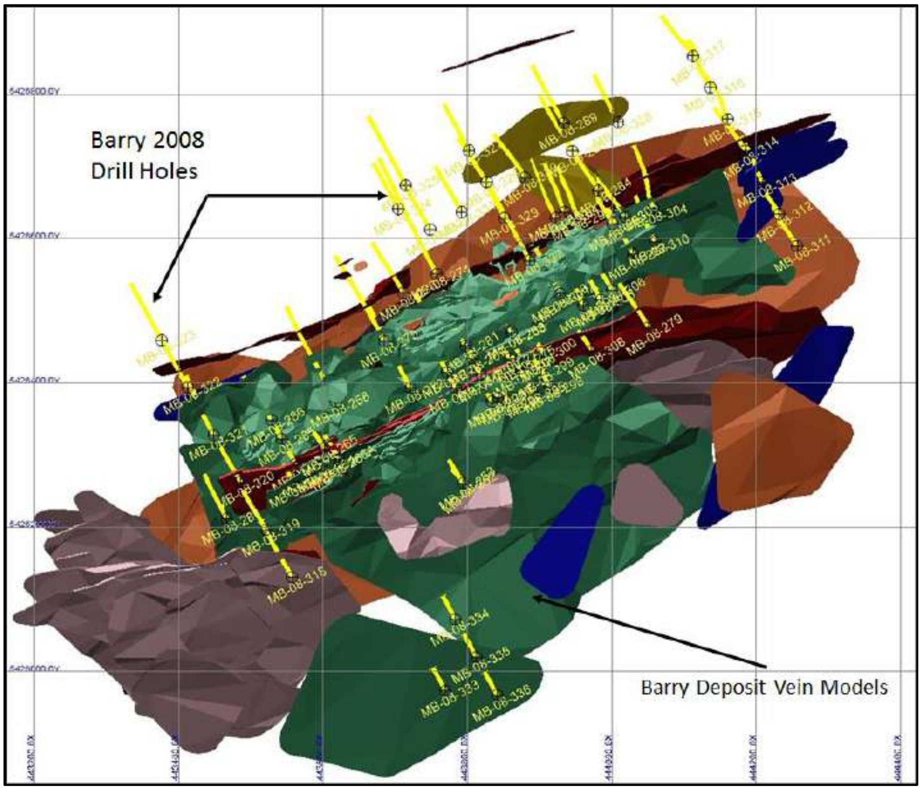
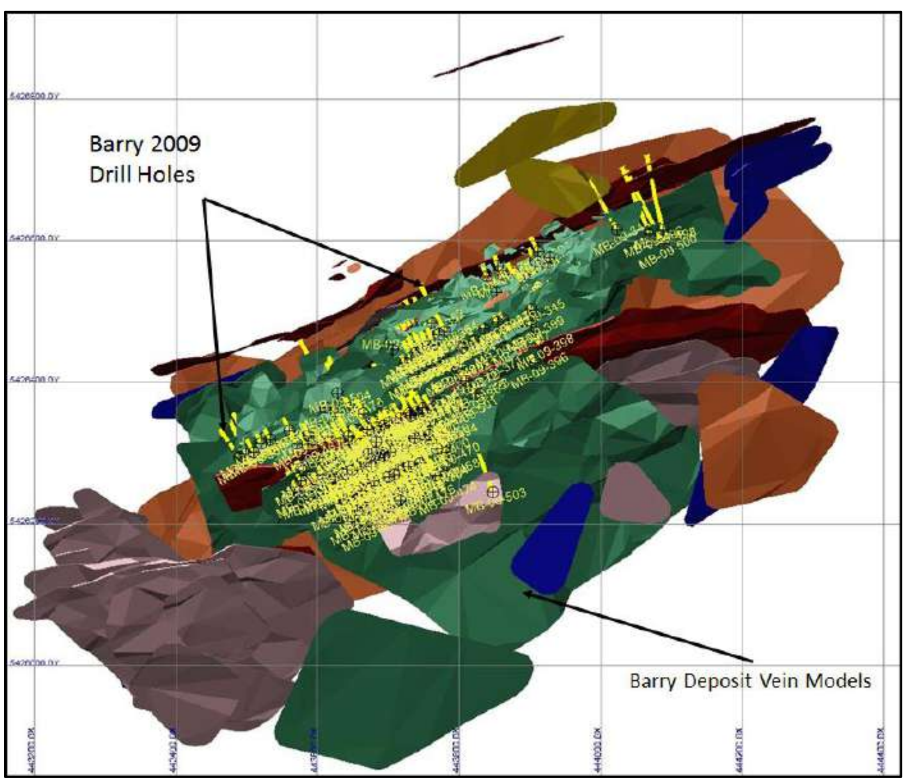


Figure 6-7 Distribution of 2009 Drill Holes in the Barry Deposit Area



6.2.14 Work done during 2009-2011

Metanor has mandated Abitibi Geophysique in 2009 to carry out an Induced Polarization (IP) survey covering parts of the Barry United claims, the Barry Center claims & the Barry West Extension claims of the Barry property. This allowed to detect several anomalies which may coincide with gold bearing zones similar to the Barry deposit.

Between October and December 2009, a complementary resistivity/induced polarization survey was carried out by Abitibi Géophysique on parts of the Barry property. Fifty-two (52) kilometres of IP survey (dipole-dipole, a=25m, n=1 to 6) were carried out to cover extensions of the preceding IP surveys on parts of the Barry United, Barry Center and on the northern block of the Barry Extension West properties. In this area, the Urban volcanic formation is northeast trending and contains several N030° to N045° trending anomalies which are characteristic of disseminated to massive sulphide mineralization.

Magnetic and resistivity/induced polarization surveys were carried out by TMC Géophysique of Val-d'Or on parts of the Barry property. Two hundred twenty-three (223) kilometers of magnetic survey and one hundred ninety-five (195) kilometers of IP survey (dipole-dipole, a=25m, n=1 to 6) were carried out to cover extensions of the preceding IP surveys on parts of the Barry United and Barry Extension East properties. In this area, the Urban volcanic formation is northeast trending and contains several 30° to 45° trending anomalies which are characteristic of disseminated to massive sulphide mineralization.

A total of eighty-nine (89) IP anomalies were detected as new anomalies or like extensions of the anomalies were detected during preceding surveys bringing the total to over 150 anomalies on the property to date. They were correlated with the magnetic pattern oriented WSW-ENE and are numbered BU-1 to BU-23 on the west block and BU-24 to BU-89 on the east block.

On the Barry property surrounding the mining concession, several IP anomalies characteristics of gold bearing mineralization of the vein type were localized on the edge of a resistive zone located to the south-west of the Barry deposit. This resistive zone has the signature of a series of quartz and feldspar porphyry intrusions (QFP) which hosts the various gold bearing bodies constituting the Barry mine (Main zone, zone 43, Center zone and zone 48). These mineralized zones are located to the east of a porphyritic intrusion and in a major deformation corridor (Mazère fault), oriented N060°. Several IP anomalies with strong intensity, similar to those defining the gold bearing zones of the Barry mine, are within or at the edge of the western resistive zone which represents a very promising environment for the search of gold bearing zones of the same type and in the prolongation of those of the Barry mine.

6.2.15 Work done during 2013-2014

In 2013-2014, Metanor completed a drilling campaign of 38 diamond drillholes totalling 12,197 meters on the property in order to investigate some of the 153 IP anomalies detected between 2009 and 2013. The holes have been drilled at distances ranging from more than 1 km up to 7 km from the Barry deposit. The drilling campaign enabled Metanor to investigate two known gold areas (Goldhawk and Moss) to confirm their extension laterally and at depth. It also enabled them to discover 5 new sectors with gold mineralization.

- NW Extension block

A series of subparallel IP anomalies, often with a strong intensity and oriented to the northeast, have been detected in a large deformation corridor of approximately 1.5 km in width. These IP anomalies extend over large distances and coincide with deformation zones containing disseminated to massive sulphides in volcanic units and associated intrusive sills. Five (5) diamond drillholes totalling 1,967 m have intersected many fractured zones containing variable amounts of pyrrhotite and chalcopyrite. A mineralized fault zone has returned anomalous gold values over 16.6m, including an intersection of 0.5 g/t Au over 3.0m (BE-13-03). This mineralized zone has returned several anomalous gold values including an intersection of 3.16 g/t Au over 0.4m (BE-13-04) approximately 750m towards the south-west and an anomalous gold intersection of 0.20 g/t over 8.10m (BE-13-06) approximately 1km further southwest. These results are encouraging and guarantee the continuation of exploration work in this area.

- Goldhawk-Oracle Block

The Bart zone has been investigated to the west and to a vertical depth of 160m with diamond drillhole MB-13-01 which has intersected an heavily mineralized pyrite zone with a gold-bearing intersection of 25.80 g/t Au over 5.6m. The future exploration works should allow the extension of the mineralized gold zone located approximately 3.5 km west of the Barry mine even further to the west. A series of strong IP anomalies have been investigated to the east end of the property and coincides with several subparallel mineralized zones containing pyrite-pyrrhotite and having returned anomalous gold values over widths reaching 10.7 m. A strong IP anomaly oriented east-west located at the south end of the property has been investigated and corresponds to a pyrite rich zone that has returned a gold-bearing intersection of 1.96 g/t in over 2m, including 3.39 g/t Au on 1.0 m.

- Block Moss

A series of IP anomalies crossing the whole claim block over a width of 500 m and located immediately to the west of the Eagle Hill Exploration property have been investigated on a lateral distance of 2 km. In this deformation corridor, several mineralized zones associated with felsic units are altered, fractured and injected with pyrite-quartz veins which have returned anomalous gold intersections over widths of up to 9.5 m at the north-eastern end and up to 300m along the south-west extensions. The longest gold intersection has been obtained in diamond drillhole MB-14-22 which intersected to a vertical depth of 30 m, a mineralized zone returning 2.14 g/t Au over 19.4m, including 5.28 g/t Au over 7.8 m. Approximately 500 m further to the south-west along the deformation corridor, diamond drillhole MB-14-21 has also intersected significant gold mineralization returning anomalous values over a width of 300m including gold intersections of 18.20 g/t Au on 0.5m and 3.39 g/t Au on 1.2m.

- Barry SE Extension

At the east end of this claims block in contact with the Bonterra property, a section of several diamond drillholes was designed to investigate a series of very strong IP anomalies which extend toward the northeast in a large deformation corridor of nearly 1 km in width. These anomalies coincide with sericite-carbonate-quartz mineralized zones containing variable amounts of pyrite-pyrrhotite and chalcopyrite. All These diamond drillholes have all returned at least one gold intersection with anomalous values over widths of up to 9.9 m (MB-13-04) and the best intersection was obtained in the diamond drillhole MB-13-10, which returned 2.38 g/t Au over 3.0 m. The type of alteration observed in this fractured and mineralized belt is similar to the one that found at the Barry mine and this mineralized zone may represent the northeast extension of the mine displaced towards the south by a north-west striking fault.

- Barry United SW Block

A series of IP anomalies extends in a northeast direction over a width of approximately 500 m up to the south-west limit of the property situated approximately 6 km away from the Barry deposit. In this area diamond drillholes have all intersected fractured locally sheared and mineralized pyrite-rich zones. The best gold intersections have been obtained in hole MB-13-14 which returned 14.8 g/t in over 0.5 m 1 km to the south-west of the Barry deposit, in the hole MB-13-16 which returned an intersection of 2.94 g/t in over 0.5 m 1.5 km to the south-west of the Barry mine and in the hole MB-13-19 which has returned an intersection of 11.75 g/t Au over 0.9m approximately 5 km south-west of the Barry mine. These widely spaced gold intersections were obtained along the south-west extension of the Barry deposit and indicate the possibility of finding significant gold mineralization in those areas which certainly require additional exploration work.

6.3 Historical Mineral Resource Estimates – Barry Property

The following is a description of previous ("historic") resources estimates completed on the Barry Property. The historic Mineral Resource Estimates presented in this report are only presented for information purposes as they represent material historical data which have previously been publicly disclosed. Bonterra has not done sufficient work to classify the historical estimates as current Mineral Resources or Mineral Reserves and Bonterra is not treating the historical estimates as current Mineral Resources or Mineral Reserves.

The reader is cautioned that the Authors have not done sufficient work to pass detailed comment on the historical Mineral Resource Estimates and classification presented here and hence the Mineral Resources are considered historic. While these estimates were prepared, in accordance with National Instrument 43-101 and the "Canadian Institute of Mining, Metallurgy and Petroleum Standards on Mineral Resources and Mineral Reserves Definition Guidelines" in effect at the time, there is no assurance that they are in accordance with current CIM 2014 Mineral Resource reporting standards and these Mineral Resource estimates should not be regarded as consistent with current standards or unduly relied upon as such.

6.3.1 February 07, 2006

On February 07, 2006, Murgor announce the results of a National Instrument 43-101 compliant resource estimate for the Main Zone of the Barry Deposit (see Murgor news release February 07, 2006, which is filed on SEDAR under Murgor's profile).

The resource estimate was carried-out by Geostat Systems International Inc. on the Main Zone of the Barry Gold Deposit only, where mineralization is best defined. Mineralized Zones 43, 45, 48 and 51 of the Barry deposit have not been taken into account due to a lack of drill information. Geostat calculated an indicated gold resource of 27,800 ounces (176,000 mt at 4.92 g/t Au) and an inferred gold resource of 18,700 ounces (118,000 mt at 4.90 g/t Au) (Deschênes, 2006a). The gold resource was estimated by kriging on regular blocks inside the mineralized envelopes. Gold values were assigned to the computer generated blocks (3 m. in easting by 3 m. in northing by 3 m. in elevation) using 1.5 m. composite samples calculated from gold assay datasets of all previous drilling on the deposit. The resource estimate was calculated using a cut-off grade of 2.0 g/t Au and a specific gravity of 2.80 g/cm3. Mineralization of the Main Zone lies from surface to a vertical depth of 30 meters and was delineated over a strike length of approximately 200 meters and a width of 70 meters. Due to its near surface occurrence, the mineralized zone is amenable to open pit mining. No pit optimization was applied in the above mineral resources.

6.3.2 April 10, 2006

On April 10, 2006, Murgor announce the results of a National Instrument 43-101 compliant resource estimate for the Barry Deposit (see Murgor news release April 10, 2006, which is filed on SEDAR under Murgor's profile). Since the results of a first resource estimate were released on the Barry Deposit (see press release, February 07, 2006), a total of 32 drill holes (1,409 meters) were completed on the deposit and a number of drill holes that were left un-sampled by previous joint venture partners were assayed. The April, 2006 resources estimate calculation presented here takes the new data into account.

The resource estimate was carried-out by Geostat Systems International Inc. on the Main Zone and adjacent parts of Zones 43 and 45 of the Barry Gold Deposit. Mineralized Zones 48 and 51, and parts of Zones 43 and 45 have not been estimated due to a lack of drill information. The new resource estimate represents a 122% increase in the total gold resource calculated in February of 2006. The new resource estimate as calculated with a high cut-off grade of 2.0 g/t Au. Geostat calculated an indicated gold resource of 35,500 ounces (269,000 mt at 4.10 g/t Au) and an inferred gold resource of 67,600 ounces (468,000 mt at 4.68 g/t Au) (Deschênes, 2006b).

The gold resource was estimated by kriging on regular blocks inside the mineralized envelopes. Gold values were assigned to the computer generated blocks (3 m. in easting by 3 m. in northing by 3 m. in elevation) using 1.5 m. composite samples calculated from gold assay datasets of all drill holes on the deposit. The resource estimate was calculated using a specific gravity of 2.80 g/cm3. The mineralization lies from surface to a vertical depth of 50 meters and was delineated over a strike length of approximately 500 meters and a width of up to 100 meters. Due to its near surface occurrence, the mineralized zone is amenable to open pit mining. No pit optimization was applied in the above mineral resources.

6.3.3 May 8th, 2007

In May, 2007, the Gold Resources for the Barry deposit were re-evaluated by Systèmes Géostat International Inc. in compliance with NI 43-101 and are now estimated at 52,300 oz Au of Indicated Resources (385,000 t at 4.23 g/t Au) and 126,600 oz Au of Inferred Resources (966,000 t at 4.07 g/t Au) in zones 43, 45 and the southwest extension of the Main Zone (Camus, 2007). This resource re-evaluation is incorporating all recent drill results performed by Murgor (summer 2006) extending the mineralized zones almost 300 meters in a southwesterly direction. This resource re-evaluation was performed with a 2 g/t Au Cut off and using the inverse distance method. A major portion of the resources are at, or near surface and are considered open-pitable, thereby reducing operating costs significantly (see Metanor news release May 8, 2007, which is filed on SEDAR under Metanor's profile). No pit optimization was applied in the above mineral resources.

6.3.4 September 21, 2010

On September 21, 2010, Metanor received SGS Geostat‟s results and publicly disclosed the resource statement. Métanor announced the results of a new resources calculation of the Barry Deposit (see Metanor news release September 21, 2010, which is filed on SEDAR under Metanor's profile).

The Gold Resources above 0.5 g/t for the Barry deposit were re-evaluated by SGS in compliance with NI 43-101 and was estimated at:

- 309,500 oz Au of Indicated Resources (7,701,000 t at 1.25 g/t Au)
- 471,950 oz Au of Inferred Resources (10,411,000 t at 1.41 g/t Au)

The resource was calculated for the Main, West, 43 and 45 mineralized zones which are included in a wide north-east striking deformation corridor. This resource re-evaluation is incorporating all recent drill results performed by Metanor in 2008-2009 (245 ddh's totalling 29,075m) and allowed to extend the mineralized zones almost 1,3km in a southwest and northeast direction. The mineralized corridor is open laterally and at depth. This resource re-evaluation was performed with a 0.5 g/t Au Cut-off and using the inverse distance method. High values were cut to 35 g/t Au and a fixed density of 2.8 g/cm was used for this calculation. A major portion of the resource is at, or near surface and is considered open-pitable, thereby reducing operating costs significantly. No pit optimization was applied in the above mineral resources.

All the computerized data was provided to SGS including all previous data and new data collected after extensive work performed by Metanor since the acquisition and which include extensive channel sampling, benching and mining in 3 open pit, a diamond drilling program executed in 2008 and totalling 9,226m in 77 holes (MB-08-258 to MB-08-337) and a drilling program completed in 2009 and totalling 168 holes (MB-09-344 to MB-09-504) totalling 19,848 m. This drilling campaign allowed the extension of the Main Zone towards the west and to extend the Centre Zone over a surface length of more than 500 m, between surface and an approximate vertical depth of 100 m. The Centre Zone is the western extension of zone 43 and is located on the Hanging Wall side of the deformation corridor of Barry and localized approximately 80 m to the south of the Main zone.

6.3.5 June 22, 2016

On June 22, 2016 Metanor received an updated Mineral Resource estimate on the Barry Deposit. The independent mineral resource estimate was prepared by GoldMinds, which updated the previous resource estimate of 2010 (see Metanor news release June 22, 2016, which is filed on SEDAR under Metanor's profile).

The 2016 estimate is based on a total database of 1,100 diamond drill holes and rock saw channel samples for 79,055 meters with 51,524 assays.

This update takes the resource to 209,400 ounces gold in Measured category grading 1.21 g/t in 5.383 Million tonnes, 96,000 ounces gold in Indicated category grading 0.98 g/t in 3.037 million tonnes and 1.046 million ounces grading 1.02 g/t Au in 31.92 million tonnes in inferred resources using a cut-off grade of 0.50g/t.

A total in-pit resources of 347,350 ounces at 2.07 g/t in 5.24 million tonnes is calculated using parameters for direct shipping of mineralized material to Bachelor Lake mill where 45% is in the measured and indicated category and 55% is in the inferred category.

Highlights

- Important increase in confidence level of the mineralization at Barry;
- 209,400 ounces in the measured category in the base case resource estimate above 0.5 g/t;
- 96,000 ounces in Indicated category in the base case resource estimate above 0.5 g/t;
- 1.046 million ounces in the inferred category in the base case resource estimate above 0.5 g/t;
- 347,350 ounces of inpit resources at 2.07 g/t in 5.24 million tonnes with a strip ratio of 2.29 to 1;
- Deposit open in all directions;
- Drill hole results of the 2013 campaign outside the Barry pit perimeters are not taken into account in the current inferred mineral resources;
- Screen metallic samples for one mineralized zone shows 11% more gold than standard fire assay;
- Higher gold grade mineralization occurs in Basalt on edges of Diorite as well as Feldspar Porphyry.

Estimation and classification

Capping at 35 g/t on assays, density to convert volume to tonne is 2.8.

These upgraded Resource Estimates encompass data from surface to a depth of 250m within the mineralized envelope. 3D envelopes of barren rocks (Diorite and FP) has been done to avoid smearing and maintain integrity of estimates with the domains.

The estimation of 3m x 3m x 3m blocks was made with capped to 35 g/t assays and composites of 3 meters.

Inverse square of the distance is used with 3 different search ellipsoid as well as different parameters in each pass. The first ellipsoid has a long axis of 50m intermediate 10 meters and small of 5 meters, the second is 75 m, 15 m and 10 meters while the third has 150 m long axis, 50 m intermediate and 25 m short axis.

Direction of the long axis is UTM 84 degrees North with an inclination of 19 degrees and 45 degrees.

In clear: the long axis plunge down 19 degrees at 84 north, intermediate 45 degrees south west and the short axis plunge 354N at 71 degrees.

The estimation was done in 3 pass where for the first pass: a minimum of 6 composites and maximum of 12 composites limited with 3 from the same hole, a minimum of 6 composites and maximum of 12 composites limited with 3 from the same hole in the second pass and a minimum of 1 composite and maximum of 12 composites limited with 3 from the same hole for the third pass.

The estimation ellipsoid are the same for the classification where a minimum of 2 holes in the ellipsoid are required for measured and indicated and one for the inferred. Search ellipsoid were validated with geostatistics and visually where mineralized zones showing up to 300 meters strike length.

Finally, the 2016 drilling of the western extension has brought a new zone in the resource model. This zone deserves additional drilling to define its size and increase its level of confidence as well as extension of mineralisation around the existing pit and other targets on the property.

The significant change from the 2010 resource model is the fact that high grade gold mineralization is East West oriented gently dipping Eastward along the regional North East trend. The high grade zone are associated with intrusive rocks.

6.4 Historic Production – Barry Property

Metanor started mining the Barry Deposit in April 2008 through a 50,000 tonne bulk sample. Between July 2008 and October, 2010, a total of 617,489 metric tons of ore has been treated to the Bachelor mill, and 123 gold bars totaling 43,682 oz of gold and 5,727 oz of silver had been sold to the Royal Canadian Mint. Consequently, the average grade for that period was of 2.2 g/t Au (Duplessis and Rousseau, 2016.). Metanor suspended the operation due to declining gold prices.

6.5 Gladiator Property

There has been little significant exploration on the Gladiator Property (formerly the Eastern Extension property) (Dzick and Carlson, 2012) prior to Bonterra. In the late 1990's to early 2000's, work was conducted on the Gladiator Property by Xemac Resources ("Xemac"). In 1996, Xemac commenced work with line cutting and geophysical surveys covering the entire Gladiator Property. These surveys revealed there are distinct magnetic (MAG), electromagnetic (VLF) and electrical (IP) anomalies on the Gladiator Property. Xemac drilled the Gladiator Property which led to the discovery gold anomalies. Xemac drilled 8,650 metres of core in 59 holes (1997 to 2001) (Figure 6-8) (Table 6-2).

Figure 6-8 Location of the Historic (1997 – 2001) Drill holes with respect to the Current Gladiator Deposit

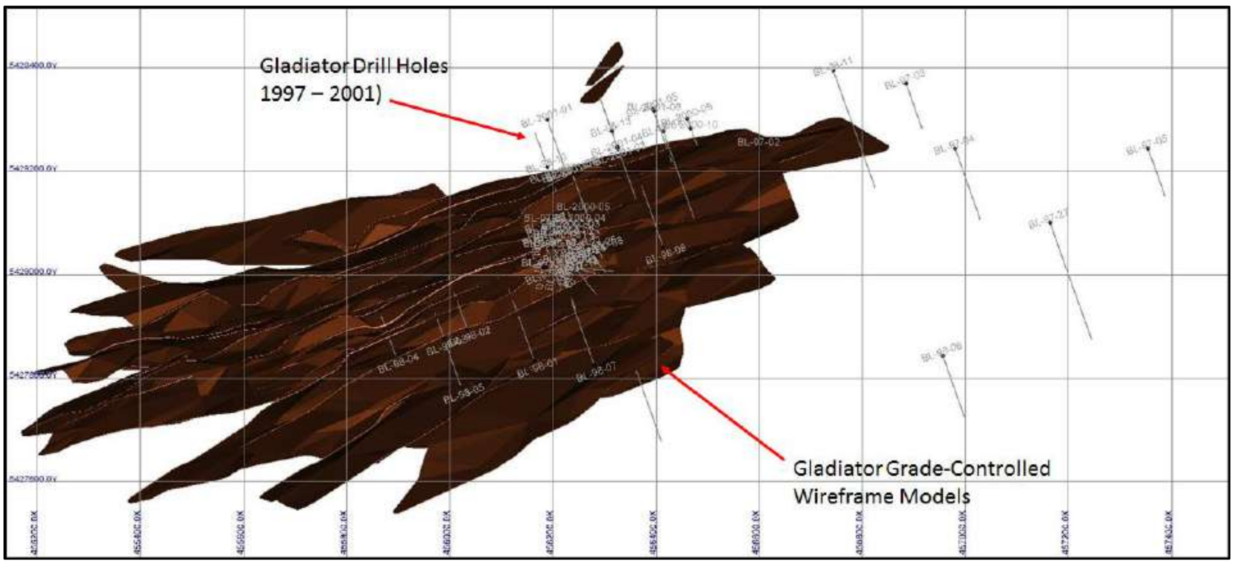


Table 6-2 1997-1998 DDH Significant Assay Results

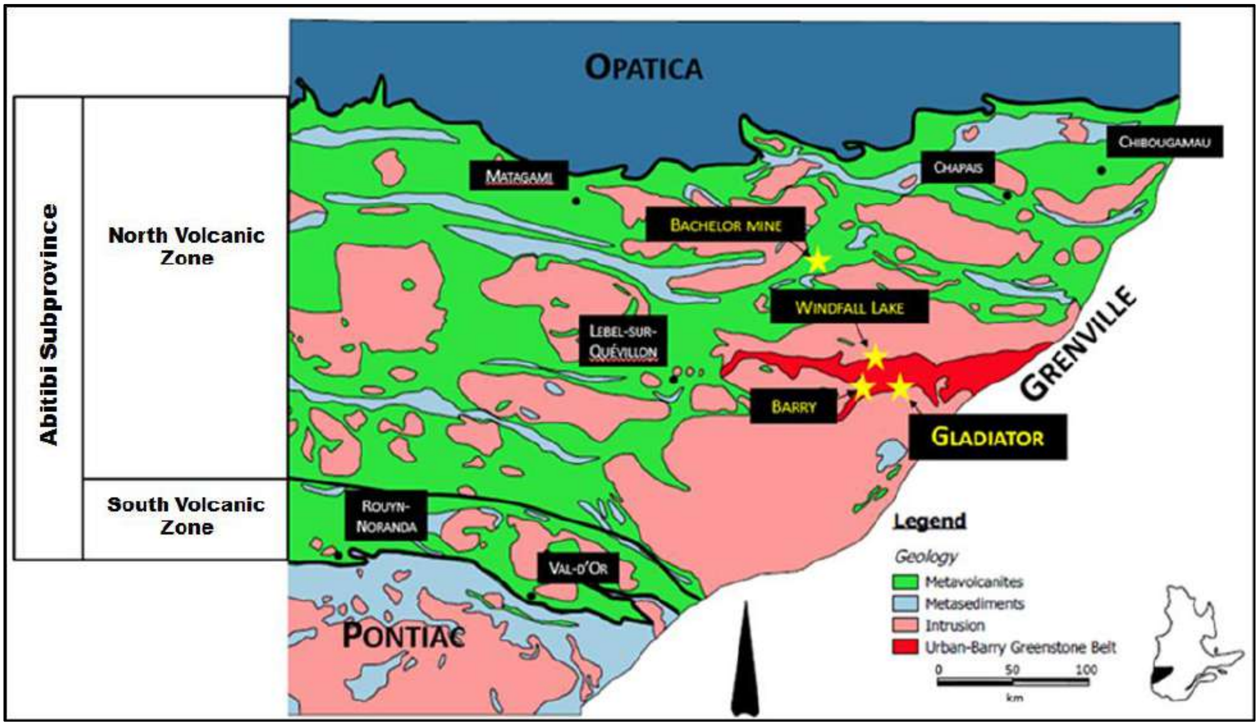
HOLE NO.	DRILL DATE (mm/yy)	ZONE	FROM metres	TO Metres	LENGTH metres	AU g/T	AU oz/t
BL-97-01	04-97	2	104.50	114.50	10.00	0.07	0.002
		1	168.50	190.50	22.00	8.31	0.243
		Incl.	168.50	181.70	13.20	13.50	0.394
		Incl.	174.00	175.70	1.70	79.88	2.330
BL-97-06	11-97	2	25.91	26.52	0.61	8.40	0.245
		2	31.24	34.32	3.08	32.05	0.935
BL-97-07	11-97	2	68.28	69.80	1.52	2.53	0.074
BL-97-08	11-97	---	36.58	37.25	0.67	3.37	0.098
		2	42.67	43.74	1.07	1.36	0.040
BL-98-09	11-97	---	46.33	47.24	0.91	3.73	0.109
		2	66.45	67.21	0.76	11.57	0.337
BL-97-10	11-97	---				NSA	
BL-97-11	11-97	3	94.18	95.40	1.22	6.04	0.176
BL-97-12	11-97	2	54.35	54.99	0.64	3.56	0.104
BL-97-13	11-97	2	57.15	59.19	2.04	20.58	0.600
BL-97-14	11-97	2	75.29	77.11	1.82	1.94	0.057
BL-97-15	11-97	----	44.35	45.42	1.07	6.19	0.181
		----	98.76	99.67	0.91	2.86	0.083
BL-97-16	11-97	2	15.45	28.04	12.59	12.65	0.369
		Incl.	17.68	21.24	3.56	33.91	0.989
		And	26.97	28.04	1.07	19.72	0.575
BL-97-17	11-97	----	14.02	14.48	0.46	2.78	0.081
		2	24.08	26.06	1.98	17.56	0.512
BL-97-18	11-97	---	8.53	9.30	0.77	4.32	0.126
		2	20.88	22.04	1.16	7.54	0.220
BL-97-19	12-97	3	60.05	63.09	3.04	0.13	0.004
BL-97-20	12-97	3				NSA	
BL-97-21	12-97	3	67.97	69.74	1.77	0.35	0.010
BL-97-22	12-97	2	37.00	39.47	2.47	0.03	0.001
BL-97-23	12-97	2	48.77	51.05	2.28	0.23	0.006
BL-97-24	12-97	2	55.99	60.66	4.67	5.32	0.155
		Incl.	57.91	58.67	0.76	27.85	0.812

BL-97-25	12-97	----	54.56	61.57	7.01	0.35	0.010
		----	89.31	92.05	2.74	0.26	0.008
		2	93.45	104.09	10.64	3.04	0.089
		Incl.	99.97	100.58	0.61	49.20	1.435
BL-97-26	12-97	2	54.19	55.11	0.92	0.78	0.023
BL-97-27	12-97	---				NSA	
BL-98-01	01-98	----	96.16	97.54	1.38	0.49	0.014
		----	108.36	110.64	2.28	0.26	0.008
		----	120.70	124.05	3.35	0.36	0.011
		----	132.28	133.50	1.22	0.89	0.026
		----	206.65	207.72	1.07	8.63	0.095
		2	216.41	217.02	0.61	2.04	0.059
		2	218.85	219.76	0.91	1.80	0.052
		----	235.31	238.35	3.04	0.19	0.006
BL-98-02	01-98	----	46.02	46.63	0.61	0.32	0.009
		2	97.84	98.60	0.76	0.47	0.014
		2	101.80	102.44	0.64	3.74	0.109
BL-98-03	01-98	----	61.26	62.79	1.53	0.75	0.022
		----	67.06	69.49	2.43	0.36	0.011
		2	97.32	106.07	8.75	0.57	0.017
		Incl.	97.32	101.80	4.48	0.89	0.026
		----	107.29	108.81	1.52	0.55	0.016
		----	126.49	127.10	0.61	1.17	0.034
BL-98-04	01-98	----	20.73	21.95	1.22	0.38	0.011
		----	29.26	29.87	0.61	1.78	0.052
		----	35.36	37.19	1.83	0.28	0.008
		----	39.01	41.76	2.75	0.69	0.020
		----	46.94	48.16	1.22	9.77	0.285
		----	56.08	57.30	1.22	0.65	0.019
		----	58.37	61.69	3.32	1.64	0.048
		----	73.15	77.11	3.96	2.73	0.080
		Incl.	73.15	74.07	0.92	7.53	0.220
		2	85.65	91.20	5.55	0.29	0.009
		----	100.89	101.65	0.76	1.42	0.041
BL-98-05	01-98	----	11.89	12.50	0.61	5.36	0.156
BL-98-06	01-98	---				NSA	
BL-98-07	01-98	2	273.80	274.41	0.61	12.00	0.350
BL-98-08	01-98	2	159.72	160.02	0.30	0.72	0.021
BL-98-09	11-98	Abandoned					
BL-98-10	11-98	---	168.55	169.32	0.77	3.99	0.116
		---	192.02	193.70	1.68	5.59	0.163
		---	223.72	226.16	2.44	1.48	0.043
		---	264.26	266.40	2.14	3.25	0.095
		---	276.97	277.67	0.70	1.87	0.055
		---	284.38	284.99	0.61	1.52	0.044
		---	300.23	301.14	0.91	3.64	0.106
		---	306.93	309.37	2.44	1.89	0.056
		---	326.14	327.36	1.22	2.02	0.059
		---	341.68	342.60	0.92	4.17	0.122
		---	424.28	425.50	1.22	6.13	0.179
		2	449.58	450.19	0.61	89.73	2.617
BL-98-11	11-98	---				NSA	
BL-98-12	11-98	2	26.21	27.13	0.92	1.18	0.034
			31.39	32.31	0.92	0.49	0.014
BL-98-13	11-98	2	171.75	172.21	0.46	0.04	0.001

7 GEOLOGICAL SETTING AND MINERALIZATION

The Urban-Barry Property lies in the heart of the 200 km long, east-west trending, Urban-Barry Greenstone Belt. The Urban-Barry belt is a narrow E-W belt comprising mafic volcanic rock units in the Northern Volcanic Zone (NVZ) of the Abitibi greenstone belt (Bandyayera et al., 2002, Rhéaume & Bandyayera, 2006, Kitney, 2009).

Figure 7-1 Regional geology of the Abitibi Greenstone Belt Showing the Location of the Urban-Barry Belt and Barry and Gladiator Gold Deposits (modified from Rhéaume & Bandyayera, 2006)

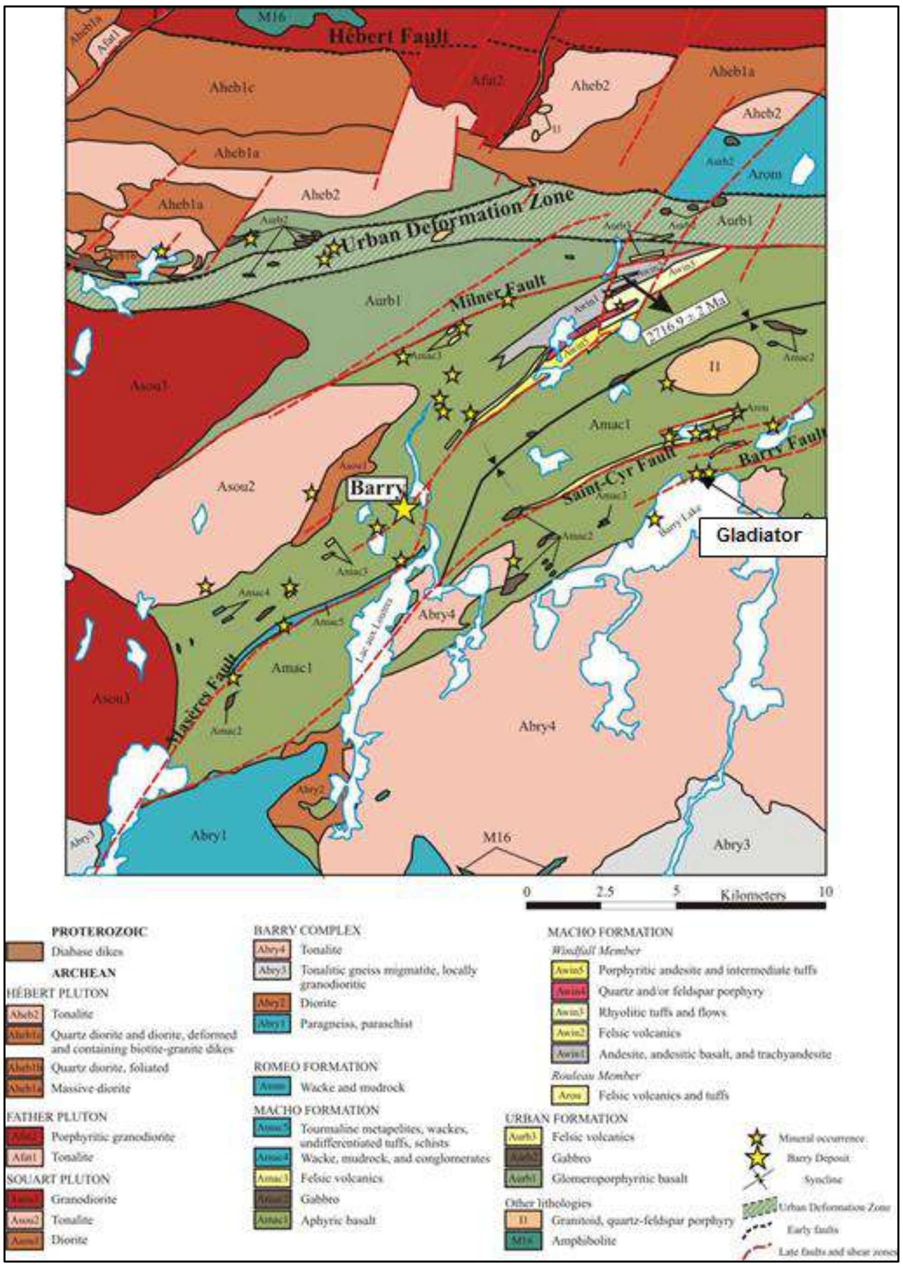


The Urban-Barry belt comprises mainly mafic volcanic rocks and isolated felsic volcanic rocks with ages ranging from 2791 Ma to 2707 Ma (Rhéaume and Bandyayera, 2006) interbedded with, or overlain by, volcanoclastic sedimentary rocks (Figure 7-2) (Kitney, 2009). The Lac aux Loutres region, containing the Barry and Gladiator Deposits, is comprised of mafic volcanic flows, co-magmatic gabbro sills, local felsic flows, lapilli and welded tuffs, and sedimentary rocks intruded by tonalite to granodiorite plutons, diorite dikes, and feldspar and/or quartz porphyry dikes (Figure 7-2). The mafic volcanic rocks are basaltic to andesitic, and form part of the Urban, Macho (which hosts the Barry and Gladiator Deposits), and Roméo formations. Mafic volcanic rocks consist of massive and pillowed flows that are commonly vesicular, porphyritic, brecciated, and locally contain phenocrysts of plagioclase. Co-magmatic gabbro sills can form bodies measuring 100-600 metres wide and 400-3000 metres long. Felsic flows are dacitic to rhyolitic in composition, equigranular and locally porphyritic. They form thin horizons that vary over 50-200 metres in width and 300-1000 metres in length. Felsic volcanic rocks from the Windfall member of the Macho Formation yield a U-P b zircon age of 2716.9 ± 2 Ma. Sedimentary rocks in the region include conglomerates composed of volcanic and intrusive rock fragments, and locally siltstone, argillite, and wacke. Intrusive rocks consist of the Archean Father, Hébert, and Souart plutons, and the Barry complex, which are locally cut by Proterozoic diabase dikes.

Rocks in the region were deformed during the 2.71-2.66 Ga Kenoran orogeny, giving them a dominant east-west trend (Kitney, 2009). The regional foliation generally strikes NE to ENE with a variable dip from

30 to 85º SE. Associated regional folds are generally isoclinal with steeply plunging axes. The three main fault sets present in the region are oriented NE-SW, E-W, NNE-SSW. The NE- trending faults, are characterized by an intense, and locally mylonitic, foliation with associated minor brecciated and silicified wall-rocks and contain subvertical stretching lineations. This set of structures is cross-cut by E-trending shear zones. The NNE-trending faults are generally brittle structures cross-cutting the other two fault sets and they are interpreted as late features. These faults have a sinistral sense of offset (from several centimetres to metres), with lineations plunging 45º to the NE. Rocks are generally metamorphosed to the greenschist facies, but locally conditions reached the amphibolite facies in zones of intense deformation or adjacent to intrusions.

Figure 7-2 Simplified Geology Map of the Urban-Barry Belt - Picquet and Mesplet Lakes (SNRC 32G/04 and 32B/13; modified after Kitney, 2009), locating the Barry and Gladiator Deposits.

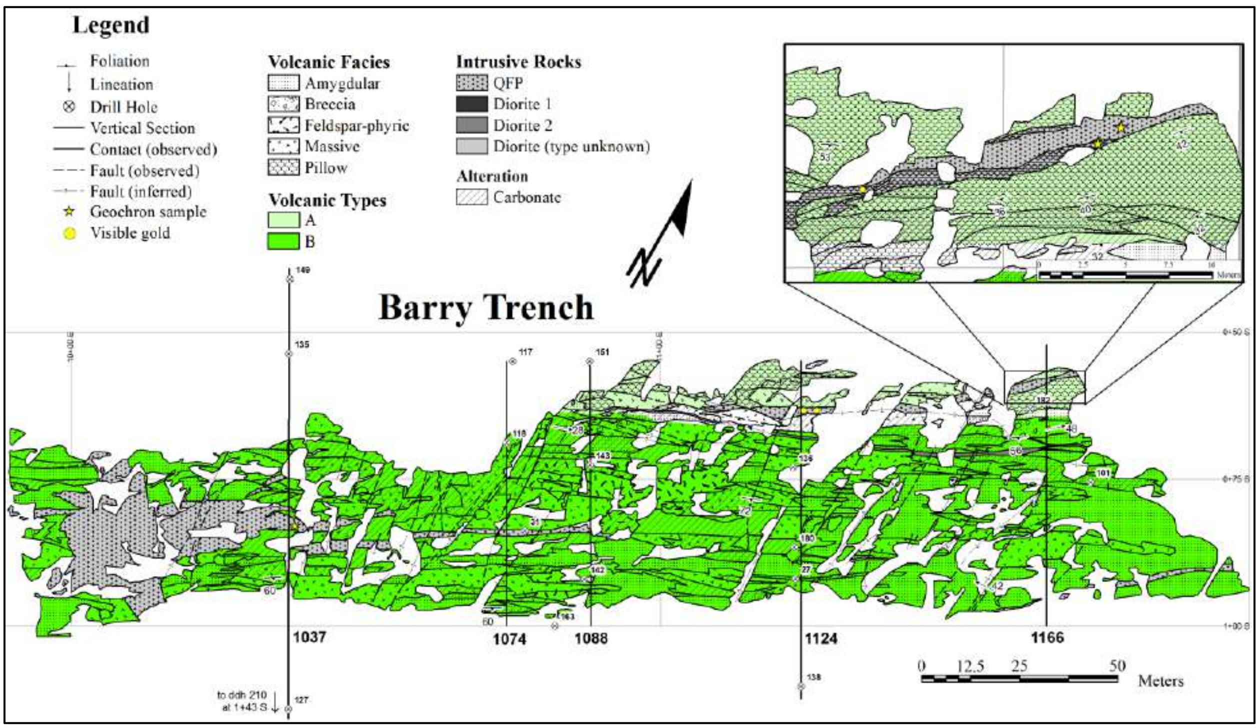


7.1 Property and Deposit Geology

7.1.1 Barry Property

Gold mineralization in the Barry deposit occurs in albite-carbonate-quartz veins and in altered host rocks, which are exposed in a trenched surface 50 m (NW to SE) by 200 m (NE to SW) (Kitney, 2009). The mineralized veins are hosted mainly in volcanic rocks of the Macho Formation, which have been locally pervasively altered to carbonate. The generally N60ºE-striking, 45ºSE dipping volcanic units are folded, foliated, and cut by intermediate to felsic intrusions of various geometries and ages (Figure 7-3, Figure 7-4). The main mineralized zone is bound by an early N55-60ºE-striking, 58ºSE-dipping shear zone to the north and by a quartz monzonite intrusion to the south and is truncated and offset by various late brittle faults.

Figure 7-3 Simplified Geology Plan Map of the Barry Deposit Showing the Locations of Several Drill Holes and Cross Sections Studied in Detail (from Kitney, 2009).



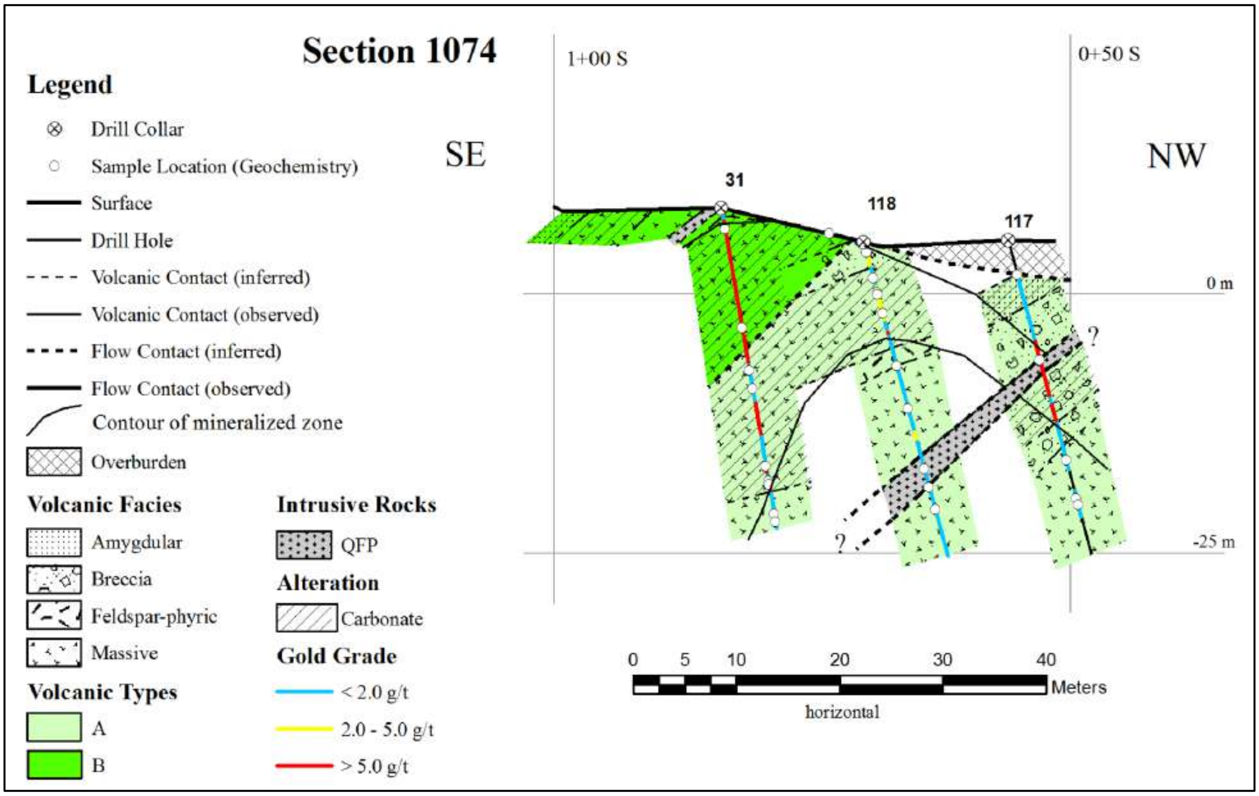
Mafic Volcanic Rocks

The mafic volcanic rocks exhibit various volcanic structures including pillows, breccias, amygdules, as well as being massive. Locally, feldspar- phyric and tuffaceous units were observed. The pillows are weakly flattened and range in size from 30 cm to 3 m along their long axes.

The brecciated units comprise sub-rounded fragments (1-30 cm long) of massive volcanic rocks and minor amygdular rocks. The amygdules (1-3mm in diameter) are round to slightly elongated and are commonly filled with carbonate and quartz. Massive flows and locally amygdular units are enriched in disseminated magnetite. The feldspar-phyric units contain up to 30% subhedral plagioclase phenocrysts up to 3mm in length. Tuffaceous units are up to 1m thick with graded bedding. These contain crystal fragments of plagioclase up to 2 mm in length and are found only in core samples at depths greater than 30m, with graded bedding indicating an upward younging direction. Primary contacts between these facies are generally gradational to sharp and the sequence forms a coherent volcanic succession. These rocks have been deformed, hydrothermally altered (locally pervasively), and metamorphosed, which makes it difficult to identify the composition of their protoliths.

Based on geochemical composition of volcanic units and on the mineralogical composition of the least altered samples (i.e, with < 7ppb Au and minimal hydrothermal alteration associated with the auriferous event), two distinct types of volcanic flows were indentified and will be further referred to as types A and B. The least altered Type A rock is composed mainly of plagioclase (70%), chlorite (15%), epidote (10%), quartz (2-5%), carbonate (1-2%), biotite (1-2%), pyrrhotite (1-2%), ilmenite (trace-1%), muscovite (trace), pyrite (trace), and chalcopyrite (trace) (e.g. sample 210-74.00). The least altered Type B volcanic rock has similar amounts of plagioclase (64%), quartz (2%), carbonate (1-3%), biotite (5%), ilmenite (1%), and pyrite (trace-1%), but higher abundance of epidote (15%), muscovite (4%), and magnetite (trace), and lower abundance of chlorite (3%).

Figure 7-4 Simplified NW-SE Vertical Cross Section of the Barry Deposit along Grid line 1074 (see Figure 7-3 above) (from Kitney, 2009).



Intrusive Rocks

Three distinct major types of intrusive rocks were identified at the Barry Property, based on their mineral composition and igneous textures: (a) diorite, (b) quartz feldspar porphyry (QFP), and (3) quartz monzonite (Figure 7-3). These rocks have been variably deformed, hydrothermally altered, and metamorphosed, but generally the identification of the protoliths is straightforward (Kitney, 2009).

Three distinct types of diorite dikes cut the mafic volcanic rocks in the trenched surface: a 10cm-wide fine-grained dike that strikes approximately N70ºE and dips 70º S (diorite 1); a 30cm-wide fine-grained dike containing mafic laths >1mm in size that strikes N60-70ºE and dips approximately 50º S (diorite 2); and fine-grained dikes (up to 55cm wide) along the margin between QFP dikes and the mafic volcanic rocks in the surface trench (diorite 3). In the eastern portion of the trenched zone, the diorite 1 and 2 dikes crosscut one another and are offset by an early fault, and locally contain carbonate alteration typical of the mineralized zones. Diorite 3 dikes in the margin of the QFP are cut by albite-carbonate-quartz veinlets and veins (associated with gold mineralization) ranging in width from 0.2mm wide to 2cm, contain carbonate alteration typical of the mineralized zones (carbonate-quartz-pyrite), and locally contain free gold. The presence of the carbonate alteration, free gold, and albite-carbonate-quartz veins that cut the diorite 3 indicate that these dikes pre-date the gold mineralizing event. A pre-ore diorite 3 dike in the north-eastern section of the trench was selected for dating to constrain the maximum age of gold mineralization. All diorite dikes are weakly foliated, as seen in the elongation and alignment of plagioclase, carbonate, and biotite laths.

The diorite 1 dike comprises 30-60% plagioclase laths (0.1mm by 0.05mm in size, identified as albite using XRD), whose cores are locally replaced by trace fine-grained muscovite and sinuous crystal aggregates of chlorite (5-30%) and biotite (trace-8%). Magnetite (trace-1%) is present as subhedral to euhedral cubic crystals (30-55μm in size) and trace ilmenite forms laths (60μm by 7μm in size) disseminated throughout the rock. Corroded zones of magnetite and ilmenite are filled with chlorite. Embayment in plagioclase, chlorite, biotite, and muscovite are filled with carbonate (25-30%) and quartz (trace-3%, up to 0.1mm in size). Pyrite (1-3%) occurs as euhedral cubic to subhedral crystals approximately 20μm in diameter that are spatially associated with carbonate crystals, and fill the embayments in plagioclase, chlorite, and biotite. Locally ilmenite is present as inclusions and filling fractures in pyrite. Trace rutile and sphalerite fill corroded zones in pyrite. Epidote (trace-3%) occupies embayments in plagioclase, chlorite, biotite and carbonate.

The diorite 2 dike is composed mainly of plagioclase laths (55-75%; approximately 0.2 mm in size, identified as albite using XRD and microprobe analysis) and minor euhedral crystals quartz (trace to 2%; approximately 30 μm in size). Chlorite (trace-5%) and biotite (trace-15%) laths (0.08- 0.24mm in size) fill cleavage planes of one another, and embayments in plagioclase laths. Corroded zones of plagioclase and quartz are filled with muscovite laths (trace-2%), and carbonate (10-20%). Sub-rounded crystals of magnetite, and aggregates and isolated prismatic grains of ilmenite (trace-1%; approximately 0.02 mm in size) occur disseminated in the host, and the latter is spatially associated with biotite. Ilmenite and trace sphalerite fill corroded zones along the rims and fractures in early pyrite. Late pyrite (trace-2%; 0.27 mm in size) is generally cubic, contains trace inclusions of ilmenite, magnetite, chalcopyrite, and locally sphalerite, and fills embayments in plagioclase, biotite, and chlorite.

Diorite 3 dikes comprise plagioclase laths (60-85%; 0.22mm by 0.33mm in size; identified as albite using XRD and microprobe analysis) with corroded zones filled by elongated flakey chlorite1 (1-10%, 0.27mm in size) and biotite (trace-5%). Cubic to sub-rounded crystals of magnetite (trace-1%; 88μm in size) occur disseminated in the groundmass or as inclusions in pyrite, and its corroded zones are filled with biotite and chlorite2. Trace ilmenite is present as laths disseminated in the groundmass and as coarser crystal aggregates. Rare rutile fills corroded zones of ilmenite. Carbonate (3-20%) and trace quartz (locally lacking) fills embayments in plagioclase, chlorite1, and biotite, and shows sharp contacts with euhedral pyrite (1-2%; 0.11-0.44mm in size) and free gold. Locally pyrite contains trace inclusions of chalcopyrite and pyrrhotite. Chlorite2 is in sharp contact with pyrite and fills corroded zones in chlorite1 and plagioclase. Muscovite (5-8%) occurs as laths (20-550 μm in size) that fill embayments in plagioclase, carbonate, chlorite, and biotite. Epidote (up to 1%; 70μm in size) occupies embayment in chlorite1, chlorite 2, and muscovite.

Two generations of QFP dikes were documented. Both generations occur as thin dikes (up to 1m wide) striking approximately N55ºE and dipping from 60˚ to 80˚ SE in the northeast, southeast, and central sectors of the trench, whereas dikes from the late generation of QFP are also found as an irregularly shaped body in the western portion of the trenched main zone. Some QFP dikes intercepted in the drill holes attain up to 18 m in thickness. Locally earlier QFP dikes have undulating margins, are boudinaged, and are offset by early NE-trending and SE dipping faults and late N-trending E and W dipping brittle faults E. The QFP dikes can vary greatly in colour and texture due to alteration and deformation. The earlier generation of QFP dikes are crosscut by white quartz veins that locally contain free gold and are locally crosscut by quartz-carbonate-albite veins. Locally, these dikes are weakly foliated, with elongated crystals aligned in a weak fabric. However, the late generation of QFP dike in the north-eastern sector of the trench cuts the mineralized and altered mafic volcanic rocks and diorite 3 dike, does not contain mineralization, and was selected for further geochronological study to constrain the minimum age of mineralization. In the western sector, a QFP dike contains xenoliths of mafic volcanic rock with gold and pervasive carbonate alteration, and was also selected for geochronological study.

The textural relationships of magmatic phases in post-mineralization and least altered pre-mineralization QFP dikes are similar, however, within the pre-mineralization QFP dikes plagioclase has locally been replaced by the carbonate-quartz-pyrite alteration assemblage associated with gold mineralization. The interpreted paragenetic sequence for both types of QFP is shown in Figure 2.13, where two major events are distinguished: magmatic (phenocrysts and fine-grained groundmass) and post-magmatic (referring to any alteration of the phenocrysts and fine-grained groundmass). In the QFP, the phenocrysts (1-3 mm in size) comprise K-feldspar (15-30%), quartz (2-10%), plagioclase (4-8%), and biotite (2-5%) in a groundmass (with crystals averaging 0.1 mm in size) of plagioclase (23-56%), quartz (4-11%), muscovite (1-4%), carbonate (trace-7%), biotite (trace-7%), chlorite (trace-2%), epidote (trace-2%), apatite (trace-2%), pyrite (trace-1%), magnetite (trace), rutile (trace), ilmenite (trace), chalcopyrite (trace), pyrrhotite (trace), and zircon (trace). Carbonate, pyrite, and late quartz are more abundant in the early QFP. K-feldspar and plagioclase phenocrysts exhibit oscillatory zoning and albite twinning, and locally plagioclase phenocrysts contain zones of albite overgrowth along the margin of the crystals. Fine-grained muscovite replaces the cores of feldspar and plagioclase phenocrysts and preferentially replaces phenocrysts along oscillatory zoning. Quartz phenocrysts are fractured and locally contain quartz sub-grains. Early biotite (and locally early chlorite) occurs as large flaky crystals or sinuous crystal aggregates that are pseudomorphs after mafic magmatic crystals. Late biotite locally replaces plagioclase and feldspar. Late chlorite pseudomorphs replace and fill corroded zones of K-feldspar, plagioclase, quartz, and biotite. Carbonate occurs as anhedral crystals generally 0.2 mm across and fills corroded zones and fractures in plagioclase, k-feldspar, and quartz phenocrysts. Apatite forms euhedral prismatic crystals in the groundmass and epidote occurs as sub-rounded and euhedral crystals replacing the groundmass minerals. Magnetite forms anhedral and euhedral crystals disseminated in the groundmass and is locally associated with biotite. Pyrite occurs as anhedral crystals disseminated in the groundmass and contains minor inclusions of ilmenite, pyrrhotite and chalcopyrite. Ilmenite forms euhedral lath-like grains in the groundmass, while rutile is present as needle-shaped euhedral crystals. Zircon forms doubly terminating crystals and prismatic crystal sections included within feldspar phenocrysts, quartz phenocrysts, and disseminated in the groundmass.

Quartz monzonite is found to the south of the main trenched zone from surface to a depth of approximately 19 metres and cross-cuts some auriferous veins. It comprises coarse grained (1.3-3mm) plagioclase (30-50%, identified as albite using XRD and microprobe analysis), K-feldspar (20-35%), quartz (6-15%), as well as muscovite (5-10%), chlorite (7-9%), carbonate (5-8%), pyrite (up to 2%), apatite (trace), zircon (trace), and rutile (trace). A few samples contain up to 4% epidote, and traces of biotite, pyrrhotite, and chalcopyrite.

Equigranular quartz, albite, K-feldspar, and mafic minerals are in sharp contact with each other (no groundmass in between) and their embayments are filled with aggregates of chlorite (chlorite1). Plagioclase and K-feldspar crystals are locally overgrown by albite. Chlorite1 contains inclusions of quartz and feldspar grains. A second generation of chlorite (chlorite2) forms flaky crystals replacing the finer-grained plagioclase, quartz, feldspar, carbonate, and chlorite1 crystals. Pyrite forms euhedral to subhedral crystals between coarse-grained plagioclase, feldspar, and quartz and fills embayments in plagioclase and feldspar crystals. Muscovite replaces plagioclase and feldspar as flaky and acicular, radiating crystals, and replaces chlorite1 and chlorite2 as laths. Carbonate fills corroded zones of plagioclase, K-feldspar, quartz, and chlorite1. Apatite crystals are found included in the coarse-grained plagioclase and K-feldspar, and between the finer-grained quartz, plagioclase, feldspar, and chlorite crystals. Zircon forms doubly terminating crystals and cubic crystal sections included in plagioclase and quartz crystals.

Structure

The mafic volcanics at the Barry deposit are locally folded along the S0 planes between volcanic facies (Kitney, 2009). The folds are open, symmetrical, and 50cm to 1m in size. Their fold axes commonly trend N60-75ºE and plunge 20º-40º to the NE. Limbs of folds are cut by minor shear zones, shear fractures, and veinlets. This observation, and the fact that the fold axes are not confined to the foliation plane, suggest that folding is associated with a D1 deformation that preceded the development of the foliation and shear zones.

The volcanic rock units of the Barry gold deposit are cross-cut by a well-defined N59ºE-striking and 58ºSE dipping D2 tectonic foliation. This is sub-parallel to several ductile shear zones on the property, and is consistent with the attitude of the regional foliation. The foliation is characterized by the planar orientation of phyllosilicates on sub-millimetre schistosity planes and flattening of amygdules and breccia fragments. Stretching lineations, which trend at 095→42 S and rake approximately 52° from the northeast in the foliation plane, are defined by elongated chlorite, pyrite, amygdules, vesicles, and breccia fragments. Cleavages are commonly observed along contacts of flow units. Boudinage of both early and late QFP dikes along N055ºE strike is subparallel to the main foliation trend.

Two fault systems are observed at the Barry deposit: an earlier one oriented at N55-60ºE, dipping 40º-58º SE, and a later one with two fault orientations: N3ºW strike with moderate to steep dip (66º-90º W); and N9ºW strike with moderate to steep dip (70º-90º E). The majority of the earlier faults occur in the north portion of the main zone where they anastomose parallel to foliation, extend approximately 20 m along strike, and terminate where they are bounded on the east and west by the later faults. Slickenlines on the earlier faults trend and plunge 105º→33º, and rake on the fault plane approximately 55º from the northeast. Generally these faults have an apparent dextral offset of up to 3.5m, and they locally contain mineralized albite-carbonate-quartz veins. An early brittle-ductile fault, 1 to 5m wide, observed at surface from line 10+45E to line 11+75E between stations 0+65S and 0+70S marks the northern boundary of the mineralized zone. Intense (locally mylonitic) S and L fabrics and boudinaged albite-carbonate-quartz veins are present where the fault is narrow. The presence of deformed albite-carbonate-quartz veins (associated with gold mineralization) within the early fault indicates that gold mineralization occurred pre- to syn-ductile deformation (D2) of this fault. The northern-most early fault has most recently offset mafic volcanic facies, intrusive dikes, and the mineralized zone to the north, indicating that it has undergone brittle deformation post-mineralization. Based on the off-sets of a QFP marker unit and attitude of the slickenlines on the fault, the brittle movement along this fault is interpreted as oblique reverse dextral, the SE block having moved up and towards the SW relative to the NW block.

The second fault system comprises brittle structures, ranges in width from <10cm to 1m, and is continuous for at least 50m along strike. The offsets caused by their displacement controls the topography of the trenched region with differences of 0.5 to 3m in elevation across a fault. These late faults offset lithologic units and mineralization, with faults dipping to the west appearing to have a sinistral sense of offset, while faults dipping to the east appear to have dextral offset. Slickenlines observed on two fault planes have shallow rakes from 10º to 30ºN.

Throughout the trenched zone (Figure 7-3), veins comprise 1-3% of the volume of the mafic volcanic rock package and 5-15% of the volume in mineralized zones. Four main vein types have been identified in the Barry deposit main zone based on their mineralogical composition: (a) auriferous albite-carbonate-quartz, (b) barren quartz-carbonate, (c) barren carbonate, and (d) locally extensional quartz veins (the latter locally auriferous). The auriferous albite-carbonate-quartz veins exhibit four main geometries: a) straight, planar veins at N64ºE/64ºSE; b) straight (N64ºE/64ºSE) veins with rootless isoclinal folding and/or transposition along the isoclinal fold hinge; c) folded veins at N20ºE/60ºSE; and d) locally shallow veins.

Barren quartz-carbonate and carbonate veins are observed at surface and throughout drill core. These veins are composed primarily of calcite and/or quartz, and locally contain traces of biotite and chlorite. At depths greater than 30 m epidote and garnet are locally present in veinlets. Calcite veins comprise approximately 1% of the rock volume, whereas from surface to 30m depth quartz-calcite veins comprise approximately 1%, and at depths greater than 30m they comprise 3% of the rock volume. Both quartz-carbonate and carbonate veins can be straight, folded, or sinuous, with irregular orientations as shown by variable core intersections of 30-90º from the core axis in vertical drill holes.

Extensional white quartz veins locally crosscut the mafic volcanic rocks and the mineralized albite-carbonate-quartz veins but are generally found within the more competent early QFP dikes. These 3-5 cm wide, mainly vitreous quartz veins cut the dikes perpendicular to their strike at N20-40ºW/64-66º SW. Veins contain up to 12% chlorite in their selvages or growing inwards from the vein wall to the centre, 3% sericite, and locally free gold. These veins appear to be syn-kinematic with early faults, as their approximately coincide with stretching lineations and slickenlines observed on the early faults.

7.1.2 Gladiator Property

The different exploration campaign conducted on the Gladiator Property by Bonterra permitted to establish a local geologic background (Lafrance, 2018). Most of the rock encountered on the properties is mafic volcanics from the Lacroix and Chanceux Formations. Those are huge massive lavas flows, locally pillowed and glomeroporphyritic with a weak to moderate carbonate alteration. This unit is most of the time foliated by an S1 deformation oriented N60-70. Local veining can occurs.

Inside the mafic units from the Chanceux Formation, some gabbroic massive bodies appear. This gabbroic rock is interpreted as interbedded sills. It looks like medium to coarse grained mafic rocks with significant amount of disseminated magnetite and homogenous chloritization of the matrix. Locally, 2mm blue quartz eyes can be observed. These gabbroic sills can have 50 to 100 m thickness and their contacts are oriented along the main deformation pattern (N60°) and sub verticals.

Through the mafic units, a felsic porphyritic system takes place. These felsic intrusive units occur specially on the Gladiator deposit. This unit can be divided into two different injection, a porphyritic and an aphanitic felsic intrusion. The porphyritic one has plagioclase phenocrysts with a pale grey siliceous matrix. Most of the time, a strong pinkish alkali feldspar alteration occurs. This intrusive is interpreted as a Syenite, and oriented along N60° with a 70° deg depth to the South-East. The veins are essentially smoky quartz. The aphanitic felsic intrusion is strongly sericitized and foliated. Locally, up to 10% fine grained disseminated chloritized amphiboles can be observed.

An intermediate tuff, representing the Chanceux Formation, can be observed at the North-East of the property. It contains up to 15% polylithic lapillis. It can also be appearing like a bedded ash tuff. The colour is pale to medium grey and the alteration is essentially weak to moderate pervasive sericite and carbonates veins and weak to moderate disseminated biotite. The alteration become stronger approaching the veins.

Finally, a band of ultramafic lavas interpreted as komatiite is located at the South-East part of the property. This unit appears in the Lacroix formation and has been identified in the historical hole BA-98-06 and is interpreted at approximately N70° by the geophysics airborne survey.

7.2 Mineralization and Alteration

7.2.1 Barry Deposit

Although the volcanic units generally strike northeast and dip to the southeast (approximately N55-60ºE/40ºSE), the envelope containing economic gold grades (>2 g/t) is constrained from surface to a depth of 30m. In northwest-southeast vertical cross sections, the outline of the mineralized zone has an antiformal/domal shape and both Types A and B volcanic rock types are hosts for the mineralization.

The gold mineralization is constrained to zones containing 5-15% albite-carbonate-quartz veins and their associated hydrothermally altered wall rocks. Albite-carbonate-quartz veins are typically 1-5cm wide (1-2 cm wide on average), and comprise euhedral albite (20-50%), carbonate (30-40%), and quartz (20-40%). Albite identification was confirmed using XRD and microprobe analysis. In addition to albite, carbonate, and quartz, these veins locally contain trace biotite +/- sericite, chlorite (fine-grained anhedral), pyrite (fine-grained anhedral, or coarse-grained euhedral), pyrrhotite, rare euhedral magnetite, and fine-grained visible gold as inclusions or fracture infill in pyrite, or in sharp contact with carbonate crystals in the vein. Biotite and chlorite are present along vein selvages. Veins locally pinch and swell or are boudinaged with biotite generally filling the cusps. Gold grades in mineralized veins and altered mafic volcanic rocks range from <2 g/t to >100 g/t.

In addition to the pre-ore alteration described for the least altered samples in the previous sections, the following alteration types were identified at the Barry deposit main ore zone based on the mineralogical composition and textural relationships: (a) syn-ore carbonate-quartz-pyrite alteration associated with the mineralized albite-carbonate-quartz veins; (b) syn-ore biotite-calcite alteration associated with mineralized albite-carbonate-quartz veins in areas of intense foliation; and c) post-ore biotite-chlorite, carbonate, muscovite, and epidote alteration. Post-ore epidote alteration is generally found at depths greater than 25 m, where it is commonly associated with epidote-garnet veinlets, or in non-mineralized zones at shallower depths.

Syn-ore Carbonate-quartz-pyrite Wall-rock Alteration

Volcanic rocks that have undergone carbonate-quartz-pyrite alteration are comprised of carbonate 1 (5-45%), quartz (2-8%), pyrite (2-8%), albite (trace-3%: identified using XRD and microprobe analysis), pyrrhotite (trace-3%), muscovite (trace), chalcopyrite (trace), biotite (locally trace) and locally native gold, which pseudomorphously replace and fill corroded zones of pre-ore alteration minerals. In mineralized zones the carbonate is ferroan dolomite to ankerite in composition, as determined by XRD.

Carbonate, quartz, and albite (6-10μm in size) replace plagioclase laths and fill corroded portions of chlorite, biotite, and rare crystals of magnetite. Rare magnetite contains inclusions of chalcopyrite and pyrrhotite, and mantles cubic pyrite. Locally biotite has sharp contacts with quartz, albite, carbonate, and pyrite. Pyrite forms euhedral cubic to subhedral crystals (11-50μm in size) and crystal aggregates, has sharp contacts with carbonate and quartz, contains inclusions of ilmenite, magnetite, rutile, chalcopyrite, pyrrhotite, native gold, and gold tellurides, and locally pyrite mantles muscovite.

Trace element composition of pyrite is variable and does not relate to the composition of inclusions or amount of corrosion of pyrite grains. Pyrite locally contains variable Ni, Co, W, Ti, Te, and Se, Hg, and Zn were near detection limits of 0.0085 wt%, 0.0331 wt%, and 0.0196 wt%, respectively. Gold is near or below detection limit in pyrite, with the exception of one sample that contains Au over three times the detection limit of 0.0067 wt%. Arsenic is above detection limit in one sample (0.059 wt% As). Locally carbonate, pyrrhotite, chalcopyrite, and gold fill embayments and fractures in pyrite grains. Rare pyrrhotite and chalcopyrite replace euhedral cubic pyrite. Chalcopyrite locally contains variable amounts of Ti, Zn, Au, and Se. Gold is spatially associated with pyrite (or pyrrhotite after pyrite), and although gold grade can vary in samples containing trace pyrite and/or pyrrhotite, in samples containing >3% pyrite and/or pyrrhotite, the gold grade is generally >2 g/t Au. Gold grains are visible at a microscopic scale (2-8μm in size) and are locally visible at hand sample scale (up to 1mm in size). Energy dispersive X-ray spectroscopy (EDS) analysis indicates that locally gold is also present as micro-inclusions (generally <1μm in diameter) of native gold and gold tellerides within pyrite crystals. Electron microprobe analyses indicate that the composition of gold is variable within the mineralized zone. Gold included in pyrite has a lower Ag content (3.6-5.12 wt%) than gold grains filling cracks in, or in contact with pyrite grains have an intermediate Ag content (5.72-8.07 wt%), and gold grains included in carbonate grains contain higher Ag amounts (8.2-9.04 wt%). In general, gold grains contained low levels of Te (0.01-0.07 wt%), whereas most other elements identified are at concentrations near detection limits.

Three samples of Type B volcanic rock with an average gold grade of 8.1 g/t and containing pervasive carbonate-quartz-pyrite alteration with trace amounts of biotite and epidote (≤2%) alteration, are plotted against the least altered sample of Type B. Elements above the solid line are enriched in the altered samples compared to the least altered sample, whereas elements below the line are depleted in comparison to the least altered sample. The elements significantly added (>100% increase) to the Type B volcanic rocks that underwent carbonate-quartz-pyrite alteration are: Au, S, Mo, Ag, Bi, W, Se, Pb, Cu, and Na, as well as LOI. Mg, Ca, Mn, Sr, U, As, and Sb were added in considerable amounts (20-100% increase), and Ba, Ga, Sm, and Si show a modest gain (6.7-20% increase). Whereas P, Zn, Ni, and Sc are considerably depleted (20-100% decrease) and Cs, Dy, Er, Fe, Lu, Rb, Ta, Tb, Tm, and Yb show modest decreases (6.7-20% decrease).

Syn-ore Biotite-carbonate Alteration

The syn-ore biotite-carbonate alteration is found locally within the deposit and is associated with areas of intense foliation and shear zones in drill core. Where present, it is impossible to determine the primary volcanic textures and structures, as they have been destroyed by deformation and alteration. However, biotite-carbonate altered samples have Ti/Zr and Zr/Y ratios (77-89 and 3.2-4.3 respectively) similar to Type A volcanic rocks, suggesting that their protoliths belong to this volcanic unit. Volcanic rocks that have undergone syn-ore biotite-carbonate alteration are comprised of biotite (10-55%), carbonate (20-30%), pyrite (trace-2%), and rare pyrrhotite, which replace the pre-ore alteration assemblage. Biotite2 forms flakey and lath-like crystals (10-30μm in size) that generally have sharp contacts with carbonate1, and locally fill embayments in carbonate and pyrrhotite. Pyrite forms cubic crystals (11-30μm in size) that are mantled by pyrrhotite. Pyrrhotite has sharp contacts with carbonate1 and flakey biotite2, and is locally replaced by chalcopyrite.

The elements significantly added (>100% increase) to the biotite-carbonate altered rock are: Au, Ag, Mo, S, Se, Bi, W, Cu, K, Rb, Pb, Ba, Cs, Tl, Na, Ga, Fe, and Ca. Si, Al, Mg, Mn, Co, U, Zn, Ni, and As were added in considerable amounts (20-100% increases), and Cr, Hf, Ta, Th, and Sc show a modest gain, whereas P and Sm are considerably depleted (20-100% decreases) and Sr, V, Dy, and Ho show modest decreases.

2.4.5 Post-ore Alteration

Post-ore biotite, chlorite, carbonate, muscovite, and epidote are present throughout the main zone within the mafic volcanic and intrusive units. Volcanic rocks that have undergone post-ore alteration are comprised of epidote (5-30%), carbonate (5-25%), chlorite (5-20%), muscovite (trace-15%), and biotite (trace-10%), which replace or fill embayments in pre-ore and syn-ore alteration minerals.

Biotite and chlorite comprise 2-10% of the rock and pseudomorphously replace and fill embayments in one another and quartz-carbonate-albite crystals in veins. In post-ore QFP, chlorite forms coarse grains that replace the mafic phenocrysts. Microprobe analysis of post-ore chlorite indicates that it is Fe-rich clinochlore, and is similar chemically to pre-ore chlorite. Post-ore biotite has a similar composition (Fe, Mg, and Al values) to pre-ore biotite. Carbonate is fine grained and fills corroded zones of biotite, chlorite, and quartz-carbonate-albite crystals in veins as fine-grained granular aggregates and anhedral crystals. Muscovite occurs as fine-grained laths that fill embayments in biotite, chlorite, and carbonate. Epidote occurs as euhedral crystals (2-10 μm in size) and fine-grained crystal aggregates that fill embayments in all other alteration minerals, including quartz, carbonate, and albite in the veins. Garnet is locally present at depths greater than 25 m, and is spatially associated with epidote alteration.

7.2.2 Gladiator Deposit

Gold is found primarily in Smoky quartz-carbonate ± tourmaline veins on the Gladiator Property. These veins range from 20 cm to 4 m in width. These veins are mineralized in variable amounts (from 1 to 15%) of Pyrite, Chalcopyrite, Sphalerite (Brown and Yellow) and locally Galena. Visible gold as free grains from 1 mm to 1 cm has been observed. A clear correlation exists between the presence of Sphalerite and the gold grade (Dzick and Ghayemghamian, 2012).

The smoky quartz veins are altered. The primary alteration types seen on the property are silica, carbonate, sericite, ankerite, tourmaline and epidote. The secondary vein system is also altered, although not to the same degree as the smoked quartz. High grade samples range from 20 g/t Au to 129 g/t Au. Two samples assayed greater than 100 g/t Au. Both of these samples are in hole BA-11-29.

The local East-northeast trending geology consists of variably foliated basalts, intercalated with a thick sequence of weakly foliated gabbro(s) and late sub-conformable narrow felsic porphyritic dykes. The veins hosting the gold occur along the sheared contacts between rocks of differing hardness, where an increase in intensity of deformation and resulting foliation is noted. A spatial association between the gold concentrations and syenite porphyritic dykes is noted. The association is both spatial and genetic, that emplacement of gold is contemporaneous with that of the dykes. The dykes will typically be emplaced along planes of weakness.

The mineralization discovered to date consists of gold bearing smoky quartz veins along the contact(s) of a single sheared and altered syenite porphyry dyke. The dyke and associated mineralized zones have been defined over a strike length of 1000 m, to a vertical depth of 800 m. The structural controls to the higher-grade shoots within the contact are not yet defined. The gold-bearing structure limits have not yet been defined. Strike and dip extents to the mineralised structure suggest further gold mineralization is possible subject to definition with drilling.

Recent Strip Mapping, Main Zone, July 20th and ended on September 14th, 2018

Strip mapping of a small are area in the main deposit area of the Gladiato Deposit was recently completed by Bonterra (Lafrance, 2018).

The geology of striped area or outcrop is a broad gabbroic unit with aphanitic felsic dykes (Figure 7-5). The gabbro is pale to medium grey, medium to strongly foliated, weakly magnetic with up to 15% quartz eyes. The associated mineralization is 5-7% disseminated plurimilimetric euhedral pyrite. The felsic intrusion is aphanitic with up to 10% of fine grained disseminated chloritized amphiboles. This unit is strongly foliated and folded.

Four types of veins were identified during the mapping of the outcrop (Figure 7-5):

- **Type 1 –** These veins are generally laminated by thin chlorite veinlets parallel to veins contacts. This family is essentially smoky quartz (local milky quartz) and contains local fine-grained disseminated pyrite (up to 3%) and chalcopyrite clusters (tr-1%). It also contains disseminated tourmaline or ptygmatitic tourmaline veins. Contacts of this type of veins are sharp and associated with thin shears (Fig. 9B), generally oriented ENE (N255°).
- **Type 2 –** these veins are essentially homogeneous, massive (Fig. 10A) and contacts are sharp. A boudinage (Fig. 10C) is also observed along the veins. The colour is variating from milky white to weakly smoky and containing traces of fine grained disseminated euhedral pyrite. It also locally contains disseminated tourmaline. This family is representing branches (Fig. 10B) of the main vein, intersecting the foliation and is oriented E-W (N090°).
- **Type 3 –** These veins are generally smoky quartz and are crenulated (Fig. 11A) by the principal schistosity. This family is a bit late in time compared with others type, but prior to deformation. It cuts through the type 1 veins and locally causes a slight shift (Fig. 11B). Only traces of finely disseminated pyrite are observed. The orientation of those veins is almost N-S (N190°).
- **Type 4 –** These veins are white quartz-carbonates with sharp contacts. No significant mineralization is observed in this kind of veins. This family is representing late veins, post-deformation. The orientation is SE at N144°.

The mapping of the outcrop was helpful to develop the geological model. This outcrop helped to determine the spatial association between gold mineralization, veins and felsic intrusive.

The aphanitic felsic intrusion with fine-grained disseminated chloritized amphiboles is folded and the fold axis is plunging to the east (068/31) almost parallel to the stretching lineation. The shear is essentially associated with the felsic intrusion and its walls. The orientation for the shear is 264/72 and the mean orientation of the dyke is 256/77.

The type 1 veins are clearly associated with shear zones; type 2 veins are slightly angled with shear and type 3 and 4 are cutting the shear.

The interpretation here is that it is a mineralized corridor which contains the main vein and its splays (Fig. 14). This corridor has almost the same orientation than the main vein. This model may explain why the modelled vein, locally doesn't have gold results.

Figure 7-5 Map of the Stripping of an area in the Main Zone, Gladiator Deposit (Lafrance, 2018)

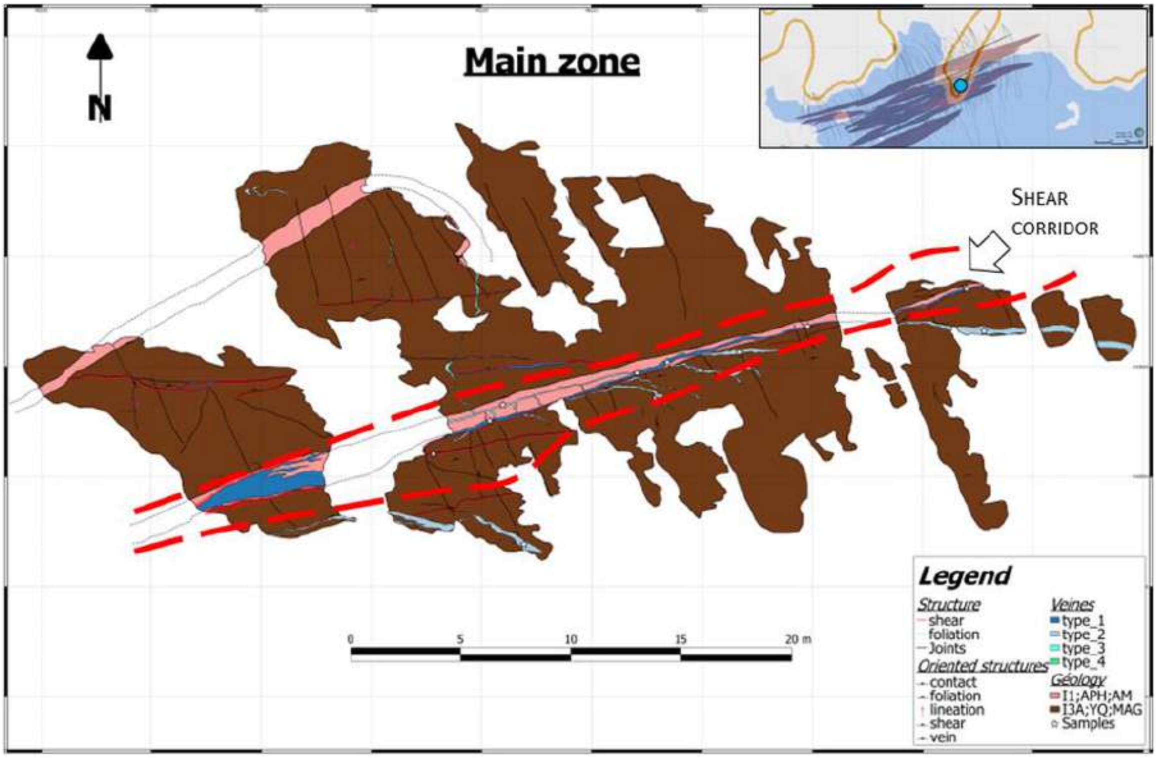
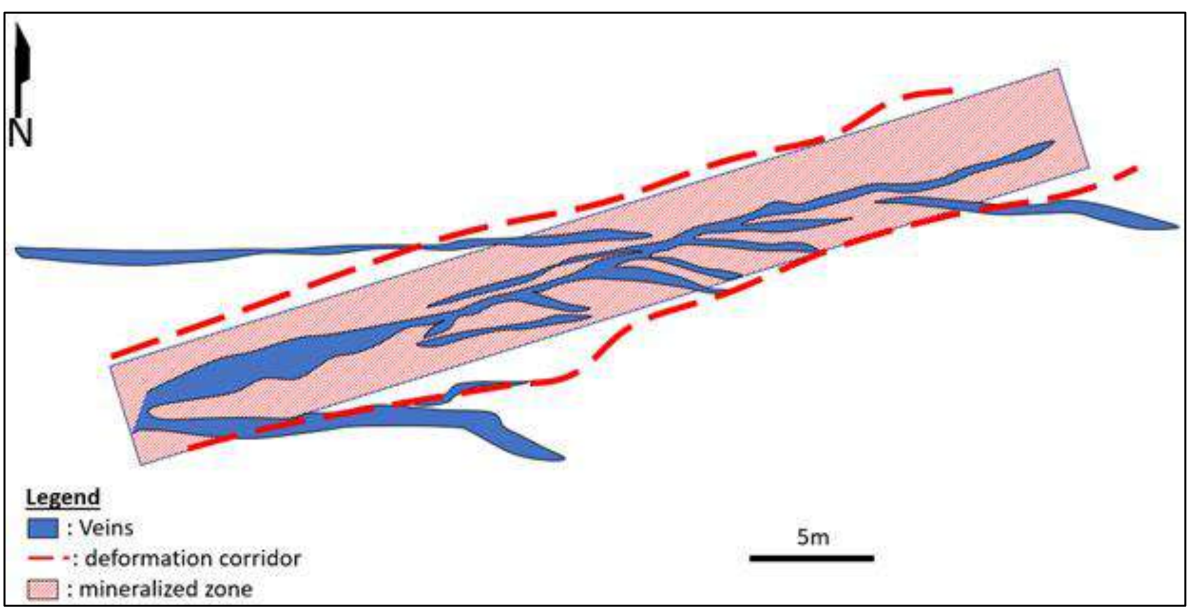


Figure 7-6 Simpified Schematic Interpretation of the Geological Model at the Gladiator Gold Project (Lafrance, 2018)



8 DEPOSIT TYPES

Gold mineralization in the Barry and Gladiator Deposit are structurally controlled and exhibit similar geological, structural and metallogenic characteristics to Archean Greenstone-hosted quartz-carbonate vein (lode) deposits. These deposits are also known as mesothermal, orogenic, lode gold, shear-zone-related quartz-carbonate or gold-only deposits (Dubé and Gosselin, 2007).

Archean Greenstone-hosted quartz-carbonate vein (lode) deposits deposits are a significant source of gold mined in the Superior and Slave provinces of the Canadian Shield. Dubè and Gosselin (2007) have recently published an overview of greenstone hosted gold deposits in Canada. These deposits are typically quartz-carbonate vein hosted and are distributed along crustal-scale fault zones that mark convergent margins between major lithological boundaries such as those between volcano-plutonic and sedimentary domains.

The following description of Greenstone-hosted quartz–carbonate vein deposits is extracted from Dubé and Gosselin (2007).

Greenstone-hosted quartz-carbonate vein deposits are structurally controlled, complex epigenetic deposits that are hosted in deformed and metamorphosed terranes. They consist of simple to complex networks of gold-bearing, laminated quartz-carbonate fault-fill veins in moderately to steeply dipping, compressional brittle-ductile shear zones and faults, with locally associated extensional veins and hydrothermal breccias. They are dominantly hosted by mafic metamorphic rocks of greenschist to locally lower amphibolite facies and formed at intermediate depths (5-10 km). Greenstone-hosted quartz-carbonate vein deposits are typically associated with iron-carbonate alteration. The relative timing of mineralization is syn- to late-deformation and typically post-peak greenschist-facies or syn-peak amphibolite facies metamorphism.

Gold is mainly confined to the quartz-carbonate vein networks but may also be present in significant amounts within iron-rich sulphidized wall rock. Greenstone-hosted quartz-carbonate vein deposits are distributed along major compressional to transpressional crustal-scale fault zones in deformed greenstone terranes of all ages, but are more abundant and significant, in terms of total gold content, in Archean terranes. However, a significant number of world-class deposits (>100 t Au) are also found in Proterozoic and Paleozoic terranes.

The main gangue minerals in greenstone-hosted quartz-carbonate vein deposits are quartz and carbonate (calcite, dolomite, ankerite, and siderite), with variable amounts of white micas, chlorite, tourmaline, and sometimes scheelite. The sulphide minerals typically constitute less than 5 to 10% of the volume of the orebodies. The main ore minerals are native gold with, in decreasing amounts, pyrite, pyrrhotite, and chalcopyrite and occur without any significant vertical mineral zoning. Arsenopyrite commonly represents the main sulphide in amphibolite-facies rocks and in deposits hosted by clastic sediments. Trace amounts of molybdenite and tellurides are also present in some deposits.

This type of gold deposit is characterized by moderately to steeply dipping, laminated fault-fill quartz-carbonate veins in brittle-ductile shear zones and faults, with or without fringing shallow-dipping extensional veins and breccias. Quartz vein textures vary according to the nature of the host structure (extensional vs. compressional). Extensional veins typically display quartz and carbonate fibres at a high angle to the vein walls and with multiple stages of mineral growth, whereas the laminated veins are composed of massive, fine-grained quartz. When present in laminated veins, fibres are subparallel to the vein walls.

Individual vein thickness varies from a few centimetres up to 5 metres, and their length varies from 10 up to 1000 m. The vertical extent of the orebodies is commonly greater than 1 km and reaches 2.5 km in a few cases.

The gold-bearing shear zones and faults associated with this deposit type are mainly compressional and they commonly display a complex geometry with anastomosing and/or conjugate arrays. The laminated quartz-carbonate veins typically infill the central part of, and are subparallel to slightly oblique to, the host structures. The shallow-dipping extensional veins are either confined within shear zones, in which case *they are relatively small and sigmoidal in shape, or they extend outside the shear zone and are planar and laterally much more extensive.*

Stockworks and hydrothermal breccias may represent the main mineralization styles when developed in competent units such as the granophyric facies of differentiated gabbroic sills, especially when developed at shallower crustal levels. Ore-grade mineralization also occurs as disseminated sulphides in altered (carbonatized) rocks along vein selvages. Due to the complexity of the geological and structural setting and the influence of strength anisotropy and competency contrasts, the geometry of vein networks varies from simple (e.g. Silidor deposit), to fairly complex with multiple orientations of anastomosing and/or conjugate sets of veins, breccias, stockworks, and associated structures. Layer anisotropy induced by stiff differentiated gabbroic sills within a matrix of softer rocks, or, alternatively, by the presence of soft mafic dykes within a highly competent felsic intrusive host, could control the orientation and slip directions in shear zones developed within the sills; consequently, it may have a major impact on the distribution and geometry of the associated quartz-carbonate vein network. As a consequence, the geometry of the veins in settings with large competence contrasts will be strongly controlled by the orientation of the hosting bodies and less by external stress. The anisotropy of the stiff layer and its orientation may induce an internal strain different from the regional one and may strongly influence the success of predicting the geometry of the gold-bearing vein network being targeted in an exploration program.

The veins in greenstone-hosted quartz-carbonate vein deposits are hosted by a wide variety of host rock types; mafic and ultramafic volcanic rocks and competent iron-rich differentiated tholeiitic gabbroic sills and granitoid intrusions are common hosts. However, there are commonly district-specific lithological associations acting as chemical and/or structural traps for the mineralizing fluids as illustrated by tholeiitic basalts and flow contacts within the Tisdale Assemblage in Timmins. A large number of deposits in the Archean Yilgarn craton are hosted by gabbroic ("dolerite") sills and dykes as illustrated by the Golden Mile dolerite sill in Kalgoorlie, whereas in the Superior Province, many deposits are associated with porphyry stocks and dykes. Some deposits are also hosted by and/or along the margins of intrusive complexes (e.g. Perron-Beaufort/North Pascalis deposit hosted by the Bourlamaque batholith in Val d'Or. Other deposits are hosted by clastic sedimentary rocks (e.g. Pamour, Timmins).

The metallic geochemical signature of greenstone-hosted quartz-carbonate vein orebodies is Au, Ag, As, W, B, Sb, Te, and Mo, typically with background or only slightly anomalous concentrations of base metals (Cu, Pb, and Zn). The Au/Ag ratio typically varies from 5 to 10. Contrary to epithermal deposits, there is no vertical metal zoning. Palladium may be locally present.

At a district scale, greenstone-hosted quartz-carbonate vein deposits are associated with large-scale carbonate alteration commonly distributed along major fault zones and associated subsidiary structures. At a deposit scale, the nature, distribution, and intensity of the wall-rock alteration is controlled mainly by the composition and competence of the host rocks and their metamorphic grade.

Typically, the proximal alteration haloes are zoned and characterized – in rocks at greenschist facies – by iron-carbonatization and sericitization, with sulphidation of the immediate vein selvages (mainly pyrite, less commonly arsenopyrite).

Altered rocks show enrichments in CO2, K2O, and S, and leaching of Na2O. Further away from the vein, the alteration is characterized by various amounts of chlorite and calcite, and locally magnetite. The dimensions of the alteration haloes vary with the composition of the host rocks and may envelope entire deposits hosted by mafic and ultramafic rocks. Pervasive chromium- or vanadium-rich green micas (fuchsite and roscoelite) and ankerite with zones of quartzcarbonate stockworks are common in sheared ultramafic rocks. Common hydrothermal alteration assemblages that are associated with gold mineralization in amphibolite-facies rocks include biotite, amphibole, pyrite, pyrrhotite, and arsenopyrite, and, at higher grades, biotite/phlogopite, diopside, garnet, pyrrhotite and/or arsenopyrite, with variable proportions of feldspar, calcite, and clinozoisite. The variations in alteration styles have been interpreted as a direct reflection of the depth of formation of the deposits.

The alteration mineralogy of the deposits hosted by amphibolite-facies rocks, in particular the presence of diopside, biotite, K-feldspar, garnet, staurolite, andalusite, and actinolite, suggests that they share analogies with gold skarns, especially when they (1) are hosted by sedimentary or mafic volcanic rocks, (2) contain a calc-silicate alteration assemblage related to gold mineralization with an Au-As-Bi-Te metallic signature, and (3) are associated with granodiorite-diorite intrusions. Canadian examples of deposits hosted in amphibolite-facies rocks include the replacement-style Madsen deposit in Red Lake and the quartz-tourmaline vein and replacement-style Eau Claire deposit in the James Bay area.

9 EXPLORATION

9.1 Gladiator Property

Exploration work completed on the Gladiator Property prior to 2012 is described a recent technical report by Snowden Mining Industry Consultants Inc. ("Snowden") (Dzick. and Ghayemghamian, 2012). Recent surface exploration work, other than diamond drilling, completed on the Gladiator Property since 2012 is restricted to a High-Resolution Heliborne Magnetic Survey (Dubé, 2018). Recent diamond drilling is discussed below in section 10.

9.1.1 High-Resolution Heliborne Magnetic Survey

PROSPECTAIR conducted a heliborne high-resolution magnetic (MAG) survey for the mineral exploration company Bonterra Resources Inc. on its Gladiator Property. The survey was flown from April 6th to 10th 2018.

Two survey blocks, referred to as Main and SW, were flown for a total of 2097 l-km. A total of 11 production flights were performed using PROSPECTAIR's Eurocopter EC120B, registration C-GEDI. The helicopter and survey crew operated out of Bonterra's exploration Camp located at the north end of Barry Lake, just besides the Main block. The Lebel-sur-Quévillon Airport is located about 100 km to the west of the block (Figure 9-1).

The Gladiator blocks were flown with traverse lines at 50 m spacing and control lines spaced every 500 m. The survey lines were oriented N157 for the Main block and N140 for the SW block. The control lines were oriented perpendicular to traverse lines. The average height above ground of the helicopter was 42 m and the magnetic sensor was at 21 m. The average survey flying speed (calculated equivalent ground speed) was 39.7 m/s. The survey area is covered by forest, lakes and wetlands, and, aside from a few isolated hills, the topography is mostly flat, which are fairly typical characteristics of the area near Lebel-sur-Quévillon. The elevation is ranging from 383 to 473 m above mean sea level (MSL). The Main block overlaps with three major lakes, namely the Bailly, Bary and Aux Loutres Lakes. The SW block is located just east of the Maseres Lake. Coordinates outlining the survey blocks are given in Appendix A, with respect to NAD-83 datum, UTM projection zone 18N. The location of the Gladiator Property claims (in red) and of the survey lines is shown on Figure 9-2 and Figure 9-3 for the Main and SW blocks, respectively.

9.1.2 Results and Discussion

The Residual Total Magnetic Intensity (TMI) data of the two blocks are presented in Figure 9-4 and Figure 9-5. Both blocks share similar background values, with slightly stronger anomalies and signal variability in the Main block.

The strongest magnetic anomaly of the entire Property occurs at the north end of the Barry Lake, to the south of Bonterra's exploration Camp, and relates to rocks mapped as komatiite by Québec's Ministère de l'Énergie et des Ressources Naturelles (MERN). Most of the surveyed area is affected by strong linear magnetic features characteristic of alternating sequences of mafic volcanic rocks with sedimentary or intermediate to felsic volcanics, with possibly some small size intrusive stocks or dykes. In a general sense, areas with lower background values and decreased signal variability are likely to be dominated by sedimentary or felsic intrusive/volcanic rocks. In a few areas, such as in the center of the Main block, strings of elongated alternating series of magnetic highs and lows are occurring. This type of feature possibly belongs to mafic intrusive or volcanic rocks affected by boudinage effects which could explain the alternating sequence of magnetic highs and lows. In the eastern half of the Main block, towards the south, two wide areas depict much lower background values and settled magnetic signal and could relate to large felsic intrusions, as suggested by MERN's databases which mention tonalite rock occurrences in these areas.

The vast majority of magnetic lineaments found in both survey blocks are trending from ENE-WSW to NNE-SSW, except near the postulated large intrusions of the Main block, where lineaments are rather organized parallel to their contact, which depict a complex geometry. Several lineaments are also locally curved, and even heavily folded in a few areas, attesting that the area underwent strong deformation events in the past. In general terms, magnetic lineaments are related to rock formations that are enriched in magnetic minerals (magnetite and/or pyrrhotite).

In some areas, it is possible to detect structural features offsetting observed magnetic lineaments and causing abrupt interruption or changes of the magnetic response. These features are typically caused by faults, fractures and shear zones. If they are thought to be favorable structures in the exploration context of the Gladiator project, they should be paid particular attention and should be the object of a comprehensive structural interpretation, which is beyond the scope of this report.

Shorter wavelength anomalies are greatly enhanced on the FVD (Figure 9-6 and Figure 9-7) and on the TILT products. Since the FVD attenuates longer wavelength anomalies, and the TILT enhances very weak amplitude anomalies, they are the preferred products for structural interpretation.

It should be noted that the high-resolution magnetic data is locally disturbed by human infrastructures. This is clearly the case along 2 separate high-tension power lines running across the Main block. The power lines themselves induce noise in the local magnetic data. In addition, since the helicopter had to climb up above the power lines for obvious safety reasons, the magnetic response appears somewhat attenuated, blurred and noisier within about 100 m on either sides of the power line.

Figure 9-1 Survey Location and Base of Operation, 2018 High-Resolution Heliborne Magnetic Survey

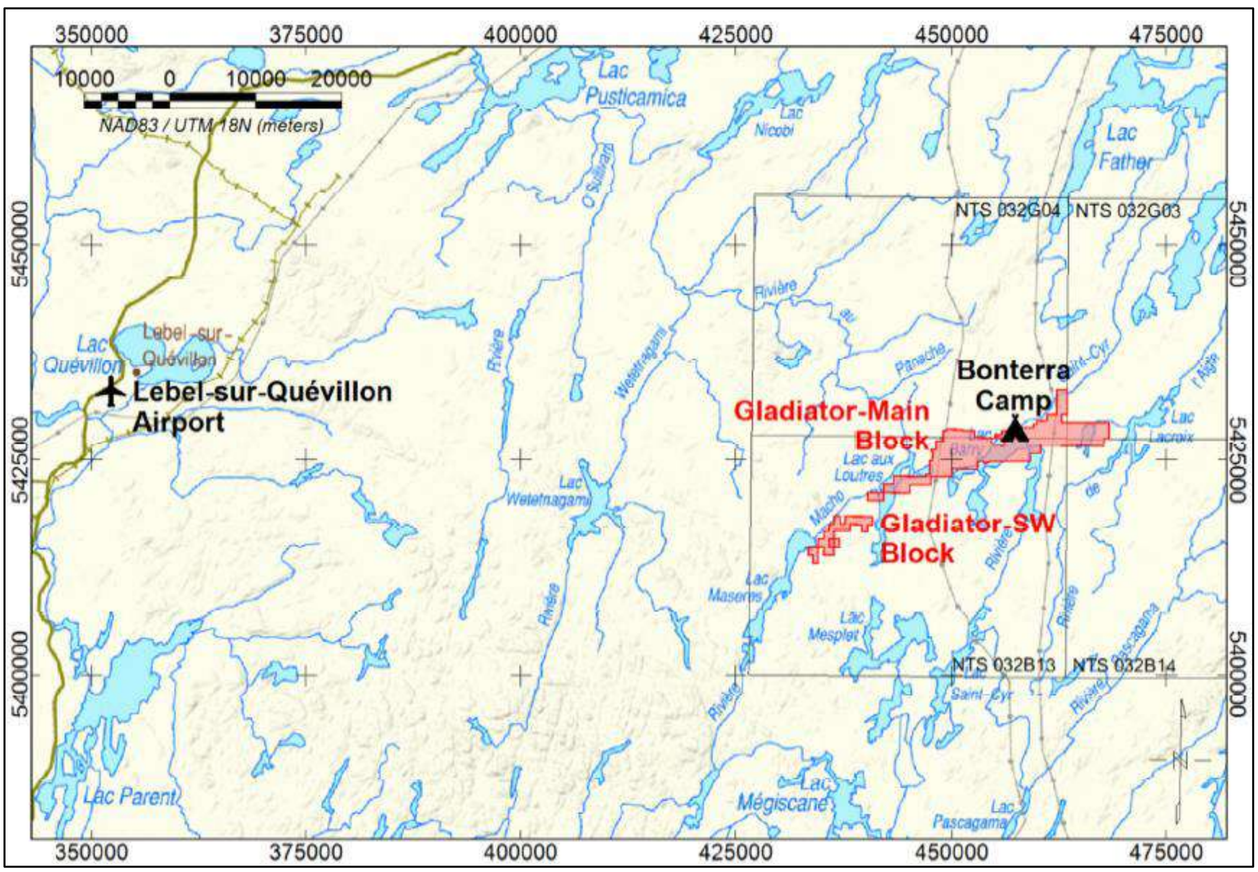


Figure 9-2 Main Block Survey Lines and Gladiator Property Claims

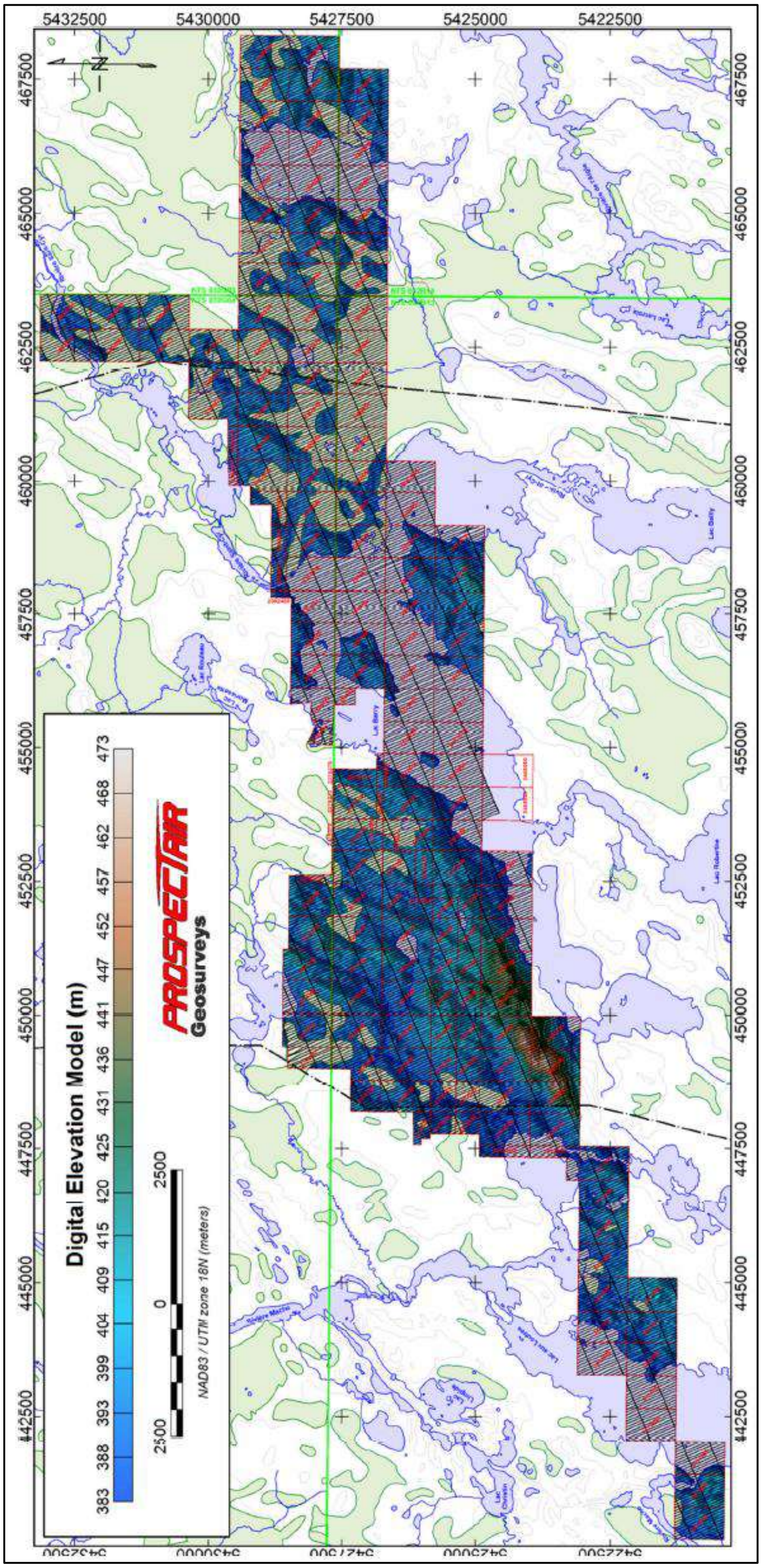


Figure 9-3 SW Block Survey Lines and Gladiator Property Claims

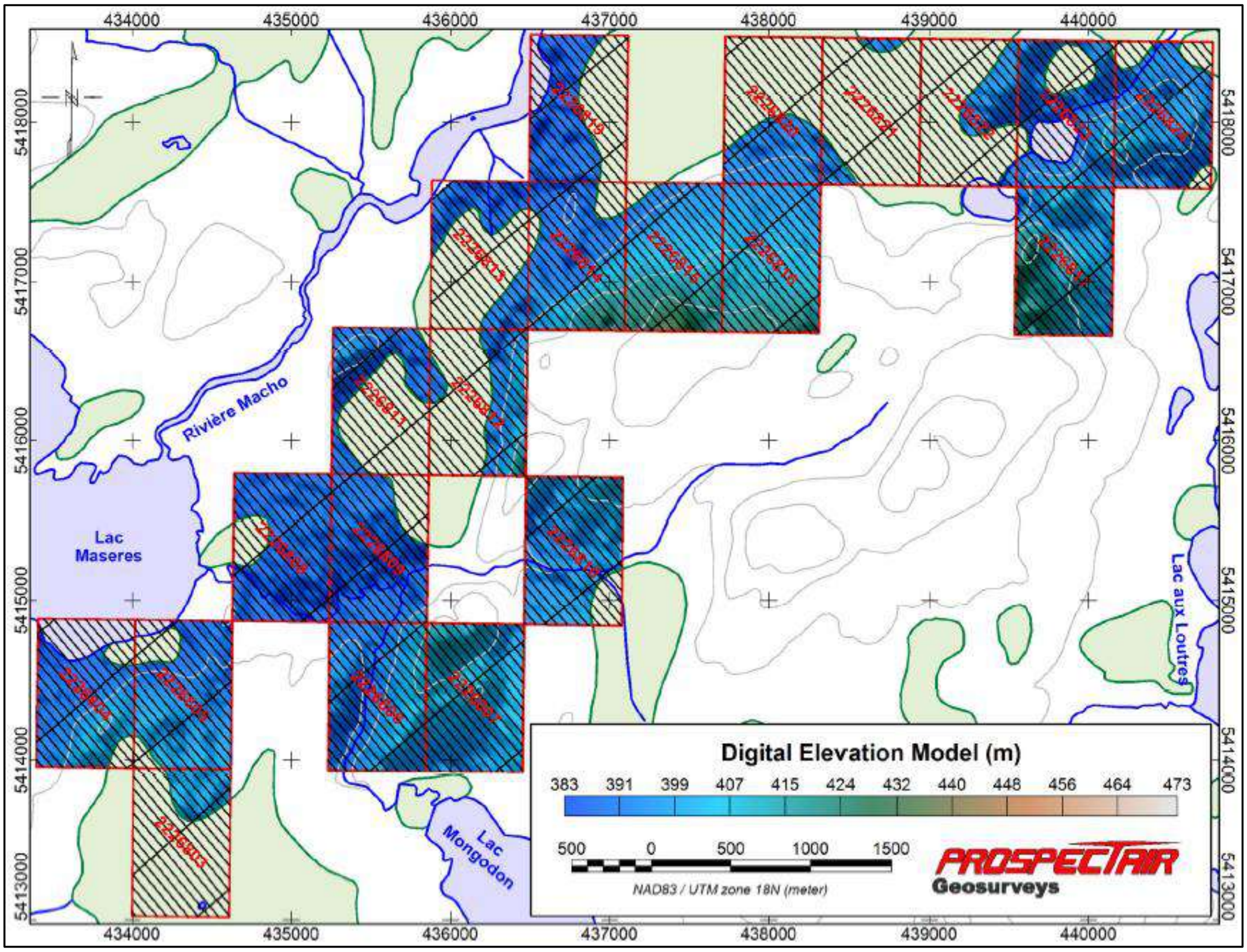


Figure 9-4 Main block residual Total Magnetic Intensity

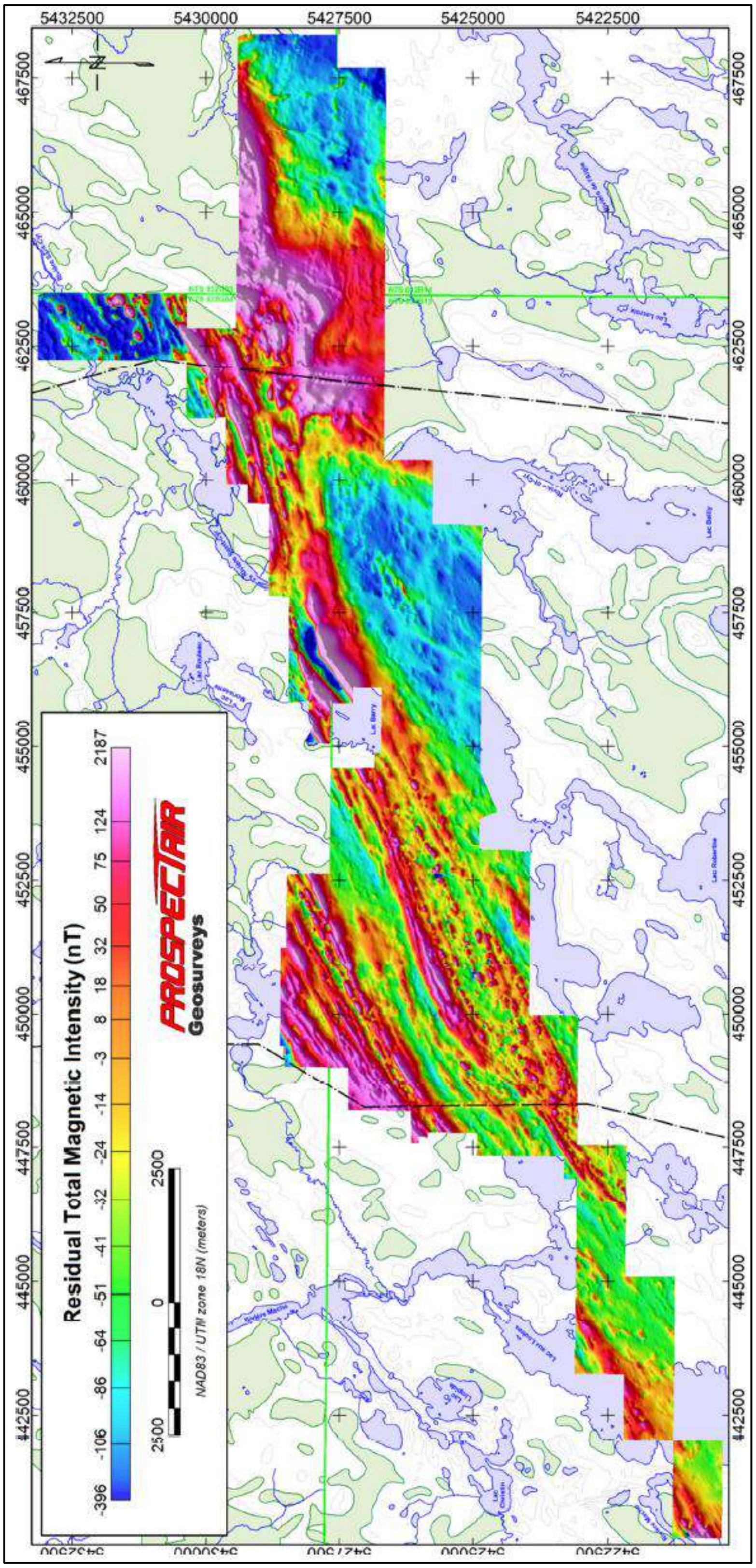


Figure 9-5 SW block residual Total Magnetic Intensity

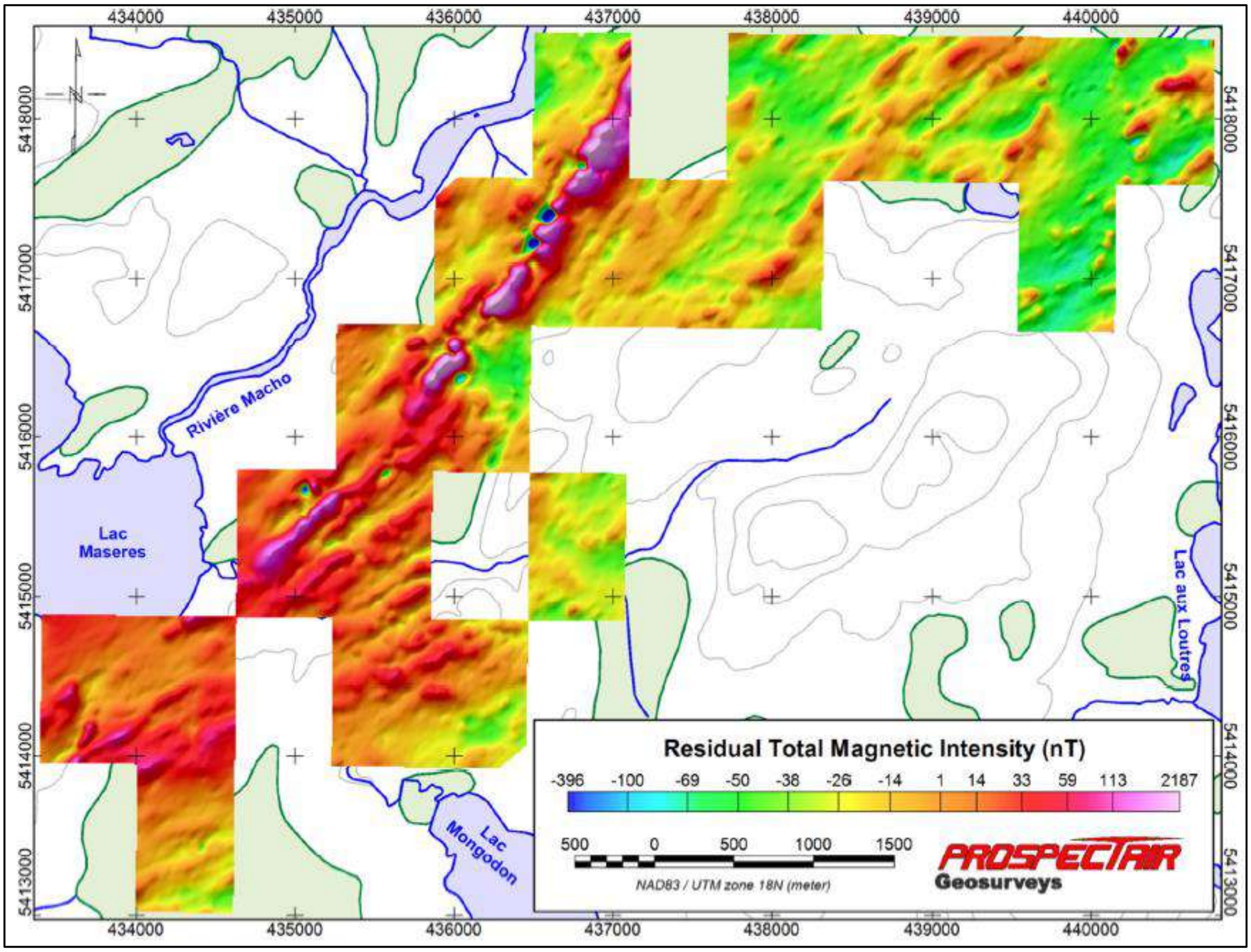


Figure 9-6 Main block First Vertical Derivative of TMI

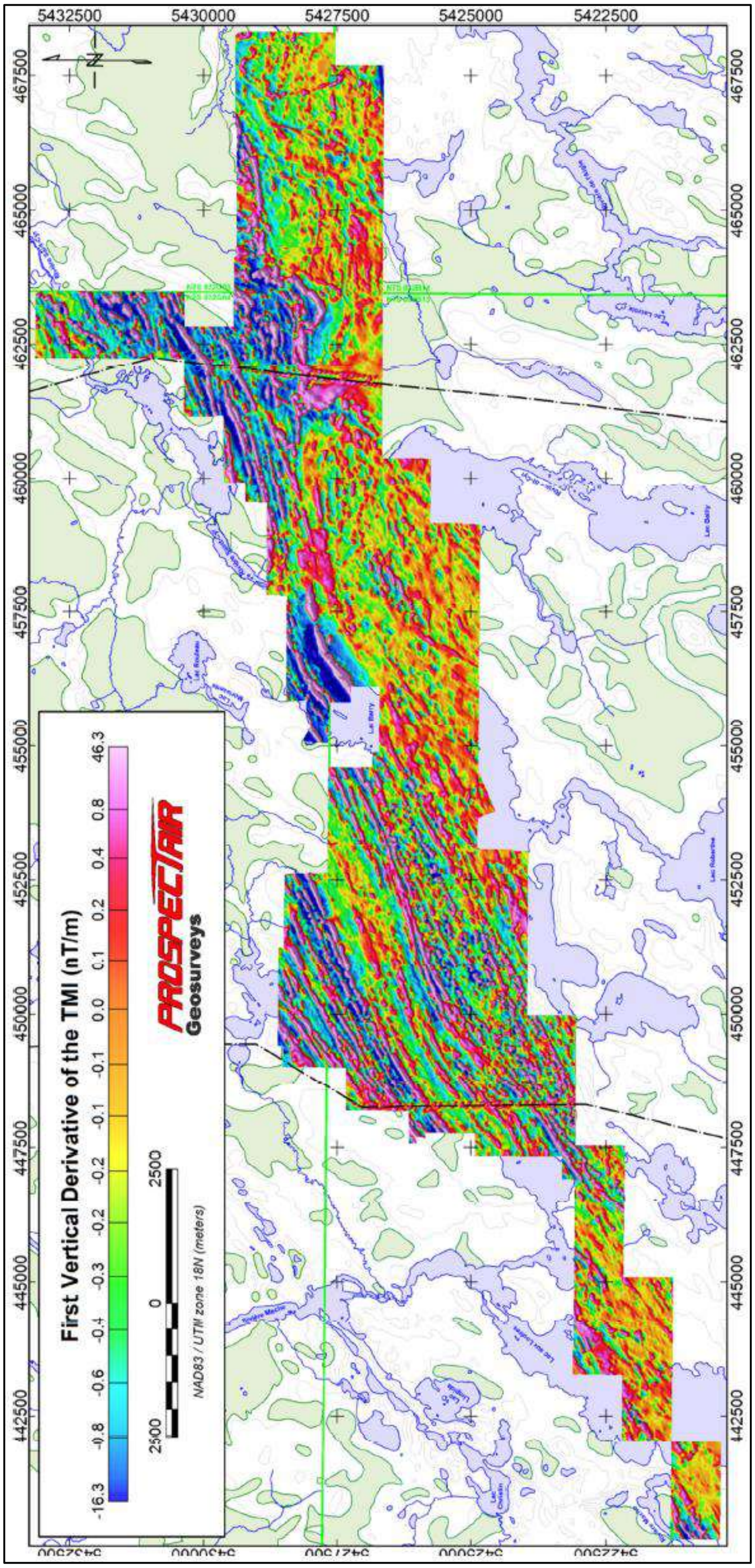
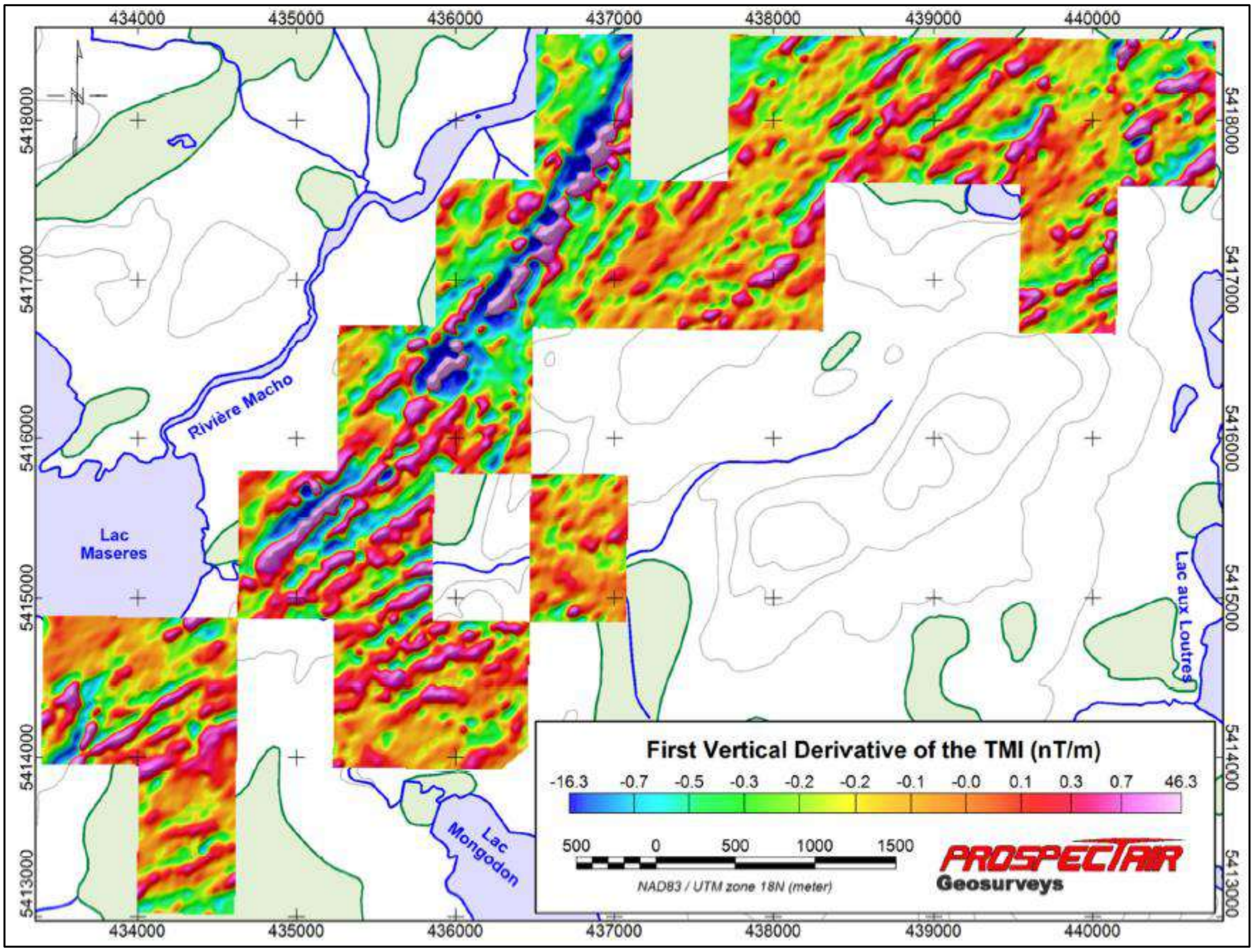


Figure 9-7 SW block First Vertical Derivative of TMI



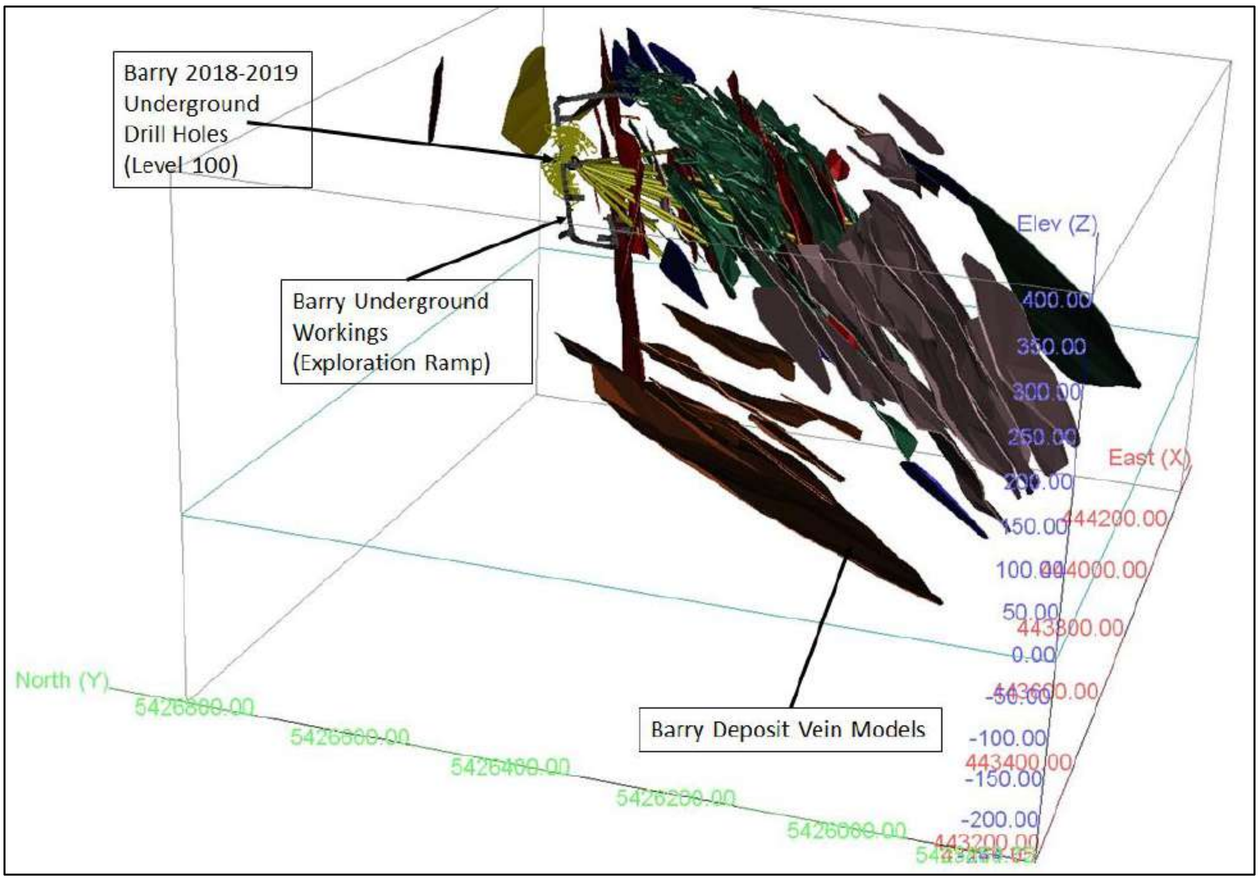
9.2 Barry Property

Exploration work completed on the Barry Property prior to 2016 is described a recent technical report by GoldMinds (Duplessis and Rousseau, 2016) and summarized in section 6 above. There has been no new surface exploration work except for diamond drilling completed on the Barry Property since 2009. Recent diamond drilling is discussed below in section 10.

Exploration on the Barry Property is restricted to underground development. In May 2018, an underground exploration ramp was began to allow access to the mineralized zones for future bulk sample programs and underground drill stations. The plan is to collect a 50,000 tonne underground bulk sample. To date, a total of 1,172 m of underground development has been completed and includes an 822.8 m ramp.

Bonterra has recently completed a drilling campaign consisting of 25 sub-horizontal drill holes totaling 7,548 metres (MB18-01 to MB19-25), mainly on Level 100 (see section 10.2.4 below) (Figure 9-8).

Figure 9-8 Isometric View Looking Northeast showing the Location of the 2018 - 2019 Underground Workings and Drill holes with respect to the Current Barry Deposit



10 DRILLING

10.1 Gladiator Property

Drilling completed on the Gladiator Property (formerly the Eastern Extension Property) prior to 2012 is described in a recent technical report by Snowden Mining Industry Consultants Inc. (“Snowden”) (Dzick. and Ghayemghamian, 2012).

Between 2012 and April 4, 2019, 295 diamond drill holes have been completed on the Gladiator Property for a total of 173,050.7 m of drill core (Table 10-1). In 2013 and 2014 no drill holes were completed. Since 2016 an intensive drilling campaign has provided 275 drill holes that are considered in the current Mineral Resource Estimation (Table 10-1; Figure 10-1 to Figure 10-6). Drill hole details and drill hole results are presented in Appendix A and B respectively. Width in tables in Appendix B is expressed as core width, true width has not been determined.

Table 10-1 Drill holes Completed on the Gladiator Property Between 2012 and 2019

Year	# of Drill holes	Total Meterage	# of Assays
2012	15	4,906	3,112
2015	4	1,722.4	1,184
2016	52	27,248.6	13,440
2017	65	49,656.7	22,178
2018	124	76,690.8	51,740
2019	35	12,809.3	5,136
Total:	**295**	**173,050.7**	**96,790**

10.1.1 2012 Drill Program

Bonterra completed 15 drill holes (BA-12-01 to 15) totalling 4,906 m at Gladiator in 2012 (Table 10-1).

On April 18, 2012, Bonterra received the first assays for the 2012 drill program on. The highlight of the first batch of assays was hole BA-12-02. This hole was drilled on the ice and is characterized by a series of gold zones, one as thick as 19 metres in length assaying approximately one gram per g/t. This zone included one sample assaying 10.20 g/t gold. Assays exhibit smoked quartz veins hosting gold.

On May 10, 2012, Bonterra received high grade gold assays for hole BA-12-10 (“Hole 10”), the first drill hole BonTerra drilled into the Rivage Zone (“Rivage”) on the Gladiator Property. Hole 10 assayed 73.82 g/t gold over 3.00 metres. The highest grade sample received from this drill hole was 220.00 g/t gold (6.41 Ounces per short ton) in a one metre long drill core sample. This is the highest grade drill core sample Bonterra has received since commencing work on the Property in the fall of 2010.

Hole 10 was collared approximately 120 metres from the Rivage outcrop and assayed 204 g/t gold in a chip sample. Bonterra also intercepted bonanza gold grades in a smoked, altered and mineralized quartz-carbonate vein.

On September 27, 2012, Bonterra received gold assays for two holes, BA-12-12 (“Hole 12”) and BA-12-14 (“Hole 14”), from the Rivage Zone (Figure 10-1). Hole 12 was the highlight as this drill hole hit the target Rivage Vein as well as four additional veins. The best drill core sample of the Rivage Vein assayed 23.30 g/t over 1.0 metre. Bonterra discovered the Rivage in 2011. The Rivage is characterized by a series of parallel veins mineralized with sulphides and often visible gold.

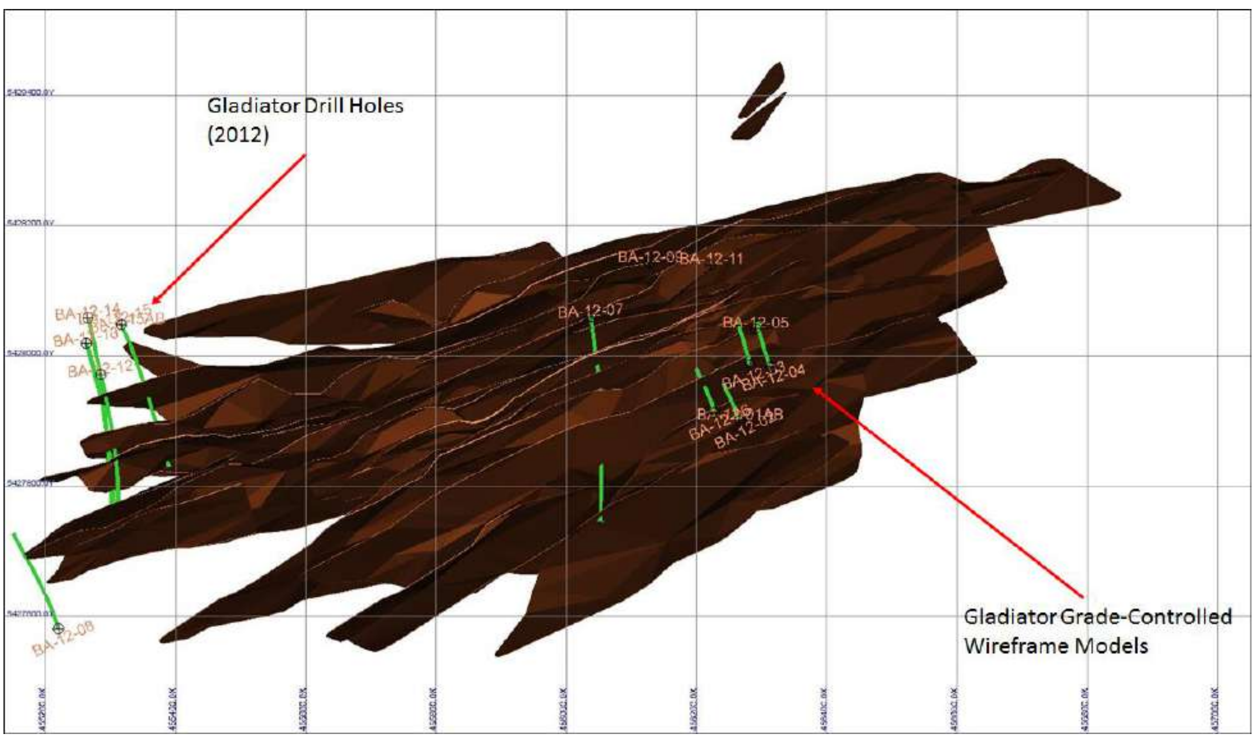
Highlights of assay results for the Rivage Vein include 23.3 g/t over 1.0 metre at 50 metres vertical depth in Hole 12 as disclosed in this news release, 204.0 g/t in a surface chip sample taken from the discovery outcrop as previously disclosed in Bonterra's news release dated October 4th, 2011 and 220.0 g/t over 1.0 metre at 200 metres in vertical depth in BA-12-10 ("Hole 10") as previously disclosed in Bonterra's news release dated May 10th, 2012. When reviewing results for Hole 10 and Hole 12, gold grades seem to increase with depth. BonTerra intercepted the high grade Rivage Vein and four other parallel veins in Hole 12 which is encouraging for Bonterra.

On June 12, 2013, Bonterra submitted samples from three drill holes to ALS Laboratories ("ALS") in Val d'Or, Quebec. Two of these three holes were drilled into the Peninsula Zone to test continuity of veins hosting high grade nearby while the final hole was drilled at the Rivage Zone.

When examining the core, particularly for holes BA-12-07 ("Hole 7") and BA-12-09 ("Hole 9"), mineralized quartz-tourmaline veins were observed and sampled. Hole 7 is the westernmost hole BonTerra has drilled on the Peninsula Zone to date. It must be noted that the veins seen in holes 7 and 9 appear to line up with nearby veins which have been discovered in previous drill holes by BonTerra. One of the key targets for both Holes 7 and 9 is a vein regularly returning high grade gold values. This vein has been intercepted in four previously completed drill holes: 42.60 g/t over 1.30 metres (BA-11-23); 10.19 g/t over 2.60 metres (BA-11-26); 25.40 g/t over 1.00 metre (BA-11-31) and 10.00 g/t over 0.90 metres (BA-11-36W).

BA12-07 returned values of 3.07 g/t Au over 5.0 m (101.0 to 106.0 m), which included 10.75 g/t Au over 1.0 m. The hole intersected the main NE-SW gold bearing structure identified by Bonterra during previous drilling campaigns, as expected.

Figure 10-1 Location of the 2012 Drill holes with respect to the Current Gladiator Deposit

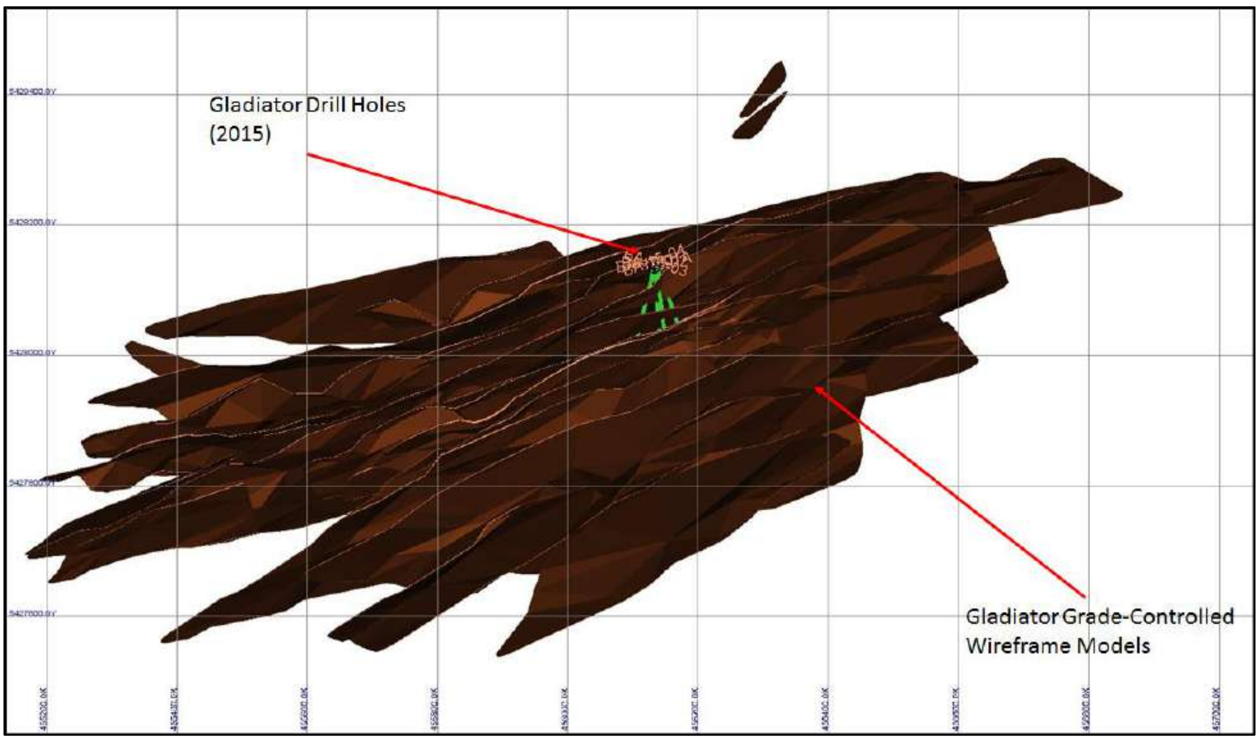


10.1.2 2015 Drill Program

Bonterra completed 4 drill holes (BA-15-01 to 04) totalling 1,722 m at Gladiator in 2012 (Table 10 2). The 2015 Phase 1 drill program targeted the plunge and strike extensions the Gladiator Zone.

The first hole, BA-15-01A, encountered the main zone at 175 meters below surface, intersecting 14.0 g/t gold over 6.6 meters (Appendix B). This included a high-grade section of 104.5 g/t over 0.8 meters where numerous flecks of visible gold were observed. The second hole, BA-15-02, intersected 7.2 g/t Au over 7.7 meters. Hole BA-15-03, located approximately 75 meters to the west of drill hole BA-15-02, encountered a number and range of gold intersections. High grade was discovered in the FW Zone, and broad lower gold grades were intersected within a mineralized felsic porphyritic intrusive in the lower half of the hole. Hole BA-15 04, which intersected 1.3 m of 8.0 g/t Au, was located approximately 50 meters to the east of drill hole BA-15- 01, and even though the hole was placed much higher in the system and above plunge, it hit the Main Zone with similar higher-grade mineralization as seen in BA-15-01 and BA-15-02.

Figure 10-2 Location of the 2015 Drill holes with respect to the Current Gladiator Deposit



10.1.3 2016 Drill Program

On February 2, 2016, Bonterra announced it had commenced the 2016 Multi-Phase Exploration and Drill Program commenced on Gladiator. Based on results from the 2015 Phase 1 Drill Program and the successful financing in late 2015, the 2016 Exploration and Drill Program was expanded to consist of up to 25,000 meters with a minimum of two drill rigs to extend and expand the known Gladiator zones. Bonterra completed 52 drill holes (BA-16-01 to 51) totalling 27,248.60 m at Gladiator in 2016 (Table 10-1, Figure 10-3). See Appendix B for a more complete list of significant drill results.

On March 2, 2016, Bonterra announced it had received assays from the first two holes (BA-16-01 and BA-16-03). Drilling had extended all zones 100 meters to the west of previously known limits most notably in the Main zone with a high grade near surface intersection of 9.0 g/t over 5.0 m in hole BA-16-03. BA-16-03 was a shorter probe hole located to test only for the western extension of the Main zone near surface. Drill hole BA-16-01 intersected three zones, most notably the broad and mineralized intrusive unit at approximately 300 meters in depth, extending this zone another 100 meters to the west. Visible gold was noted in the Main zone at 355 meters in hole BA-16-01.

On March 29, 2016, Bonterra announced it had received assays from an additional five holes, and on April 29, 2016, Bonterra announced that it had received assays from an additional four (4) holes from its 2016 Exploration. Two new high-grade mineralized zones have been discovered to the north (BA-16-02) and south (BA-16-05) of the extensions of the main deposits.

- Drilled 5.0 m of 15.3 g/t Au in Hole BA-16-02 in a new zone (North Shear 1);
- Drilled 6.0 m of 10.4 g/t Au in Hole BA-16-04;
- Drilled 3.3 m of 29.0 g/t Au in Hole BA-16-05 in a new zone (South);
- Drilled 5.7 m of 24.3 g/t Au in Hole BA-16-09;
- New South Zone discovery intersects 3.0 m of 20.7 g/t Au in Hole BA-16-07 at westernmost limits of drilling to date;
- Intersection of 3.0 m of 3.0 g/t Au drilled in New South Zone in Hole BA-16-08;
- Extends Main Zone further to the west with intersection of 10.0 m of 9.3 g/t Au, including 3.0 m of 27.5 g/t Au, in Hole BA-16-10;

On May 18, 2016, Bonterra announced it had received assays from an additional eight. BA-16-19, targeting the lower and westernmost extents of the Gladiator zones, generated a high-grade intersection of 137.4 g/t over 2.5 m with coarse visible gold having been observed in the core.

- 2.5 m of 137.4 g/t Au in Hole BA-16-19 at westernmost and deepest limits of drilling to date in Main Zone, coarse visible gold was observed over a 0.5 m section of the core;
- Intersection of 3.5 m of 12.0 g/t Au in Main Zone drilled less than 100 m below surface in Hole BA-16-14;
- Extends Main Zone further to the west with intersection of 3.0 m of 15.0 g/t Au, at nearly 200 m below surface in Hole BA-16-17;
- Hole BA-16-15 extends Footwall Zone further to the west with intersection of 2.6 m of 8.6 g/t Au at 100 m below surface;

On November 16, 2016, Bonterra announced announce that it has significantly extended its Gladiator Gold Zones by over 250 m down plunge and to the east with multiple intersections of high grades and meaningful widths. Drill Hole BA-16-39, targeting the lowest and easternmost extents of the Gladiator zones, generated multiple gold bearing horizons including a high grade intersection of 70.0 g/t over 5.5 meters at the eastern extent of the deposit and at over 600 meters in depth below surface. Drill BA-16-38, located the zone an additional 50 meters lower in depth and 100 meters to the east, intersected 12.4 g/t over 4.0 meters. Drill holes 31, 38 and 39 also intersected the Main Zone below an eastern plunging mineralized felsic porphyritic unit that appears to coincide with the overall plunge of the deposit.

On December 8, 2016, Bonterra announced that the first two drill holes targeted within the “Rivage Gap” successfully located new high-grade gold mineralization, resulting in the addition of over 500 meters of strike length to the Gladiator Deposit. Drill hole BA-16-40 intersected 64.3 g/t over 2 meters at 130 m below surface while drill hole BA-16-42 intersected 8.7 g/t over 3 meters at over 300 meters below surface.

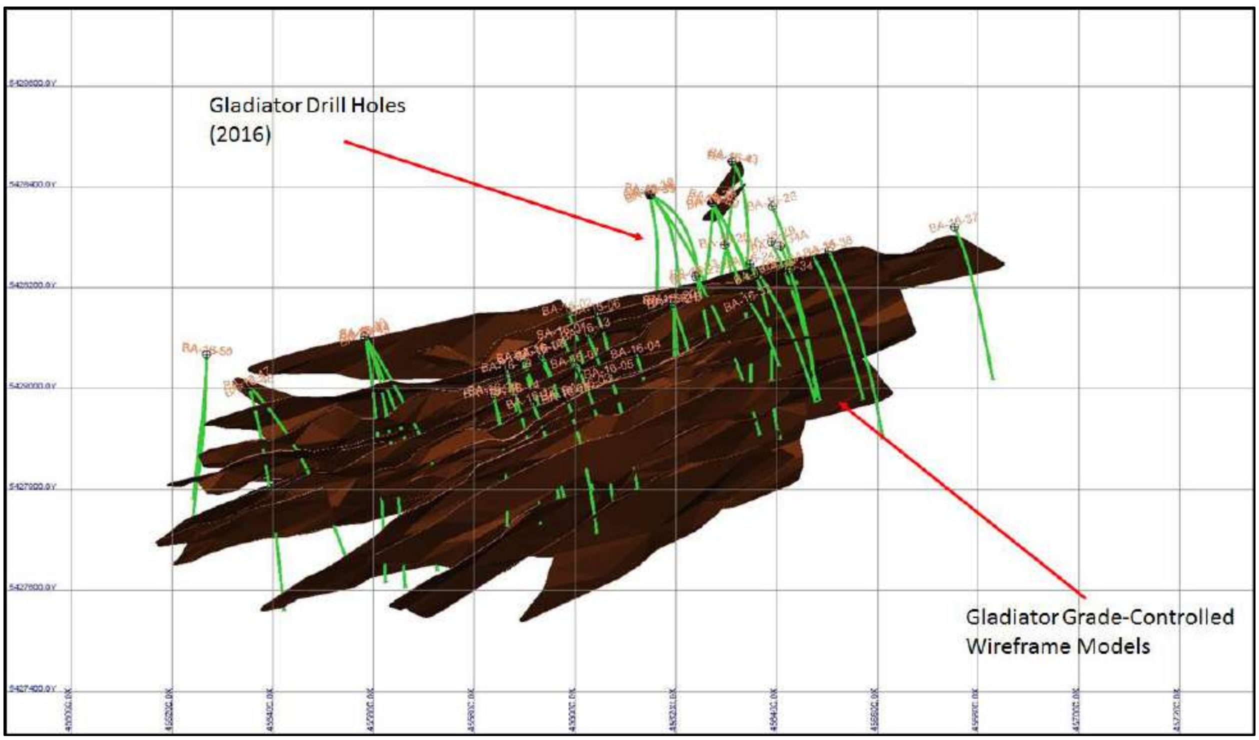
On February 2, 2017, Bonterra announced positive drilling results from the “Rivage Gap Western Extension”. Assays from selected intersections were reported as follows:

- Hole BA-16-48 encountered multiple high grade intersections in the "Rivage Gap", including intersections in the Main Zone and the Footwall Zone with the following results:
    - 3.8 m grading 16.8 g/t Au (Main Zone) at ~275 meters below surface.
    - m grading 14.9 g/t Au (Footwall Zone) at ~225 meters below surface.

Drilling at the "Rivage Gap", a 600 meter long stretch of the Gladiator Deposit to the west contains limited drill information to-date, and continues to demonstrate excellent continuity in multiple horizons between the Gladiator Deposit and the Rivage Zone. The continuity identified at the Gladiator Deposit currently indicates a total drilled strike length to date on multiple horizons of 1,200 meters, and to a depth of 650 meters below surface. The Rivage Zone had previously been interpreted to be a distinct and separate zone. The Gladiator Deposit remains open in all directions.

- Hole BA-16-47 also discovered a new gold zone to the south of the deposit at 300 meters below surface with 3 m of 2.0 g/t, as well as two mineralized zones of approximately 10 m at 0.6 g/t on either side of the new zone.

Figure 10-3 Location of the 2016 Drill holes with respect to the Current Gladiator Deposit



10.1.4 2017 Drill Program

Bonterra completed 65 drill holes (BA-17-01 to 53, including wedges etc.) totaling 49,656.70 m at Gladiator in 2017 (Table 10-1, Figure 10-4). See Appendix B for a more complete list of significant drill results.

On January 31, 2017, Bonterra announced that multiple high-grade intersections had been discovered at the Deep Eastern Zone of the Gladiator Deposit. Hole BA-17-01 intersected two high grade intersections in the "Deep East Zone", interpreted as the down plunge deep eastern extension of the Gladiator deposit which includes

- 5.0 m grading 20.7 g/t Au (Main Zone) at ~425 meters below surface.
- 8.5 m grading 15.7 g/t Au (Footwall Zone) at ~300 meters below surface.

Hole BA-17-01 also discovered a new third new gold zone to the north of the deposit at 200 meters below surface, and intersected 10.0 meters grading 1.6 g/t.

On May 16, 2017, Bonterra announced further drill result from the “Rivage Gap”.

- Hole BA-17-04 encountered multiple high grade intersections in the “Rivage Gap”, especially extending the new North zone to the west, giving the following results:
  - 4.2 m grading 9.5 g/t Au (North Zone) at ~50 meters below surface.
  - 4.0 m grading 10.0 g/t Au (Footwall Zone) at ~200 meters below surface.
- Holes BA-17-08 and BA-17-10 each intersected four distinct zones in the “Rivage Gap” area, confirming the existence of the Main and Footwall zones, plus extending to the west the North and Mid zones, highlighting the following results:
  - 3.5 m grading 8.4 g/t Au (Footwall Zone) at ~150 meters below surface.
  - 1.0 m grading 8.0 g/t Au (Mid Zone) at ~200 meters below surface.
- Holes BA-17-07 and BA-17-09 extended the Main and Footwall zones to the west, effectively joing them with the Rivage area, confirming the strike length of over 1 km for each. BA-17-07 was also the deepest intersection yet recorded in the Rivage Gap area to date.
  - 3.0 m grading 12.0 g/t Au (Main Zone) at ~300 meters below surface.
  - 1.8 m grading 9.0 g/t Au (Footwall Zone) at ~50 meters below surface.

All intersections are located within a length or gap of drill information between the westernmost Rivage area and the known portion of the Gladiator Deposit. The high grade Main, Footwall and North Zones are in or near the sheared contact between mafic volcanic units and a mineralized felsic porphyritic intrusive.

On June 6, 2017, Bonterra announced that drilling from its ongoing resource development program discovered an additional parallel gold zone to the south and west of the main Gladiator Gold Deposit. The new zone lies within the “Rivage Gap” and was intersected by four (4) drill holes to date, with BA-17-12, which intersected 3.0 m of 8.8 g/t, being the most predominant and westerly hole to date.

- Hole BA-17-12 encountered multiple high grade intersections in the “Rivage Gap”, and confirms and extends the new South Zone to the west, indicating an ~500 m strike length to date with the following result:
  - 3.0 m grading 8.8 g/t Au (new South Zone) at ~275 m below surface.
- Hole BA-17-12 also intersected the main zone near surface in the “Rivage Gap” with:
  - 2.0 m grading 11.1 g/t Au (Main Zone) at ~25 m below surface.

On September 18, 2017, Bonterra announced that the ongoing resource development program in and around the Gladiator Gold Deposit has successfully further extended the Main, Footwall and North Zones by increasing the strike and depth by up to 300 metres depth to the known mineralized horizons. Assays from selected intersections were reported as follows:

Results from six recent drill holes significantly expand the size and confirm the continuity of the Gladiator Gold Deposit.

- Holes BA-17-20, BA-17-28, BA-17-31 and BA-17-32 collectively add 300 m depth and strike to the Main Zone. This extension occurs under plunge to the west below the Rivage Gap to a depth of over 650 m. A highlight of this significant extension is BA-17-20 which intersected 3.0 m of 10.4 g/t Au at 550 m below surface.
- Hole BA-17-23 extended the Footwall Zone to 400 m below surface under plunge with 3.0 meters of 10.1 g/t Au.
- Holes BA-17-30 and BA-17-31 extend the North Zone to depth by 100 m below BA-17-21: 21.5 g/t Au over 3 meters

On November 9, 2017, Bonterra announced that the ongoing resource development program in and around the Gladiator Gold Deposit has increased the width of the Main Zone and extended the strike length of multiple gold-bearing horizons. Assays from selected intersections were reported as follows:

- Results from six (6) recent drill holes have increased the width of the Main Zone and have extended the strike length of the Footwall and North Zones.
- Hole BA-17-38 extends the North Zone down plunge to 700 m below surface with 4.0 m of 7.3 g/t Au including 24.8 g/t over 1.0 m.
- Hole BA-17-38 increases width and grade down plunge in the Main Zone with 9.4 m of 8.2 g/t Au at 800 m depth.
- Hole BA-17-37 confirms the eastern continuity of the South Zone with 1.5 m of 17.6 g/t Au at 500 m depth.
- Hole BA-17-39B extends the Footwall Zone to the east below surface with 5.0 m of 11.5 g/t Au at 500 m below surface.
- To date, continuity of mineralization is now confirmed over a total drilled strike length on at least two horizons (Main and Footwall) of 1,200 m, as well as a drilled depth of 1,200 m.

On November 16, 2017 Bonterra announced the identification of a fifth new parallel gold zone at the Gladiator Deposit. This new “Barbeau Zone”, intersected by six drill holes up to 800 m below surface, was identified south of the “South Zone”.

Highlights and Observations:

- Two recent drill holes (BA-17-24 and BA-17-40A) at the Gladiator Gold Deposit indicate the potential of a new parallel gold zone south of the “South Zone.”
- BA-17-40A intersected 22.2 g/t Au over 1.9 m up to 800 m below surface.
- The Barbeau Zone has been intersected by at least six holes to date including BA-16-05 with 28.5 g/t Au over 3.3 m and BA-16-07 with 20.7 g/t Au over 3.0 m.

On December 5, 2017, Bonterra announced continued success from its ongoing resource development program at the Gladiator Gold Deposit. Assays from selected intersections were reported as follows:

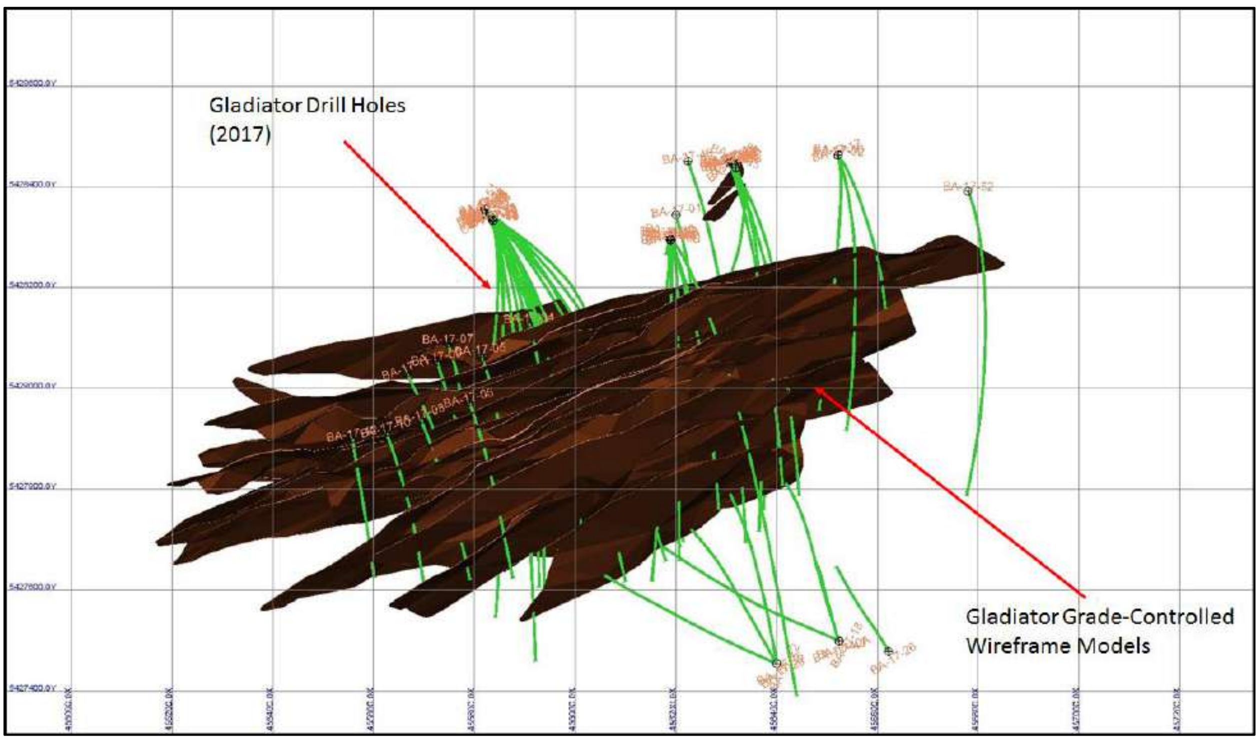
- Drill holes BA-17-42A (18.5 g/t Au over 4.0 m) and BA-17-44 (11.9 g/t Au over 3.2 m) in the South Zone increase and further define the size of the high-grade core area.
- Holes BA-17-42A and BA-17-48 improve the definition of the high-grade core of the Footwall Zone, with significant grade and width in hole BA-17-48, which intersected 10.1 g/t Au over 6.3 m.

- Holes BA-17-42, BA-17-43B and BA-17-46 confirm the eastern continuity of the North Zone, with BA-17-42 intersecting 9.6 g/t Au over 3.0 m. This recent drilling also extends the North Zone down plunge to the east.

On February 6, 2018, Bonterra announced that the ongoing resource development program at the Gladiator Gold Deposit has extended the North, Footwall and Main Zones by 200 m down plunge to the east. Assays from selected intersections were reported as follows:

- Hole BA-17-53B extends the North, Footwall and Main Zones by 200 m down-plunge to the east with 6.2 g/t Au over 1.9 m, 4.8 g/t Au over 3.5 m and 4.9 g/t Au over 1.8 m.
- Hole BA-17-45B intersected the Main and South Zones 650 m below surface with 15.8 g/t Au over 3.3 m adding further definition to the high-grade core of the Main Zone.
- Hole BA-17-46 intersected the North Zone with 26.7 g/t Au over 3.1 m and the Main Zone with 8.8 g/t Au over 3 m, demonstrating the continuity of these zones.

Figure 10-4 Location of the 2017 Drill holes with respect to the Current Gladiator Deposit



10.1.5 2018 Drill Program

Bonterra completed 124 drill holes (BA-18-01 to 108, including wedges and restarted holes etc.) totaling 76,690.80 m at Gladiator in 2018 (Table 10-1, Figure 10-5). See Appendix B for a more complete list of significant drill results.

On March 20, 2018, Bonterra announced initial results from the winter drilling campaign. Assays from selected intersections were reported as follows:

Highlights and Observations:

- Hole BA-18-04 intersected 16.9 g/t Au over 6.5 m at the Main Zone and 14.1 g/t Au over 1.5 m at the South Zone.
- MT-18-01 intersected the Main Zone with 8.4 g/t Au over 2.9 m and 8.6 g/t Au over 3.6 m. MT-18-02 intersected the Main Zone with 9.3 g/t Au over 4.0 m. These holes will provide the representative sample for the ongoing metallurgical studies and add infill definition to the Main Zone.
- Hole BA-18-03A intersected the Main Zone, adding strike length at depth with 3.5 g/t Au over 2.0 m.
- Initial results from the ongoing winter drilling campaign demonstrate the continuity of the Gladiator Deposit and strength of the geological model with increased drill density.

On April 3, 2018, Bonterra announced further results from the winter drilling campaign. Assays from selected intersections were reported as follows:

Highlights and Observations:

- Results from four recent drill holes demonstrate the continuity of the Gladiator Gold Deposit. The four drill holes were drilled on the ice and focused on the western side of the deposit. Two holes, BA-18-07 and BA-18-08, extend the near-surface strike length of multiple zones westward at the Rivage Gap, an area with minimal drilling.
- Hole BA-18-05 intersected 9.3 g/t Au over 3.1 m at the North Zone, 4.2 g/t Au over 1.5 m at the Footwall Zone, 6.9 g/t Au over 1.3 m at the Main Zone and 3.5 g/t Au over 1.2 m at the Barbeau Zone. Multiple intersections in BA-18-05 confirm the continuous nature of the modelled mineralized zones.
- Hole BA-18-06 intersected 6.1 g/t Au over 2.5 m at 350 m depth the South Zone. and 4.7 g/t Au over 2.0 m at 200 m depth in the North Zone.
- Holes BA-18-07 and BA-18-08 added near-surface strike length to the North and South zones at the Rivage Gap. BA-18-07 intersected the North Zone with 8.8 g/t Au over 1.3 and the South Zone at 5.8 g/t Au over 1.2 m. BA-18-08 intersected 17.8 g/t Au over 3.0 m at the South Zone.

Hole BA-18-07 intersected the North Zone near surface with 8.8 g/t over 1.3 m and the South Zone at 230 m depth with 5.8 g/t Au over 1.2 m. BA-18-07 is the most western hole drilled in 2018 at the Gladiator Gold Deposit so far, with anomalous gold intersected across all mineralized horizons. Results from BA-18-07 extend multiple mineralized zones to the west, adding over 100 m of strike length near surface.

BA-18-08 intersected 17.8 g/t Au over 3.0 m at the South Zone at 250 m depth. This intersection occurs in an area with minimal drilling and confirms the continuity of the South Zone on the western side of the Gladiator Deposit.

On April 9, 2018, Bonterra announced the first significant intersections of a new “sixth parallel” gold zone at the Gladiator Gold Deposit. This newly discovered gold zone, located approximately 50 metres south of the Barbeau Zone, is parallel to and geologically similar to the other five mineralized zones currently modelled at the expanding deposit. Assays from selected intersections were reported as follows:

Highlights and Observations:

- A new gold zone was recently discovered in Hole BA-18-09, at the Gladiator Gold Deposit, with 11.8 g/t Au over 2.6 m intercepted south of the Barbeau Zone, increasing the number distinct mineralized gold zones to six.
- Infill drill results continue to demonstrate the continuity of the deposit, highlighting the predictability of the mineralized zones.
- Hole BA-18-12 intersected 16.3 g/t Au over 3.4 m at the South Zone at 266 m depth. This intersection continues to confirm the continuity of the South Zone on the western side of the Gladiator Deposit.
- Hole BA-18-11 intersected high-grade gold in five mineralized zones, including 10.1 g/t Au over 2.4 m in the Barbeau Zone. This highlights the predictability of multiple mineralized zones and validates the geological model.
- Hole BA-18-10A intersected 16.5 g/t Au over 2.2 m in the Main Zone and confirms the continuous nature of the modelled mineralized zones.

On June 4, 2018, Bonterra announced drill results that further extended the South Zone to the west by approximately 50 metres. Positive assay results from ten recent drill holes have extended the known dimensions of the mineralization in multiple zones westward and to surface at the Rivage Gap area. Assays from selected intersections were reported as follows:

Highlights and Observations:

- Hole BA-18-25 intersected 34.3 g/t Au over 2.8 m at the North Zone, extending the deposit westward by approximately 50 m in the Rivage area.
- Infill drill holes BA-18-14 and BA-18-22A confirm continuity of the South Zone at depth and the extend the South Zone under plunge with 19.8 g/t Au over 1.2 m in BA-18-22A.
- Hole BA-18-15 extends the Main Zone to surface at the Rivage Gap with 13.9 g/t Au over 2.0 m.
- Hole BA-18-19 extends the Footwall down plunge with 13.4 g/t Au over 1.0 m at 550 m below surface.
- Hole BA-18-20 extends North Zone to surface at the Rivage Gap area with 14.2 g/t Au over 1.0 m.
- Infill drill results continue to demonstrate the continuity of the deposit, highlighting the predictability of the mineralized zones.

On June 13, 2018, Bonterra announced drill results that extended a high-grade ore shoot of the Footwall Zone up-plunge to the west in the Rivage Gap area. Assays from selected intersections were reported as follows:

Highlights and Observations:

- Hole BA-18-34 intersected the Footwall Zone with 44.9 g/t Au over 3.0 m, extending a high-grade ore shoot to the west, up-plunge in the Rivage Gap area.
- Hole BA-18-36 extended the North Zone by ~150 m to the east, down-plunge of a defined ore shoot with 8.4 g/t Au over 3.0 m.
- Infill holes BA-18-27A, BA-18-30 and BA-18-31 intersected the Main Zone between 300 to 500 m below surface, demonstrating the continuity of mineralization with 24.3 g/t Au over 5.0 m in BA-18-30 and 9.6 g/t Au over 3.5 m in BA-18-31.
- Hole BA-18-28 intersected the North Zone in the Rivage area, extending the zone downplunge in the western part of the deposit, with 5.3 g/t Au over 1.3 m.
- Holes BA-18-27A and BA-18-30 intersected the North Zone adding definition between 300 to 400 m depth with 7.2 g/t Au over 2.0 m in BA-18-27A.

On July 11, 2018, Bonterra announced drill results increasing the down-plunge size of the South Zone high-grade extent, and demonstrating continuity of mineralization. Assays from selected intersections were reported as follows:

Highlights and Observations:

- Hole BA-18-43 extends the North Zone in the east side of the deposit with 11.4 g/t Au over 1.0 m. BA-18-43 was drilled as a follow up to BA-18-36, which intersected 8.4 g/t Au over 3.0 m (see news release dated June 13, 2018). These intersections expand the North Zone 150 m east at approximately 500 m below surface.
- Hole BA-18-40, intersected the North Zone in the West end Rivage area, extended the depth of known mineralization to 300 m below surface with 6.3 g/t Au over 1.0 m.
- BA-18-41 intersected the Footwall Zone with 10.3 g/t Au over 2.1 m, extending the highgrade shoot down plunge further to the east.
- BA-18-42 expanded a high-grade shoot in the Footwall Zone eastward with 18.7 g/t Au over 2.0 m, increasing definition of the zone at 300 m depth.
- Infill hole BA-18-39 intersected both the Main Zone with 19.8 g/t Au over 1.5 m and the South Zone with 30.5 g/t Au with 2.0 m. These intersections increase the overall size of the mineralized zones and increase the confidence of the high-grade shoots between 350 m and 400 m below surface.

On July 17, 2018, Bonterra announced drill results extending the Footwall Zone down-plunge to the east. Assays from selected intersections were reported as follows:

Highlights and Observations:

- Infill and extension drill results continue to demonstrate the continuity of the deposit, highlighting the predictability of the mineralized zones.
- Hole BA-18-54 intersected the Footwall Zone with 15.3 g/t Au over 2.7 m approximately 500 m below surface. This intersection increases the Footwall Zone considerably in both size and grade, expanding the potential down plunge.
- This intersection increases the Footwall Zone considerably in both size and grade, expanding the potential down plunge.
- Step out hole BA-18-44 intersected the Footwall Zone with 9.1 g/t Au over 2.0 m, expanding mineralization westwards in the Rivage area, and opens the zone to depth on westside of the deposit.
- Hole BA-18-49A intersected the North Zone in the Rivage area with 12.2 g/t Au over 1.5 m, extending the depth, and opened up new high-grade mineralization down plunge to 300 m below surface.
- Hole BA-18-50 intersected the South Zone at 300 m below surface, proving the predictability of the geological model and adding definition to the high-grade chute recently defined at the east side of the deposit.
- BA-18-48 intersected the North Zone and expanded the high-grade chute up plunge towards surface in the east side of the deposit with 12.6 g/t Au over 1.3 m.

On September 14, 2018, Bonterra announced drill results. Assays from selected intersections were reported as follows:

- BA-18-53A intersected multiple high-grade gold zones including 29.6 g/t Au over 3.0 m at the South Zone, indicating the presence of a new high-grade chute, expanding the known extents of mineralization and opening the South Zone at depth.

- BA-18-53A intersected multiple structures in the North Zone with 6.5 g/t Au over 2.0 m and 4.0 g/t Au over 3.0 m.
- BA-18-53A also intersected with Footwall Zone with 4.5 g/t Au over 3.0 m, increasing the thickness of the zone at 600 m below surface.
- BA-18-54 further defines the North Zone with 9.4 g/t Au over 3.0 m. This intersection increases the grade and indicates the continuity of the North Zone in the eastern part of the deposit.
- BA-18-58 intersected the South Zone at 600 m below surface with 12.3 g/t Au over 1.5 m, connecting the mineralization at the Rivage area to a high-grade chute at depth.
- BA-18-58 intersected the Main Zone, expanding the extents of known mineralization upplunge with 4.1 g/t Au over 1.5 m.
- BA-18-62 intersected the Main Zone, increasing the size of the high-grade chute 400 m below surface with 17.7 g/t Au over 2.0 m.
- BA-18-62 intersected two structures in the South Zone with 9.8 g/t Au over 2.0 m and 5.8 g/t Au over 2.0 m, proving continuity.

On September 19, 2018, Bonterra announced the discovery of a new high grade gold zone near surface to the north of the Gladiator Gold Deposit with an intersection of 27.4 g/t Au over 7.0 m. This new high-grade mineralization is located approximately 200 m north of the most northerly Gladiator zone (North Zone) and was located by drill hole BA-18-60 above 100 m in depth. The mineralization and characteristics of this zone are very similar to the Gladiator Deposit and are similar to Bonterra’s current geological model.

Highlights and Observations:

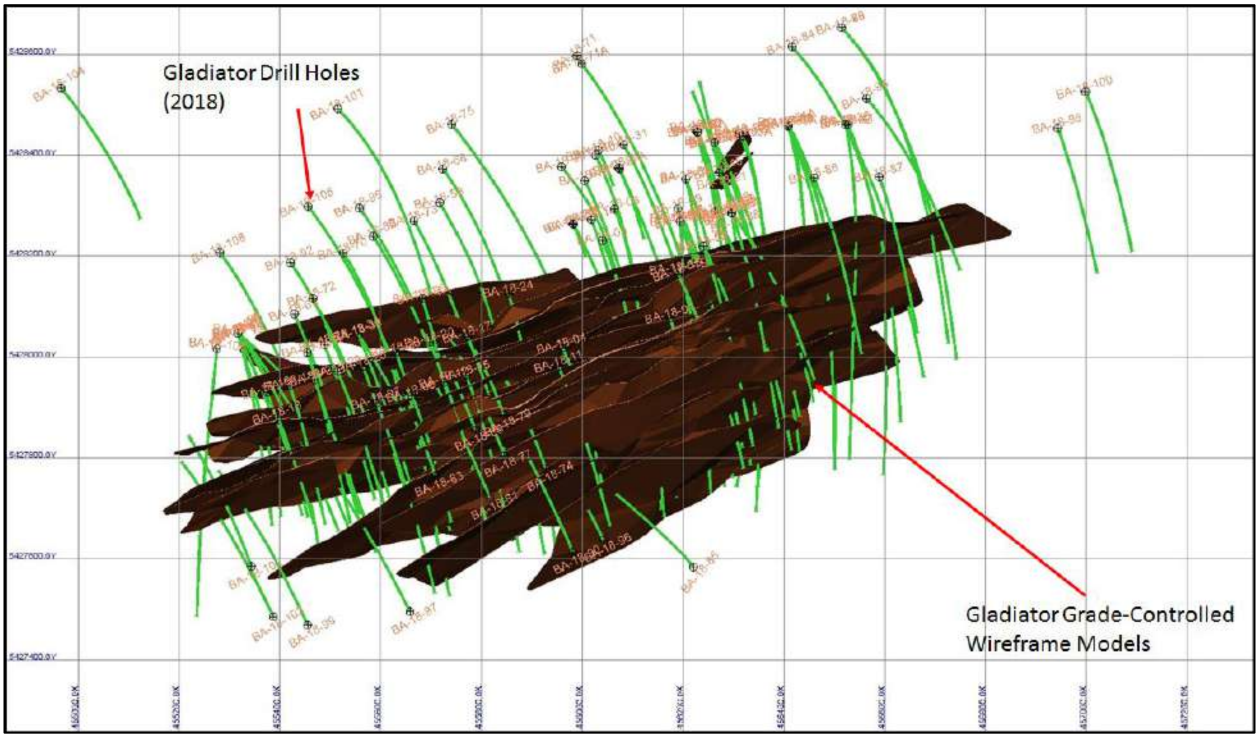
- BA-18-60 intersected a new high-grade zone located 200 m north of the North Zone with 27.4 g/t Au over 7.0 m. The intersection occurred between 96.0 m and 103.0 m down hole and contained numerous fine specks of visible gold within smoky quartz veining with pyrite and minor sphalerite mineralization, typical of the Gladiator Deposit. Follow-up holes are ongoing in order to validate continuity.
- BA-18-60 intersected the Main Zone at 600 m below surface with 14.8 g/t Au over 7.0 m. This intersection adds to continuity of high-grade mineralization at depth with shallow intersections along an easterly plunge.

On December 6, 2018, Bonterra announced drill results. Assays from selected intersections were reported as follows:

- Multiple new high-grade intersections were intersected in exploration drilling north and west of the Gladiator deposit, extending the known extents of mineralization up to 300 m north and highlighting the potential for further expansion.
- BA-18-72 intersected the New North zone with 7.3 g/t Au over 2.1 m and extended the North Zone down plunge in the Rivage area with 14.1 g/t Au over 1.2 m.
- BA-18-78 intersected the North zone eastward down plunge to more than 800 m below surface with 5.4 g/t Au over 1.1 m.
- BA-18-81 extended the North zone in the Rivage area with 18.0 g/t Au over 2.6 m. This intersection expands the zone down plunge and opens up the Rivage area for further extension at depth.
- BA-18-83 intersected the Main zone at approximately 100 m below surface with 13.7 g/t Au over 7.3 m. This infill intersection expanded the high grade trend within the Main zone in the Rivage Gap area.
- BA-18-90 further defines the Footwall zone with 25.9 g/t Au over 2.0 m in the Rivage area.

- BA-18-95 intersected multiple high-grade structures north of the deposit onto the Duke property including 4.8 g/t Au over 3.8 m. This exploration hole discovered five distinct gold zones north of the Gladiator deposit.
- BA-18-95 extended the North zones down plunge greater than 500 meters below surface with 7.7 g/t Au over 1.0 m. Hole BA-18-95 also opens up the Footwall zone with 4.8 g/t Au over 2.0 m in the Rivage area. These intersections highlight the exploration potential to discover additional high-grade chutes at the deposit.
- BA-18-102 intersected multiple new structures in the Rivage area, including 10.6 g/t Au over 1.4 m, extending mineralization more than 100 m to the southwest.
- BA-18-108 intersected 11.4 g/t Au over 2.5 meters north of the deposit on the Duke property.

Figure 10-5 Location of the 2018 Drill holes with respect to the Current Gladiator Deposit



10.1.6 2019 Drill Program

Bonterra completed 35 drill holes (BA-19-01 to 29, including wedges and restarted holes etc.) totaling 12,809.30 m at Gladiator in 2019 (Table 10-1, Figure 10-6). See Appendix B for a more complete list of significant drill results.

On Feb. 14, 2019, Bonterra announced that the ongoing exploration drill program continues to return positive results, extending gold-bearing mineralized zones on the Gladiator Deposit. The objective of the current drill program is to explore potential extensions on the Gladiator Deposit with three active drill rigs. Today's positive results, includes 40.2 g/t over 2 m in hole BA-19-09 and 20.7 g/t over 1.5 m in hole BA-19-07. These results confirm the extension of the North and Rivage Zones in a west-southwesterly direction by an additional 100 m, with mineralization encountered within 150 m of surface. These recent drill holes also confirm the easterly plunge of the mineralization. Visible gold is observed in smoky quartz veins and is associated with sphalerite which is typical of the Gladiator Deposit zones.

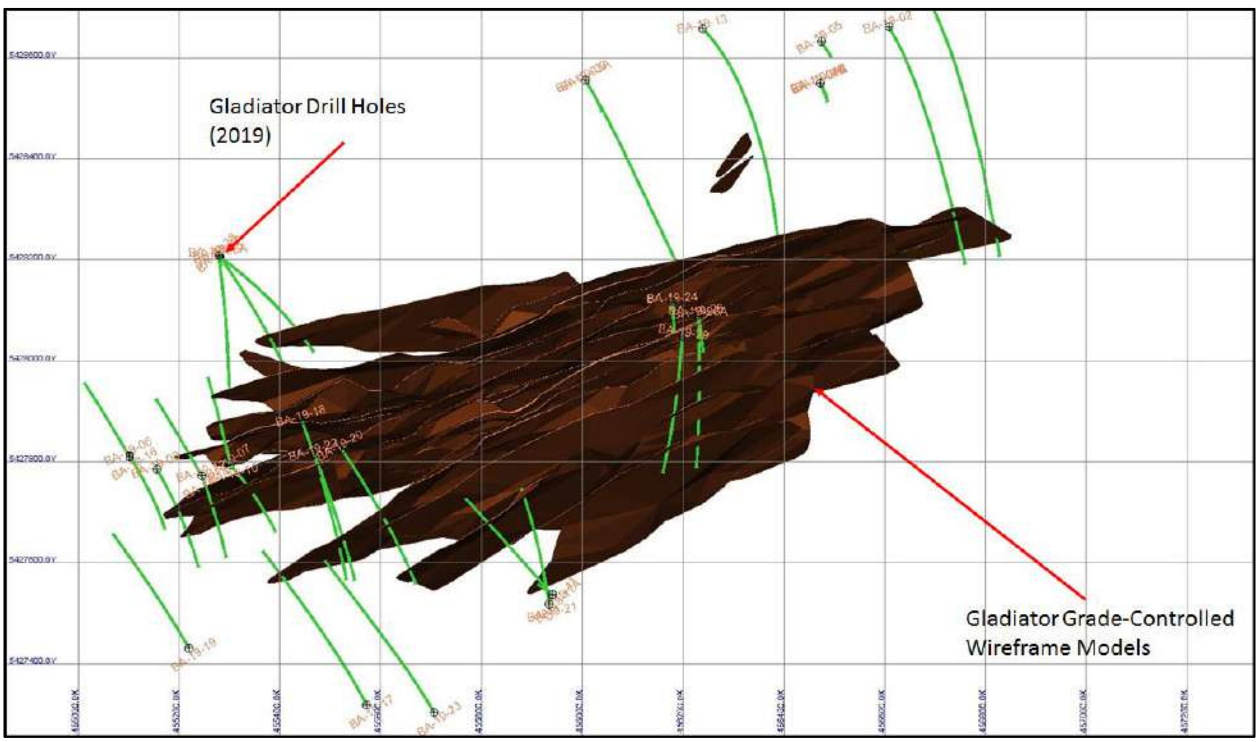
On April 4, 2019, Bonterra announce assay results from ongoing diamond drilling. The results reported extend several of the gold-bearing mineralized zones along strike on the Gladiator Deposit.

The Barbeau zone is the southernmost of the mineralized Gladiator structures and is characterized by mineralized smoky quartz veins with pyrite, sphalerite, chalcopyrite and visible gold. Current drilling has extended the zone by 250 metres, confirming its continuity in grade and length with hole BA-19-24 that returned 14.6 g/t Au over 4.6 m. The Barbeau zone has now been outlined over a strike length of 450 metres to a depth of 200 metres.

The Rivage 2 zone, located north of the Gladiator deposit, consists sub-vertical quartz veins mineralized with pyrite, sphalerite and visible gold. Initially discovered by field prospecting in the summer of 2018, the mineralized zone now extends over 350 metres to a depth of 200 metres. Drill hole BA-19-28 returned 37.6 g/t Au over 1.7 m. The Rivage 2 zone remains open along strike and at depth.

The South zone, located in the heart of the Gladiator deposit, was intersected in drill hole BA-19-26A that returned 17.7 g/t Au over 2.0 m. Mineralization typically consists of smoky quartz, pyrite, sphalerite and visible gold. Attesting to the Company's geological modeling and continuity of the mineralized zones, this drill hole was expected to intersect the South zone prior to reaching the Barbeau zone.

Figure 10-6 Location of the 2019 Drill holes with respect to the Current Gladiator Deposit



10.2 Barry Property

Drilling completed on the Barry Property prior to 2016 has been described in previous technical reports by Deschênes, (2006a, 2006b), Camus (2007), Claude Duplessis and Camus (2010), Duplessis and Gilbert Rousseau (2016) and Duplessis et al., (2016) and summarized in Section 6 above. The following discusses recent drilling completed on the Barry Property from 2016 to 2019.

Between 2016 and, 2019, 200 surface diamond drill holes have been completed on the Barry Property for a total of 82,590.95 m of drill core (Figure 10-7 to Figure 10-10). The surface drilling was completed by Metanor prior to the acquisition of the Barry Property by Bonterra. An additional 25 underground drill holes were completed in 2018-2019 for a total of 7,548m. This drilling was completed by Bonterra. Drill hole details and drill hole results are presented in Appendix A and B respectively. Width in tables in Appendix B is expressed as core width, true width has not been determined.

10.2.1 2016 Drill Program (Figure 10-7)

On April 27, 2016, Metanor announce the preliminary drilling results from the 1,200 m diamond drilling campaign at the Barry Property.

The drilling program was aimed to test the extension of high grade mineralization and the new mineralization model proposed by GoldMinds Geoservices Qualified Person (QP), Claude Duplessis P.Eng.

Previous modeling of the mineralization and estimation of resources was done under the basis that mineralization was striking North-East and dipping South East. Goldminds' analysis of the high grade mineralization using GENESIS © software has allowed the visualisation of 3 stacked oreshoots plunging East at 19 degrees over 225m strike length (open) inclined to the south at 49 degrees, these high grade zones are about 55-60m wide (25-30m true thickness-see figure attached) These high grade zones are located to the west and connect the west pit and the center pit in the East direction.

This trend was also tested in other sectors and Hole MB-16-14 located to the extreme East of the Main Pit demonstrates continuity of high grade mineralisation in that direction. Hole MB-16-07 located in the west outside the pit area has also shown mineralization of interest and is in line with limited surrounding holes. This will require additional drilling to define a possible new zone to the West. Preliminary highlights of the program at Barry – Partial results (only holes 06, 07, are completed)

Highlights to date:

- 4.4 m at 2.1 g/t Au iand 10 m at 2.5 g/t Au in hole MB-16-04
- 30 m at 1.8 g/t Au in hole MB-16-06, including 13 m at 3.6 g/t
- 20 m at 0.8 g/t Au in hole MB-16-07
- 9 m at 5.4 g/t Au in hole MB-16-14

On May 11, 2016, Metanor announced additional drilling results from the 2016 diamond drilling campaign.

- Drill campaign Highlights to date:
- 40m at 2.1 g/t Au in hole MB-16-14, east extension of the main pit;
- 33m at 1.9 g/t Au in hole MB-16-12, central extension of the main pit;
- 30m at 1.8 g/t Au in hole MB-16-06, connexion of the west and center pit;
- 27m at 1.6 g/t Au in hole MB-16-08, south extension of the main pit;
- 14m at 2.8 g/t Au in hole MB-16-05, connexion of the west and center pit;

- 10m at 2.5 g/t Au in hole MB-16-04, west extension of the main pit;
- 14m at 1.5 g/t Au in hole MB-16-01, east extension of the center pit;
- 8m at 4.1 g/t Au in hole MB-16-13, central extension of the main pit

- Including:
  - 3.0 g/t Au over 6m in hole MB-16-01;
  - 3.6 g/t Au over 13m in hole MB-16-06;
  - 5.4 g/t Au over 5m in hole MB-16-08;
  - 4.4 g/t Au over 8m in hole MB-16-12;
  - 5.4 g/t Au over 9m in hole MB-16-14

The results from holes MB-16-05 and MB-16-06 confirm the connection of the mineralization between the west and the center pit. Hole MB-16-01 demonstrates the extension at depth of the mineralized trend. Hole MB-16-02 had to be relocated during execution, for safety reason, and was therefore unable to hit the target. Hole MB-16-03 demonstrates the mineralization under the intrusive while MB-16-04 shows the mineralization near surface. The holes MB-16-08, 09, 12, 13, and 14 demonstrate mineralization to the south in the extensions of the mined areas. Hole MB-16-08 shows the continuity of the mineralization near surface at 100m south from the main pit. The assay results from MB-16-10 and 11 are pending.

The holes MB-16-07 and 15 confirmed a new mineralized zone located a further 250 m west from the existing western pit. The mineralization in this sector is located in the basalt, above the quartz feldspar porphyry (QFP), whereas in the other sector of the project, the mineralization is located in the basalt, above the granodiorite. An old cut 141.7E located near 500 m to the west reveals gold at surface and could be the extension of this zone. More work will be required to validate the dimension of this new gold zone.

On November 15, 2016, Metanor announced additional results from its 2016 drilling campaign. This drill program, targeting the area covered by the mining lease, aimed to delineate the extensions to the west, south-west, and to validate the geometry of the mineralized materials north of the regional shear Urban-Barry. Results from 13 new drill holes are reported in this press release.

The holes 16, 19, 20, 21, and 22 were drilled north of the existing pits. The holes 17 and 18 were drilled to west of the pits, and the holes 23 to 28 were drilled to the south-west of the pits. See attached diagram.

Highlights:

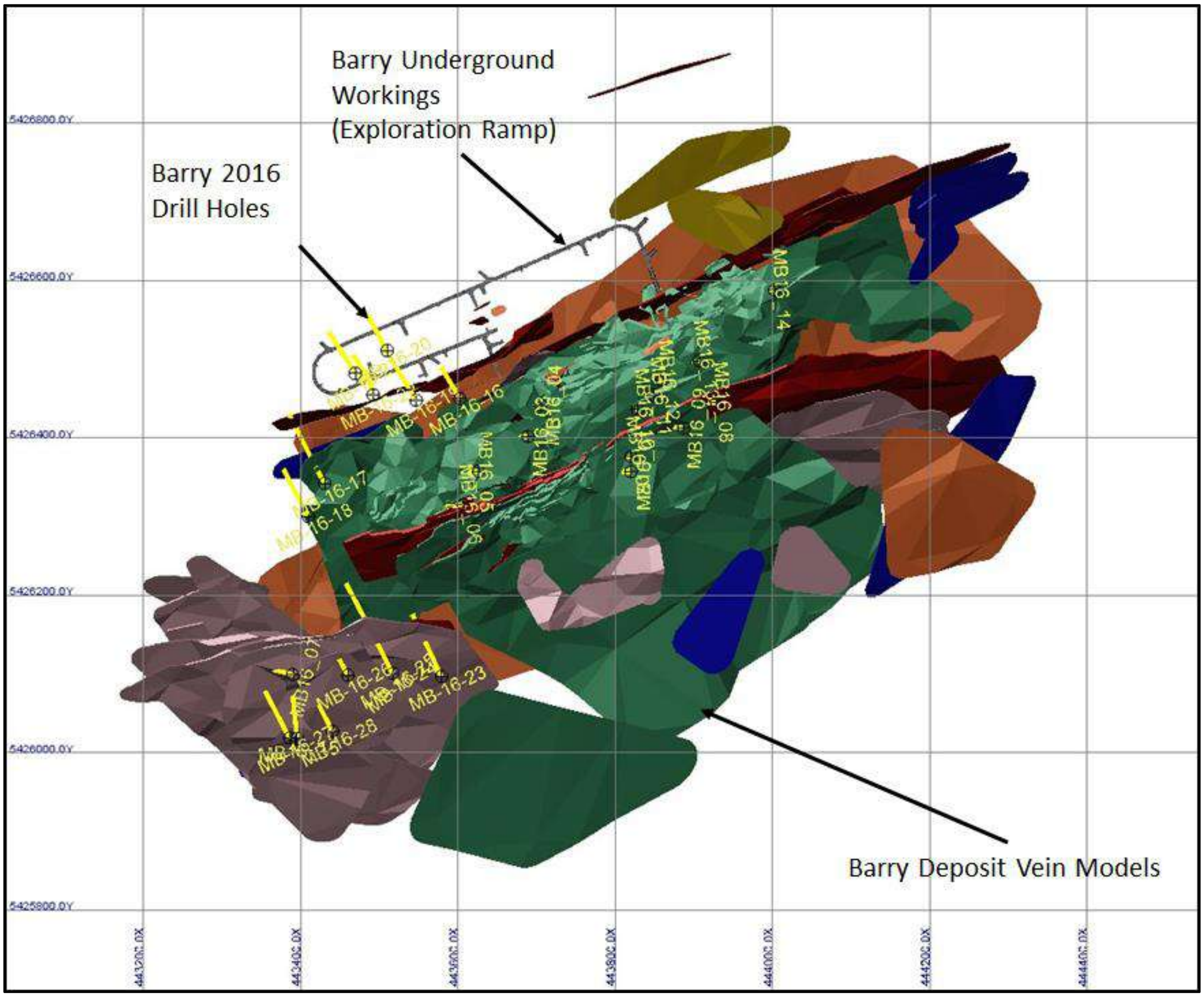
- 4.14 g/t over 3.6 meters in MB-16-17,
- 4.25 g/t over 16.7 meters in MB-16-24 including 11.89 g/t over 4.8 meters,
- 1.30 g/t over 15.45 meters in MB-16-26 including 2.18 g/t over 6.85 meters,
- 2.33 g/t over 16.8 meters in MB-16-27 including 3.58 g/t over 8 meters,
- 2.27 g/t over 16.6 meters in MB-16-28 including 3.67 g/t over 5.5 meters.

The holes 16, 19, 20, 21, and 22 that were drilled to the north tend to demonstrate that the mineralization may not be oriented the same way north of the pits. Hole 20 did not intersect the gold intersected by hole 19. The holes 16, 21, and 22 did not intersect significant values. Additional holes in a different direction should be drilled to validate this possibility.

The holes 17 and 18 drilled to the West intersected interesting mineralization near surface in relation to the presence of a porphyry intrusive below another porphyry. This sector is open to the West and at depth.

The holes 23 to 28 located south-West from the pits intersected the mineralization on the contact of the intrusive. Only hole 25 did not intersect mineralization because it was too shallow, and it should be extended eventually. These new holes confirm the extension of a zone at least 250 meters along strike by 200 meters along dip direction. The zone is open in all direction.

Figure 10-7 Location of the 2016 Drill holes with respect to the Current Barry Deposit (MB-16-01 to 028)



10.2.2 2017 Drill Program (Figure 10-8)

On March 8th, 2017, Metanor provided an update on its ongoing 2017 surface drilling program. Sixteen holes have been drilled so far this year, totalling 2,730 meters, towards the south-east and south-west of the Barry pit.

Highlights:

- The drill holes MB-17-42 and MB-17-43 identified the mineralized sub-vertical shear structure.
- The holes MB-17-29 to MB-17-38 drilled south-east of the pit allowed for the increase in size of the mineral envelope to the west associated to the pit.

Many narrow shear structures with gold mineralization, were encountered by the two drill holes MB-17-42.

On June 7th, 2017, Metanor provided an update on its ongoing 2017 surface drilling program at the Barry Property. Several new gold bearing shear zones have been identified below and outside of the Barry pit area as highlighted by drill hole MB-17-76 which intersected 9.9 g/t over 4 meters at over 200 meters below the Barry pit. Two primary gold bearing settings are the focus of this program being sub vertical high grade shear/vein systems and broader mineralized felsic intrusive contact zones near surface. The current program has attained its two main objectives of outlining new high grade gold bearing shear zones, and in increasing pit resources near surface.

A new shear structure named «South Zone» identified the plan view below, is located 75 m south of the pit, and shows continuity over 300 m along strike, and 250 m vertically. A minimum of 5 parallel shear zones have been identified so far and remain open along strike and to depth. Highlights of the drill intercepts in the quartz veins associated with the shear zones include:

- MB-17-70 from 296.9 m to 304.9 m 5.1 g/t Au over 8.0 m
- MB-17-72 from 135.3 m to 139.3 m 9.7 g/t Au over 4.0 m
- MB-17-74 from 344.0 m to 352.0 m 5.3 g/t Au over 8.0 m
- MB-17-76 from 365.0 m to 369.0 m 9.9 g/t Au over 4.0 m

The high grade gold bearing zones are associated with quartz-pyrite veins in narrow shear structures. These shear zones generally host high gold grades in narrow (1 to 5 m) widths as compared to the broadly mineralized lower grade zones that were mined in the past by open pit methods. These shear zones were recognized this year as having substantial potential to add new resources outside of the proposed pit as described in the preliminary economic assessment published in September 2016. The next portion of our drill campaign at the Barry project will focus on identifying and defining higher grade shear zones in and around the Barry pit area.

On August 28th, 2017, Metanor provide an update on its ongoing surface drilling program at the Barry Property. Over the past three months, the focus has been on verifying the extension of several gold bearing shear zones identified below and located outside the Barry pit area. The current program has attained its main objective of outlining the high-grade gold bearing shear zones. Since the last press release issued June 7th, 2017, 21 holes have been drilled and assayed and they have all intersected multiple shears at various depth.

The shears are now showing continuity over 600 metres along strike, and 400 metres vertically. A minimum of 5 parallel shear zones have been identified so far while remaining open along strike and at depth.

Highlights of drill intercepts in the quartz-pyrite veins associated to the shear zones include:

- MB-17-83 from 313.0 m to 322.0 m 4.8 g/t Au over 9.0 m
- MB-17-88 from 473.4 m to 480.6 m 6.2 g/t Au over 7.2 m
- MB-17-99 from 389.3 m to 397.5 m 7.1 g/t Au over 8.2 m
- MB-17-99 from 487.0 m to 492.5 m 9.4 g/t Au over 5.5 m

On October 16th, 2017, Metanor provided the following drill results from its ongoing surface drilling program at the Barry project. Pursuant to the results released August 28, 2017(press release available at www.sedar.com) an additional 24 holes have been drilled for a total of 11,163 meters.

The reduced spacing between the latest drill holes has enabled the differentiation of many gold bearing shear zones in the area east of the pits. Each of these new holes have crossed shear zones. The direction of these gold-bearing shears is parallel to the axis of elongation of the pits, and 2 inclinations are identified: the first one being at 45-55 ° which is parallel to the inclination of the felsic intrusion known on the surface and the other shears show an inclination between 75 ° and 85 ° to the south. The gold zones remain open in all directions.

Highlights:

- 4.0 m at 8.4 g/t Au in drill hole MB-17-102
- 0.7 m at 35.1 g/t Au in drill hole MB-17-103 (VG)
- 5.0 m at 5.9 g/t Au in drill hole MB-17-108
- 6.0 m at 5.3 g/t Au in drill hole MB-17-109
- 3.0 m at 27.8 g/t Au in drill hole MB-17-111 (VG)

On November 15th, 2017, Metanor announced that the ongoing exploration program at the Barry gold deposit has successfully identified multiple gold bearing shear zones; intercepted 14.5 g/t over 2 metres. The results from this drilling campaign continue to expand the size and further confirm the continuity of these structures. To date, the structures are now confirmed over a total drilled strike length of 900 m, as well as a depth of 550 m.

Highlights of drill intercepts in the quartz-pyrite veins associated to the shear zones include:

- MB-17-113 from 165.0 m to 167.6 m 7.8 g/t Au over 2.6 m
- MB-17-118 from 230.0 m to 234.0 m 5.2 g/t Au over 4.0 m
- MB-17-120 from 422.0 m to 426.3 m 5.8 g/t Au over 4.3 m
- MB-17-122 from 308.0 m to 310.0 m 14.5 g/t Au over 2.0 m

On January 19th, 2018, Metanor announced new high-grade intercepts of 14.3g/t Au over 4.6 metres and 10.4 g/t Au over 4.5 metres. These new exploration drill results continued to expand the size and further confirm the continuity of gold bearing structures. The shear zones have now been extended in excess of 1,500 m on strike, to a depth exceeding 440 m remaining open in all directions. From recent drilling, Metanor has identified multiple tensional veins within the existing shear hosted system.

Highlights of drill intercepts in the quartz-pyrite veins associated with the shear zones include:

- MB-17-37 extension from 498.0 m. to 502.6 m. 14.3 g/t Au over 4.6 m.
    - Altered sheared basalt with locally stockwork of quartz veinlets (15%) and 4% of fine disseminated pyrite
- MB-17-129 from 334.6 m. to 335.6 m. 20.3 g/t Au over 1.0 m.
    - Biotized sheared basalt with stockwork of quartz veinlets (25%) and 10% of disseminated pyrite
- MB-17-137 from 367.5 m. to 372.0 m. 10.4 g/t Au over 4.5 m.
    - Altered and sheared breccia basalt with stockwork of quartz veinlets (10%) and 7% of fine disseminated pyrite. 2 segments with many gold grains.

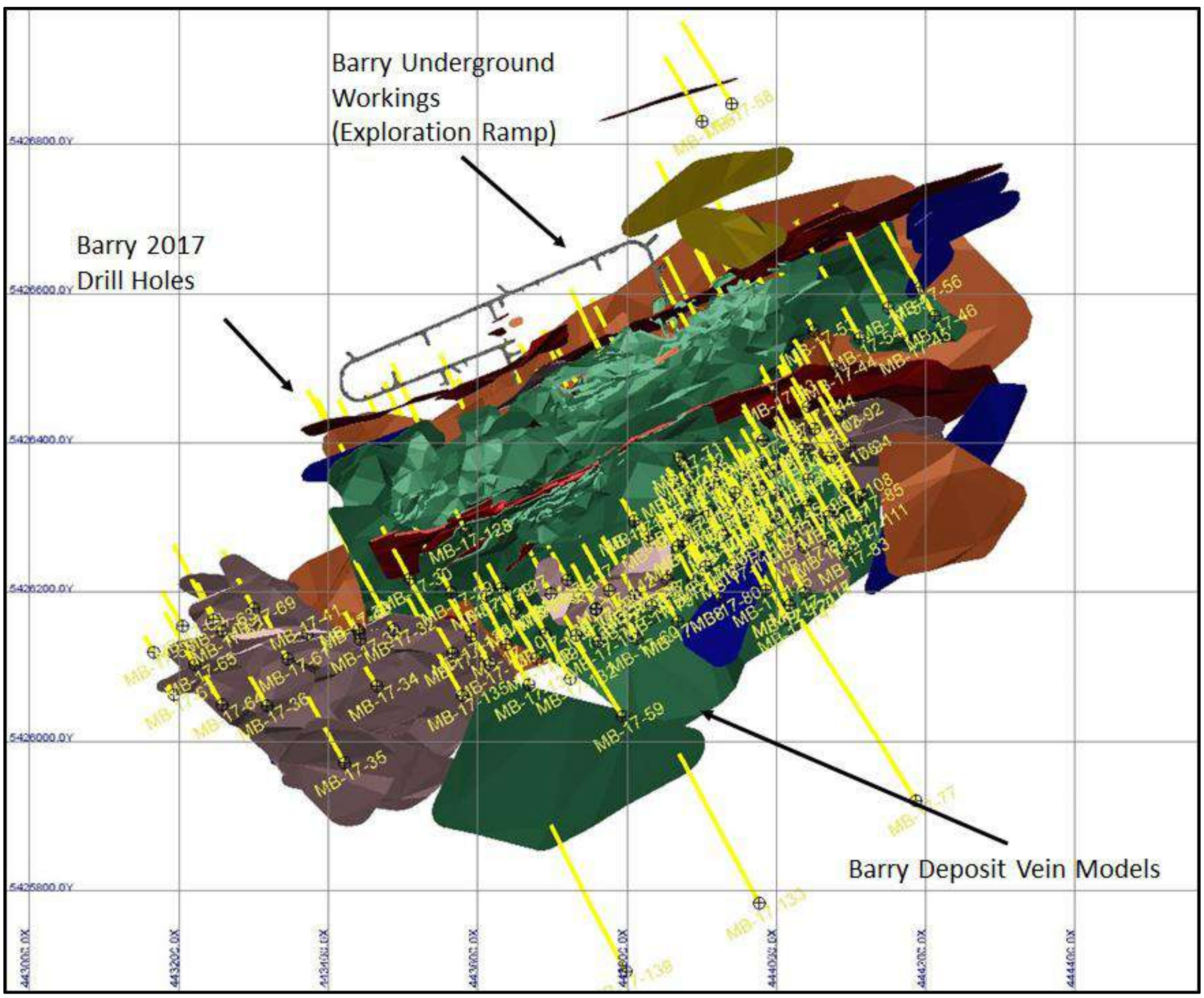
On February 27th, 2018, Metanor announced new high-grade results of 21.2 g/t Au over 1.7 metres, 31.5 g/t Au over 1.1 meters and 24.7 g/t Au over 1.5 metres. Metanor also extended the main shear zone at depth with grades of 6.4 g/t Au over 5.1 metres and 3.9 g/t Au over 12.0 metres.

The gold mineralization at the Barry project is structurally controlled and is hosted in a sheared basalt containing quartz-carbonate-albite veins with pyrite. Metanor has identified three main sub-vertical shear zones and approximately ten secondary lower dipping shear zones. These structures are open in all directions.

Highlights of drill intercepts in high-grade shear zones include:

- MB-17-142 from 184.9 m. to 186.6 m. 21.2 g/t Au over 1.7 m.
    - Strong shear zone in altered basalt along felsic intrusive contact. Numerous quartz veinlets with ~10% pyrite.
- MB-17-143 from 180.1 m. to 181.6 m. 24.7 g/t Au over 1.5 m.
    - Sheared and altered basalt with ~15% pyrite, pyrrhotite and folded quartz veining with VG.
- MB-17-52 ext from 163.0 m. to 164.1 m. 31.5 g/t Au over 1.1 m.
    - Altered and sheared basalt containing numerous quartz veinlets and ~5% fine pyrite.
- MB-18-152 from 257.0 m. to 262.1 m. 6.4 g/t Au over 5.1 m.
- Silicified sheared basalt with VG and ~6% fine pyrite - pyrrhotite.

Figure 10-8 Location of the 2017 Drill holes with respect to the Current Barry Deposit (MB-17-29 to 147)



10.2.3 2018 Drill Program (Figure 10-9)

On April 19th, 2018, Metanor announced drill results from the on-going drill campaign at the Barry Property, including new high-grade results of 15.8 g/t Au over 1.5 metres and 12.3 g/t Au over 1.3 metres. These new results have extended the deposit 100 metres to the east and 75 metres at depth, demonstrating the continuity and predictability of its shear-hosted gold deposit.

Highlights from new drillholes include:

- MB-17-54 ext from 158.1 m. to 159.6 m. 15.8 g/t Au over 1.5 m.
    - Biotite-sericite altered basalt with quartz stockwork and 3-5% pyrite
- MB-18-155 from 406.0 m. to 406.5 m. 18.1 g/t Au over 0.5 m.
    - Quartz veining zone in altered basalt with 5% pyrrhotite, 3% pyrite and 3% chalcopyrite
- MB-18-156 from 387.2 m. to 394.5 m. 4.0 g/t Au over 7.3 m.
    - Including 387.2 m. to 388.5 m. 12.3 g/t Au over 1.3 m.
    - Strong biotite-sericite-chlorite-hematite altered basalt with quartz carbonate veining and 2% pyrite
- MB-18-157 from 676.0 m. to 680.0 m. 5.5 g/t Au over 4.0 m.
    - Strong carbonatization-silicification zone in the altered basalt with quartz carbonate veining and 1.5% pyrite

On June 14, 2018, Metanor announced drill results, including new high-grade results of 15.7 g/t Au over 2.4 metres, 14.6 g/t Au over 1.8 metres, 12.2 g/t Au over 2.7 metres and 14.2 g/t Au over 1.2 metres. These new drill holes were designed to infill the South-Eastern portion at depth and to test the felsic intrusive on the western extent of the deposit. Current drilling has demonstrated the continuity and predictability of its shear-hosted gold deposit for over 1.1 km in strike length.

Highlights from new drillholes include:

- MB-18-185 from 113.5 m. to 125.6 m. 5.0 g/t Au over 12.1 m
    - Including 113.5 m. to 115.9 m. 15.7 g/t Au over 2.4 m.
    - Including 120.6 m. to 122.0 m. 13.3 g/t Au over 1.4 m
    - Sheared basalt zones with silica-sericite-biotite alteration, quartz stockwork, 2% pyrite and 6% pyrrhotite.
- MB-18-184 from 330.6 m. to 332.4 m. 14.6 g/t Au over 1.8 m.
    - Massive basalt with quartz-carbonate stringers, chlorite-carbonate-biotite alteration and 1% pyrite.
- MB-18-176 from 387.0 m. to 389.7 m. 12.2 g/t Au over 2.7 m.
    - Quartz feldspar porphyry host in contact with basalt displaying chlorite-sericite alteration, 1% pyrite and visible gold grains.
- MB-18-167 from 323.1 m. to 324.2 m. 14.2 g/t Au over 1.1 m.
    - Basalt host proximal to contact with felsic porphyry with breccia textures, numerous quartz-carbonate veinlets and 1% pyrite.
- MB-18-173 from 376.2 m. to 380.2 m. 5.7 g/t Au over 4.0 m.
    - Including 376.2 m. to 377.4 m. 14.2 g/t Au over 1.2 m.
    - Fine-grained basalt with small visible shears, quartz-carbonate veinlets and 1% pyrite.

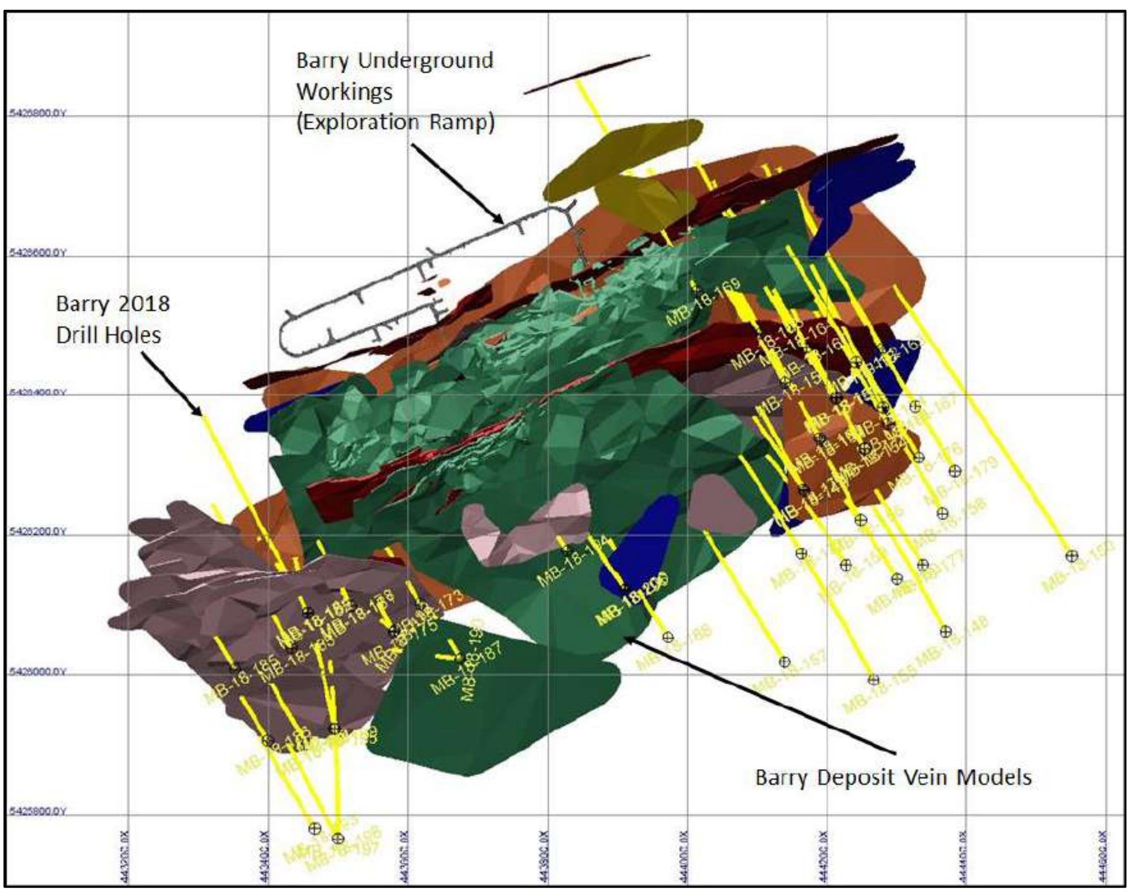
- MB-18-175 from 476.2 m. to 478.0 m. 7.5 g/t Au over 1.8 m.
    - Intermediate basalt host with tuffaceous textures, sericite-silica alteration, multiple visible shears with quartz-carbonate veinlets and 1% pyrite.

On July 16, 2018, Metanor announced drill results, including new high-grade results of 7.4 g/t Au over 4.4 metres, 7.1 g/t Au over 4.2 metres, 9.4 g/t Au over 2.9 metres and 8.2 g/t Au over 2.6 metres. These new drill holes were designed to expand the deposit westerly and at depth, which continues to demonstrate strong continuity to the mineralized system.

Highlights from new drillholes include:

- MB-18-195 from 226.8 m. to 238.4 m. 3.7 g/t Au over 11.6 m
    - Including 226.8 m. to 231.2 m. 7.4 g/t Au over 4.4 m.
    - Sheared basalt zones with, quartz stockwork, 2% pyrite multiple VG grains.
- MB-18-191 from 193.8 m. to 198.0 m. 7.1 g/t Au over 4.2 m.
    - Massive basalt with local shearing, quartz-carbonate stringers, chlorite-carbonate alteration and 1-2% pyrite.
- MB-18-194 from 151.4 m. to 154.0 m. 8.2 g/t Au over 2.6 m.
    - Basalt host with quartz stockwork, chlorite-carbonate-biotite-albite alteration and 1% pyrite.

Figure 10-9 Location of the 2018 Drill holes with respect to the Current Barry Deposit (MB-18-148 to 200)



10.2.4 2018 – 2019 Underground Drill Program (Figure 10-10)

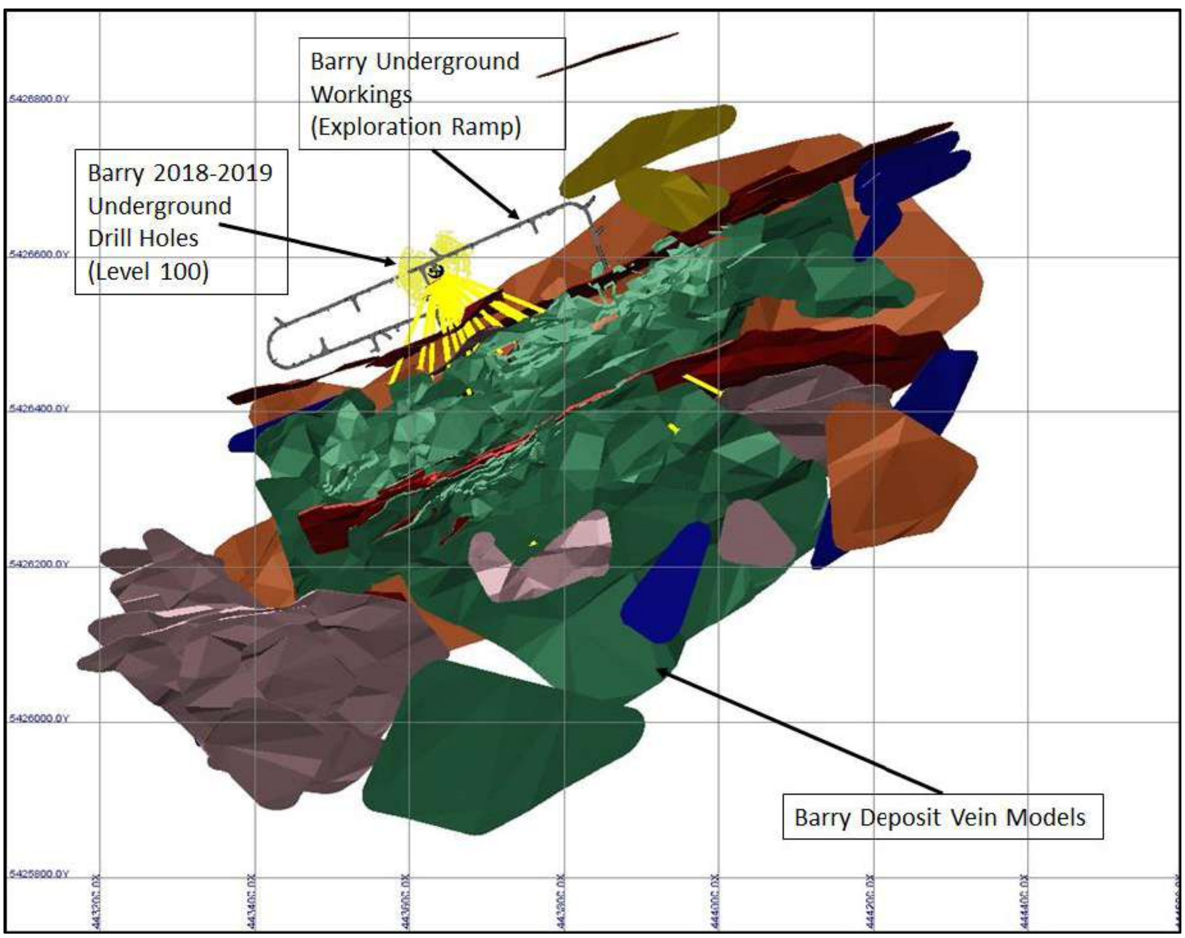
On March 4, 2019: Bonterra announce the results from its recently completed underground drilling campaign at the Barry Property, with new high-grade gold mineralization intersections in various zones.

Drilling highlights include:

- 3.4 g/t Au over 3.2 metres in hole BR18-03
- 8.2 g/t Au over 5.3 metres in hole BR18-05
- 5.4 g/t Au over 2.3 metres in hole BR18-08
- 57.6 g/t Au over 1.3 metres in hole BR18-12B
- 5.5 g/t Au over 4.5 metres in hole BR19-25

These results are from Bonterra's diamond drilling campaign undertaken on the Barry Deposit during Q4 2018 and Q1 2019. The program consisted of 25 sub-horizontal drill holes totaling 7,548 metres (MB18-01 to MB19-25). This campaign was successful in confirming the multiple gold zones utilizing 20- to 30-metre drill spacings, mainly on Level 100. Most of the drill holes intersected gold mineralization where it was anticipated based on our current models.

Figure 10-10 Location of the 2018 - 2019 Underground Drill holes with respect to the Current Barry Deposit (BR18-01 to BR19-25)



11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Gladiator Sample Preparation and Analyses and Security

Sample preparation, analyses and security for the Gladiator property prior to 2012 is described in a previous technical report for Bonterra by Snowden Mining Industry Consultants Inc. ("Snowden") (Dzick. and Ghayemghamian, 2012). Snowden was of the opinion that sample preparation, analyses, and security of diamond drill core samples for the Gladiator property was of industry standard and that the assay data was suitable for use in the 2012 resource estimation. The data was reviewed by the Authors and is included in the discussions below.

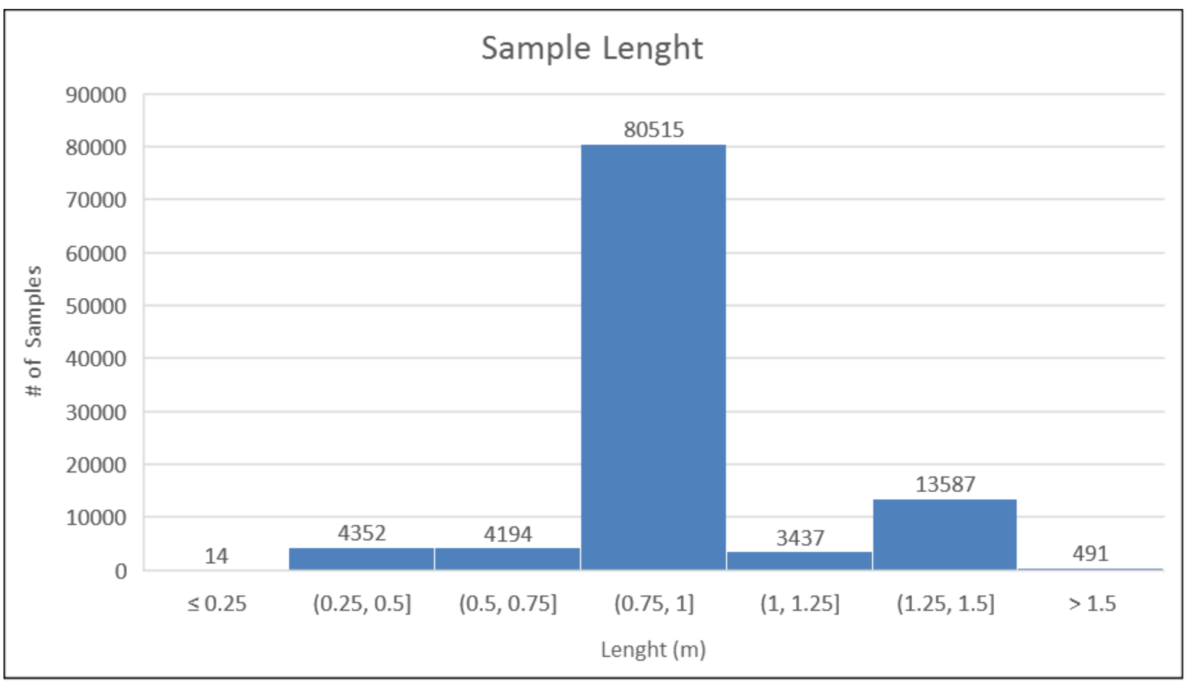
The following sections describe the sample preparation, analyses and security for drilling completed on the Gladiator property between 2010 and 2019.

11.1.1 Sampling

Sampling at the Gladiator property has been carried out through drill core sampling. Drill core intervals to be sampled are described, selected and marked by a geologist. The drillcore sample, intervals vary in width between 0.11 and 18 meters on the basis of unique geology, alteration, vein and/or mineralization and to adhere to major lithological boundaries. The histogram of drilling sample is seen in (Figure 11-1). Out of the 107,993 assays samples, 76,053 samples measure exactly 1m (70.4%). Core samples were cut in half using a diamond saw, following the reference line and other markings defined by the geologist. Core is replaced in its original position in the core box. The 'top' or 'right' half of the sawn sample interval is placed in a plastic sample bag along with a copy of the assay tag and sealed with a plastic tie or tape. This half of the core was then sent to a laboratory for assaying while the remaining half was retained for future reference.

Where visible gold ("VG") was detected either before or during cutting, the blade would be 'dressed' with a piece of barren material (cement brick) to prevent carry over.

Figure 11-1 Gladiator Drilling Sample Length Histogram



The sealed sample bags were placed into standard fiber rice shipping bags, an average of 4 per bag weighing approximately 10 kg in total. The rice bags are clearly marked with a shipping label and sealed with cable ties and fiber tape.

Sample preparation and analysis was carried out by ALS-Chemex Laboratories in Val-d'Or, Québec up to the end of 2018. ALS is independent of Bonterra. The laboratory is currently accredited by the Standards Council of Canada (accredited laboratory number 689) to ISO 17025 for the analysis of gold by lead collection fire assay with atomic absorption spectrometry as well as the determination of gold by lead collection fire assay with gravimetric finish. The management system of the ALS Minerals Group laboratories is accredited International Organization of Standardization ("ISO") 9001:2008 by QMI Management Systems.

Since 2019, samples are sent to the laboratory at the Bachelor Mine. The laboratory at the Bachelor mine is currently owned by Bonterra and is not an independent lab. The reader can refer to the Barry Sample Preparation and Analyses section (11.2) to review the preparation and analyses method at the Bachelor mine laboratory.

At the ALS-Chemex laboratories, the two primary methods of testing used were fire assay with an AA finish (« Au-AA24 »), and fire assay with a gravimetric finish (« Au-GRA22 »). FA-GRAV tests were automatically implemented if a sample assayed greater than 10 g/t Au by Au-AA24. The methods are described below (Table 11-1 and Table 11-2).

Standard sample preparation « PREP-31B »: The samples were logged in the tracking system, weighed, dried and finely crushed, with more than 70% passing a 2 mm (Tyler 9 mesh, US Std. No.10) screen. A split of up to 1,000 g was taken and pulverized until more than 85% would pass a 75 micron (Tyler 200 mesh) screen.

- Atomic Absorption Spectroscopy (AAS), « Au-AA24 »: A prepared sample was fused with a mixture of lead oxide, sodium carbonate, borax, silica and other reagents as required, inquarted with 6 mg of gold-free silver, then cupelled to yield a precious metal bead. The bead was digested in 0.5 mL dilute nitric acid in the microwave oven, 0.5 mL concentrated hydrochloric acid was then added, and the bead was further digested in the microwave at a lower power setting. The digested solution was cooled, diluted to a total volume of 4 mL with de-mineralized water, and analyzed by atomic absorption spectroscopy against matrix-matched standards. This yielded a lower limit of detection of 5 ppb and an upper limit of detection of 10 ppm Au.
- All samples that returned assays greater than 10000 ppb Au from Au-AA24, received fire assay with a gravimetric finish, « Au-GRA22 »: A prepared sample was fused with a mixture of lead oxide, sodium carbonate, borax, silica and other reagents, in order to produce a lead button. The lead button containing the precious metals was cupelled to remove the lead. The remaining gold and silver bead was parted in dilute nitric acid, annealed and weighed as gold. Silver, if required, was then determined by the difference in weights. This gave a lower limit of detection of 50 and 5 000 ppb, and an upper limit of detection of 1 000 and 10 000 ppm for gold and silver, respectively.

Table 11-1 Abbreviation for the Analytical Methods

PREP-31B	Fine Crushing - 70% < 2mm
	Pulverize 1,000 g to 85% < 75µm
Au-AA24	Au 50 g FA-AA Finish
Au-GRA22	Au 50 g FA-GRAV finish (if Au-AA24 > 5000 ppb)

Table 11-2 Lower and Upper Detection Limits for Au Methods

Method	Unit	Lower Limit	Upper Limit
Au-AA24	ppm	0.005	10.0
Au-GRA22	ppm	0.05	1000

11.1.2 Gladiator Quality Assurance/Quality Control (QA/QC) Program

In addition to the ALS Chemex internal QC protocol, Bonterra inserted blanks and control standards during drill core sample collections as part of the QA/QC procedure. Blanks and standards underwent the same sample preparation and analysis as the drill samples with which they were delivered. An effort was made to insert one blank, one duplicate and one standard at regular intervals with approximately every 60 samples sent for assay, which together comprise 6.2% of all drill core samples assayed in this program. A total of 107,993 core samples, 2,647 blanks and 2,320 standards, were collected, prepped and submitted for analysis for quality assurance purposes. From the 107,993 core samples, 2,199 core samples have been ¼ split for re-assays as a duplicate sample. SGS also did an independent review by submitting 58 pulp rejects to be resampled (see Section 12 below).

11.1.2.1 Gladiator Blanks Statistics

Barren coarse material ("a blank") is submitted with samples for crushing and pulverizing to test for possible contamination in the laboratory assay procedure. They have an expected Au value of zero ppm Au.

Additional blanks were inserted following any sample that contained visible gold (VG). This served as a measure to determine contamination and carry over at the lab as well as a method to reduce or eliminate carry over by utilizing the blank to effectively clean the preparation equipment and vessels.

A total of 2,647 blanks were in the QA/QC tables of Bonterra for the Gladiator project as of the effective date of this report. The blanks were dated from the 2010 campaign, up to the 2019 campaign at hole BA-19-29. Blanks total 2.35% of the entire database.

The failure threshold for the blanks is set at 0.05 ppm, which is 10x the lower detection limit of 0.005 ppm. A value of 0.0025 ppm (half the detection limit) is used for all assay results of "below detection limit". A general guideline for success on a contamination quality control program is a success rate of 90% of blanks showing no contamination exceeding the accepted limits.

Blank samples are deemed to have resulted in a quality control failure if their assay values exceeded 50 ppb, although any sample exceeding a warning level of 25 ppb was inspected. Elevated values for blanks may suggest that there has been contamination or sample cross-contamination during preparation. Elevated values may also indicate sources of contamination in the fire assay procedure (contaminated reagents or crucibles) or sample solution carry-over during instrumental finish.

Out of the 2,647 blank samples, there is 19 warnings (0.72% of all the blanks) and 23 failures (0.87% of all the blanks). Most of the warning and failures are caused by a blank inserted directly after a sample with visible gold (Figure 11-2, Table 11-3). More than 98% of the blanks analyzed passed the process (Figure 11-2).

Table 11-3 Summary of Main Blank failures

Hole	Sample		Au ppm	Disposition
BA-10-01	J731392	Blank	0.292	Contamination no high grade around
BA-11-32	L934003	Blank	1.3	Mix with SH41
BA-16-19	S481262	Blank	0.23	Mix with duplicate
BA-16-41	41476	Blank	0.255	Contamination after 4.26 g/t Au
BA-17-03	V201300	Blank	0.61	Possible contamination
BA-17-05	V201945	Blank	2.5	Contamination After high garde
BA-17-31	W330935	Blank	0.365	Contamination After high grade
BA-18-30	X291126	Blank	0.37	Contamination After high grade
BA-18-62	Y379888	Blank	0.264	Contamination After High grade

Figure 11-2 Complete Gladiator Blanks

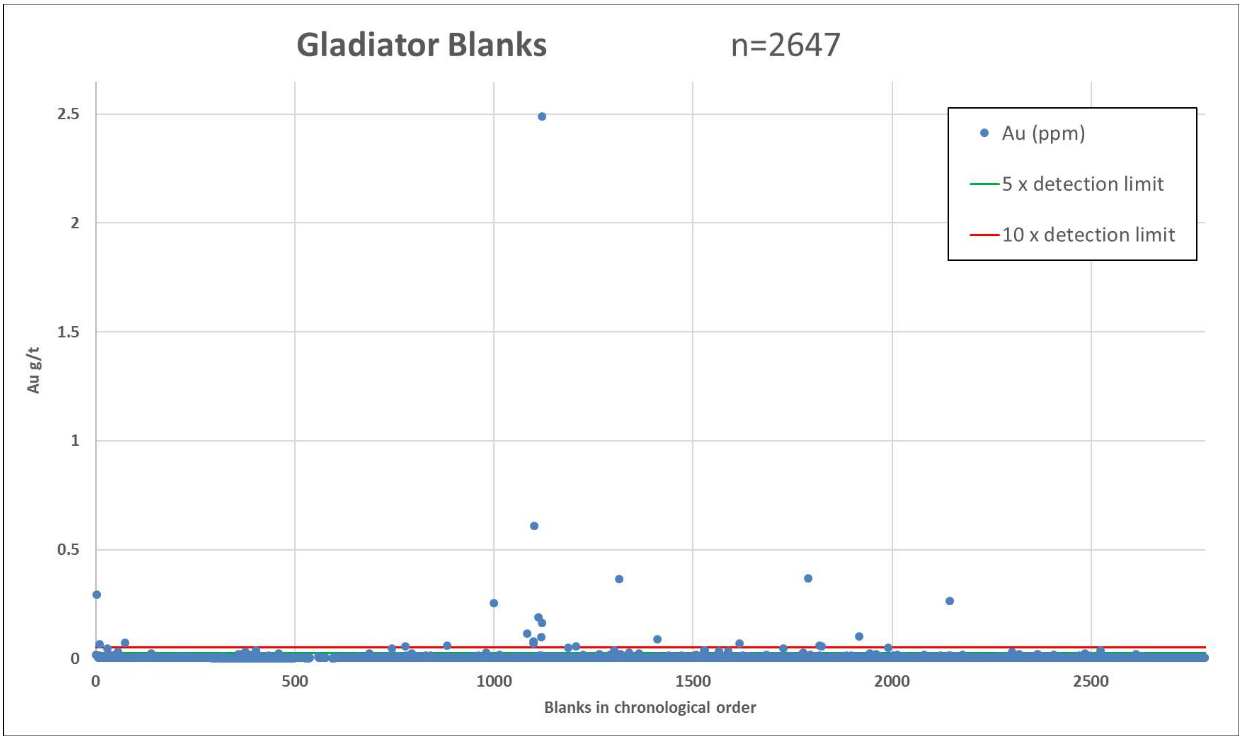
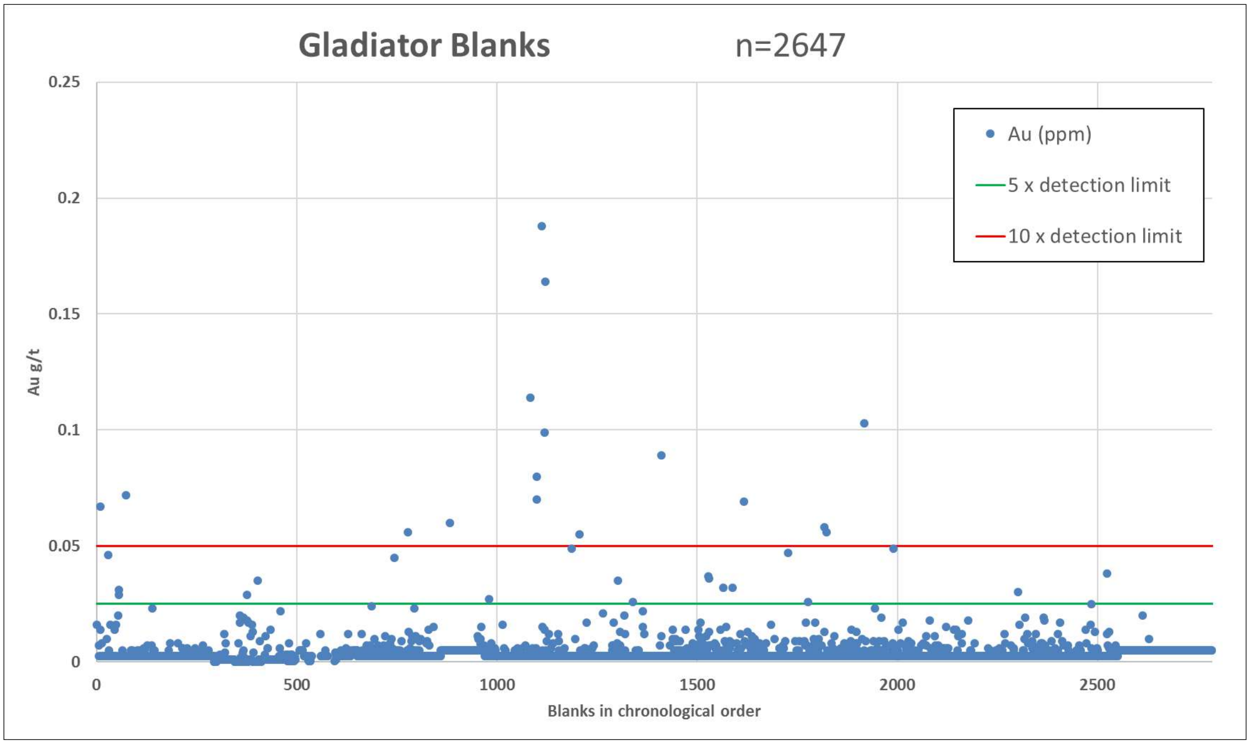


Figure 11-3 Partial Gladiator Blanks (<0.25)



11.1.2.2 Gladiator Control Standards

Certified reference materials (CRM or RM) are submitted with samples for assay as control standards to identify any possible assay problems with specific sample batches or long-term biases in the overall dataset. A total of 22 distinct CRM’s were used throughout the years, from the 2010 to the 2019 drilling programs with random distribution. The CRM’s were chosen to fall within six ranges of Au content to most effectively test the labs performance across a range of grades typical on the project. The standards were deemed to have resulted in a quality control failure if the RM’s Au assay results fell outside ± three standard deviations of its certified value. Table 11-4 displays a list of RM's used along with their expected grade and distribution data.

Up to 2018 CRM's were manufactured by ROCKLABS® Reference Materials, New Zealand. These ROCKLABS® standards are certified in accordance with International Standards Organization (ISO) recommendations. Since mid-2018, Oreas CRM’s are utilised. Oreas standards are certified in accordance with International Standards Organization (ISO) recommendations.

A total of 2,320 standards were submitted to ALS laboratory during the 2010 to 2019 drilling programs. All standards underwent fire assay with an AA finish and fire assay with a gravimetric-finish where the initial result was >10,000 ppb or over limit. No numerical data is available for individual assays that, for a given analytical method, returned either ‘Non-Sufficient Sample (NSS)’ or assayed ‘above the upper detection limit’. These individual assays have been removed from the QC data and calculation and are not considered failures. The removed assays have not been included in the total number of assays received, as they document only a lack a material, with no implications regarding the overall accuracy of the laboratory’s analytical methods.

Table 11-4 Control Standards Statistics

Standards	Quantity	Reference			Duplicates Statistics				Difference Value vs Mean	Results			% QAQC failed
		Value	Sigma	Unit	mean	Standard Deviation	Minimum	Maximum		Pass	Warning	Fail	
SK52	59	4.107	0.088	g/t	4.166	0.210	3.41	4.74	-0.059	48	8	11	18.6%
SH41	143	1.344	0.041	g/t	1.332	0.173	0.089	2	0.012	126	11	17	11.9%
SL46	82	5.867	0.17	g/t	5.866	0.303	4.2	6.36	0.001	79	5	3	3.7%
SL51	76	5.909	0.136	g/t	5.862	0.180	4.93	6.21	0.047	74	4	2	2.6%
SH55	58	1.375	0.045	g/t	1.345	0.043	1.255	1.455	0.030	58	5	0	0.0%
SL61	51	5.931	0.177	g/t	5.813	0.208	5.31	6.3	0.118	50	8	1	2.0%
OxK94	46	3.562	0.131	g/t	3.523	0.172	3.13	3.96	0.039	43	4	3	6.5%
SG56	37	1.027	0.033	g/t	1.017	0.063	0.765	1.09	0.010	35	0	2	5.4%
SE68	47	0.599	0.013	g/t	0.595	0.023	0.548	0.668	0.004	43	3	4	8.5%
OxL118	76	5.828	0.149	g/t	5.718	0.197	5	6.06	0.110	72	8	4	5.3%
OxP116	70	14.920	0.360	g/t	14.81	0.554	13.1	16.247	0.106	65	9	5	7.1%
OxN117	185	7.679	0.207	g/t	7.604	0.243	6.64	8.29	0.075	181	12	4	2.2%
SH82	103	1.333	0.027	g/t	1.308	0.072	1.005	1.82	0.025	95	12	8	7.8%
SG84	418	1.026	0.025	g/t	1.006	0.047	0.492	1.1	0.020	402	15	16	3.8%
SK93	73	4.079	0.089	g/t	3.976	0.196	2.98	4.19	0.103	66	4	7	9.6%
SK94	387	3.899	0.084	g/t	3.865	0.142	2.46	4.24	0.034	376	13	11	2.8%
OxN134	18	7.667	0.155	g/t	7.633	0.135	7.27	7.81	0.034	18	1	0	0.0%
SE86	148	0.595	0.015	g/t	0.578	0.065	0.228	0.999	0.017	134	12	14	9.5%
SN75	49	8.671	0.199	g/t	8.351	1.053	1.845	9.04	0.320	44	1	5	10.2%
Oreas 223	71	1.780	0.045	g/t	1.792	0.122	1.67	5.77	-0.012	71	2	0	0.0%
Oreas 210	36	5.490	0.152	g/t	5.476	0.042	5.17	1.89	0.014	36	1	0	0.0%
Oreas 250	87	0.309	0.013	g/t	0.318	0.011	0.3	0.34	-0.009	87	4	0	0.0%
total	2320												

The 22 CRM’s used have been plotted to show the AA24 and GRA22 assay data for each of the 22 eligible RM's used. The results of these assays are presented in Figure 11-4 to Figure 11-25. A summary of the assay data for all standards is presented in Table 11-4. The assay values are given for both analysis methods; Au-AA24 and Au-GRA22. The number of assay failures for each RM is included at the end of Table 11-4. The mean of 19 standards of the 22 is below the anticipated value of the certified material showing that a weak low bias is observed on most standards. However they are still within the 3 standard deviation range. Standards that failed with the most disparity with the anticipated value are generally also below this anticipated value as presented in Figure 11-4 to Figure 11-25.

Numerous mislabelled standards were identified by SGS and Bonterra and have been corrected by Bonterra after the first review of the QA/QC by SGS. Out of the 117 failed remaining standards (5% of 2,320 standards), 21 were tolerated by Bonterra because there is no economic grade associated to the assays neighbouring those standards. Many other failed standards are also probably mislabelled standards that cannot be confirmed as mislabeled by Bonterra. The measured gold value is significantly distant from the standard value that it seems more as a manipulation error then a problem at the laboratory. In some case two CRM’s have a very similar value, so the probable mislabelled assays cannot be associate to another CRM with certainty.

Figure 11-4 Standard Oreas 223

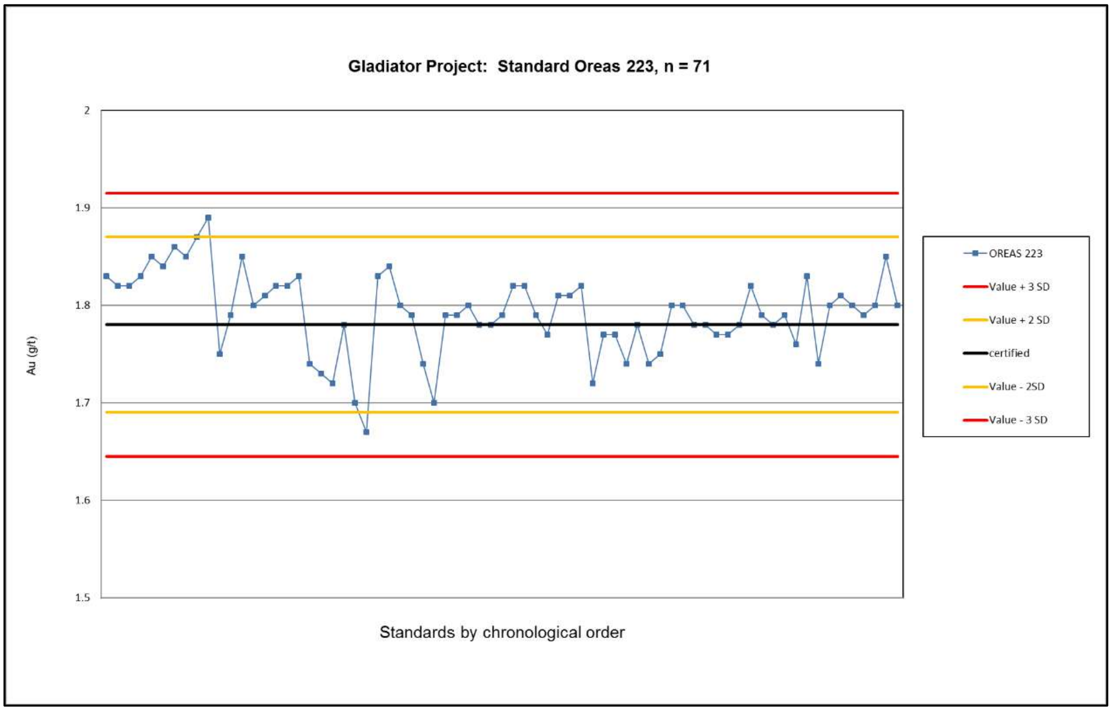


Figure 11-5 Standard Oreas 210

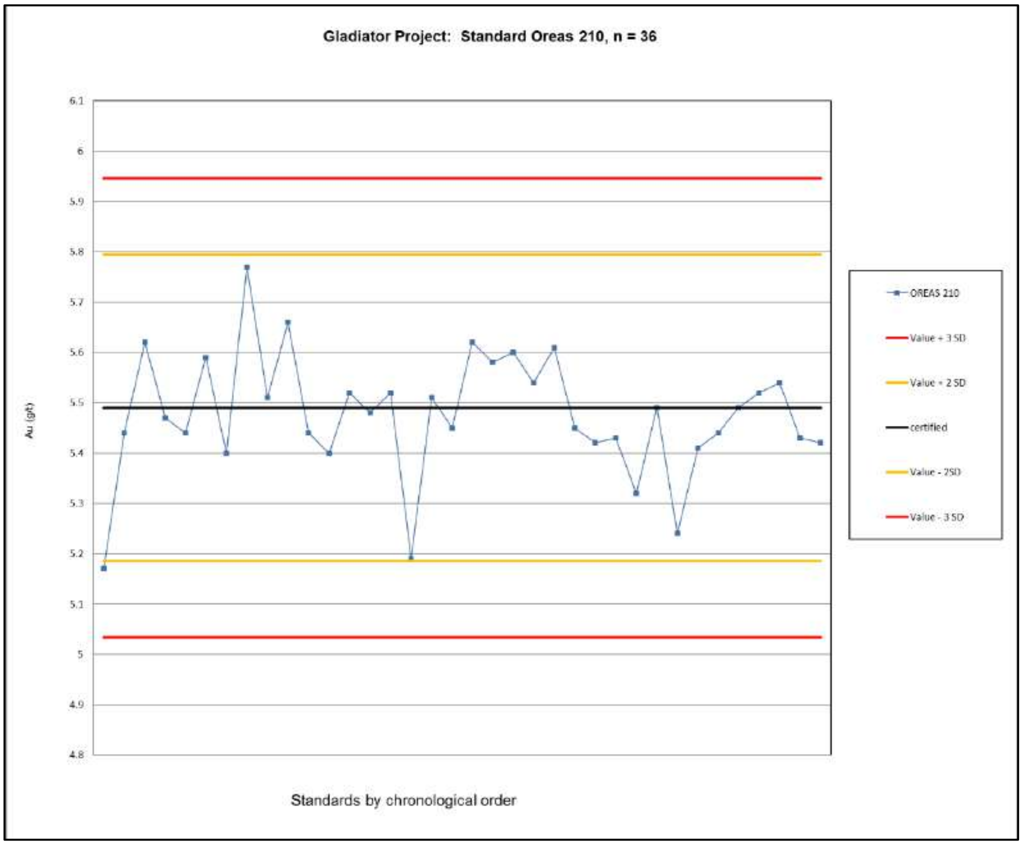


Figure 11-6 Standard Oreas 250

Figure 11-7 Standard SN75

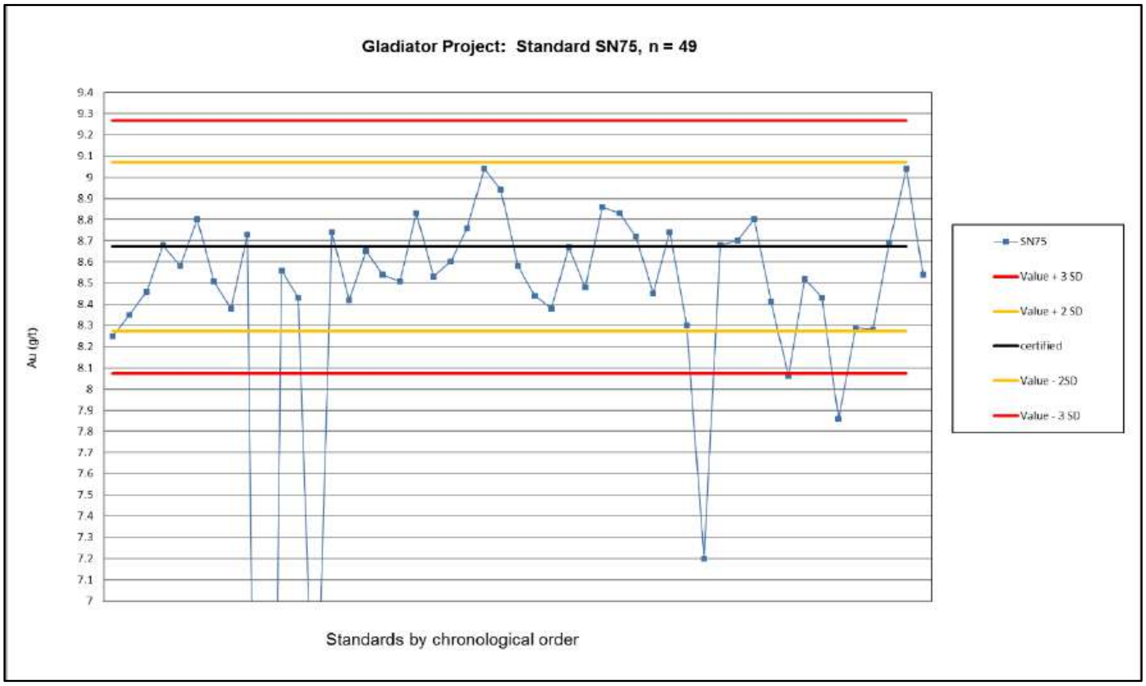


Figure 11-8 Standard SL61

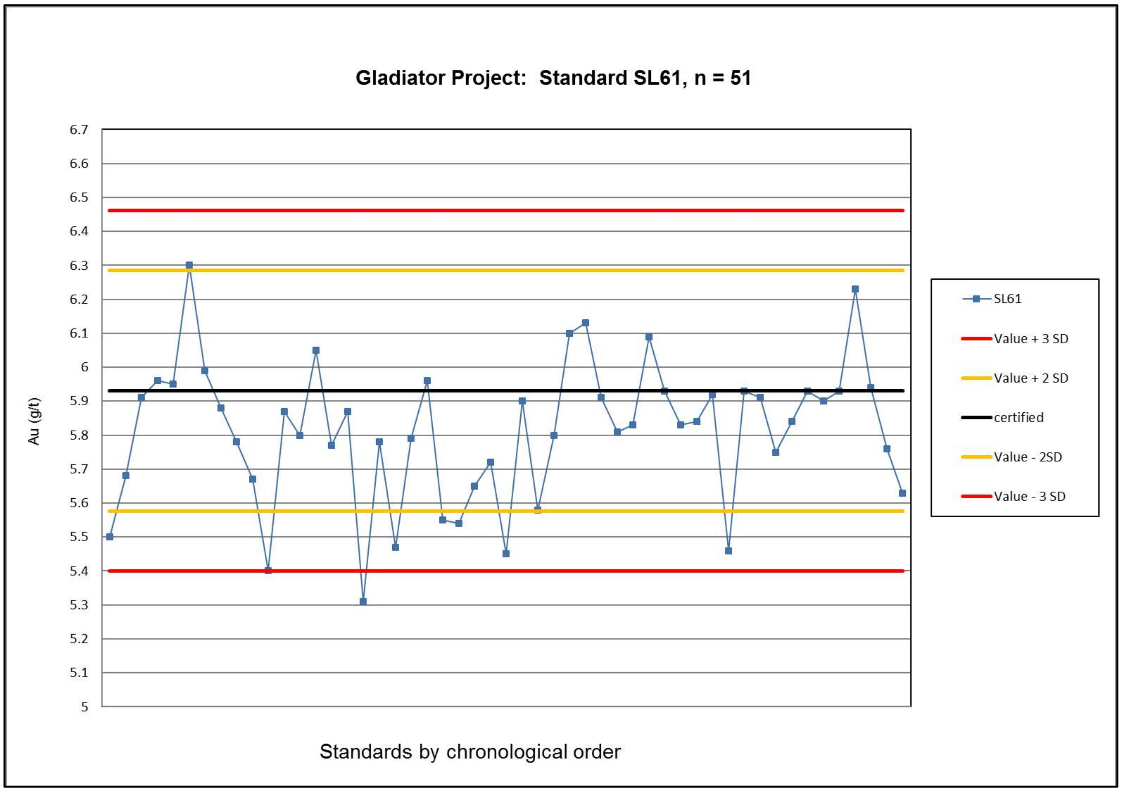


Figure 11-9 Standard SK94

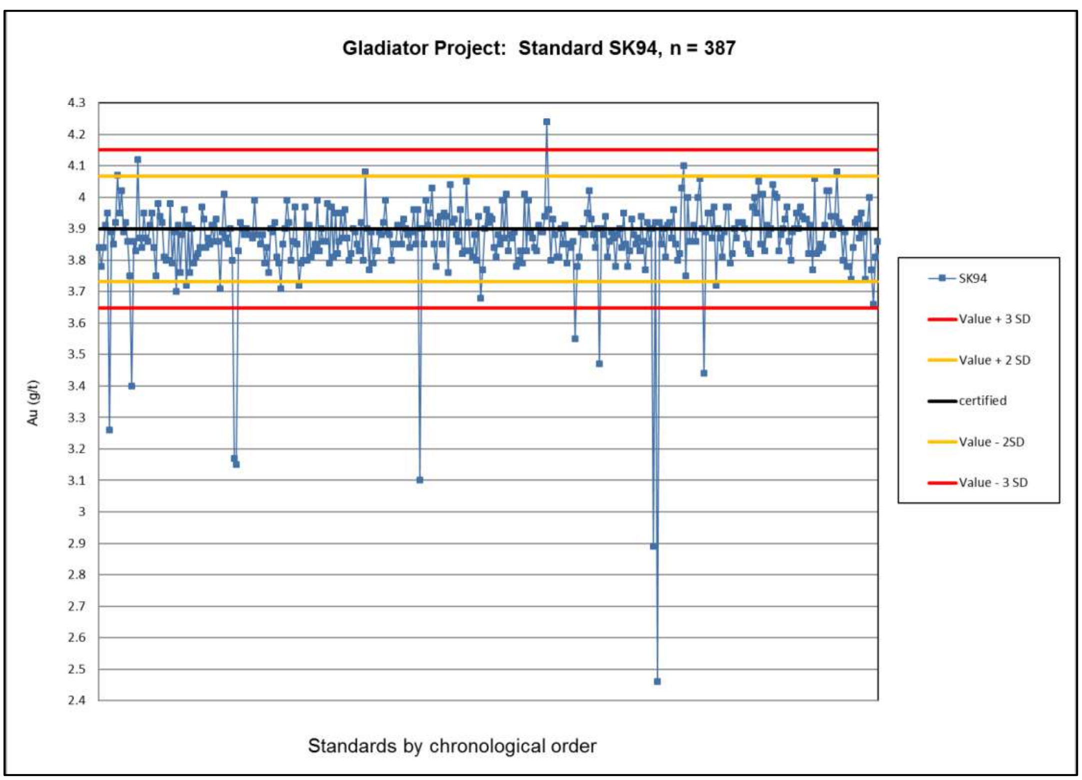


Figure 11-10 Standard SH82

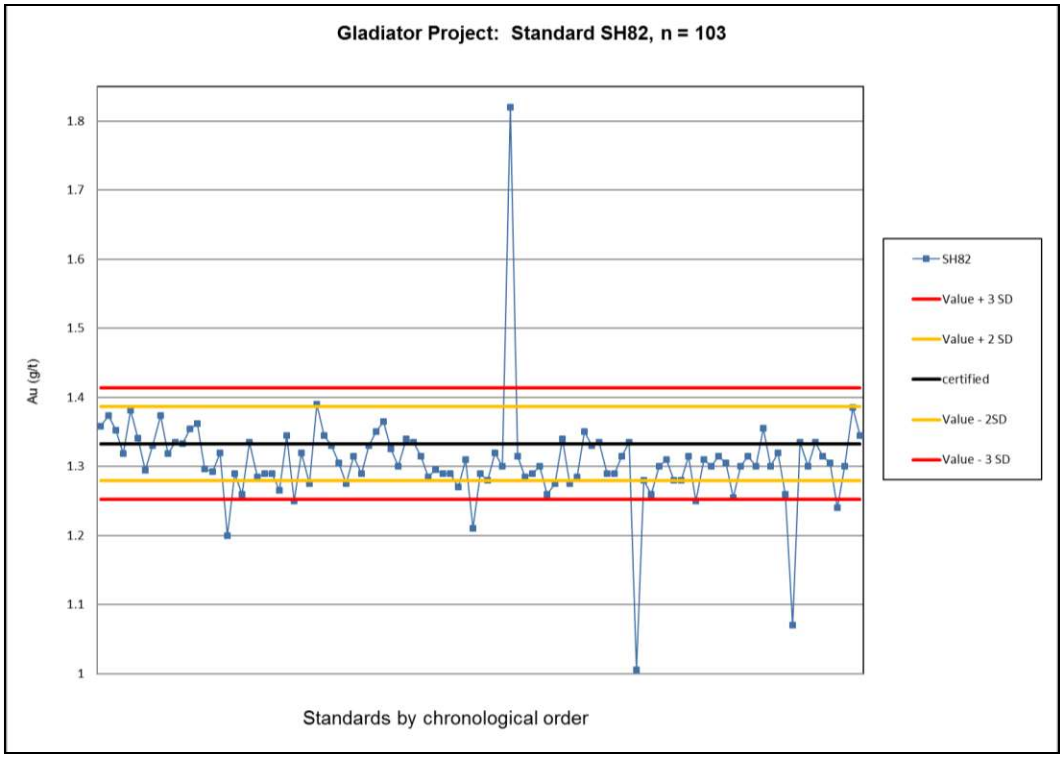


Figure 11-11 Standard SK93

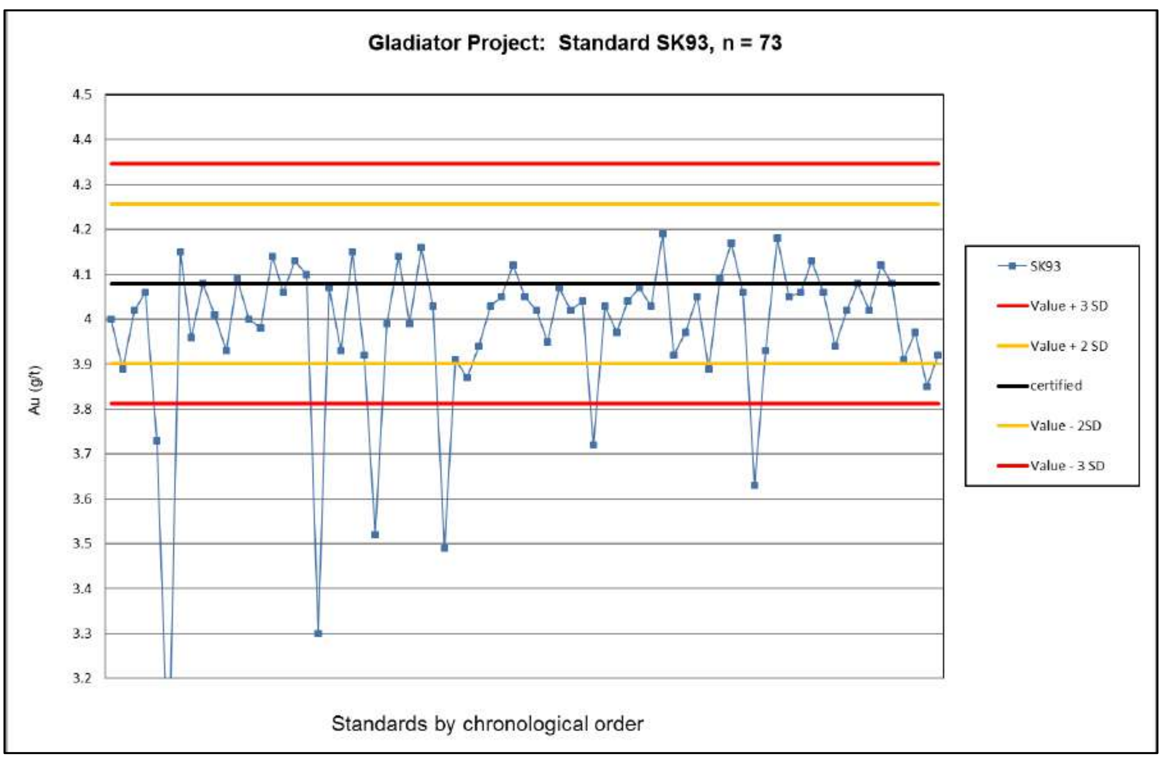


Figure 11-12 Standard SH55

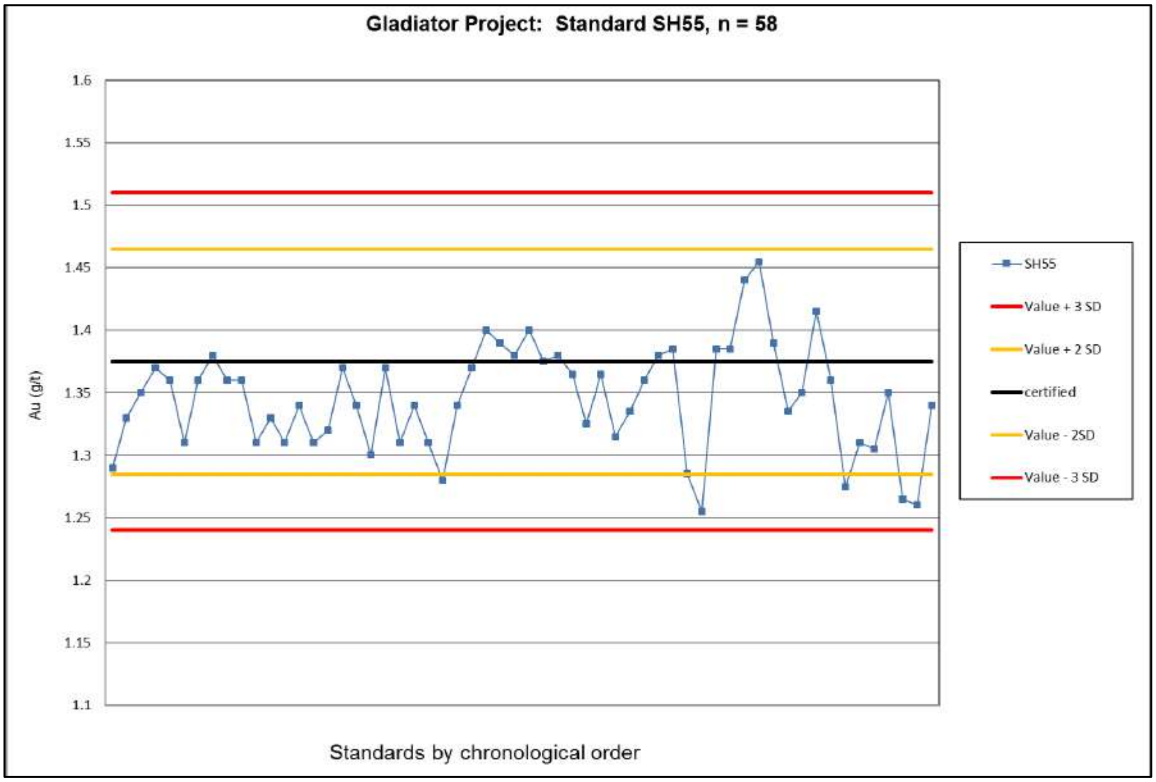


Figure 11-13 Standard SG84

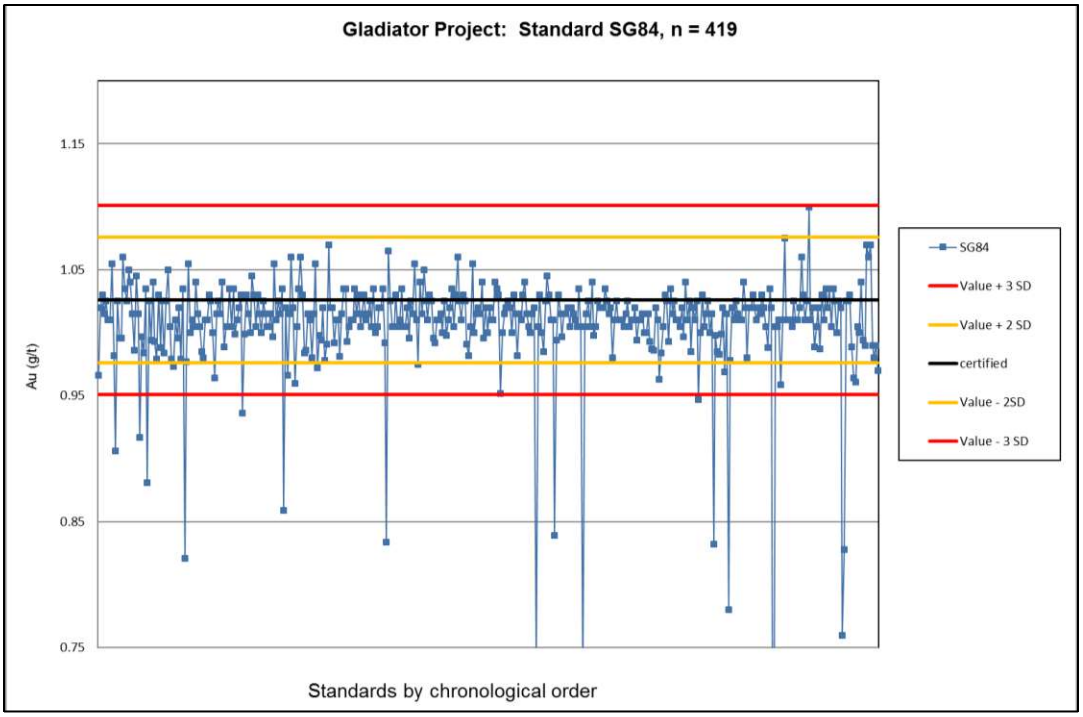


Figure 11-14 Standard SG56

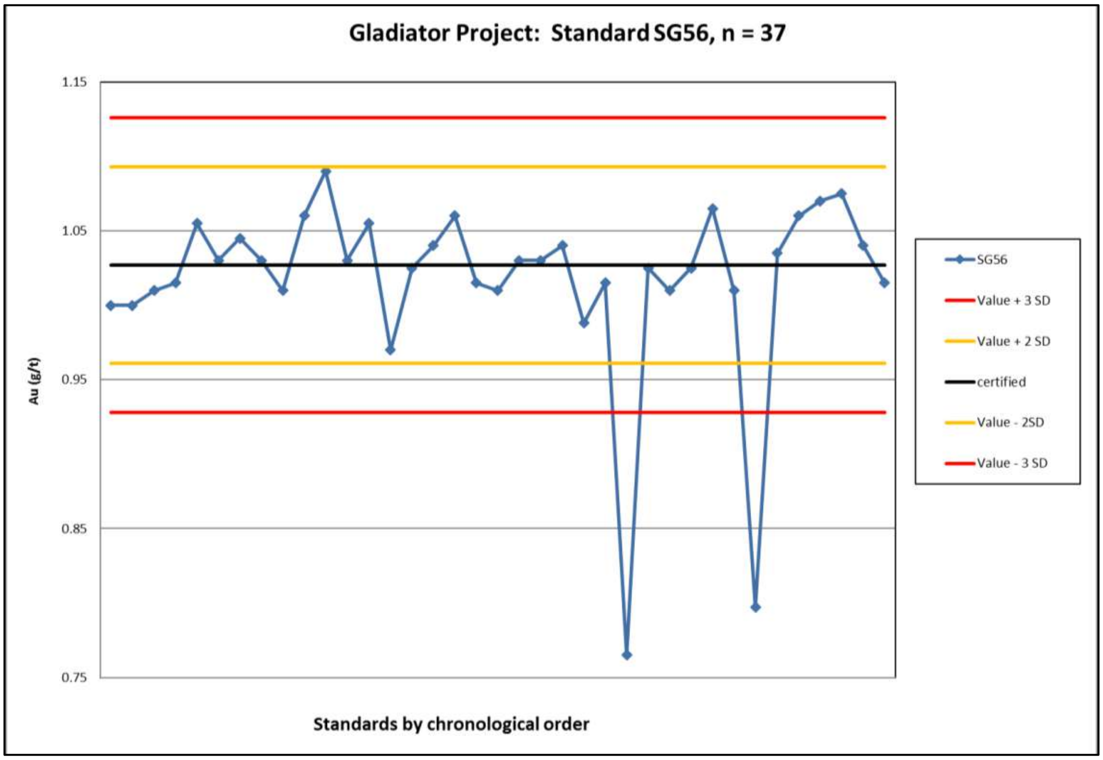


Figure 11-15 Standard SE86

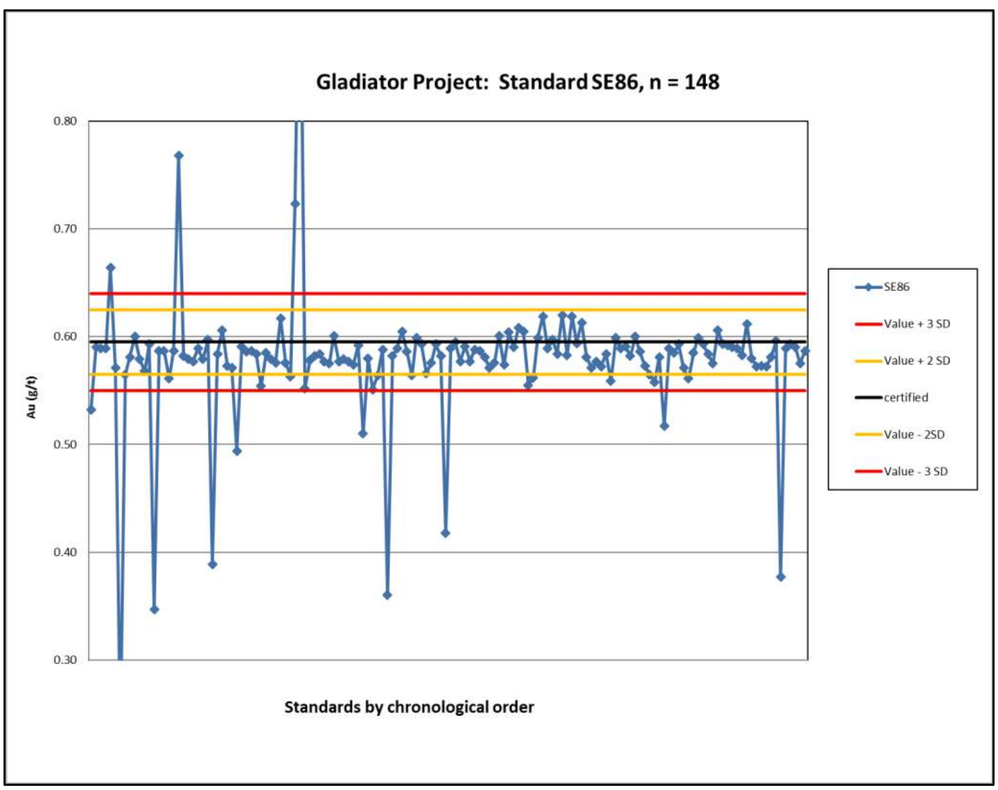


Figure 11-16 Standard SE68

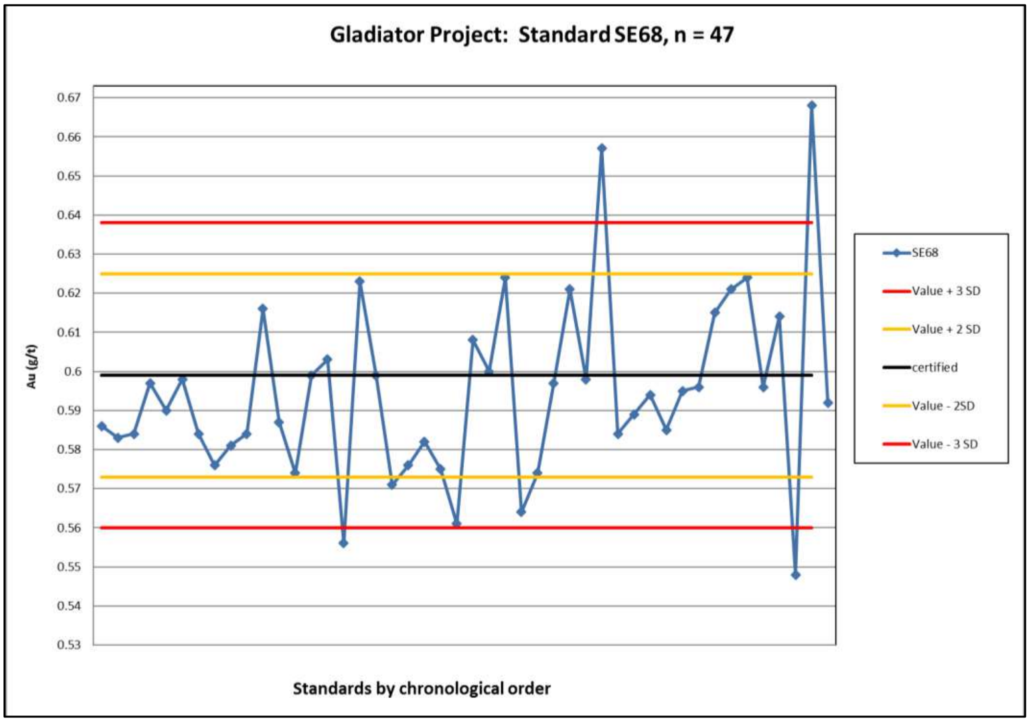


Figure 11-17 Standard OxP116

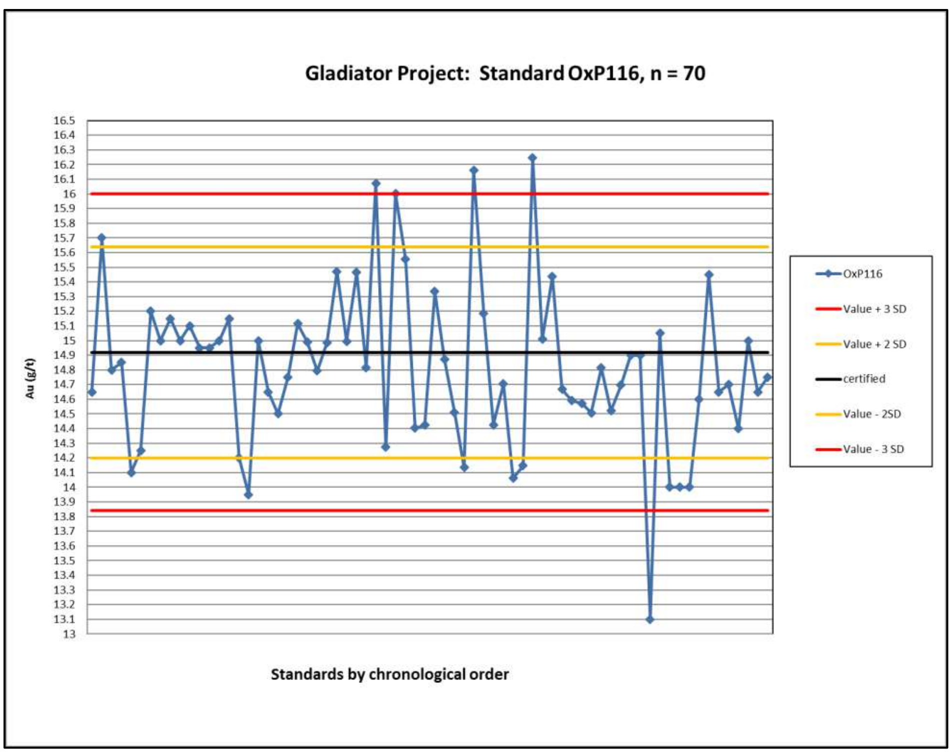


Figure 11-18 Standard OxN134

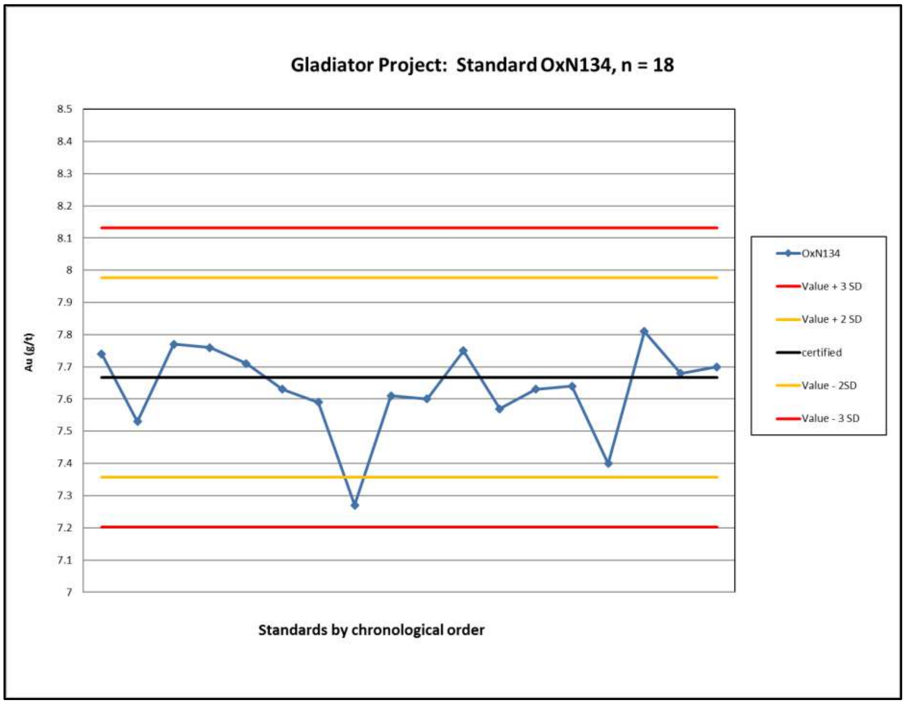


Figure 11-19 Standard OxN117

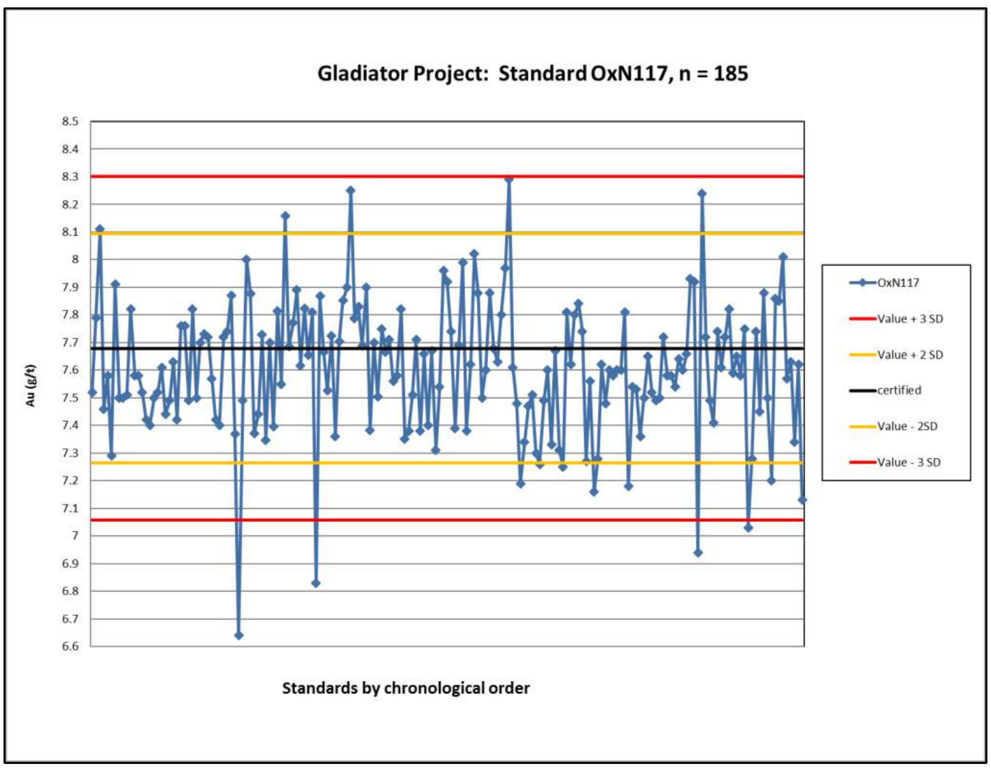


Figure 11-20 Standard OxL118

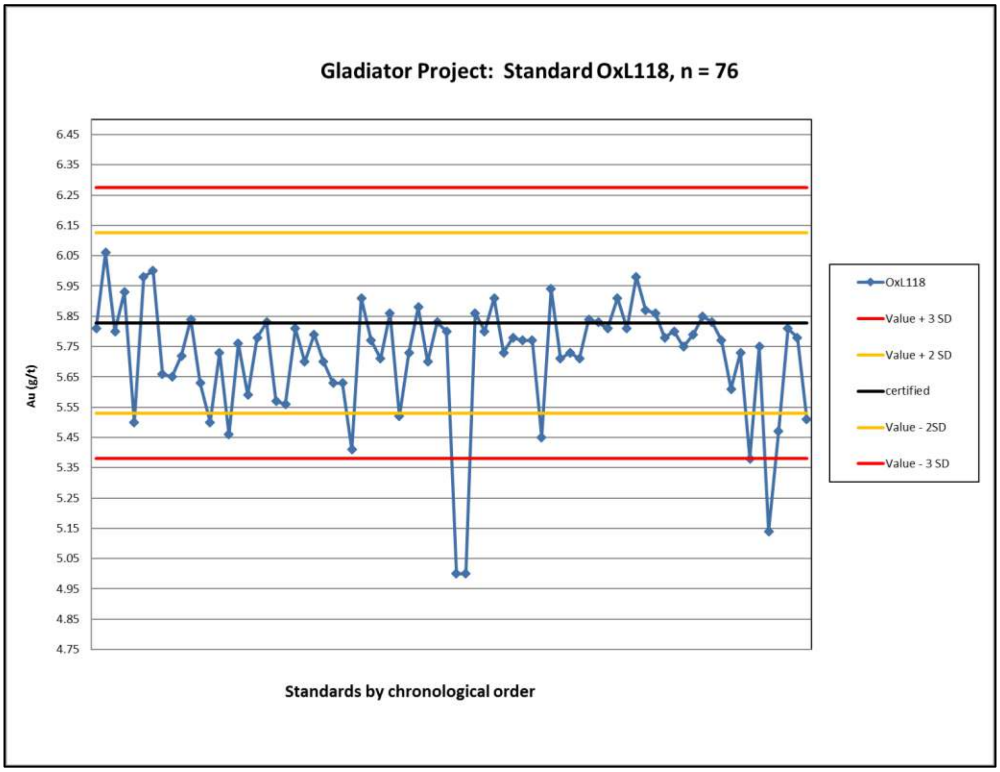


Figure 11-21 Standard OxK94

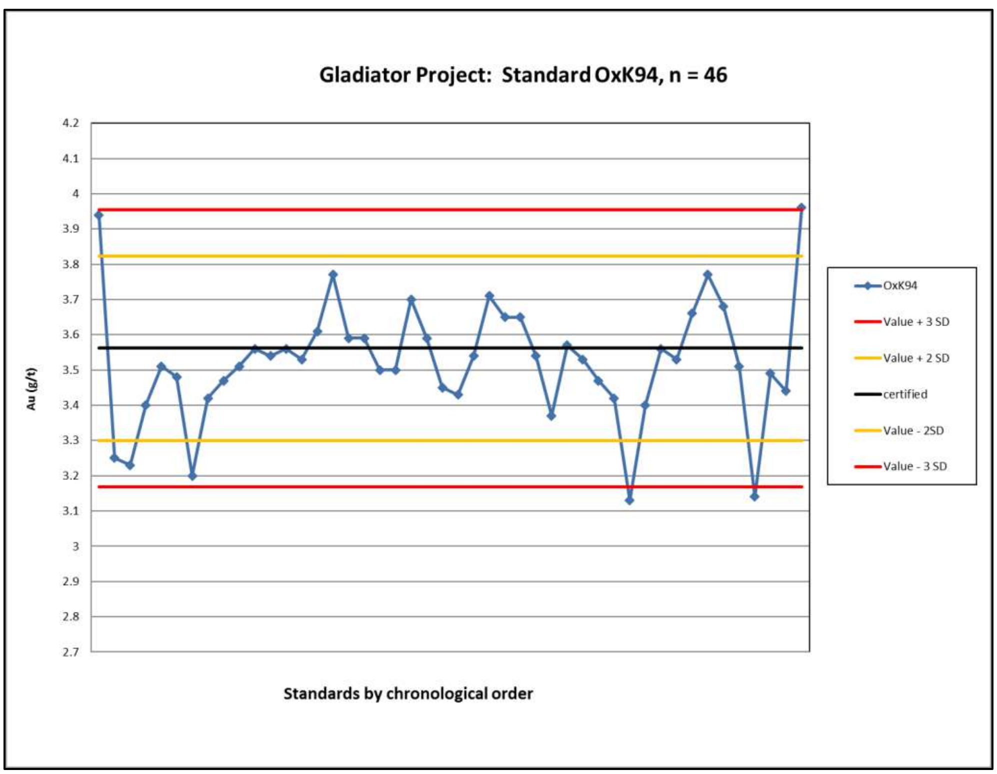


Figure 11-22 Standard SK52

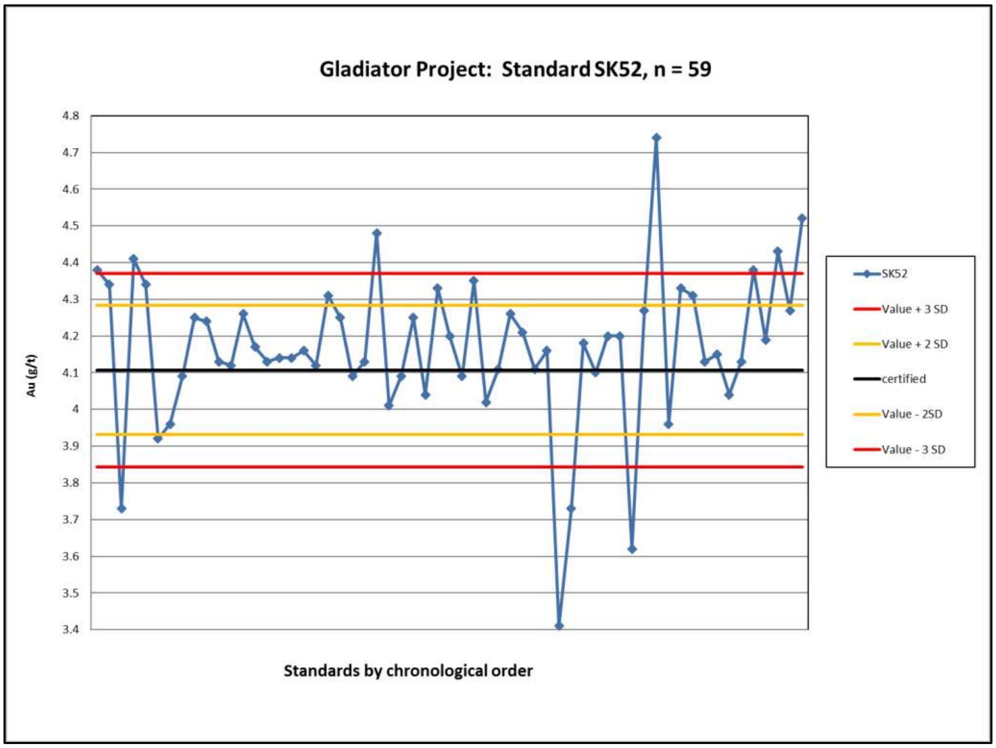


Figure 11-23 Standard SH41

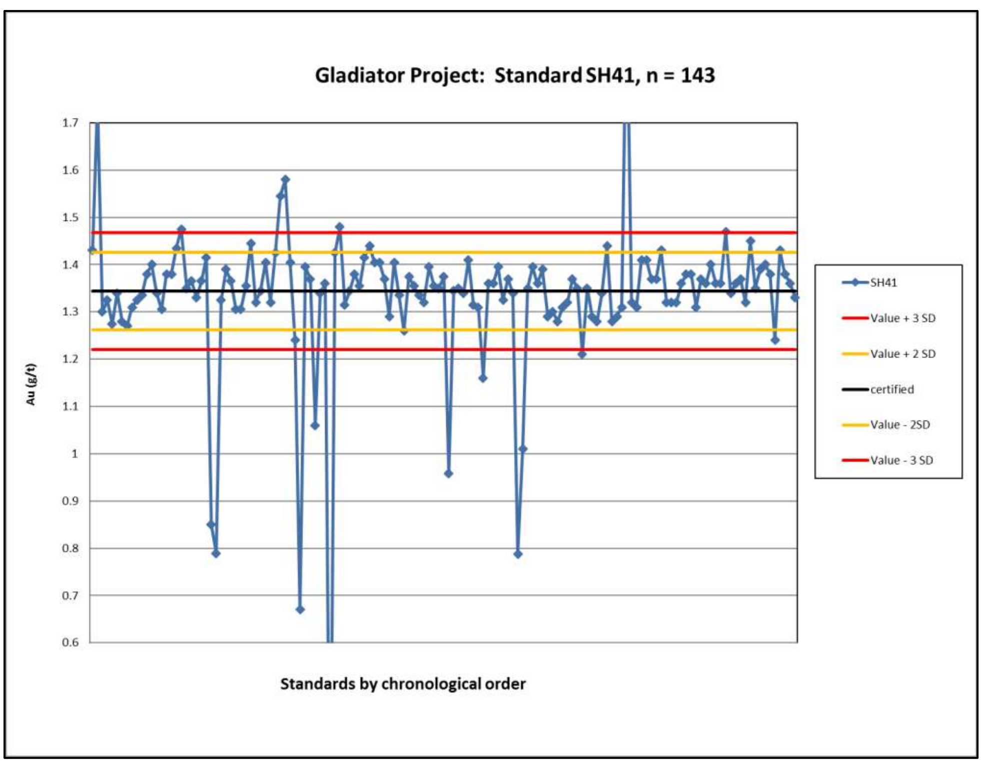


Figure 11-24 Standard SL46

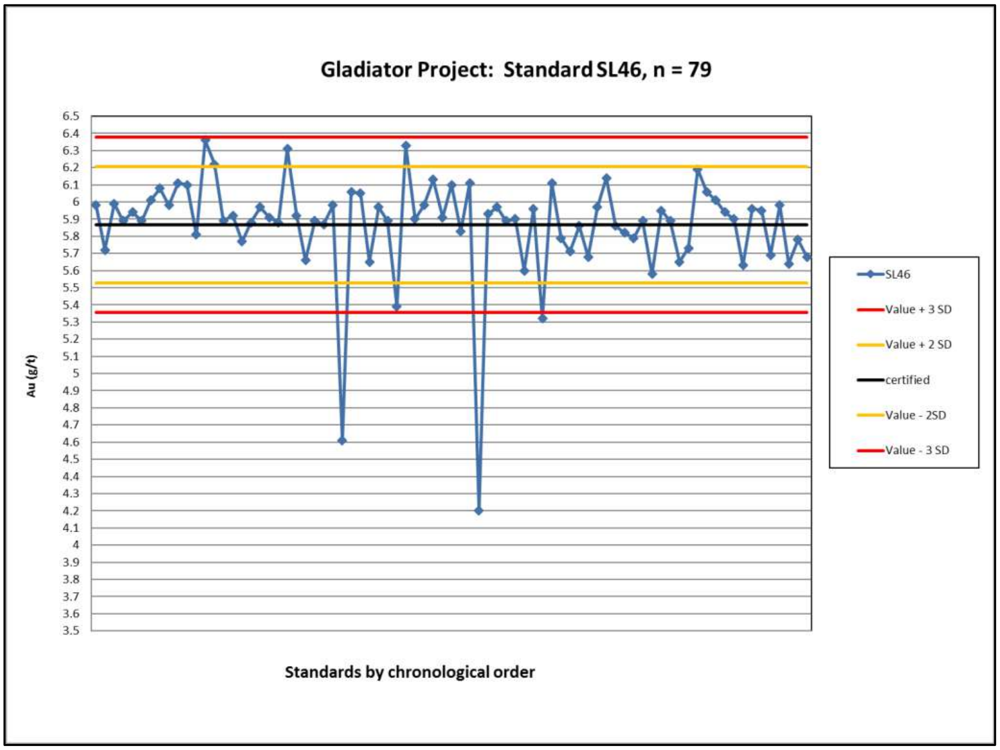
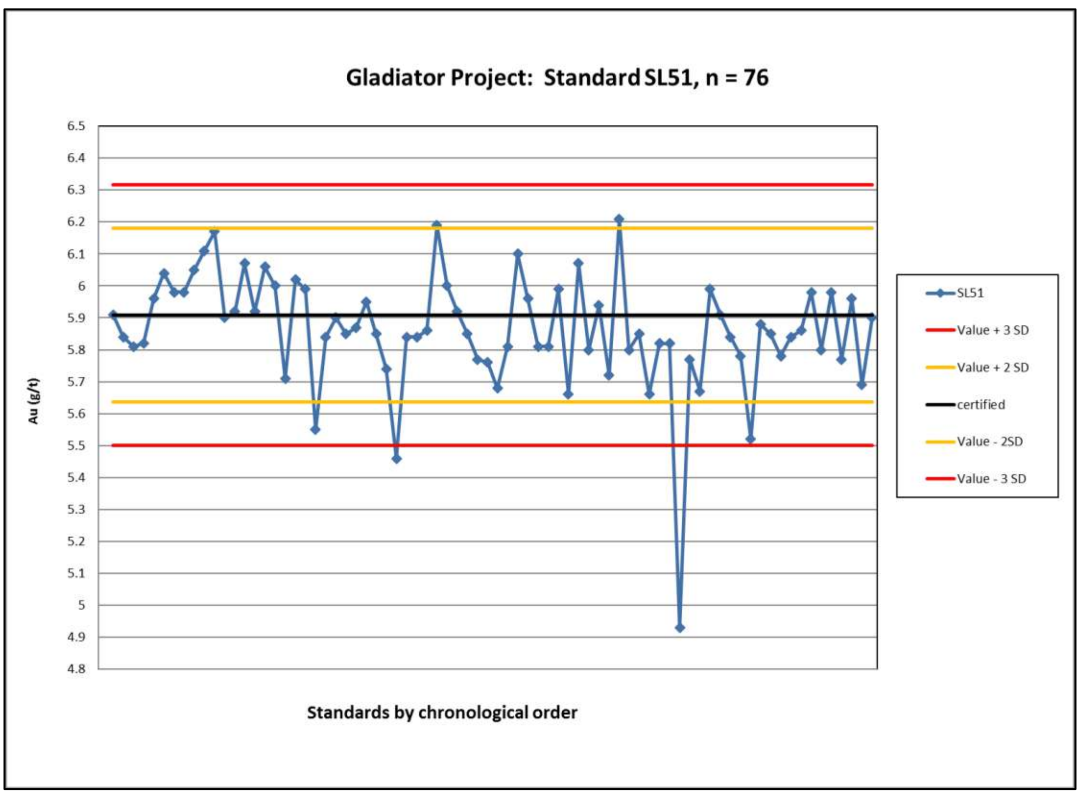


Figure 11-25 Standard SL51



11.1.2.3 Gladiator Duplicates

From 2010 to 2018, a total of 2,199 ¼ split of diamond drill core duplicates were prepared by Bonterra.

Between 2010 and 2018, most of the pairs (original and ¼ split duplicate analysis) reveal a barren material. In a coarse gold deposit, comparison between an half core sample and the associate ¼ split can be problematic especially in a coarse gold deposit as Gladiator where the nugget effect could be unpredictable. To minimise problems caused by material close to the detection limit, SGS retained 197 pairs with an average grade above the interesting gold values of 0.1 g/t.

The coefficient of variation of these 197 pairs over 0.1g/t is 303%. In comparison, if all pairs with data over the detection limit of 0.005g/t are considered (1183 pairs), the coefficient of variation is 639%. The ¼ split duplicates with gold values below 0.1g/t Au have much more variability than the ones with significant gold values.

The pairs resulting figures (over 0.005g/t detection limit) (scatterplot, Thompson-Howarth plot and QQ plot) are shown
Comments and Recommendations

The Authors have reviewed the field procedures and analytical quality control measures used by Bonterra on the Gladiator Property. The data sets examined by the Authors show no indication of analytical bias and follow generally accepted industry standards.

The level of contamination, based on the analysis of blank material is low as approximately 98% of the blank samples returned values below or equal to the accepted limit of 10x the detection limit (0.005 g/t Au).

The statistics on the CRM's (standards) are considered reliable and within acceptable limits of accuracy in the industry.

Split core duplicate (¼ split) results are acceptable and confirm that the database is reliable. The Authors did not identify any accuracy or precision issues.

Bassically the results of the QA/QC programs to date on the Gladiator Property indicate there are no significant issues with the drill core assay data. The data verification programs undertaken on the data collected from the Gladiator Property support the geological interpretations, and the analytical and database quality, and therefore data can support a mineral resource estimation.

During the initial analysis of the results of the CRM's, numerous mislabelled standards were identified by SGS and were corrected by Bonterra prior to the final analysis of the QA/QC data. After discussions with the Bonterra geologists, it became apparent that the QA/QC data was not being monitored on a regular basis. The Authors strongly recommend that Bonterra monitor and review all QA/QC data on a regular basis, preferably upon receipt of each and every lab report.

Although the results of the QA/QC programs to date on the Gladiator Property indicate there are no significant issues with the drill core assay data. Issues with QA/QC results need to be addressed in a timely manner.
,Figure 11-27,Figure 11-28,Figure 11-29 and Figure 11-30.

SGS did the verification of bias between population by statistical sign test. On pairs with average data over 0.1g/t Au, the sign test cannot identify a bias. The student t-test, the logarithmic student t-test and the Wilcoxon sign rank-test cannot identify a bias either

There is 2 high grades in the original assays that could not be reproduced by the duplicates. These 2 results are not statistically significant. Therefore, these duplicates results are acceptable and confirm that the database is reliable.

Since 2019, Bonterra began sending their core samples for assaying at the Bachelor mine laboratory. At this laboratory, duplicates are prepared with the pulp rejects instead of ¼ split core. From the 29 diamond drill holes sampled in early 2019, which are considered in this report, 200 pulp duplicates have been analysed at the Bachelor mine lab.

SGS did the verification of bias between populations by statistical sign test. The sign test cannot identify a bias, nor the Student t-test.

Figure 11-31 displays pairs on a log/log chart and Figure 11-32 displays the same data on a QQ plot.

These duplicate results are acceptable and confirm that the database is reliable.

11.1.3 Comments and Recommendations

The Authors have reviewed the field procedures and analytical quality control measures used by Bonterra on the Gladiator Property. The data sets examined by the Authors show no indication of analytical bias and follow generally accepted industry standards.

The level of contamination, based on the analysis of blank material is low as approximately 98% of the blank samples returned values below or equal to the accepted limit of 10x the detection limit (0.005 g/t Au).

The statistics on the CRM's (standards) are considered reliable and within acceptable limits of accuracy in the industry.

Split core duplicate (¼ split) results are acceptable and confirm that the database is reliable. The Authors did not identify any accuracy or precision issues.

Bassically the results of the QA/QC programs to date on the Gladiator Property indicate there are no significant issues with the drill core assay data. The data verification programs undertaken on the data collected from the Gladiator Property support the geological interpretations, and the analytical and database quality, and therefore data can support a mineral resource estimation.

During the initial analysis of the results of the CRM's, numerous mislabelled standards were identified by SGS and were corrected by Bonterra prior to the final analysis of the QA/QC data. After discussions with the Bonterra geologists, it became apparent that the QA/QC data was not being monitored on a regular basis. The Authors strongly recommend that Bonterra monitor and review all QA/QC data on a regular basis, preferably upon receipt of each and every lab report.

Although the results of the QA/QC programs to date on the Gladiator Property indicate there are no significant issues with the drill core assay data. Issues with QA/QC results need to be addressed in a timely manner.

Figure 11-26 Scatter plot of ¼ split duplicates with values below 5g/t

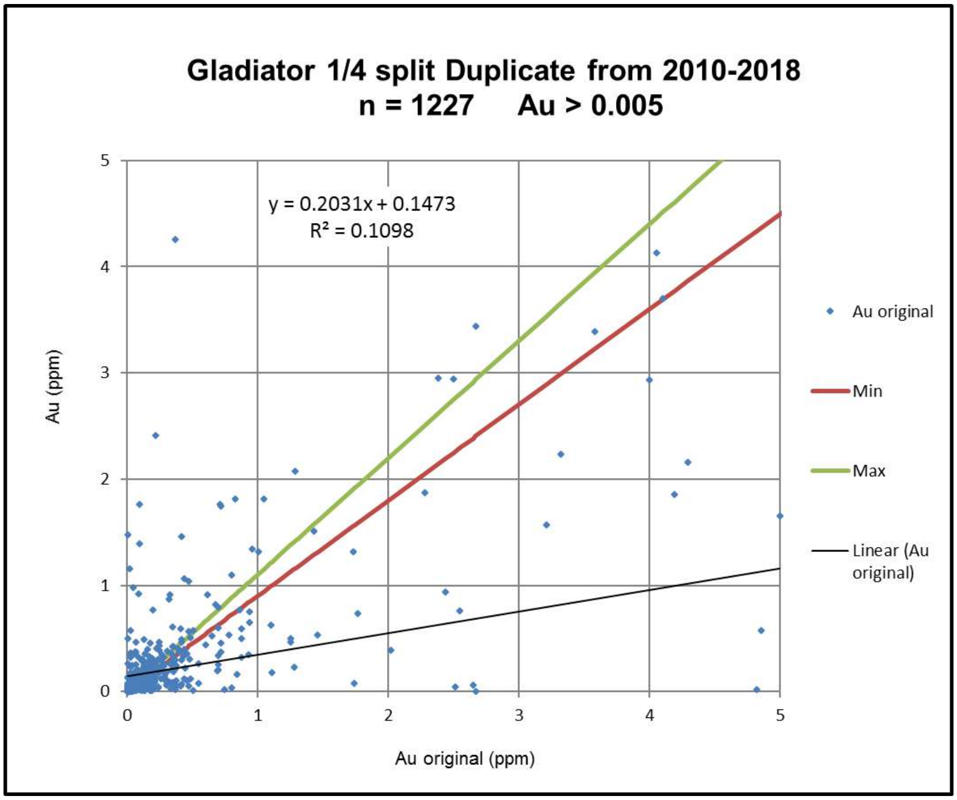


Figure 11-27 Scatter plot of ¼ split duplicates

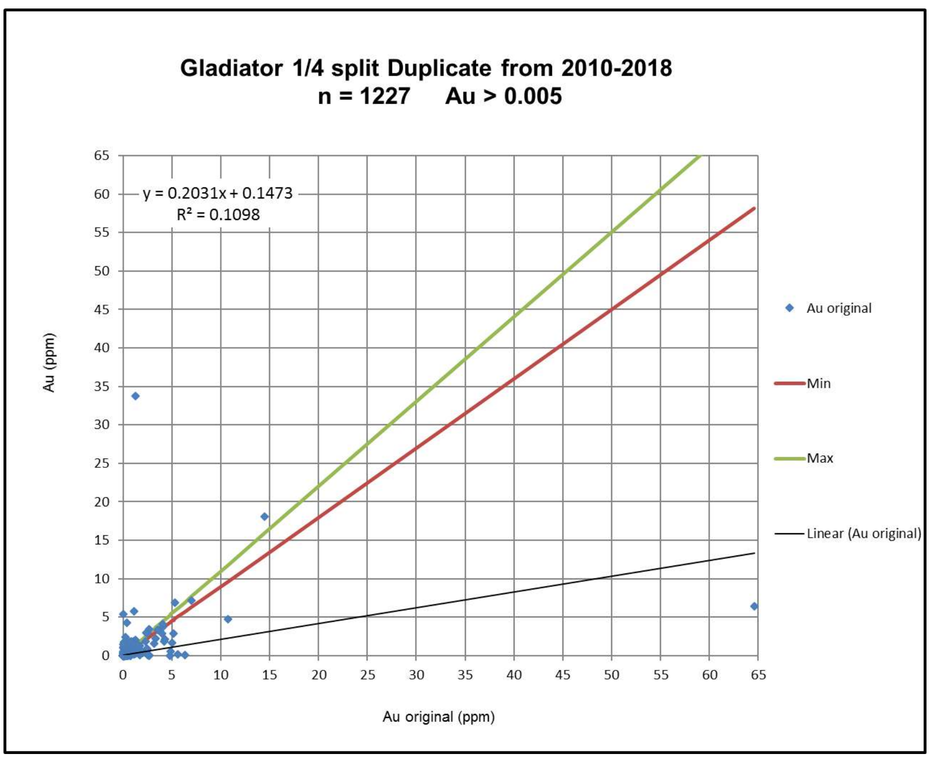


Figure 11-28 1/4split duplicates on a log/log chart

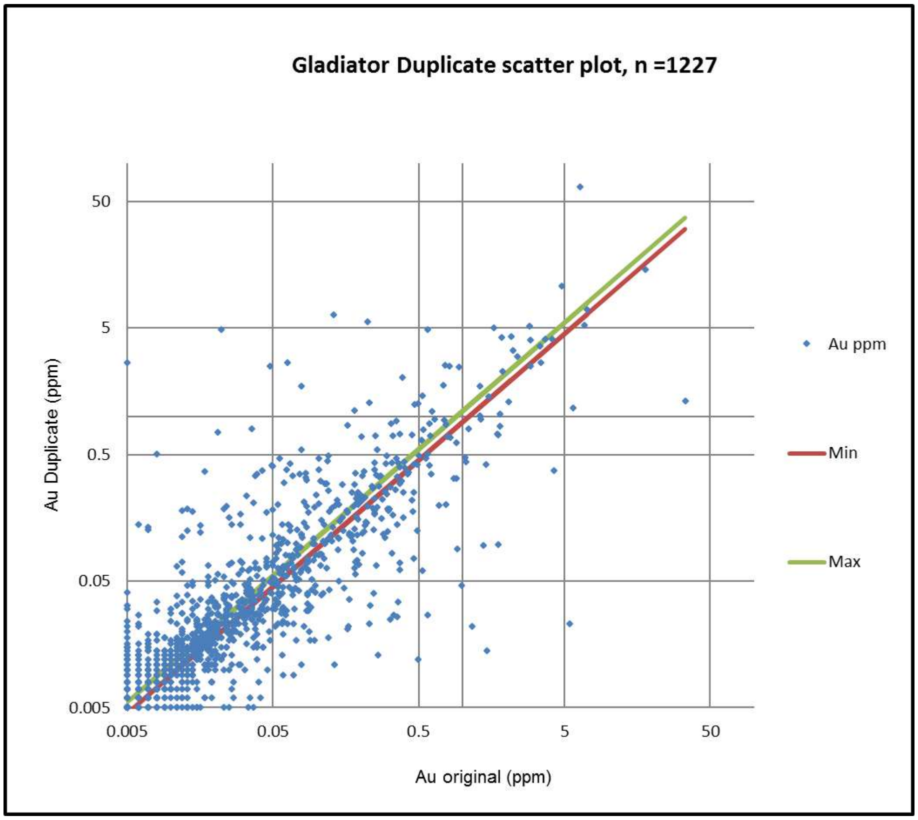


Figure 11-29 Duplicates on Thompson-Howarth chart

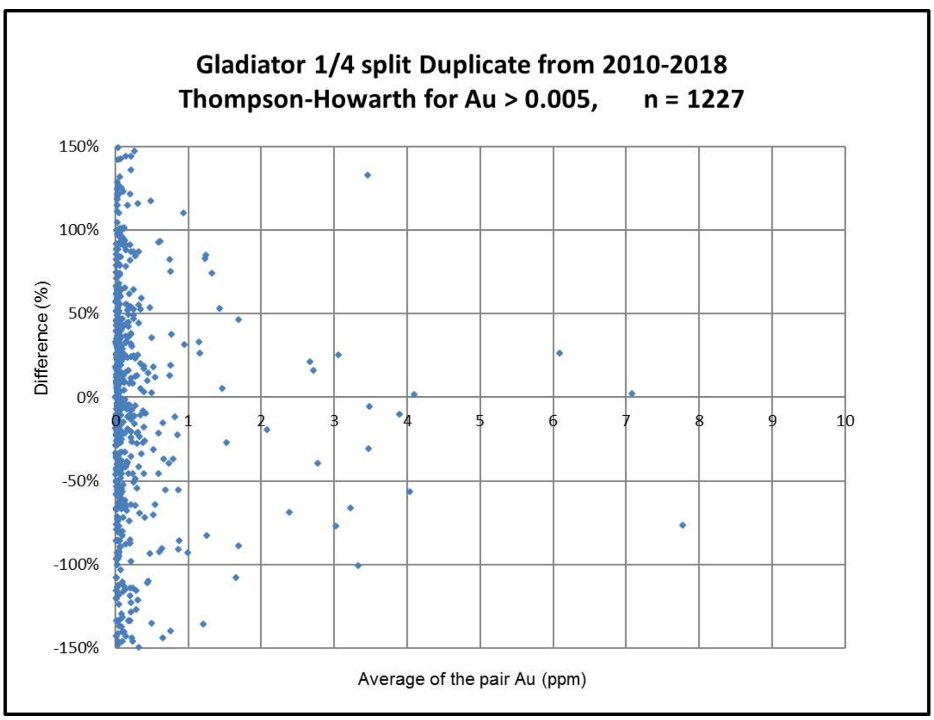


Figure 11-30 QQ plot on a log/log chart

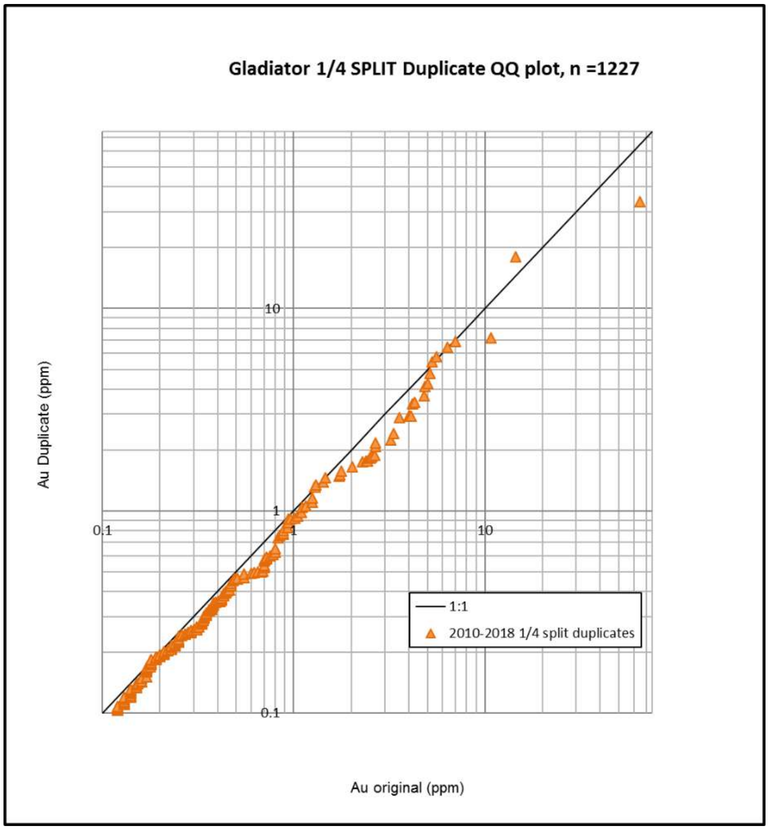


Figure 11-31 log/log chart of 2019 pulp duplicates

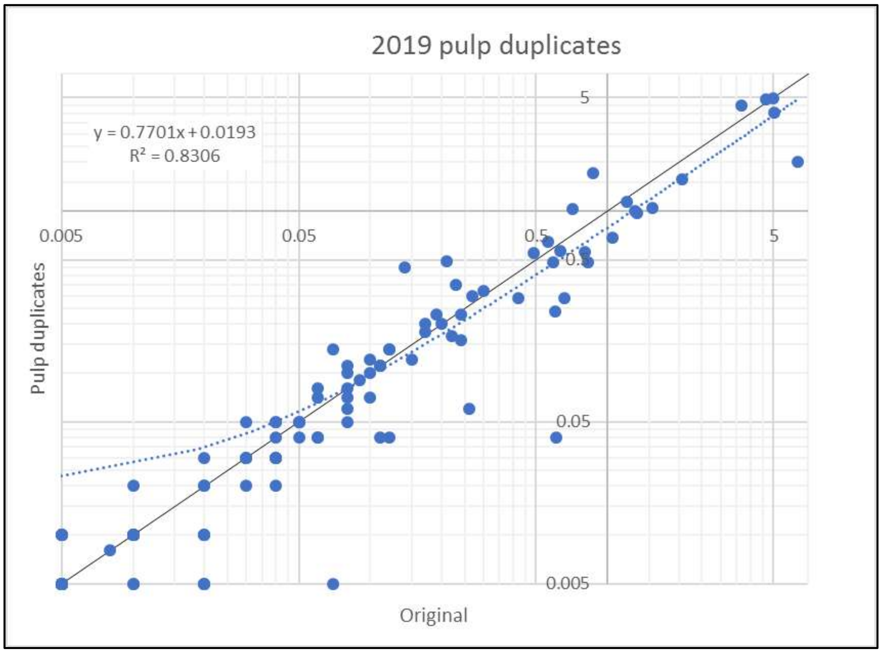
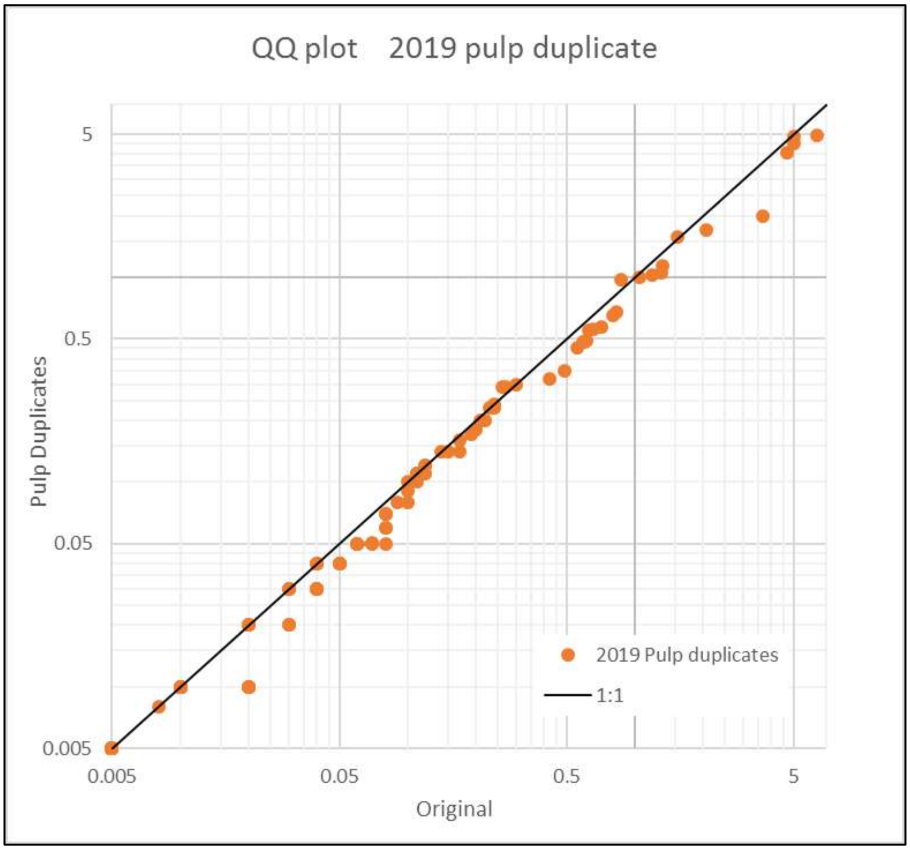


Figure 11-32 QQ plot of 2019 pulp duplicates



11.2 Barry sample preparation, analyses, and security

Sample preparation, analyses and security for the Barry property prior to 2017 is described in a previous technical reports for Metanor by SGS and GoldMinds (Duplessis, et al., 2016, Duplessis and Rousseau, 2016, Duplessis, C. and Camus, 2010). GoldMinds was of the opinion that sample preparation, analyses, and security of diamond drill core samples for the Gladiator property was of industry standard and that the assay data was suitable for use in the 2012 resource estimation. The data was reviewed by the Authors and is included in the discussions below.

The following sections describe the sample preparation, analyses and security for drilling completed on the Gladiator property between 2010 and 2019.

11.2.1 Sampling

During the 2016 drilling campaign, a consistent methodology was used for the preparation of the samples. The core sampling protocol was established by GoldMinds and is described below. The same methodology has been used since then by Metanor and Bonterra.

Once the drilling core was extracted, the sampling method was as follows:

a) The geologist takes photos of dry and wet core boxes;
b) If the core is oriented, the geologist matches the different pieces of the core to determine the direction of veins and faults;

c) Once the geology is described, the geologist marks the beginning and the end of the sample directly onto the core with a yellow-colored wax crayon;
d) The core is sampled over regular intervals of 1 m;
e) A sample tag is placed at the beginning of each sample interval and the tag number is integrated within the database;
f) Blanks and standards tags were inserted for each batch of 10 samples;
g) Samples are cut or split into two parts at the Barry Mine site, one part of each sample is sent for analysis by fire-assay and the other part was stored on site for the archives (Figure 11-33, Figure 11-34).
h) The half-core meter-long samples were placed in a plastic bag with there tag and closed (Figure 11-35). The remaining half of the cores were kept at Bonterra's core-shack for future assay verification or any other further investigation;
i) The plastic bags were placed into 25kg rice bags. Each rice bag was then sealed with a tie-wrap and identified prior to being transported to the laboratory (Figure 11-36).

Figure 11-33 Barry Core Storage

Figure 11-34 Barry Core Storage

Figure 11-35 Samples Placed in Plastic Bags with Sample Tag

Figure 11-36 Rice Bags Filled by Samples Ready to be Shipped to the Laboratory

The procedure for samples processing at Bachelor laboratory to assay the gold content of each sample consists of:

a) + Reception logging

b) + Drying of samples

c) + Crushing and grinding of the half core at 60% passing 8 mesh

d) + Splitting

e) + Pulverisation of 250 g to 400 g at 80% passing 200 mesh.

f) + Split to take 30 grams for gold Fire Assay

g) + Detection limit for the gold assay was established at 0.01ppm.

11.2.2 Barry Quality Assurance/Quality Control (QA/QC) Program

All samples from the Barry Property have been sent to the Bachelor Mine laboratory for gold assaying. Selected pulp duplicates are sent to ALS Chemex Laboratory in Val d'Or.

11.2.2.1 Barry Blanks Statistics

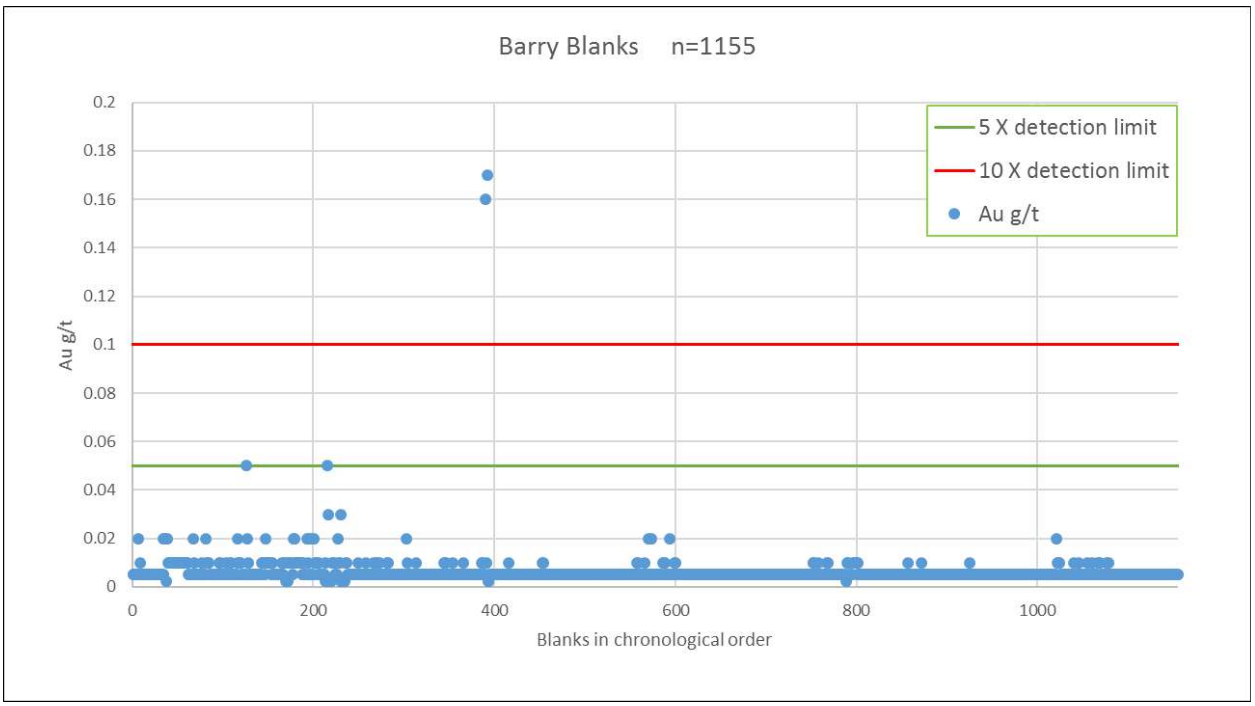
A total of 1,155 blanks were in the QAQC tables of the Barry project from Bonterra at the effective date of the report since the previous technical report dated June 2017. The blanks were dated from May 15, 2016, to January 26 2019. Blanks total 2.27% of the entire database (Figure 11-37).

The failure threshold for the blanks is set at 0.1 ppm, 10x the lower detection limit of 0.01 ppm. A value of 0.005 ppm (half the detection limit) is used for all assay results of "below detection limit".

Blank samples are deemed to have resulted in a quality control failure if their assay values exceeded 0.1 ppm, although any sample exceeding a warning level of 0.05 ppm was inspected. Elevated values for blanks may suggest that there has been contamination or sample cross-contamination during preparation. Elevated values may also indicate sources of contamination in the fire assay procedure (contaminated reagents or crucibles) or sample solution carry-over during instrumental finish.

Out of the 1,155 blank samples, there is 0 warnings and 3 failures (0.26% of all blanks). One of the blank failure is with a sample at 18.55g/t Au. This suggest a manipulation mistake. The results of the blanks do not show significant contamination.

Figure 11-37 Blanks from the Barry project 2016-2018



11.2.2.2 Barry Control Standards

Certified reference materials (CRM or RM) are submitted with samples for assay as control standards to identify any possible assay problems with specific sample batches or long-term biases in the overall dataset. Eleven distinct reference materials were used throughout the 2016 to the 2019 drilling programs with random distribution. The standards were chosen to fall within six ranges of Au content to most effectively test the labs performance across a range of grades typical on the project. The standards were deemed to have resulted in a quality control failure if the RM's Au assay results fell outside ± three standard deviations of its certified value. Additionally, ALS Chemex states: "In general, we have an agreement that Geochem methods should have 10% precision and Assay methods 5%" and these levels of confidence were taken into consideration when evaluating failures and the appropriate action to be taken. Table 11-5 displays a list of RM's used along with their expected grade and distribution data.

Table 11-5 Barry Control Standards

Standards	Quantity	Reference			Duplicates Statistics				Results			% QAQC failed
		Value	Sigma	Unit	Mean	Standard Deviation	Minimum	Maximum	Pass	Warning	Fail	
Oreas 16A	191	1.810	0.060	g/t	1.770	0.187	0.30	3.49	176	8	7	3.7%
Oreas 202	21	0.752	0.026	g/t	0.746	0.016	0.71	0.78	21	0	0	0.0%
Oreas 12A	80	11.790	0.240	g/t	11.537	1.165	1.77	12.65	64	10	6	7.5%
Oreas 223	437	1.780	0.045	g/t	1.761	0.095	0.005	1.90	418	16	3	0.7%
Oreas 229	17	12.110	0.206	g/t	11.974	0.443	11.20	12.60	10	5	2	11.8%
Oreas 207	23	3.470	0.130	g/t	3.485	0.057	3.38	3.59	23	0	0	0.0%
Oreas 250	943	0.309	0.013	g/t	0.321	0.203	0.005	5.41	882	33	28	3.0%
Oreas 210	289	5.490	0.150	g/t	5.410	5.409	0.04	6.61	252	9	28	9.7%
Oreas 220	23	0.866	0.020	g/t	0.830	0.042	0.76	0.94	13	4	6	26.1%
Oreas 216	24	6.660	0.160	g/t	6.540	0.243	5.77	6.84	22	0	2	8.3%
Oreas 215	24	3.540	0.100	g/t	3.530	0.107	3.39	3.88	23	0	1	4.2%
total	2072											

The CRM's were manufactured by Ore Research & Exploration Pty Ltd (ORE), in Australia, and were distributed in Canada through Analytical Solutions Ltd, Toronto. These ORE standards are certified in accordance with International Standards Organization (ISO) recommendations. The Performance Gates applied for the Clearwater project are available on the Analytical Solutions Ltd. website (www.explorationgeochem.com) and are described as follows:

"*Performance gates provide an indication of a level of performance that might reasonably be expected from a laboratory being monitored by this standard in a QA/QC program. They take into account errors attributable to measurement (analytical bias and precision) and standard variability. For an effective standard, the contribution of the latter should be negligible in comparison to measurement errors.*
There are three main sources of measurement error:

- inter-lab bias
- inter-batch bias
- repeatability (analytical precision)

The standard is submitted to one or more labs at random with the aim of evaluating and/or comparing their competence and the performance gates accommodate all sources of potential error.

The performance gates are calculated from the standard deviation of the pooled individual analyses generated from the certification program. All individual and laboratory dataset (batch) outliers are removed prior to determination of the standard deviation. These outliers can only be removed after the absolute homogeneity of the CRM has been independently established, i.e. the outliers must be confidently deemed to be analytical rather than arising from inhomogeneity of the CRM.

Performance gates have been calculated for one, two and three standard deviations of the accepted pool of certification data. As a guide, these intervals may be regarded as: informational (**1s**), warning or rejection for multiple outliers (**2s**), or rejection for individual outliers (**3s**) in QC monitoring, although their precise application should be at the discretion of the QC manager concerned."

A total of 2,072 standards (4.08% of the database) were submitted to the Bachelor Mine laboratory during the 2016 to 2019 drilling programs. All standards underwent fire assay with an AA finish. No numerical data is available for individual assays that, for a given analytical method, returned either 'Non-Sufficient Sample (NSS)' or assayed 'above the upper detection limit'. These individual assays have been removed from the QC data and calculation and are not considered failures. The removed assays have not been included in the total number of assays received, as they document only a lack a material, with no implications regarding the overall accuracy of the laboratory's analytical methods.

Eleven graphs have been plotted to show the atomic absorption assay data for each of the eight eligible RM's used. The results of these assays are presented in Figure 11-38 to Figure 11-45. A summary of the assay data for all standards is presented in Table 11-5. The number of assay failures for each RM is included at the end of Table 11 5 Barry Control Standards.

A weak low bias for RM Oreas 229 was observed so the Bachelor laboratory stopped using it. Only 16 RM Oreas-229 were used on total. 9 of them (56%) passed the two standard deviation threshold. This standard has a very high expected gold value (12.11 g/t Au).

From the 289 RM Oreas-210 used at the Barry project, 16 are above expected values (Figure 11-43). These high values are clustered in time and on grade. They are all approximately 1 g/t Au above the RM Oreas-210 expected value and this high bias happen only between July 25th and September 5th and between October 16th and November 16th 2017.

The RM Oreas-12A is a standard with a very high expected gold value (11.79 g/t Au). Out of 80 RM Oreas 12A, 5 (6%) of these standards failed (Figure 11-39).
A total of 83 failures occurred from all CRM's. This represents a combined failure rate of 4% for all CRM assay results. The total QC failure rate, when reviewing both blanks and standards, is 2.6%. These results are within acceptable industry parameters and reveal no indication of long term bias or systematic contamination.

Figure 11-38 Standard OREAS 250

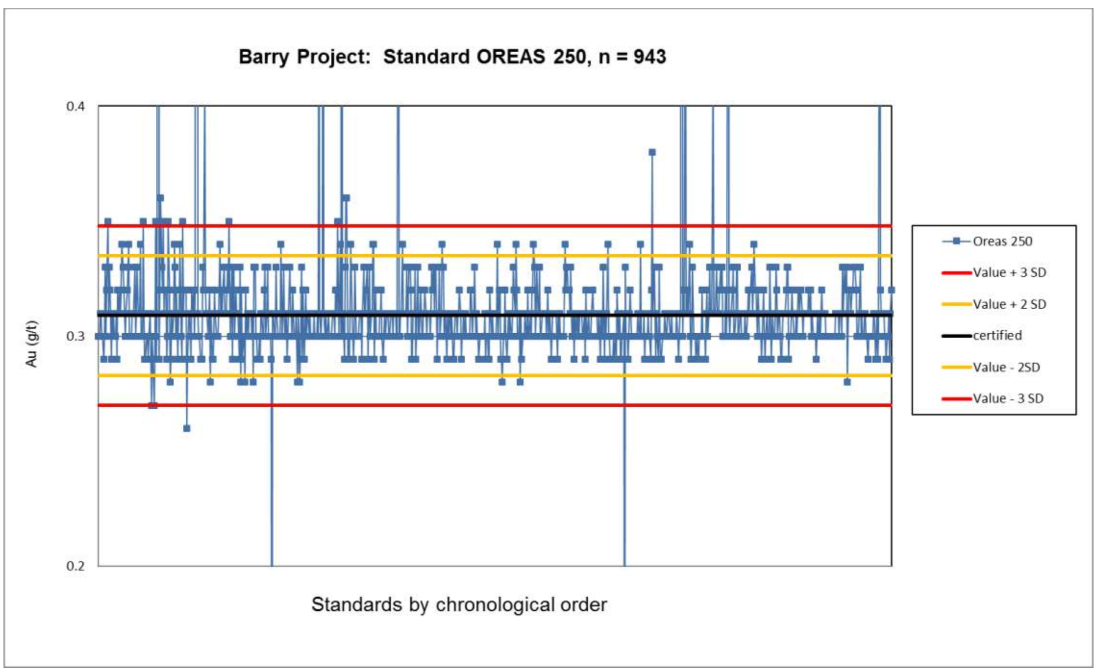


Figure 11-39 Standard OREAS 12A

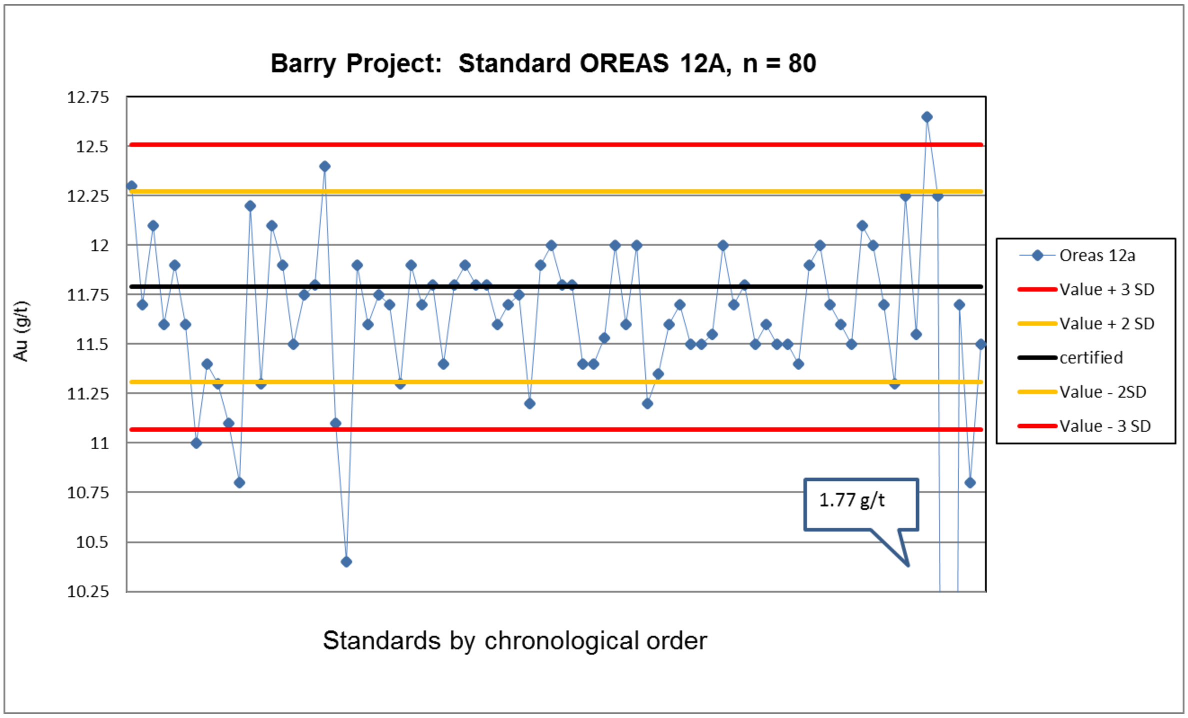


Figure 11-40 Standard OREAS 16A

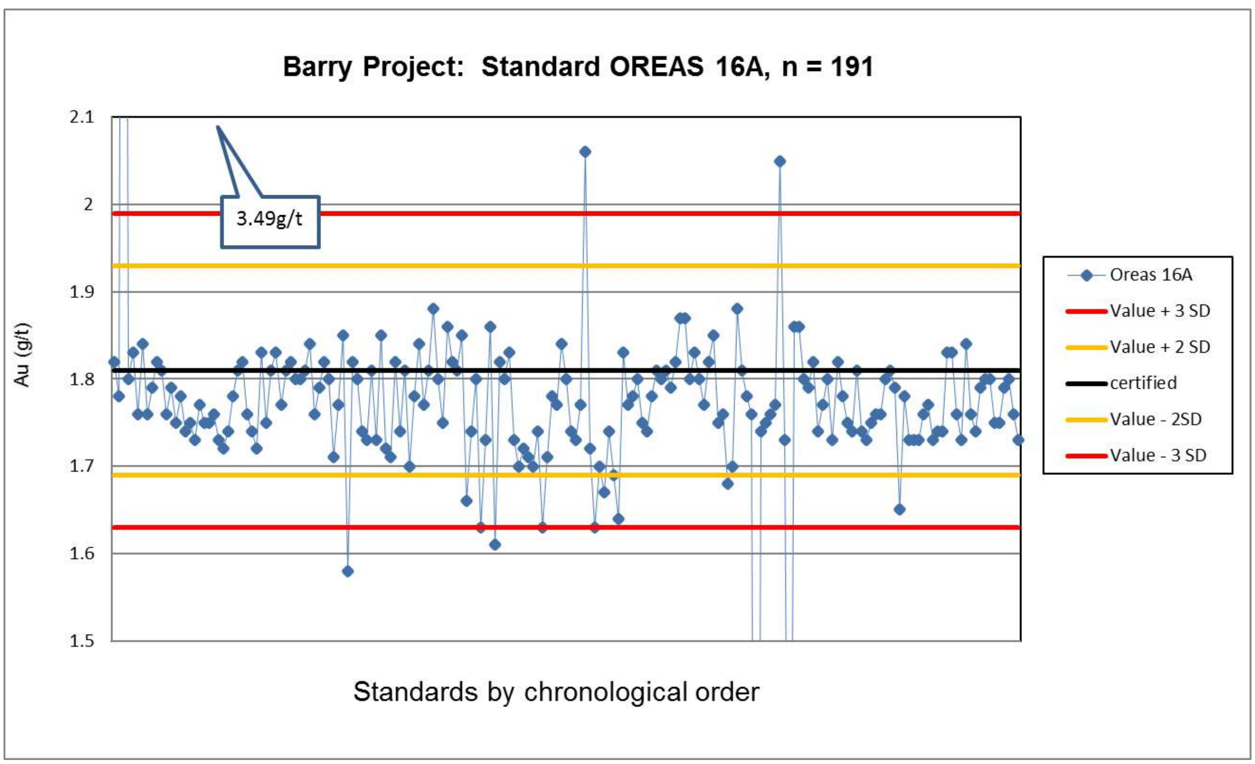


Figure 11-41 Standard OREAS 202

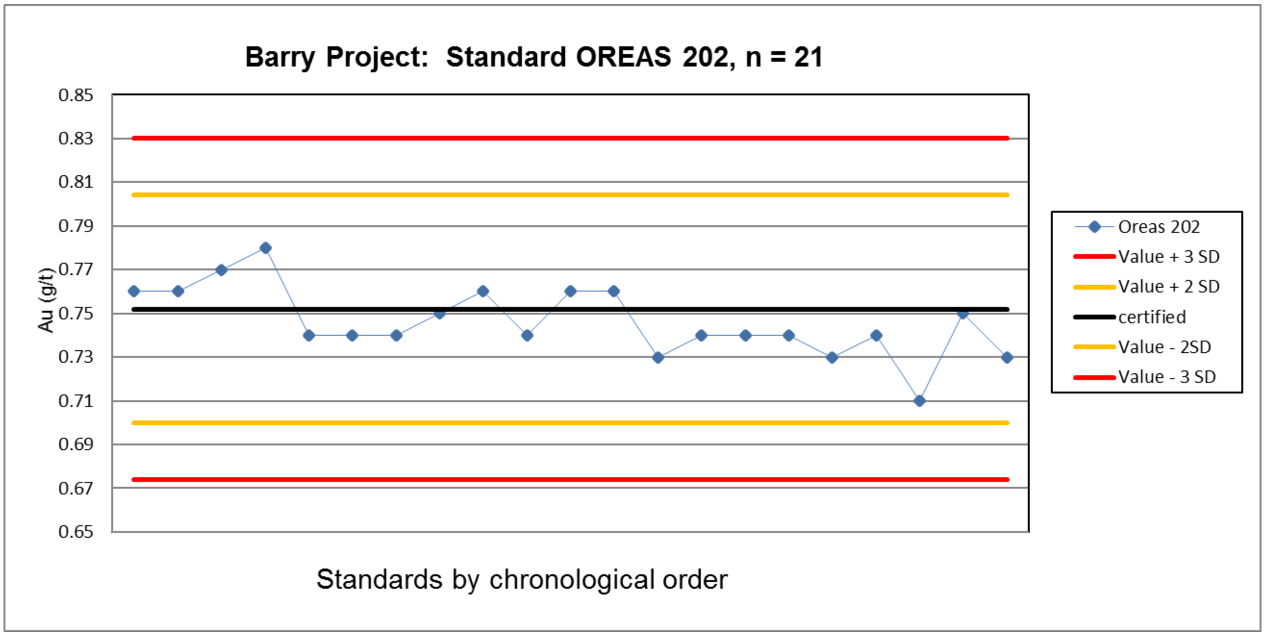


Figure 11-42 Standard OREAS 207

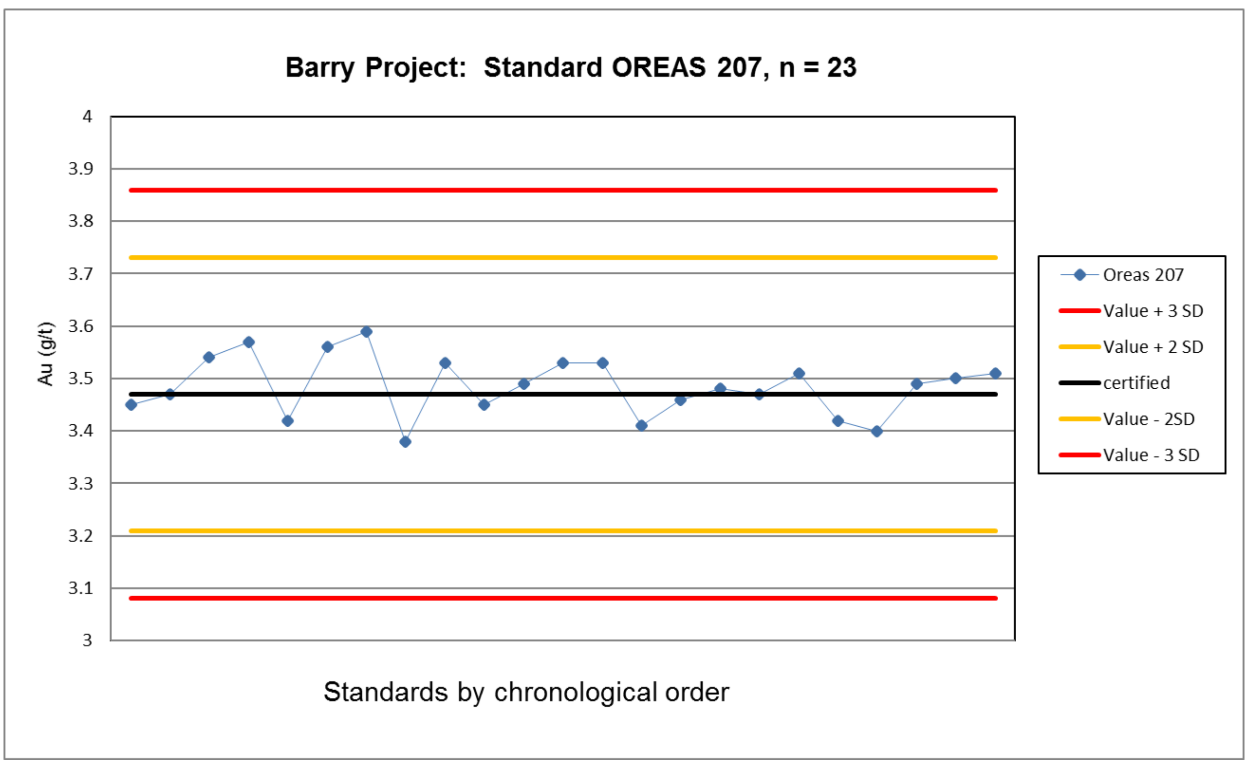


Figure 11-43 Standard OREAS 210

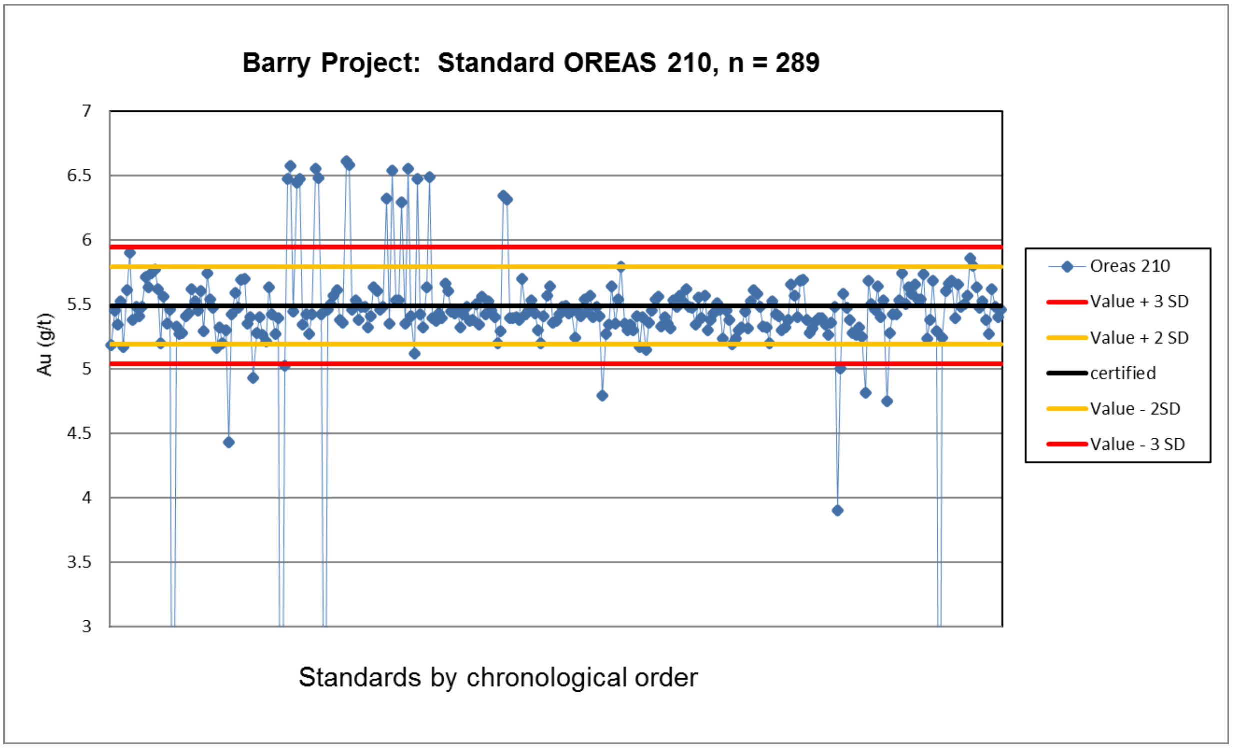


Figure 11-44 Standard OREAS 223

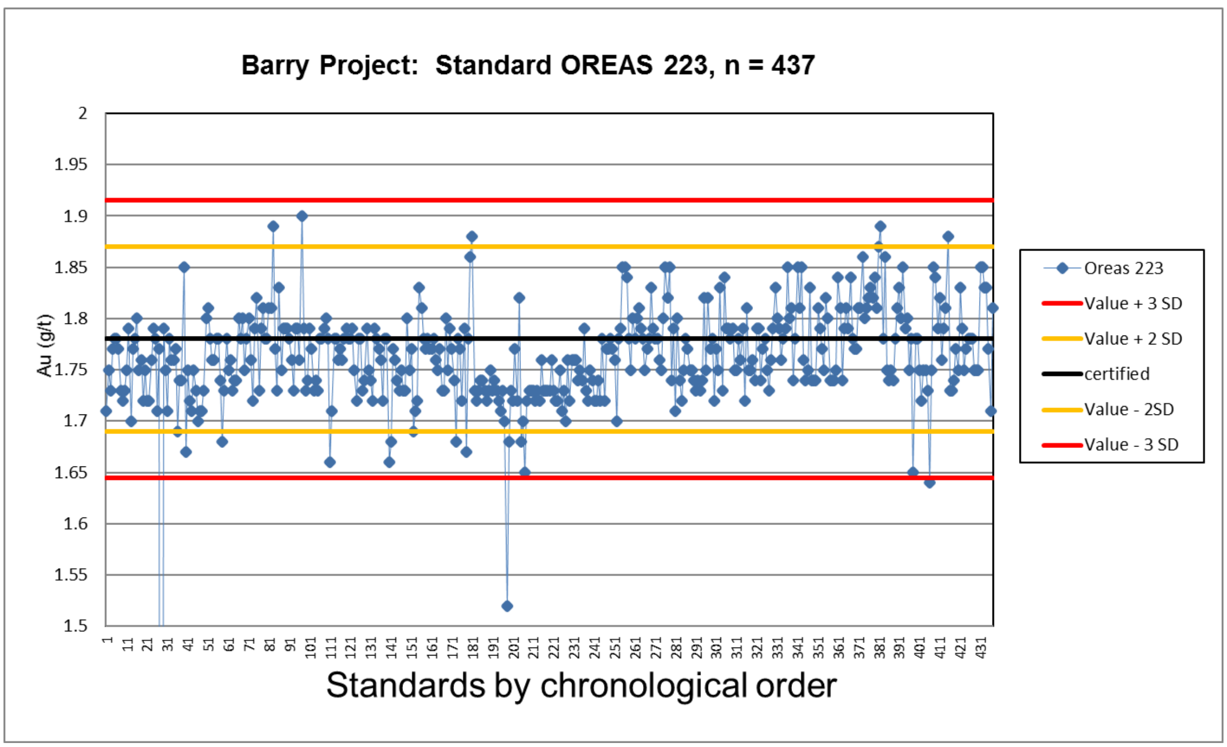
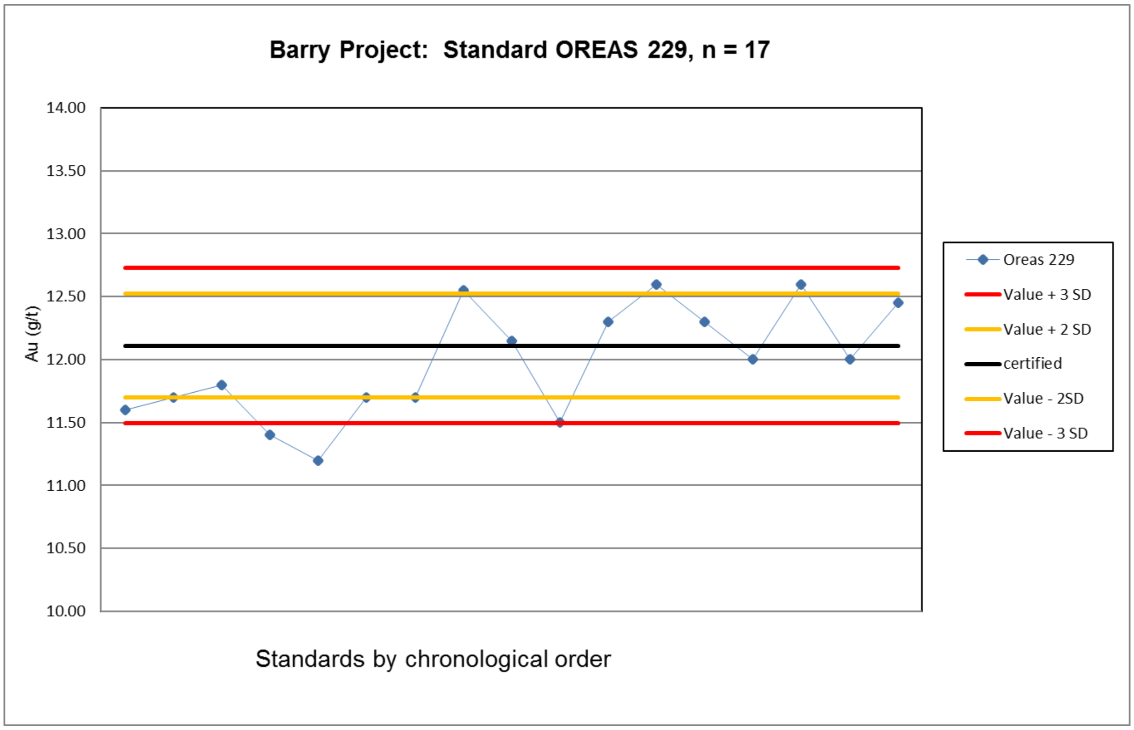


Figure 11-45 Standard OREAS 229



11.2.2.3 Barry Field Duplicates

Random pulp samples that were analysed by Bonterra (previously Metanor) at the Bachelor Mine laboratory in Desmaraiville were sent to ALS Chemex in Val d'Or for re-analysis to test lab variability (Figure 11-46 to Figure 11-48).

Between 2016 and 2019, Bonterra sent 3,944 pulp duplicates from the Bachelor Mine laboratory to ALS Chemex in Val d'Or, which represent 7.76% of the assays treated at the Bachelor mine laboratory.

Of the 3,944 pairs, 3,899 pairs have both data above the detection limit. Only those pairs are reviewed by SGS.

SGS did the verification of bias between population by statistical sign test, Student T-test and Wilcoxon sign rank-test. They all determined that there could be a bias. However, the bias, is of 3% and mainly because oh the high values. High values are over estimated by ALS but lower values are over estimated by Metanor (Bonterra). This bias is conservative because it slightly lowers high values. Even if the low assays (under 0.2 g/t) might be overestimated by the Bonterra laboratory at the Bachelor mine site, they won't be considered in the resource estimation, because they are significantly under the cut-off grade. There is no problem with using the data for the estimation resources.

Figure 11-46 Log/log chart on the QQ plot on Barry field Duplicate

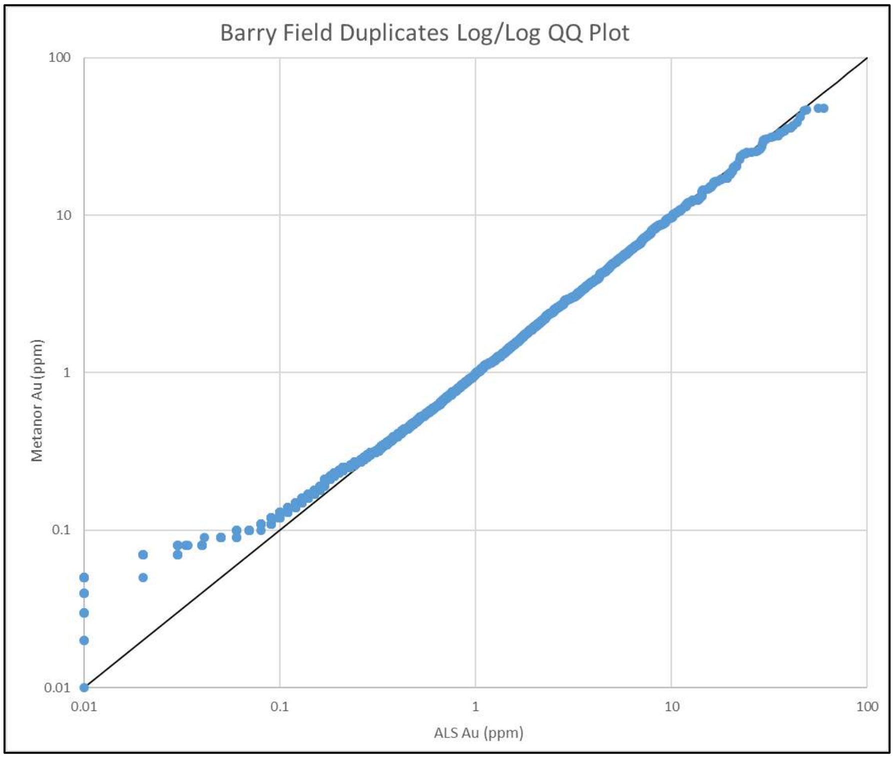


Figure 11-47 QQ plot on the Barry field duplicate

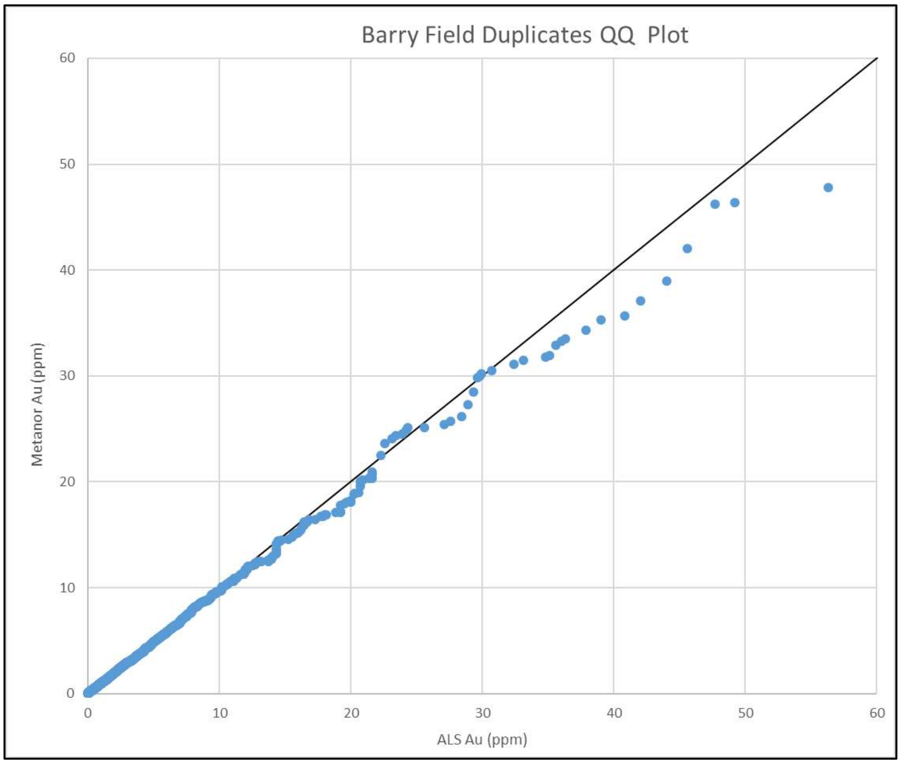


Figure 11-48 Field Duplicate Scatter plot

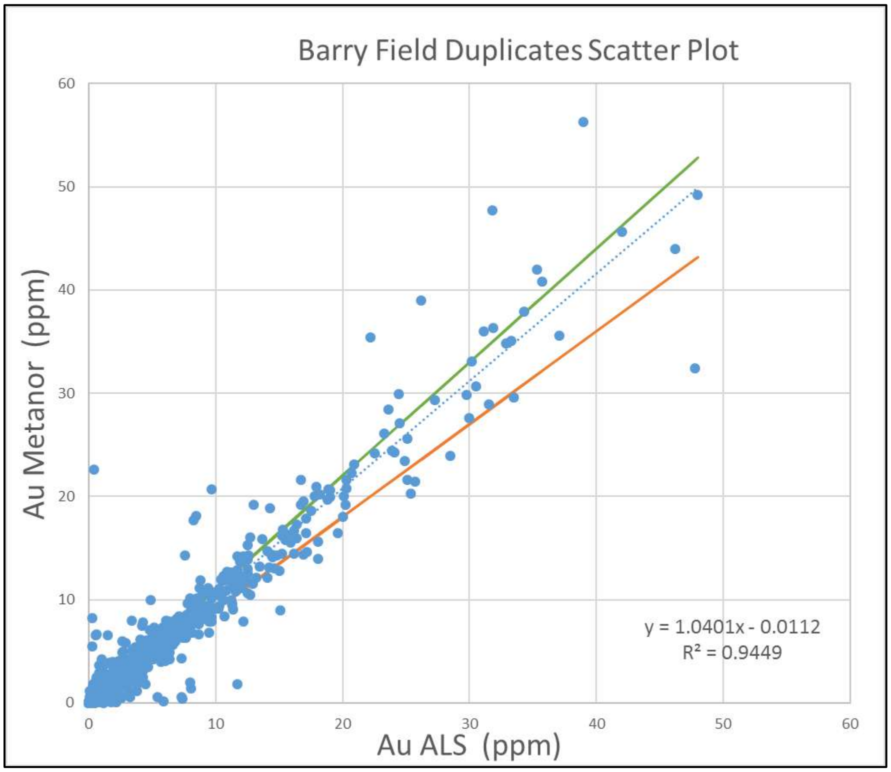
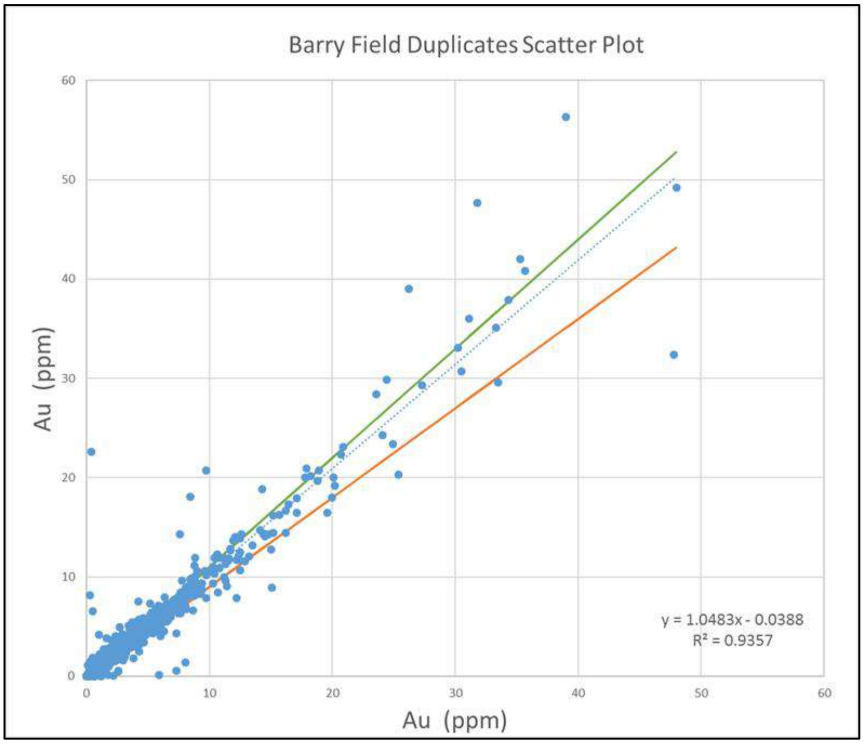


Figure 11-49 Barry Field Duplicate Scatter Plot



11.2.3 Barry internal Duplicate

The Bachelor Mine laboratory in Desmaraiville also do pulp duplicate on their own samples (Figure 11-50 to Figure 12-1).

Between 2016 and 2019, Bonterra sent 958 pulp duplicates from the Bachelor Mine laboratory to ALS Chemex in Val d'Or, which represent 1.88% of the assays treated at the Bachelor mine laboratory.

Of the 958 pairs, 480 pairs have both samples above the detection limit. Only those pairs are reviewed by SGS.

SGS did the verification of bias between population by statistical sign test, and Student T-test. No bias have been determined with those test. There is no problem with using the data for the estimation resources.

Figure 11-50 Scatter Plot of Internal Duplicate Pairs

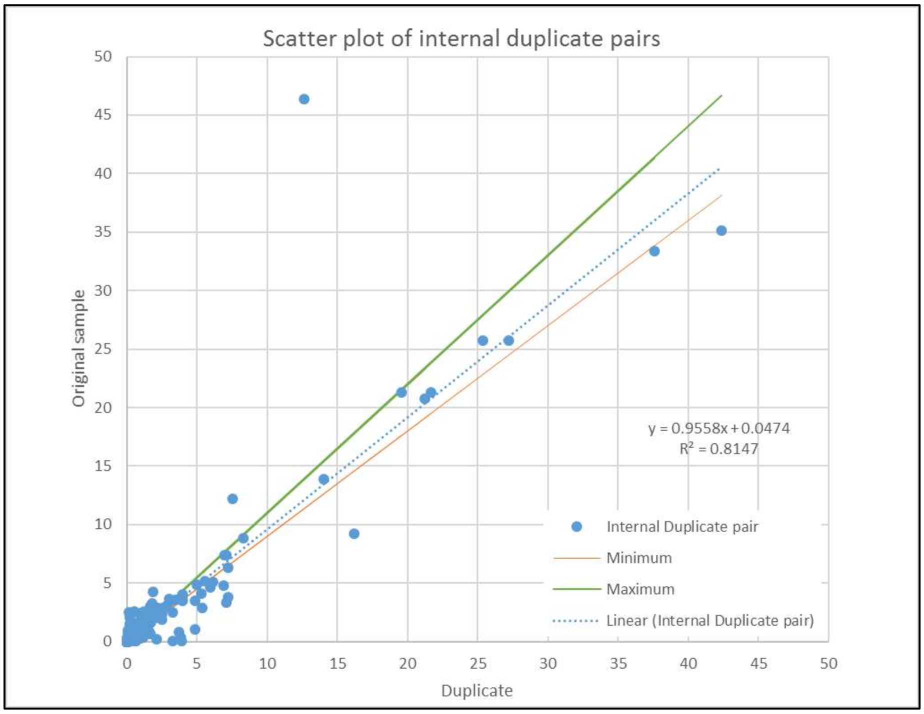


Figure 11-51 Log-Log scatter plot of duplicate pairs

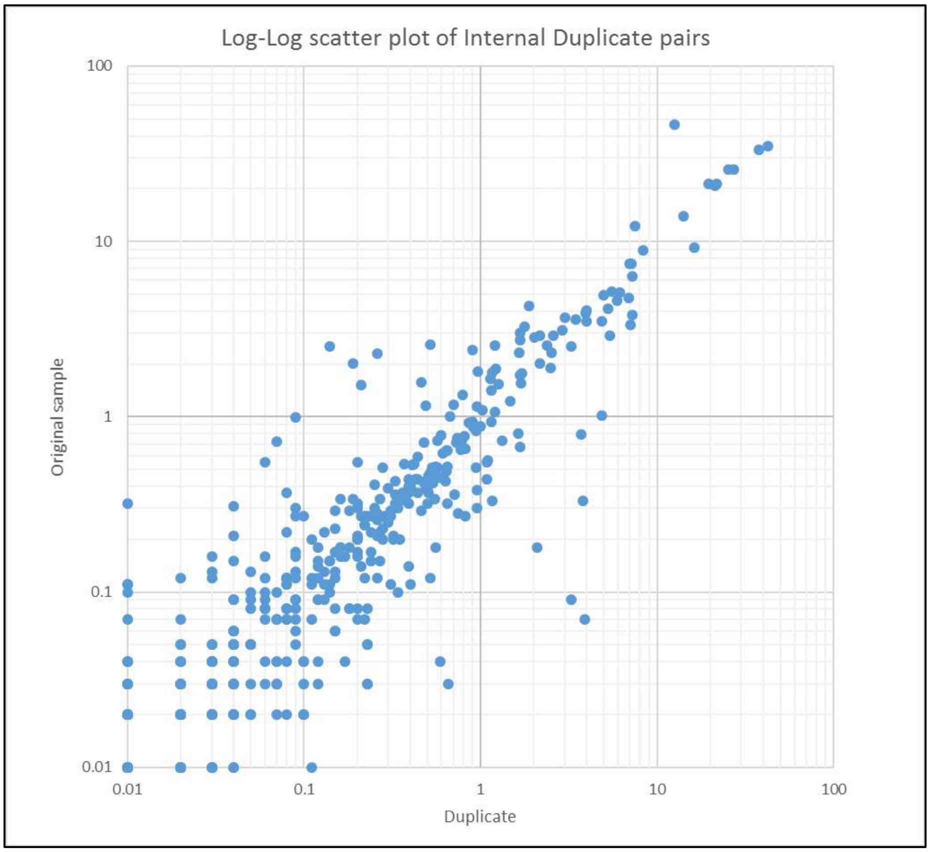


Figure 11-52 Scatter Plot of Internal Duplicate Pairs

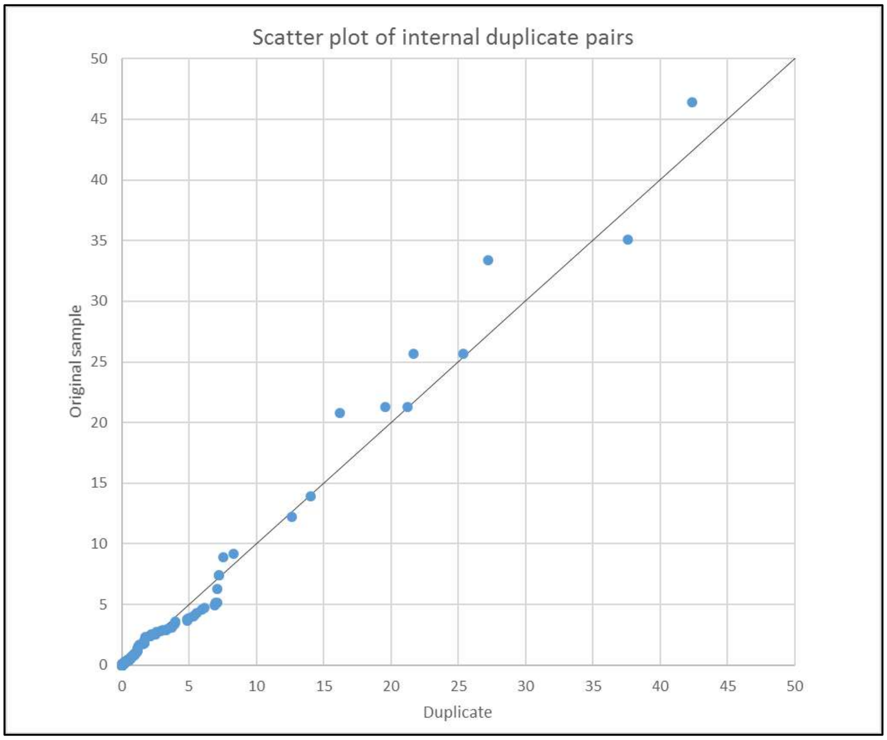
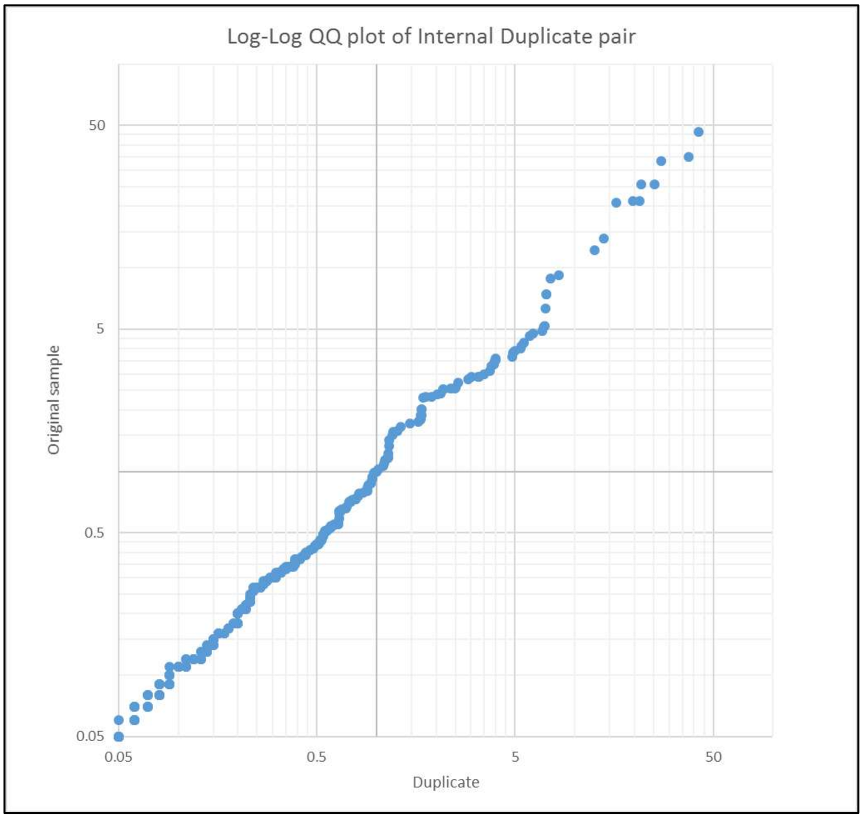


Figure 11-53 Log-Log Plot of Duplicate Pairs



11.2.4 Comments and Recommendations

The Authors have reviewed the field procedures and analytical quality control measures used by Bonterra on the Barry Property. The data sets examined by the Authors show no indication of analytical bias and follow generally accepted industry standards.

The level of contamination, based on the analysis of blank material is low as approximately 100% of the blank samples returned values below or equal to the accepted limit of 10x the detection limit (0.005 g/t Au).

The statistics on the CRM's (standards) are considered reliable and within acceptable limits of accuracy in the industry.

Split core duplicate (¼ split) results are acceptable and confirm that the database is reliable. The Authors did not identify any accuracy or precision issues.

Bassically the results of the QA/QC programs to date on the Barry Property indicate there are no significant issues with the drill core assay data. The data verification programs undertaken on the data collected from the Barry Property support the geological interpretations, and the analytical and database quality, and therefore data can support a mineral resource estimation.

12 DATA VERIFICATION

The following sub-sections summarise the data verification procedures that were carried out and completed and documented by the Authors for this technical report.

As part of their verification process, the Authors reviewed all geological data and databases, past public and technical reports, and reviewed procedures and protocols as practiced by the Bonterra field and technical team. The Bonterra technical team provided all relevant data, explanations and interpretations.

In addition, as described below, the Authors conducted its own site visit and sampling activities to better evaluate the veracity of the data. The Authors collected independent analytical checks of drill core duplicate samples taken from recent Bonterra in 2017and 2018 diamond drilling programs.

The Authors conducted verification of the laboratories analytical certificates and validation of the Project digital database supplied by Bonterra for errors or discrepancies. A minimum of 10% of the digital assay records were randomly selected and checked against the laboratory assay certificates. Verifications were carried out on drill hole locations (i.e. collar coordinates), down hole surveys, lithology, SG, trench data, and topography information. Minor errors were noted and corrected during the validation process but have no material impact on the 2019 Mineral Resource Estimates presented in the current report. The database is of sufficient quality to be used for the current resource estimates.

12.1 GLADIATOR DATA VERIFICATION

12.1.1 SGS Site Visit and Data Verification

Two different site visitss were done. Armitage conducted a site visit to the Gladiator Deposit on September 18 and 19, 2018. Vadnais-Leblanc completed the second site visit on May 14-15, 2019. The second site visit was conducted as Bonterra decided to include data for an additional 72 recent drill holes after the first site visit.

On both site visits, the Authors examined a number or core holes, and accompanying drill logs and assay certificates. Assays were examined against drill core mineralized zones. The Authors inspected the offices, core logging facilities/sampling procedures, core storage facilities and reviewed core security procedures.

Following the first site visit, a total of 58 individual mineralized pulp duplicates were collected from drill holes BA-17-05, BA-17-39B, BA-17-53B, BA-17-28, BA-18-04 for verification purposes and submitted for gold analysis at the SGS Minerals Laboratory in Lakefield, Ontario.

The 58 verification samples were collected by taking remaining pulp rejects. The verification samples were collected, bagged, labelled and transported from the Gladiator Project site, by Bonterra staff, to the SGS laboratory in Val d'Or for preparation and final shipment to the SGS laboratory in Lakefield, Ontario where the analyses are completed. In Lakefield, all of the verification samples were analyzed for gold (50 g pulp sample) by fire assay with an AAS finish. All samples returning a value >10 g/t Au were re-analysed (50 g pulp sample) by fire assay with a gravimetric finish.

A comparison of the Bonterra and SGS assay pair data was completed by Vadnais-Leblanc. Results of the comparison are presented in Table 12-1 and as bi-variate scatter plots in Figure 12-1 and Figure 12-2. The second figure is to better show the relation between pairs as some values as a gold value and if plotted on a graphic, they mask the lower results. The data shows little scatter over 6 ppm, as would be expected in this type of deposit and suggests that coarse gold is present in this deposit.

The assay pair data shows fair correlation as is the weighted average of the two intercepts is similar (Table 12-1). The verification of bias by statistical sign test on the independent duplicates shows that no bias can be identified. From the student t-test, if very high data (over 40g/t Au) are ignored, no bias can be identified.

The Authors recommend Bonterra continue periodically sending duplicate pulp samples to an umpire laboratory as part of the QA/QC program.

The Authors realize that the check assay program is limited and only represents a very small portion of the overall database (58 vs > 107,993 assays (0.05%)). However, it is the Authors opinion that the independent check assays confirm the presence of gold mineralization on the Property.

The collar surveying has been verified at the last site visit by Vadnais-Leblanc. With a handheld GPS (Garmin GPSmap 62s), 10 drill hole collars have been surveyed (Table 12-2). The elevation is not accurate with a handheld GPS, so a constant difference exists between SGS surveying and Bonterra Gladiator surveying. However, the difference in longitude and latitude is inconsequential.

12.1.2 Conclusion

All geological data has been reviewed and verified by Authors as being accurate to the extent possible and to the extent possible all geologic information was reviewed and confirmed. The Authors are of the opinion that the Gladiator database is of sufficient quality to be used for the current Gladiator resource estimate.

Table 12-1 Independent Check Sample Statistics

DDH	From	To	Length	Sample Number	Au (SGS)	Au (Gladiator)	Difference	Wt. Avg. (ppm/m)		Difference
			m		ppm	ppm	(%)	SGS	Bonterra	%
BA-17-05	*70*	*71*	*1*	*V201937*	*0.037*	*0.03*	*23.3*			
BA-17-05	*71*	*72*	*1*	*V201938*	*0.148*	*0.12*	*23.3*			
BA-17-05	*72.8*	*73.4*	*0.6*	*V201941*	*0.019*	*0.02*	*-5.0*			
BA-17-05	*73.4*	*74*	*0.6*	*V201942*	*271.34*	*288*	*-5.8*	*Length (m)=*	*9.7*	
BA-17-05	*74*	*75*	*1*	*V201944*	*56.42*	*63.9*	*-11.7*			
BA-17-05	*75*	*76*	*1*	*V201946*	*0.746*	*1.13*	*-34.0*			
BA-17-05	*76*	*77*	*1*	*V201947*	*1.738*	*1.99*	*-12.7*			
BA-17-05	*77*	*78*	*1*	*V201948*	*4.973*	*5.18*	*-4.0*			
BA-17-05	*78*	*79*	*1*	*V201949*	*0.02*	*0.03*	*-33.3*			
BA-17-05	*79*	*80.5*	*1.5*	*V201950*	*0.012*	*0.03*	*-60.0*	*23.4*	*25.3*	*8%*
BA-17-39B	475.5	477	1.5	W190188	0.539	0.46	17.2			
BA-17-39B	477	478	1	W190189	51.43	53.8	-4.4			
BA-17-39B	478	479	1	W190190	2.645	2.87	-7.8	Length (m)=	5.5	
BA-17-39B	479	480	1	W190191	0.023	0.02	15.0			
BA-17-39B	480	481	1	W190192	0.266	0.23	15.7	10.0	10.5	4%
BA-17-28	*715*	*716*	*1*	*W330599*	*0.011*	*0.04*	*-72.5*			
BA-17-28	*716*	*717*	*1*	*W330600*	*0.277*	*0.71*	*-61.0*			
BA-17-28	*717*	*718*	*1*	*W330601*	*5.129*	*7.54*	*-32.0*			
BA-17-28	*718*	*719*	*1*	*W330602*	*0.287*	*1.34*	*-78.6*			
BA-17-28	*719*	*719.9*	*0.9*	*W330603*	*0.061*	*0.05*	*22.0*			
BA-17-28	*719.9*	*720.9*	*1*	*W330604*	*0.01*	*0.01*	*0.0*			
BA-17-28	*720.9*	*722*	*1.1*	*W330606*	*0.137*	*0.09*	*52.2*	*Length (m)=*	*17.0*	
BA-17-28	*722*	*723*	*1*	*W330607*	*1.004*	*0.66*	*52.1*			
BA-17-28	*723*	*724*	*1*	*W330608*	*5.278*	*6.74*	*-21.7*			
BA-17-28	*724*	*724.8*	*0.8*	*W330609*	*0.023*	*0.03*	*-23.3*			
BA-17-28	*724.8*	*725.8*	*1*	*W330610*	*0.019*	*0.02*	*-5.0*			

DDH	From	To	Length	Sample Number	Au (SGS)	Au (Gladiator)	Difference	Wt. Avg. (ppm/m)		Difference
			m	_	ppm	ppm	(%)	SGS	Bonterra	%
BA-17-28	*725.8*	*727*	*1.2*	*W330611*	*0.017*	*0.02*	*-15.0*			
BA-17-28	*727*	*728*	*1*	*W330612*	*0.069*	*0.07*	*-1.4*			
BA-17-28	*728*	*729.5*	*1.5*	*W330613*	*8.59*	*11.45*	*-25.0*			
BA-17-28	*729.5*	*730.5*	*1*	*W330614*	*0.05*	*0.05*	*0.0*			
BA-17-28	*730.5*	*732*	*1.5*	*W330615*	*0.023*	*0.02*	*15.0*	*1.5*	*2.0*	*37%*
BA-17-53B	923	924	1	W984963	0.015	0.01	50.0			
BA-17-53B	924	925	1	W984964	0.008	0.01	-20.0			
BA-17-53B	925	925.8	0.8	W984965	0.204	0.19	7.4			
BA-17-53B	925.8	927	1.2	W984966	6.484	5.83	11.2			
BA-17-53B	927	928	1	W984967	0.164	0.15	9.3	Length (m)=	10.0	
BA-17-53B	928	929	1	W984968	0.013	0.01	30.0			
BA-17-53B	929	930.2	1.2	W984969	0.02	0.01	100.0			
BA-17-53B	930.2	930.7	0.5	W984970	18.9	17.55	7.7			
BA-17-53B	930.7	931.2	0.5	W984971	0.096	0.12	-20.0			
BA-17-53B	931.2	932	0.8	W984972	0.019	0.04	-52.5			
BA-17-53B	932	933	1	W984974	0.012	0.01	20.0	1.8	1.6	-8%
BA-18-04	*150.5*	*151*	*0.5*	*X276159*	*0.014*	*0.02*	*-30.0*			
BA-18-04	*151*	*151.5*	*0.5*	*X276161*	*0.024*	*0.04*	*-40.0*			
BA-18-04	*151.5*	*152.4*	*0.9*	*X276162*	*1.854*	*1.69*	*9.7*			
BA-18-04	*152.4*	*153*	*0.6*	*X276163*	*0.105*	*0.07*	*50.0*			
BA-18-04	*153*	*153.5*	*0.5*	*X276164*	*0.06*	*0.05*	*20.0*			
BA-18-04	*153.5*	*154.4*	*0.9*	*X276165*	*8.078*	*7.95*	*1.6*			
BA-18-04	*154.4*	*155*	*0.6*	*X276166*	*3.688*	*3.74*	*-1.4*	*Length (m)=*	*12.0*	
BA-18-04	*155*	*155.8*	*0.8*	*X276167*	*42.64*	*44.7*	*-4.6*			
BA-18-04	*155.8*	*156.4*	*0.6*	*X276168*	*4.209*	*4.84*	*-13.0*			
BA-18-04	*156.4*	*157*	*0.6*	*X276169*	*11.79*	*13.4*	*-12.0*			
BA-18-04	*157*	*157.5*	*0.5*	*X276170*	*81.84*	*92*	*-11.0*			
BA-18-04	*157.5*	*158*	*0.5*	*X276171*	*1.372*	*1.17*	*17.3*			
BA-18-04	*158*	*159*	*1*	*X276172*	*1.504*	*1.76*	*-14.5*			
BA-18-04	*159*	*160*	*1*	*X276173*	*5.302*	*5.25*	*1.0*			
BA-18-04	*160*	*161*	*1*	*X276174*	*0.041*	*0.04*	*2.5*			
BA-18-04	*161*	*162.5*	*1.5*	*X276175*	*0.058*	*0.04*	*45.0*	*8.6*	*9.3*	*8%*

Figure 12-1 Independently Re-Assayed Samples Au (ppm) vs Independent SGS Au (ppm)

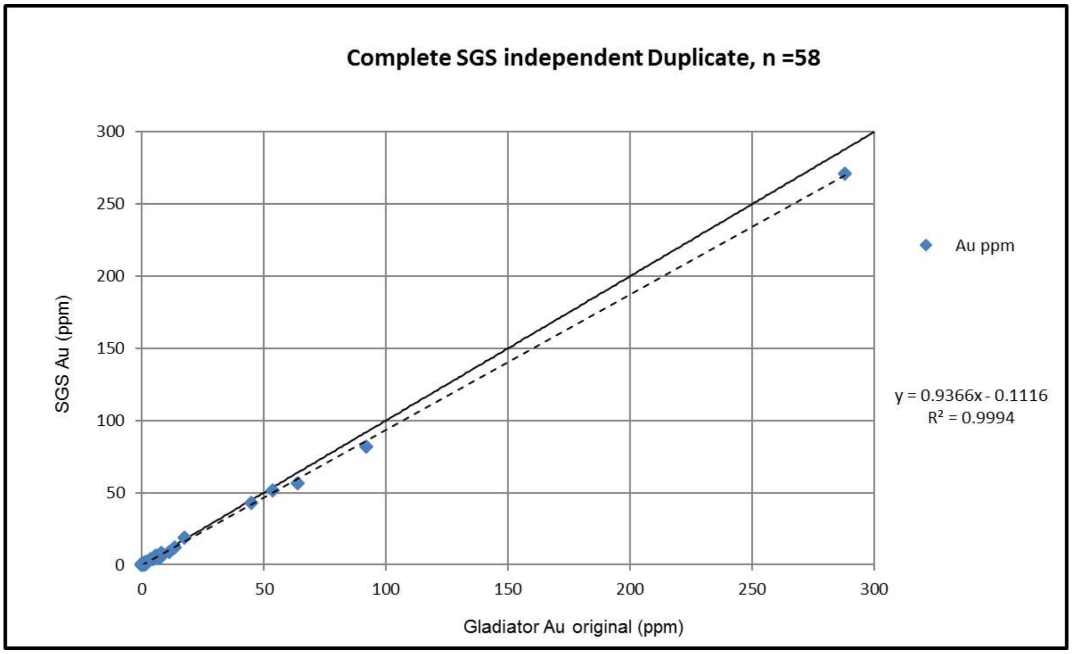


Figure 12-2 Partial SGS independant Duplicate (<20ppm)

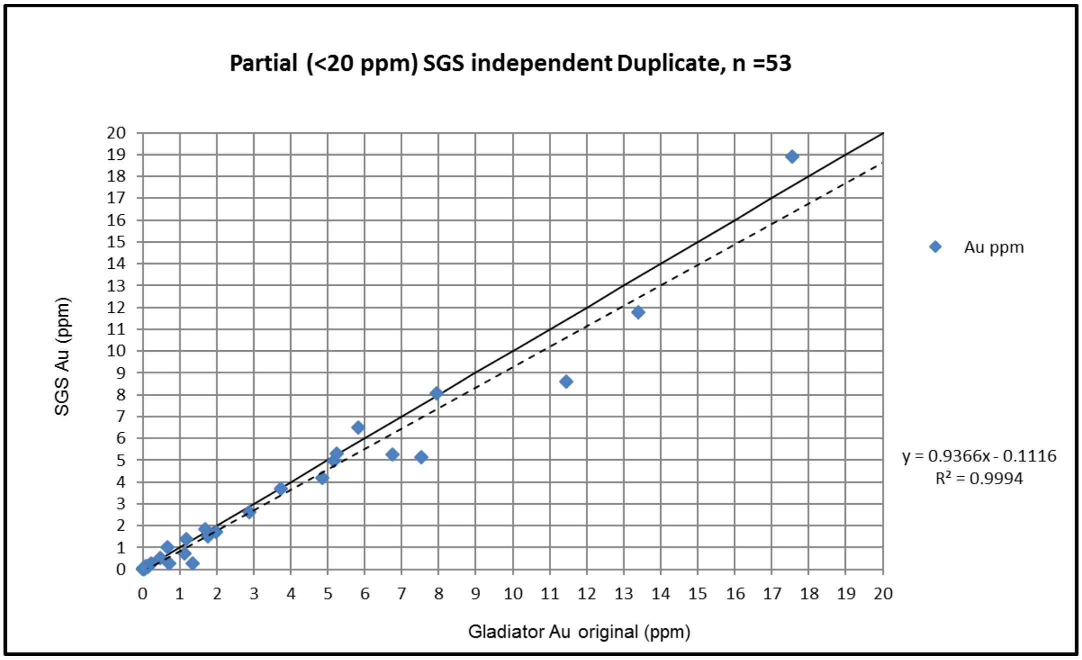


Table 12-2 Collar coordinate comparison

SGS				Gladiator				Difference (m)		
Hole Name	Easting	Northing	Elevation	Hole Name	X	Y	Z	X	Y	Z
BA-11-11	456,237.05	5,428,103.50	398.84	BA-11-11	456,236.91	5,428,102.01	391.51	0.14	1.49	7.33
BA-11-33	456,242.28	5,428,218.96	404.80	BA-11-33	456,243.07	5,428,216.18	395.99	-0.79	2.78	8.81
BA-16-22	456,237.34	5,428,223.11	404.45	BA-16-22	456,239.01	5,428,223.00	396.40	-1.67	0.11	8.05
BA-16-43	456,311.31	5,428,449.65	400.47	BA-16-43	456,311.24	5,428,449.88	394.24	0.07	-0.23	6.23
BA-17-39B	456,307.91	5,428,445.34	400.78	BA-17-39B	456,306.81	5,428,446.89	394.45	1.1	-1.55	6.33
BA-17-52	456,778.77	5,428,390.74	400.35	BA-17-52	456,779.35	5,428,391.34	391.68	-0.58	-0.6	8.67
BA-18-56	456,238.84	5,428,219.10	404.93	BA-18-56	456,240.00	5,428,220.00	390.00	-1.16	-0.9	14.93
BA-18-61B	456,190.44	5,428,165.23	401.64	BA-18-61B	456,192.00	5,428,170.00	390.00	-1.56	-4.77	11.64
BA-18-87	456,588.31	5,428,361.55	400.28	BA-18-87	456,589.00	5,428,357.00	386.00	-0.69	4.55	14.2777
BA-19-26A	456,230.43	5,428,089.32	399.08	BA-19-26A	456,230.00	5,428,089.00	389.58	0.43	0.32	9.5
						Average		-0.47	0.12	9.58
						Standard deviation		0.89	2.52	3.08
						Median		-0.635	-0.06	8.74

Coordinates in UTM, NAD83, Zone 18N

12.2 BARRY DATA VERIFICATION

12.2.1 Barry Site Visit and Data Verification

A site visit was conducted by Armitage and Vadnais-Leblanc on August 9 to 10, 2018. During the site visit, the Authors examined several core holes, and accompanying drill logs and assay certificates. Assays were examined against drill core mineralized zones. The Authors inspected the offices, core logging facilities/sampling procedures, core storage facilities and reviewed core security procedures.

Following the first site visit, a total of 38 individual mineralized pulp duplicates were collected from drill holes MB-17-140, MB-17-144, MB-18-173, MB-18-184, for verification purposes and submitted for gold analysis at the SGS Minerals Laboratory in Lakefield, Ontario.

The 38 verification samples were collected by taking remaining coarse rejects. The verification samples were collected, bagged, labelled and transported from the Barry Project site to the SGS laboratory in Val d'Or for preparation and final shipment to the SGS laboratory in Lakefield, Ontario where the analyses are completed. In Lakefield, all of the verification samples were analyzed for gold (50 g pulp sample) by fire assay with an AAS finish. All samples returning a value >10/t Au were re-analysed (50 g pulp sample) by fire assay with a gravimetric finish. As part of the independent assays verification, the density was also tested by picnometry at the SGS laboratory.

A comparison of the Barry Bonterra and SGS assay pair data was completed. Results of the comparison are presented in Table 12-3 and in Figure 12-3 and Figure 12-4. Data follows the expected trend on the charts even if a little scatter is present, as would be expected in this type of deposit. That suggests that coarse gold is present in this deposit.

The assay pair data shows fair correlation as is the weighted average of the two intercepts is similar (Table 12-3). The verification of bias by statistical sign test and the Student t-test on the independent duplicates shows that no bias can be identified. The Authors recommend Bonterra continue periodically sending duplicate pulp samples to an umpire laboratory as part of the QA/QC program.

The Authors realize that the check assay program is limited and only represents a very small portion of the overall database (38 vs > 79,602 assays (0.05%)). However, it is the Authors opinion that the independent check assays confirm the presence of gold mineralization on the Property.

The collar surveying has been verified at the last site visit by Vadnais-Leblanc. With a handheld GPS (Garmin GPSmap 62s), 11 drillhole collar have been surveyed (Table 12-4). The elevation is not accurate with a handheld GPS, so a constant difference exists between SGS surveying and Bonterra Barry surveying. However, the difference in Easting and Northing is inconsequential.

The Authors participated in a field tour of the Barry Deposit area conducted by Cedric de Marneffe, currently the Chief Geologist for the Barry Project.

Many subjects were discussed including but not limited to:

- Structural geology;
- Known mineralized structures and available data;
- Procedures put in place for drilling, logging, sampling, QA/QC, etc.;
- Potential new targets;
- Comments on the most recent mineralized envelopes;
- Availability of material for independent sampling by SGS.

During the authors' visit at the Barry site, the following actions were taken:

- Visit of the Core shack and the split core warehouse
- Visit of the storage site for the core;
- Visit of the surface infrastructure
- Visit of the outcrop;
- Visit of the open pit;
- Revision of the core sampling protocol;
- Review of Quality Assurance and Quality Control Protocols (QA/QC)

12.2.2 Conclusion

All geological data has been reviewed and verified by Authors as being accurate to the extent possible and to the extent possible all geologic information was reviewed and confirmed. The Authors are of the opinion that the database is of sufficient quality to be used for the current Barry resource estimate.

Table 12-3 Independent Check Sample Statistics (Barry)

DDH	Sample number	From	To	Length	SGS	Barry original	Difference	Wt Avg (ppm/m)	(ppm/m)	
		m	m	m	(Au ppm)	(Au ppm)	(Au ppm)	SGS	Barry	Difference %
MB-18-173	201707	375	375.6	0.6	1.758	1.39	0.368			
MB-18-173	201708	375.6	376.2	0.6	0.072	0.23	-0.158			
MB-18-173	201709	376.2	376.8	0.6	10.21	25.1	-14.89	MB-18-173		
MB-18-173	201710	376.8	377.4	0.6	4.258	3.36	0.898	Length (m) =	6.1	
MB-18-173	201712	377.4	378	0.6	1.053	0.26	0.793			
MB-18-173	201713	378	378.7	0.7	0.143	0.33	-0.187			
MB-18-173	201714	378.7	379.5	0.8	4.398	4.33	0.068			
MB-18-173	201715	379.5	380.15	0.65	2.441	2.59	-0.149			
MB-18-173	201716	380.15	381.1	0.95	0.723	0.58	0.143	2.673	3.956	119%
MB-18-184	203859	91	92	1	0.194	0.24	-0.046			
MB-18-184	203860	92	92.75	0.75	2.824	3.01	-0.186			
MB-18-184	203861	92.75	93.75	1	1.083	0.92	0.163	MB-18-184		
MB-18-184	203862	93.75	94.25	0.5	2.034	2.11	-0.076	Length (m) =	6.5	
MB-18-184	203863	94.25	94.75	0.5	0.143	0.14	0.003			
MB-18-184	203864	94.75	95.5	0.75	0.25	0.26	-0.01			
MB-18-184	203865	95.5	96.5	1	0.927	1.51	-0.583			
MB-18-184	203866	96.5	97.5	1	0.166	0.22	-0.054	0.887	0.995	-24%
MB-17-140	798140	140	141	1	0.026	0.005	0.021			
MB-17-140	798141	141	142	1	0.498	0.54	-0.042			
MB-17-140	798142	142	143	1	2.77	3.32	-0.55			
MB-17-140	798143	143	144	1	0.355	0.93	-0.575	MB-17-140		
MB-17-140	798144	144	145	1	0.423	0.32	0.103	Length (m) =	10	
MB-17-140	798145	145	146	1	0.807	1.15	-0.343			
MB-17-140	798146	146	147	1	0.164	0.63	-0.466			
MB-17-140	798147	147	148	1	0.636	0.9	-0.264			
MB-17-140	798148	148	149	1	1.893	1.11	0.783			
MB-17-140	798150	149	150	1	0.285	0.22	0.065	0.786	0.913	-38%
MB-17-144	797766	287.5	288.5	1	0.037	0.07	-0.033			
MB-17-144	797767	288.5	289.5	1	3.157	2.9	0.257			
MB-17-144	797769	289.5	290.5	1	0.22	0.29	-0.07			
MB-17-144	797770	290.5	291.5	1	0.01	0.02	-0.01	MB-17-144		
MB-17-144	797771	291.5	292.25	0.75	0.024	0.005	0.019	Length (m) =	9.5	
MB-17-144	797772	292.25	292.75	0.5	0.013	0.005	0.008			
MB-17-144	797773	292.75	293.25	0.5	0.025	0.17	-0.145			
MB-17-144	797774	293.25	294	0.75	0.297	0.29	0.007			
MB-17-144	797775	294	295	1	0.23	0.54	-0.31			
MB-17-144	797776	295	296	1	0.705	1.04	-0.335			
MB-17-144	797777	296	297	1	0.082	0.11	-0.028	0.495	0.556	-63%

Figure 12-3 QQ plot of the Independent Verification Samples on Barry Project

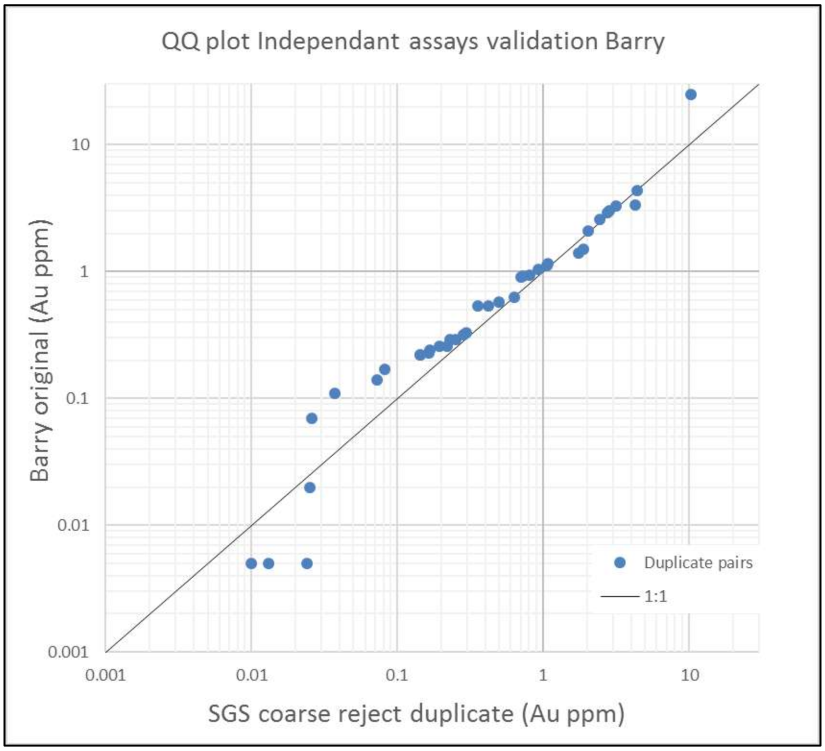


Figure 12-4 Scatter plot of the Independent Verification Samples on Barry Project

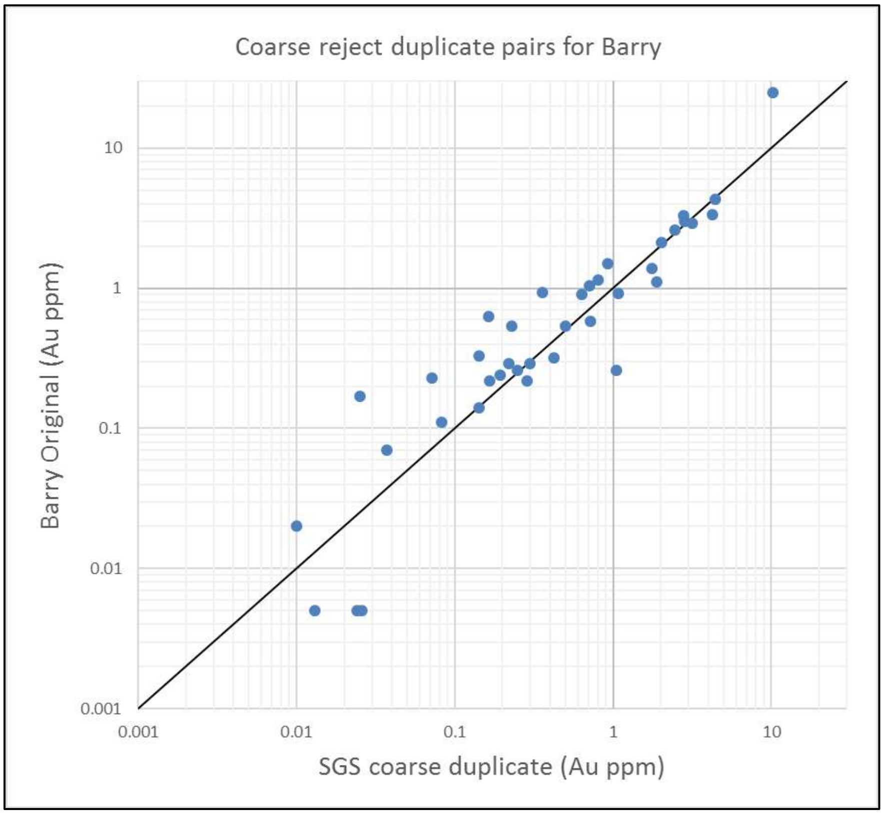


Table 12-4

Barry				sgs				Difference (m)		
Hole Name	Easting	Northing	Elevation	Hole Name	Easting	Northing	Elevation	Easting	Northing	Elevation
MB-17-103	444052.70	5426422.08	396.67	MB-17-103	444051.24	5426419.02	393.38	1.46	3.06	3.29
MB-17-144	444042.92	5426451.36	393.78	MB-17-144	444042.81	5426449.06	393.55	0.11	2.30	0.24
MB-17-92	444085.36	5426438.39	395.71	MB-17-92	444086.18	5426436.86	393.55	-0.82	1.53	2.15
MB-17-145	443996.40	5426303.93	392.58	MB-17-145	443998.78	5426302.59	394.18	-2.38	1.34	-1.60
MB-18-188	443970.97	5426052.02	389.70	MB-18-188	443972.14	5426053.86	394.89	-1.17	-1.84	-5.19
MB-17-59	443792.23	5426033.98	393.54	MB-17-59	443793.83	5426033.81	400.20	-1.60	0.17	-6.66
MB-18-190	443675.88	5426027.71	398.11	MB-18-190	443675.38	5426023.13	401.82	0.50	4.58	-3.71
MB-18-187	443675.61	5426027.94	398.11	MB-18-187	443675.09	5426023.30	401.84	0.52	4.64	-3.73
MB-17-128	443579.34	5426284.17	401.95	MB-17-128	443583.56	5426283.12	404.27	-4.22	1.05	-2.32
MB-17-129	443608.50	5426195.70	398.11	MB-17-129	443611.92	5426195.43	402.53	-3.42	0.27	-4.42
MB-17-41	443365.82	5426143.22	399.55	MB-17-41	443372.54	5426144.16	404.70	-6.71	-0.94	-5.15
						average		-1.61	1.47	-2.47
						standard deviation		2.43	2.07	3.19
						Median		-1.17	1.34	-3.71

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 Barry Deposit Mineral Processing

Bonterra acquired a 100% interest in the Barry Property, including the Barry Deposit in 2018. Since acquisition, Bonterra has yet to complete mineral processing or metallurgical testing. Any test work completed on the Barry Deposit has been completed by other issuers and is described in an NI-43-101 technical report by Goldminds Geoservices ("Goldminds") in 2016 for Metanor ((Duplessis et al., 2016) and is described below.

Previous metallurgical tests made on the Barry Deposit samples have given a recovery rate of 94% (based on information provided by Metanor but was not verified by Goldminds).

13.1.1 Milling Operation 2008 - 2010

From July 2008 to October 10, 2010, a total of 617,489 metric tons of ore have been processed at the Bachelor mill, and 123 gold bars totalling 43,682 oz of gold and 5,727 oz of silver have been sold to Royal Canadian Mint. Consequently, the average grade for that period was of 2.2 g/t Au.

GoldMinds Geoservices could not get the average recovery for the whole period, but from July 2008 to May 2009, a total of 487,970 tonnes of ore was processed at the Bachelor mill for an average head grade of 2.38 g/t Au and an average gold recovery of 92.55%.

In January 2010, the average feed rate to the mill was 24.7 t/h. The gold recovery for that month was 95.4%. In April 2010, the average mill feed rate was 40.1 t/h and the gold recovery dropped to 89.4%.

At that time, milling at Bachelor was via a Merril Crowe type circuit and there was no gravity machinery. The mill is now using a Carbon-in-Pulp type circuit (CIP) since 2012. The grinding circuit had a total electric power of 578 kW and the cyanide leaching tanks had a capacity of 1,292 m^3 for a total leaching time of approximately 42 hours without counting the leaching that took place directly in the ball mills.

13.1.2 Leach Test Work – Innovat Method (December 2011)

The main objective of the test was to investigate alternative means of leaching the mineralized material directly at the Barry Deposit, which is restrained by the remote location of resources from any power grid and which is characterized by low grades. Innovat's Continuous Vat Leaching method (CVL) was suggested as an alternative to conventional cyanidation methods, i.e., heap and/or tank leaching, primarily for the purpose of minimizing power and heavy transportation costs to the Bachelor mill. The test was conducted at SGS Canada Inc. in Lakefield, On.

- Test work observation

Two samples, identified as Sample A and B, were fire assayed to 1.45 g/t and 1.24 g/t Au grades respectively. Size distribution analysis gave the following results (Table 13-1):

Table 13-1 Barry's Material, Size Distribution Analysis

PRODUCT	CUM WEIGHT RETAINED	CUM ANALYSIS CALCULATED Au g/t	CUM DISTRIBUTION RETAINED Au %	CUM WEIGHT RETAINED	CUM ANALYSIS CALCULATED Au g/t	CUM DISTRIBUTION RETAINED Au %
Plus 10 m	49.99	1.21	41.4	45.99	0.71	26.4
Plus 48 m	78.71	1.35	73.0	74.95	1.08	65.6
Plus 200 m	87.99	1.41	85.6	86.42	1.16	80.9
Minus 200 m	12.01	1.75	14.4	13.58	1.74	19.1
TOTAL	100.00	1.45	100.00	100.00	1.24	100.00

Leaching of both samples was tried at a crush size of -1/4" for 48 hours. Although reagent consumption was very low, recovery achieved in both samples was 55%, with the leach curves showing that the leaching had ceased at the end of the time period.

As expected, analysis of the recovery by size fraction has shown that the losses occur in the coarse fractions and that the gold particles, though fine, are more or less evenly scattered.

Because the crushing method was conventional coarse particles were impervious to the cyanide solution. For this reason, why high pressure grind rolling (HPGR) was tried. HPGR is reputed to be of lower cost than SAG milling. In some case, it has been proven to induce micro cracks in the mineral particles, permitting the cyanide solution to have capillarity accesses to the gold trapped inside the ore.

An HPGR preparation of Sample A was crushed to 2.59 mm (versus 6.35 mm with standard jaw crushing) yielding a jump in recovery to 69.4% at 48 hours leach time.

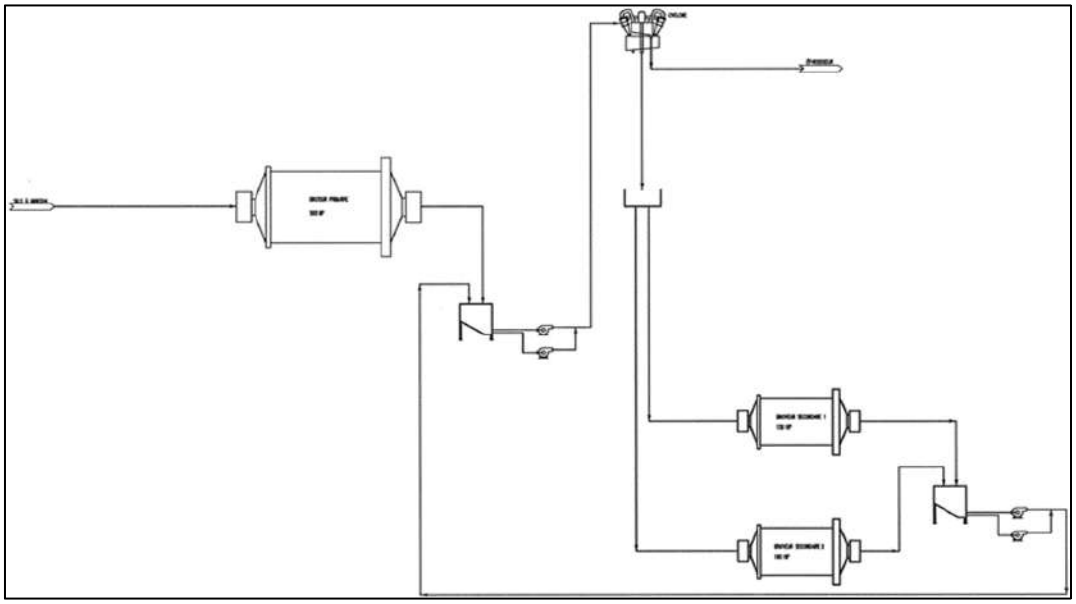
Further HPGR crushing to 0.75 mm brought the recovery to 83.3% after 96 hours leaching time.

13.1.3 Grindability Characteristics and Grinding Simulations of Samples from the Barry Deposit (SGS Canada inc. February 2013)

The main purpose of the test was to assess the Bachelor mill optimal grinding capability for the Barry Deposit mineralized material before adding to the grinding capacity.

The grinding circuit configuration consists of a primary ball mill, which is actually a tricone ball mill, operated in open circuit, followed by two secondary ball mills operated in parallel and closed with a single nest of cyclones. The tricone ball mill is 10.5' x 10.0' and has a motor of 525 HP. The secondary ball mill dimensions are 6' x 10' and 5' x 10' and are fitted with 150 HP and 100 HP motors, respectively. Flowsheet is shown in Figure 13-1.

Figure 13-1 Grinding Circuit Configuration



A composite retrieved from the Barry Deposit by Mrs. Nicole Rioux of Genivar assisted by Mr. André Tremblay of Metanor, made from eight individual samples was submitted for the Bond rod mill and ball mill grindability tests. The eight individual samples, along with the composite sample, were submitted for the comparative Bond ball mill grindability test, in order to estimate the BWI variability amongst the samples. The results are summarized in Table 13-2.

Table 13-2 Grindability Test Summary

SAMPLE NAME	METRAGE	WORK INDICES (kWh/t)		COMPARATIVE
		RWI	BWI	BWI (KWh/t)
BARRY COMPOSITE		16.4	12.6	
MB 95-35	0.0 - 3.0 m			11.4
MB 95-24	0.3 - 2.4 M			10.7
MB 95-24	2.4 - 4 M			14.8
MB 06-175	3.0 - 7.0 M			12.4
MB 95-19	1.0 - 4.0 M			15.3
MB 06-175	7.0 - 10.0 m			13.5
MB 06-180	1.0 - 5.0 m			14.8
MB 19	4.0 - 5.5 m			14.0
STRAIGHTAVERAGE*				13.3
WEIGHED AVERAGE*				13.1

*Exculde the composites

The composite was categorized as moderately hard with respect to RWI and as moderately soft in terms of BWI. The RWI/BWI ratio was 1.3, which is very high, indicating that the ore is harder at coarse size, or competent. The comparative BWI's varied from 10.7 kWh/t to 15.3 kWh/t, which positions the samples from the soft to the medium range of the SGS database. The comparative BWI's averaged 13.3 kWh/t.

The grindability test results were used to simulate the maximum throughput rate of the conventional circuit, from a feed F80 of 3,127 microns down to a final P80 of 78 microns. The simulated throughput rate estimated with the comparative indices and a fixed RWI value varied from 28.0 to 38.5 t/h and the weighted average was 32.5 t/h.

13.1.4 An Investigation into the Determination of Total Gold in Three Composite Samples from the Barry Deposit (SGS Canada inc. July 2016)

The purpose of the metallurgical test program was to determine the head grade of three composite samples from Ressources Métanor Inc.'s Barry project and incidentally determine the possible gold recovery. The samples were processed using gravity separation followed by cyanide leaching of the gravity tailings. An overall gravity separation plus cyanidation metallurgical gold balance was performed to calculate the head grade of each sample. A summary of the testwork results is shown in Table 13-3.

Table 13-3 Overall Results Summary

Sample	Overall Gold Recovery (%)			CN Residue Au Assay (g/t)	Calculated Heas Grade Au (g/T)
	Gravity	Cyanidation	Gravity + CN		
Comp A	30.4	63.4	93.8	0.20	3.22
Comp B	17.7	77.2	94.8	0.11	2.13
Comp C	22.8	71.4	94.2	0.04	0.69

Metallurgical testwork

The objective of the metallurgical testwork program was to determine the head grade of each sample by subjecting the entire sample to gravity concentration of the coarse gold followed by cyanide leaching of the gravity tailings.

This test protocol was used in order to avoid the potential discrepancies in the calculation of the head grades due to the coarse gold "nugget" effect. An overall (gravity + cyanidation) gold metallurgical balance was performed to calculate the head grade of each sample.

a) Gravity separation testwork

Each sample was ground in a laboratory rod mill to a target grind size of 80% passing 75 microns. The mill discharge was processed through a Falcon laboratory concentrator operating under standard lab conditions. The Falcon concentrate produced was upgraded on a Mozley (C-800) Laboratory Mineral Separator. The target Mozley concentrate weight percentage, based on the feed weight, was 0.05– 0.1%. The Mozley concentrate was assayed to extinction for gold. The Mozley and Falcon tailings were combined, subsampled for duplicate assays, and a 1 kg subsample was submitted for cyanide leaching. The feed sizes (P80, µm) ranged from 67 to 75 microns.

b) Gravity tailing cyanidation testwork

Each 1 kg of the subsamples of combined Falcon/Mozley tailings was subjected to cyanide leaching under the following conditions:

- Pulp density: 40% solids (w/w)
- Pulp pH: 10.5 – 11.0 (maintained with lime)
- Cyanide concentration: 1.0 g/L as NaCN (maintained)
- Lead nitrate addition: 0.1 kg/t
- Retention time: 72 hours
- Cyanide consumption range: 0.08 to 0.20 kg/t
- Lime consumption range: 0.49 to 0.55 kg/t

Upon completion of the test, the pulp was filtered and the final pregnant leach solution (PLS) was collected and assayed for gold. The filter cake was washed with distilled water and dried. Duplicate 30 gram cuts per sample were riffled out for a determination of gold content by fire assay.

13.1.5 Conclusion to the Previous Mill Run and to the Testworks

In January 2010, in order to increase the mill feed rate from +/- 750 tpd to 1,200 tpd, Metanor added a 10' x 14', 400 HP rod mill to the grinding circuit and at the end of the operation in October 2010, changed the Merril Crowe circuit for a carbon in pulp while adding some 436 m3 of cyanidation volume. Because of the Merril Crowe circuit and especially filtration problems, between February and October 2010, the mill experienced many shutdowns and the expected feed target was never reached.

With the new CIP circuit, Goldminds was of the opinion that if all the available electrical energy for the grinding is used and the short head cone crusher is set at 0.25", 2010 Metanor's target is reachable and some 1,200 tonnes of the Barry material could be ground per day (50 tph) at a fineness of 75 µm at an overall efficiency of 90%. Therefore, there is no need to add more grinding capacity.

Goldminds was also of the opinion that even if Metanor install a gravity circuit ahead of the cyanidation, the actual cyanidation-CIP circuit does not have the capacity to leach 1,200 tonnes per day of the Barry's gravity tailings since this tonnage would imply a leaching time of only 33 hours at a density of 60% solid. This is not counting that the 40' thickener may also prove to be too small.

It is always possible to cheat on the pulp density of the thickener underflow and accept a lower percentage of solid, but it would add a heavier burden on the leaching time.

New Work Index and gravity-cyanidation tests are pending but for the time being and for the needs of this report, at a 1,200 tpd mill feed rate and a thickener underflow density of 50% solid, to ensure a leaching time of 48 hours and obtain 95% gold recovery, Goldminds recommended the installation of three new 30' x 30' leaching tanks.

13.2 Gladiator Deposit Mineral Processing

Preliminary metallurgical testing of a Gladiator Deposit sample was completed in early 2018 by ALS Metallurgy of Kamloops, BC (Hammerl and Sloan, 2018). This work is described below. No other mineral processing and metallurgical testing was previously completed on the Gladiator Deposit.

The primary objectives of the 2018 test program were to investigate the effect of primary grind sizing on gravity, flotation, and cyanidation leach performance on a single composite, Composite 1.

The main work completed under this program to achieve the objectives can be summarized as follows:

- Conduct a series of grind calibrations on the provided composite targeting primary grind sizings of 75, 125 and 175µm K80.
- Establish gravity performance of the provided composite at three different grind sizes.
- Determine flotation response of the gravity tailings at three different grind sizings.
- Determine cyanidation leach response of the gravity tailings at three different grind sizings.

The sample used to construct the Gladiator composite tested in the current program was received at ALS Metallurgy Kamloops under a single shipment on February 28, 2018. The sample was received in the form of half core. The total received weight was estimated to be around 35 kilograms.

13.2.1 Chemical Composition

The chemical content measured for the composite was determined using standard assaying techniques. The following subsection summarizes the assay results. A duplicate sub-sample was split from the composites for iron and sulphur assays; the results are displayed in Table 13-4.

Table 13-4 Assay Results

Product	Elements for Assay - percent or g/tonne		
	Fe	S	$Au_{Metallic}$
Composite 1 Hd 1	0.8	0.52	8.73
Composite 1 Hd 2	0.8	0.52	-
Average	0.8	0.52	8.73

Note: Au assays are measured in g/tonne; all others in percent.

The average gold content in the composite measured about 8.73 g/tonne, and was conducted using a screen metallic method. The sample was pulverized and passed through 106µm screen. The coarse screened material was assayed to extinction for gold and duplicate representative sub-samples of the sub 106µm material were assayed for gold. The coarse screened material measured about 108 g/tonne gold and indicates that “coarse” gold was present within the sample.

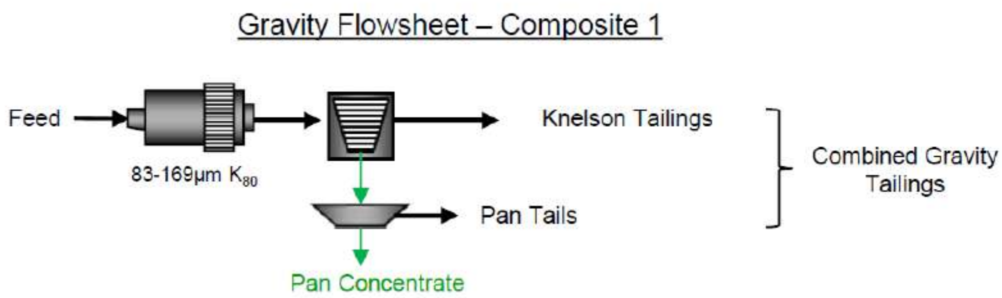
Sulphur content measured about 0.52 percent. Iron content in the sample measured about 0.8 percent.

13.2.2 Gravity Results

The flowsheet utilized in the gravity tests is illustrated in Figure 13-2. Three target primary grind sizings of 75, 125 and 175µm K_{80} were tested. Gravity testing was conducted using a lab scale Knelson concentrator, followed by hand panning of the Knelson concentrate to better approximate the mass recovery of an operating gravity concentration circuit. Gold recovery to the pan concentrate was excellent and ranged from

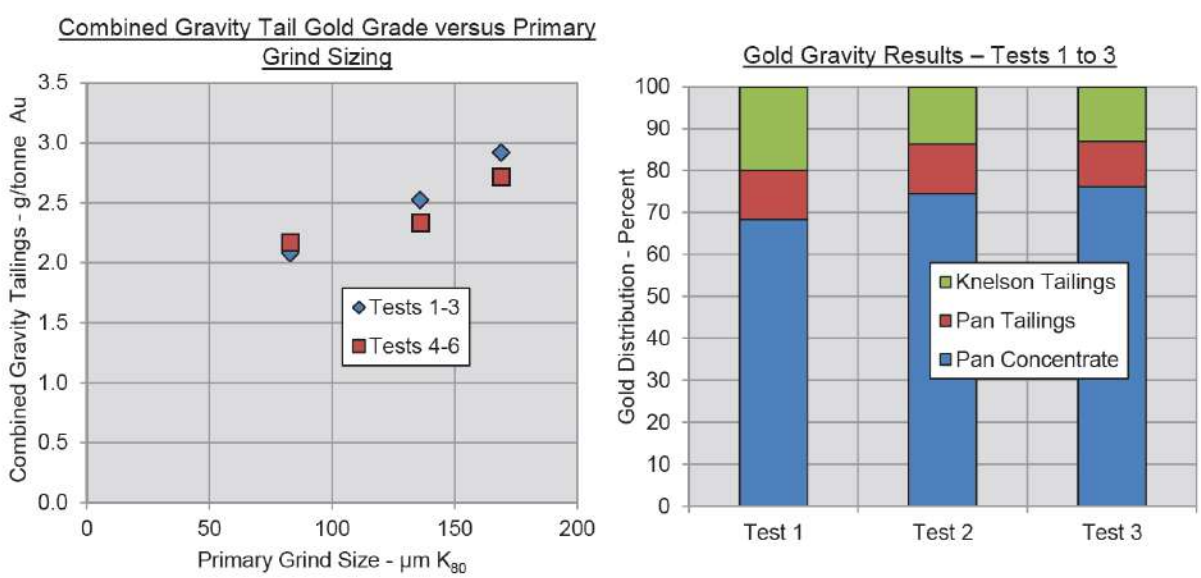
68 to 76 percent (Figure 13-4), the pan concentrate graded between 2860 to 6461 g/tonne; over the three grind sizings tested. Averaged gravity gold recoveries improved at finer grind sizings over the range tested.

Figure 13-2 Gravity Flowsheet and results



Gravity Results - Gold

Product	Test	Feed Size µm K80	Weight %	Assay - g/tonne or percent		Distribution - percent	
				Au	S	Au	S
Pan Concentrate	1	169	0.17	3627	46.0	68.3	16.4
	2	136	0.17	4437	43.3	74.5	14.2
	3	83	0.10	6461	42.5	76.1	8.6
	4	169	0.24	3039	42.1	73.0	18.8
	5	136	0.20	2860	46.7	70.9	17.1
	6	83	0.12	5183	42.9	73.8	9.7



Notes: a) A pan tailings assay was not conducted on the Tests 4-6, as all of the combined gravity tailings were advanced to bulk sulphide flotation.
b) Combined Gravity Tailings includes the Pan Tails and Knelson Tails.

13.2.3 Gravity and Rougher Flotation

The flowsheet and reagent scheme utilized in the gravity/rougher flotation tests are illustrated in Figure 13-3. Three target primary grind sizings of 75, 125 and 175µm K_{80} were tested.

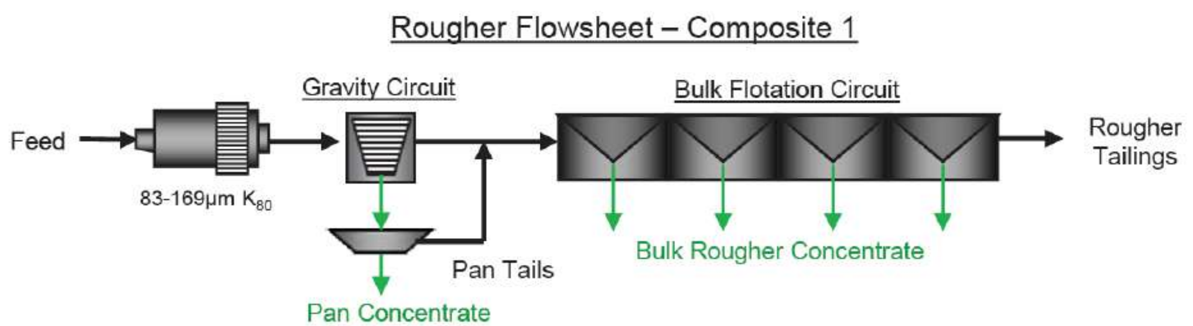
Flotation testing was carried out on the combined gravity tailings using a bulk sulphide flotation flowsheet. Potassium Amyl Xanthate (PAX) was used as the collector and with methyl isobutyl carbinol (MIBC) as the frother at natural pH.

The pan concentrate prior to flotation recovered between 71 to 74 percent of the gold in the feed and graded between 2860 to 5183 g/tonne gold over the three grind sizings tested.

Flotation of the gravity tailings recovered an additional 24 to 26 percent of the feed gold, to a bulk rougher concentrate that graded between 63 and 91 g/tonne gold.

About 97 percent of the gold in the feed was recovered to the combined gravity and bulk rougher flotation concentrate over the primary grind sizes tested. The combined gravity and bulk rougher concentrates graded between 250 to 341 g/tonne gold.

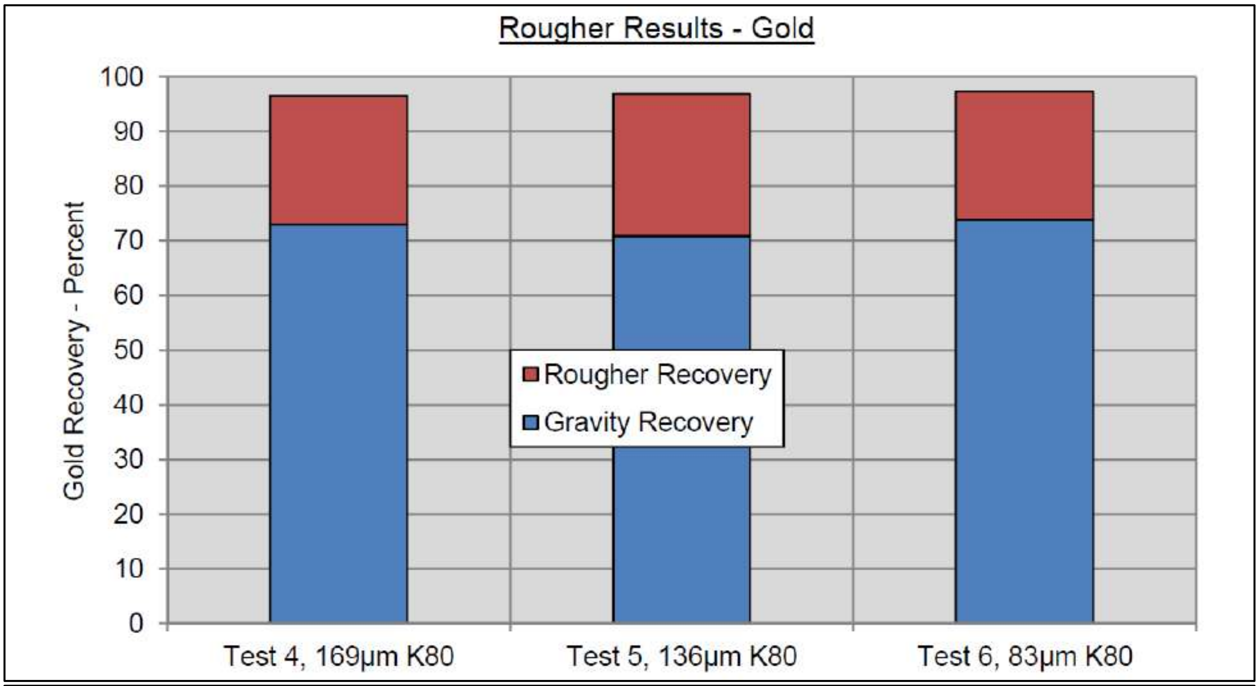
Figure 13-3 Rougher Flowsheet, Conditions and Results

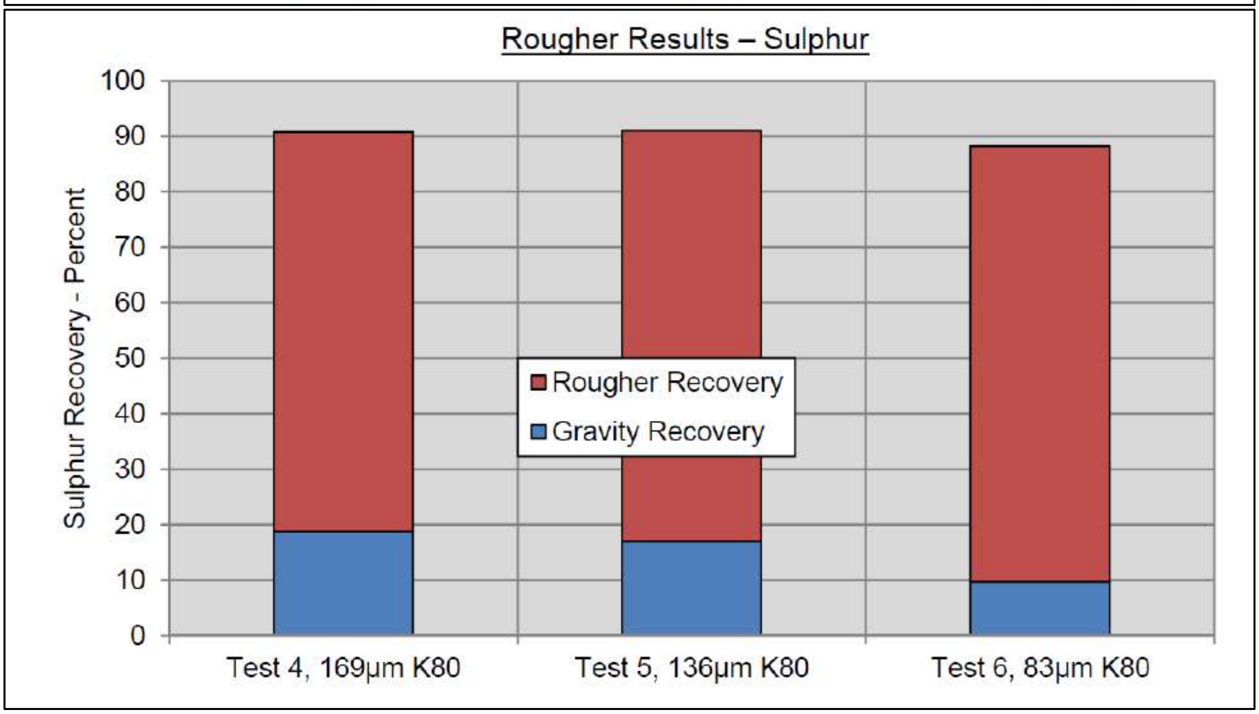


Rougher Conditions

Stage	pH	Redox	Reagents - g/tonne	
			PAX	MIBC
Primary Grind	8.3-8.5	-85 to 167	-	-
Bulk Roughers	8.3-8.5	-119 to 162	20	88-99

Note: Redox potential is measured using a Pt tip electrode in AgCl solution.





13.2.4 Gravity and Cyanidation Testing

The flowsheet utilized for the cyanidation leach tests with the Tests 1-3 combined gravity tailings is outlined in Figure 13-4.

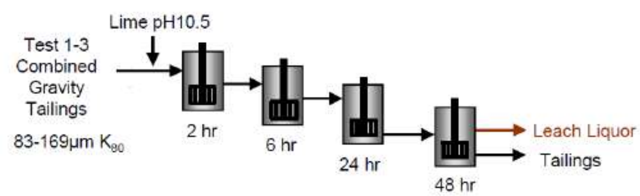
Gold recovery to the pan concentrates prior to cyanidation ranged from 68 to 76 percent and pan concentrates graded between 3627 to 6471 g/tonne. The calculated leach feed gold content ranged from 2.1 to 2.7 g/tonne.

The cyanidation leach tests were conducted over a 48 hour period. Prior to the leach, the pH was raised to 10.5 using lime, and sodium cyanide was added at a concentration of 1,000 ppm. Solution samples were taken at 2, 6, 24 and 48 hours and assayed for gold. Leach residues were assayed in duplicate for gold. The gold extraction from the gravity tailings was excellent and measured between 97 and 98 percent, and appeared to be unaffected by the primary grind sizing. Gold leach kinetics were relatively rapid; with most of the gold being extracted in the first 6 hours of the cyanidation leach.

The combined gravity and cyanidation leach recovery was about 99 percent of the gold in the feed. Sodium cyanide consumption averaged about 0.8 kg/tonne and lime consumption averaged about 0.4 kg/tonne.

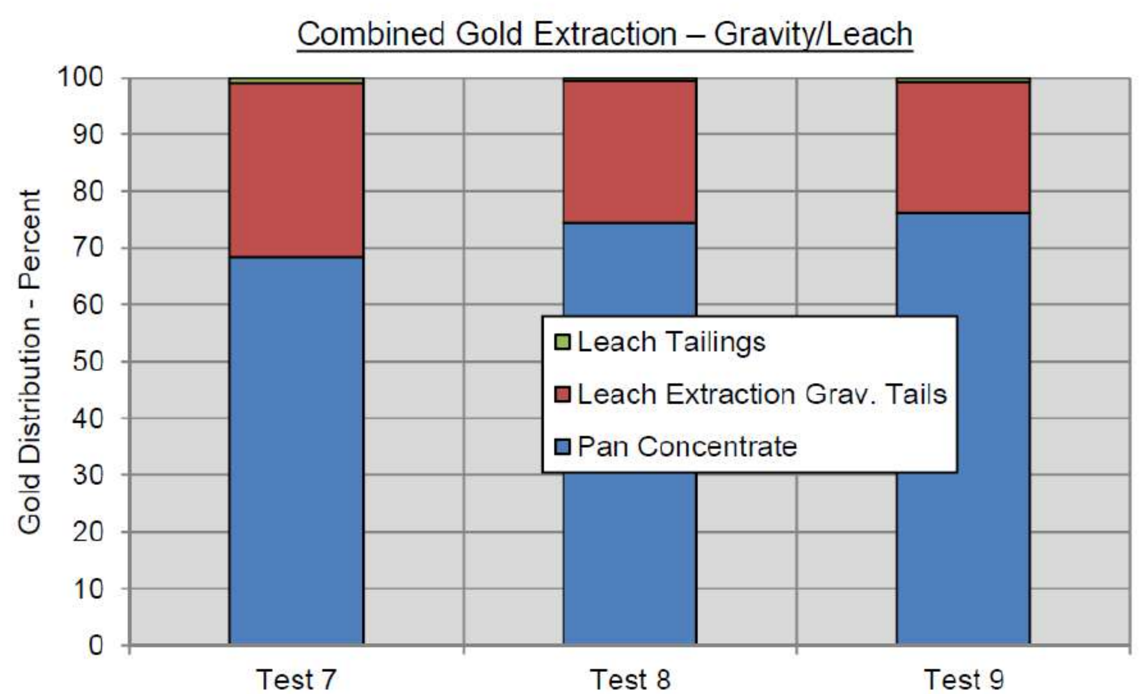
Figure 13-4 Cyanidation Leach Flowsheet, Conditions and Results

Cyanidation Leach Flowsheet – Combined Gravity Tailings



Leach Test Results – Gold

Test	Feed Size µm K80	Leach Feed (Grav Tail)	Gravity Gold Recovery Percent	Leach Extraction Percent	Au Recovery of Grav. Tails Percent	Total Gold Recovery Percent	Reagent Consumption - kg/tonne	
							NaCN	Lime
7	169	Test 1	68.3	97	30.7	99.0	0.8	0.4
8	136	Test 2	74.5	98	24.9	99.4	0.8	0.4
9	83	Test 3	76.1	97	23.1	99.2	0.8	0.5



13.2.5 Conclusions and Recommendations

Metallurgical testing was conducted on a single composite, Composite 1, from the Gladiator project, to assess its metallurgical performance. Testing included gravity concentration, froth flotation, and cyanidation leaching for recovery of gold.

Composite 1 measured a head grade of about 8.7 g/tonne gold, 0.8 percent iron, and 0.5 percent sulphur. The gold content was measured using a screened metallic method and indicated that a significant portion of the gold in the sample was coarser than 106µm after pulverization; this should indicate that a high percentage of the gold should be recoverable by gravity concentration.

Metallurgical testing was conducted at three target grind sizings of 75, 125, and 175µm K_{80} to determine the effect of primary grind sizing on metallurgical performance. Gravity testing was conducted using a Knelson concentrator followed by hand panning of the Knelson concentrate. Gold recovery to the pan concentrate ranged from 68 to 76 percent and graded between 2860 to 6461 g/tonne; over the three grind sizes tested. Finer primary grind sizings led to improved gravity gold recovery over the range of grind sizings tested.

A bulk rougher flotation circuit was applied to the combined gravity tailings in Tests 4-6, rougher flotation recovery of the gold appeared to be unaffected by the primary grind sizing. Combined gravity and rougher flotation recovery to a bulk concentrate was about 97 percent over the range of primary grind sizings tested. The combined gravity and bulk rougher concentrate graded between 250 to 341 g/tonne.

Cyanidation leaching was conducted on the combined gravity tailings produced in Tests 1-3. Cyanidation leach gold extraction from the combined gravity tailings was excellent and measured between 97 and 98 percent. The combined gravity and cyanidation leach recovery measured about 99 percent over the range of primary grind sizings tested.

Additional testing is strongly recommended with samples from other zones and deposits within the Gladiator Project to investigate the variability in gold recovery. Testing should include coarser primary grind sizing to determine the effect upon gravity, flotation, and cyanidation leach performance. A coarser primary grind sizing would have implications for a reduction in comminution energy requirements. Bond ball mill work index tests should also be carried out within the variability test program.

Excellent overall gold recovery was recorded for the sample with a gravity and rougher flotation flowsheet, and with a gravity and cyanidation leach flowsheet. A trade off study should be performed to compare the CAPEX/OPEX of each flowsheet once variability testing is complete.

14 MINERAL RESOURCE ESTIMATES

14.1 Barry Resource Estimate

14.1.1 Introduction

Completion of the current updated Mineral Resource Estimate for the Barry Deposit involved the assessment of a drill hole database, which included all data for surface and underground drilling completed through early 2019, updated three-dimensional (3D) mineral resource models, and available written reports. The Authors conducted a site visit to the Barry Deposit on August the 8 and 9, 2018. The effective date of the updated Mineral Resource Estimate is April 8, 2019.

Inverse Distance Squared ("ID^2") restricted to mineralized domains was used to Interpolate gold grades (g/t Au) into a block model. Indicated and Inferred mineral resources are reported in the summary tables in Section 14.1.10. The current Mineral Resource Estimate takes into consideration that the Barry Deposit will be mined by underground mining methods.

14.1.2 Drill Hole Database

In order to complete an updated Mineral Resource Estimate for the Barry Deposit, a database comprising a series of comma delimited spreadsheets containing drill hole information was provided by Bonterra. The database included diamond drill hole location information (NAD83 / UTM Zone 18), survey data, assay data, and lithology data. The data was then imported into GEOVIA GEMS version 6.8.2 software ("GEMS") for statistical analysis, block modeling and resource estimation. After an initial evaluation of the database, a number of drill holes were removed that were completed outside the Barry Deposit area. As a result, the current Mineral Resource Estimate does not include all drill holes completed on the Project, only those holes used to define the extend and distribution of mineralization in the Barry Deposit.

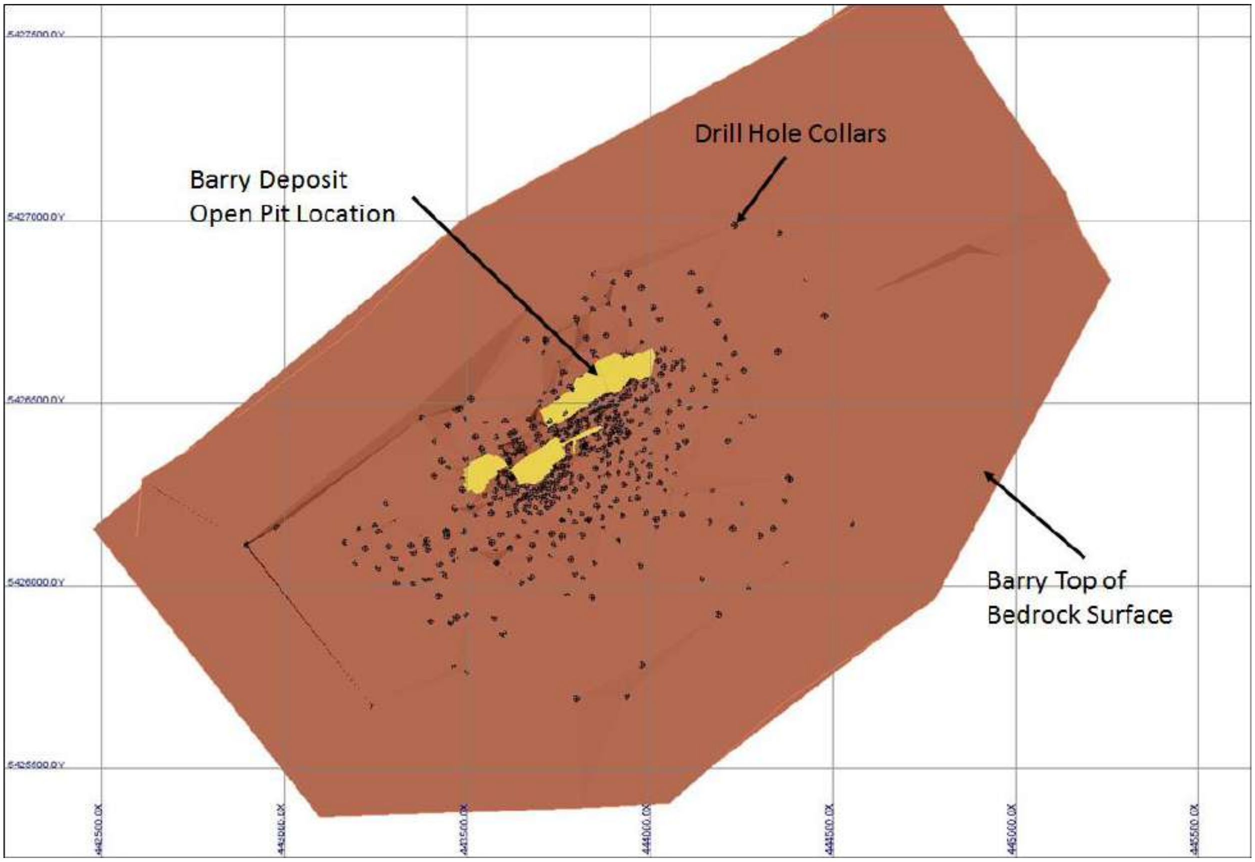
The database used for the current Mineral Resource Estimate comprises data for 715 surface and underground drill holes totaling 142,167.77 metres completed in the Barry Deposit area between 1994 and 2019. The database totals 79,602 drill core assay samples representing 81,202.97 metres of drilling (average of 1.02 m per sample).

The database was checked for typographical errors in drill hole locations, down hole surveys, lithology, assay values and supporting information on source of assay values. Overlaps and gapping in survey, lithology and assay values in intervals were checked. Minor errors have been noted and corrected during the validation process but have no material impact on the 2019 Mineral Resource Estimate. The database is of sufficient quality to be used for the current resource estimate.

14.1.3 Topography

Bonterra provided SGS with a very rudimentary three-dimensional (3D) surface model representing the top of bedrock (based on drill hole information), in DXF format, and a 3D DXF solid model representing the mined out areas of the Barry Deposit by open pit mining (Figure 14-1). To date there is no surface topography available for the project. The top-of-bedrock surface model and pit model will be used to exclude resource blocks, or portions of resource blocks, that extend above the bedrock surface or the base of the existing open pit.

Figure 14-1 Plan View of the Barry Deposit Top-of-Bedrock Surface Model and Open Pit Models



14.1.4 Mineral Resource Modelling and Wireframing

For the 2019 Mineral Resource Estimate for the Barry Deposit, a total of 122 3D grade controlled wireframe models, representing separate vein structures and vein clusters, were constructed by SGS (Figure 14-2 to Figure 14-4). The 3D grade controlled models were built by visually interpreting mineralized intercepts from cross sections using gold values. The 3D modelling was conducted using Genesis© software developed by SGS.

SGS conducted the interpretation of the 3D wireframe solids of the mineralization, based on the drill hole data. For the purpose of modeling, sections (looking West-southwest) were generated every 25m, with intermediate section where necessary to tie in the solids. The modeling was first completed on sections to define mineralized prisms using the analytical data for gold. A minimum grade of ~1.0 g/t Au over a minimum width of 1.5 m was generally used as a guideline to define the width of mineralized prisms. In cases where mineralized intercepts were < 1.5 m, lower grade material (< 1.0 g/t Au) was used to expand a mineralized intercept to the minimum 1.5 m width. The final 3D wireframe models were constructed by meshing the defined mineralized prisms based on the geological interpretation. All models have been clipped to the top-of-bedrock surface and to the base of the open pit models.

The Barry Deposit models have been roughly subdivided into 6 groups based on vein orientation and are represented by the different model colors in Figures 14-2 to 14-4. The various vein orientations are summarized in Table 14-1.

The Barry Deposit models define a series of vein structures which extend for approximately 1,300 m along strike (trending 60°) and to depths of up to 650 m.

Figure 14-2 Plan View Showing the Distribution of Drill holes, and Barry Deposit Grade-Controlled Wireframe Models

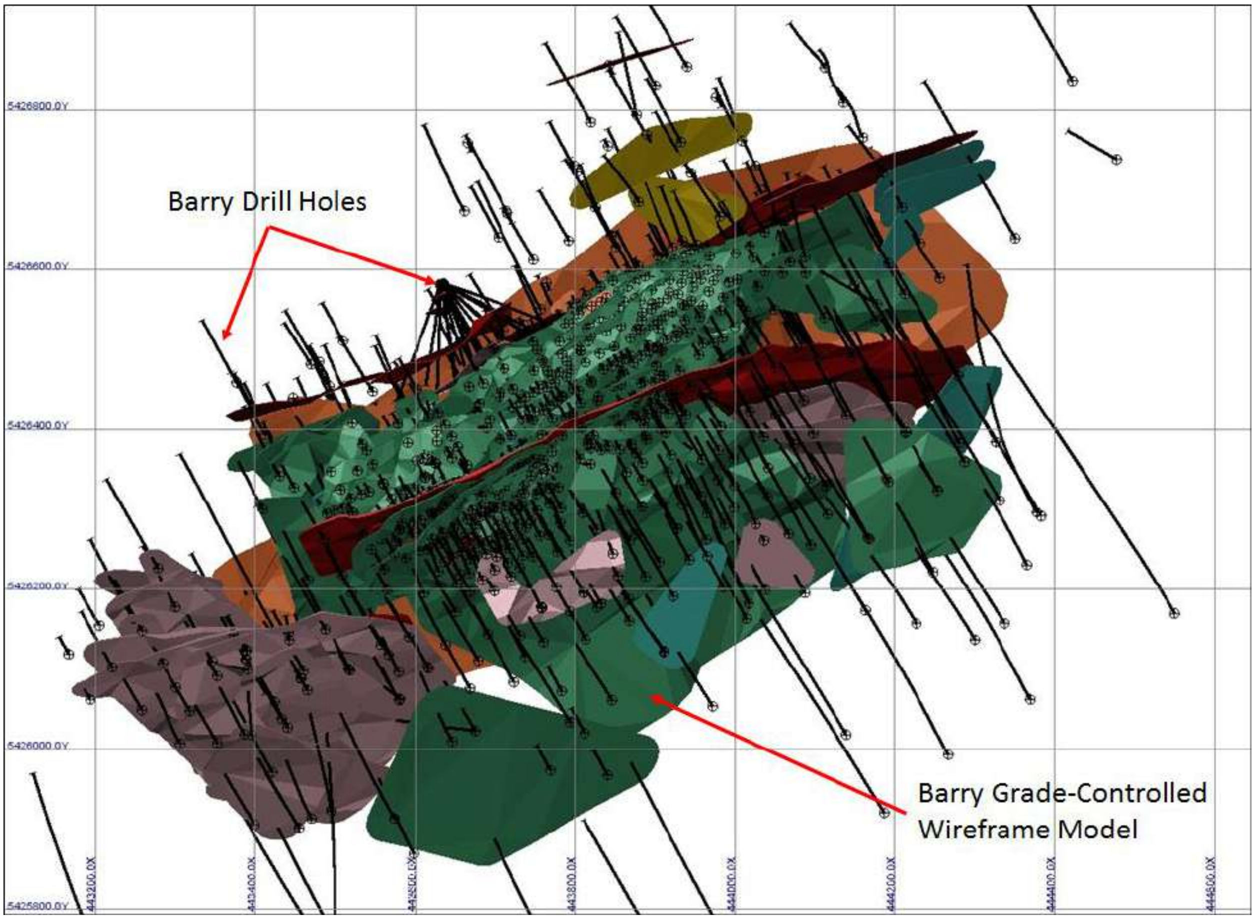


Figure 14-3 Isometric View Looking Northeast Showing the Distribution of the Drill holes, and the Barry Deposit Grade-Controlled Wireframe Models

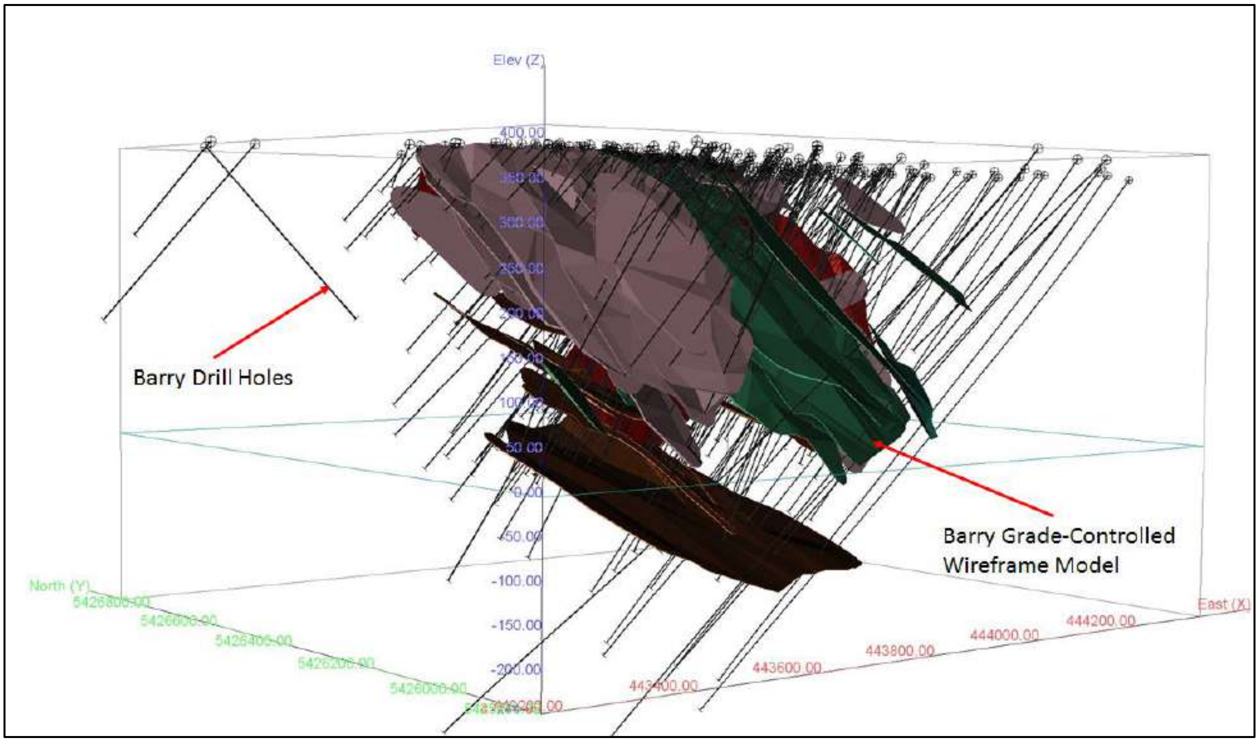


Figure 14-4 Isometric View Looking Northeast Showing the Distribution of the Drill holes, and the Barry Deposit Grade-Controlled Wireframe Models

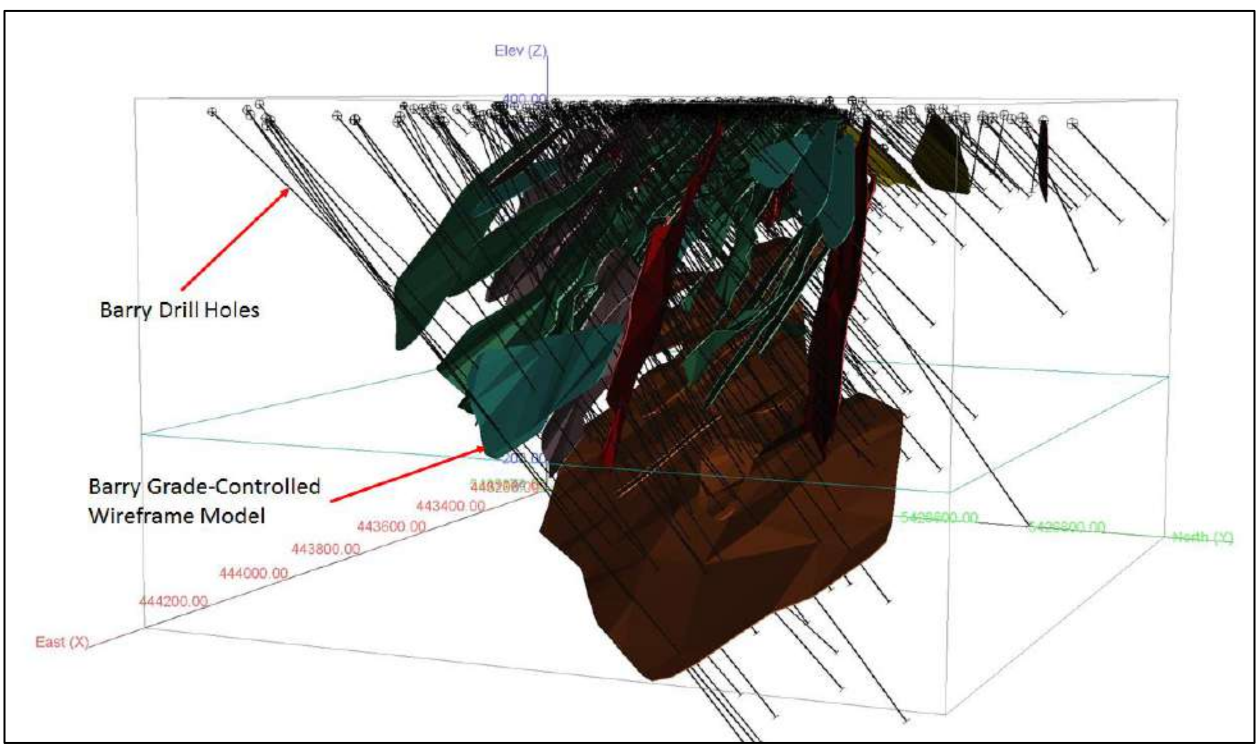


Table 14-1 Barry Deposit - Vein Structure and Vein Domain Descriptions

Vein Structure/ Orientation	Vein Domain	Rock Code	# of Vein Models	Domain Volume	Domain Tonnage
Near Vertical	VEINS1	100	21	1,090,302	3,074,652
Moderate SSE Dipping (±50°)	VEINS2	200	61	2,742,460	7,733,737
Shallow SSE Dipping (±35°)	VEINS3	300	12	1,482,520	4,180,706
Moderate South Dipping ((±50°)	VEINS4	400	17	1,426,037	4,021,424
Moderate SE Dipping (±50°)	VEINS5	500	9	286,116	806,847
Moderate NE-NW Dipping	VEINS6	600	2	17,944	50,602
	Total:		**122**	**7,045,379**	**19,867,969**

14.1.5 Compositing

The assay sample database available for the current resource modelling totalled 79,602 assays representing 81,203 m of drill core. Of these assays, 9,017 assays from 650 drill holes occur within the Barry Deposit mineral domains. A statistical analysis of the drill core assay data from within the mineralized domains is presented in (Table 14-2). Average width of the drill core sample intervals is 0.96, within a range of 0.10 m to 5.0 m. Of the total assay population approximately 70% are 1.0 m or less (Figure 14-5; Figure 14-16). To minimize the dilution and over smoothing due to compositing, a composite length of 1.0 m was chosen as an appropriate composite length for the resource estimation.

For the Barry resource estimate, composites for gold were generated within the vein structure to a nominal length of 1.0 m. Composites were normalized in each interval to create equal length composites. Tolerances of 0.25 m composite lengths were allowed. Un-assayed intervals were given a composite value of 0.0001 g/t Au. The composites were extracted to point files for statistical analysis and capping studies. The constrained composites were grouped based on the vein domain (rock code) of the constraining wireframe model.

A total of 9,366 composite sample points occur within the resource grade-controlled models (Table 14-3); the average grade of all composites is 2.51 g/t Au. An analysis of composite samples by domain (Table 14-4) indicates there is no specific vein set or vein orientation with materially higher or lower average grade. As a result, the cumulative composite sample points within all domains were used to interpolate grade into resource blocks.

Table 14-2 Statistical Analysis of the Drill Core Data from Within the Barry Deposit Mineral Domains

Variable	Drill Core
Total # Assay Samples	9,017
Average Sample Length	0.96 m
Minimum and Maximum Length	0.04 to 5.0 m
Total Sample Length	8,673 m
Minimum Grade	0.00 g/t
Maximum Grade	255.8 g/t
Mean	3.00 g/t
Median	1.32 g/t
Variance	39.3
Standard Deviation	28.6 g/t
Coefficient of variation	2.09
97.5 Percentile	17.7 g/t

Figure 14-5 Sample length histogram for Drill Core Assay Samples from Within the Barry Deposit Mineral Domains

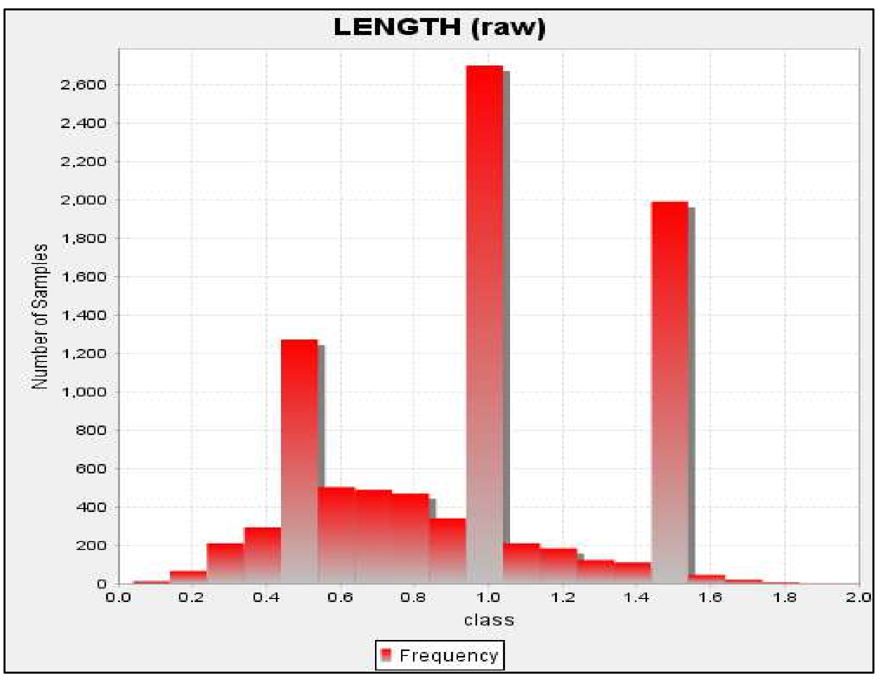


Figure 14-6 Assay Sample Length versus Assay Value of Drill Core Samples from Within the Barry Deposit Mineral Domains

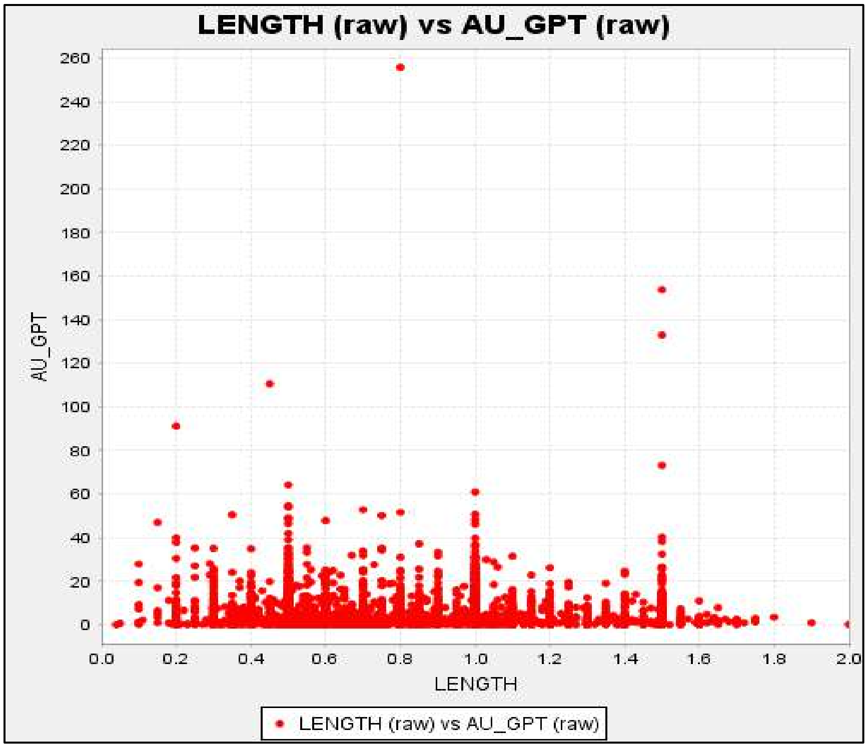


Table 14-3 Summary of the 1.0 metre Composite Data Constrained by the Barry Mineral Resource Models

Variable	Gold
Total # of Composites	9,366
Average Composite Length	0.99 m
Minimum value	0.00 g/t
Maximum value	185 g/t
Mean	2.51 g/t
Median	1.29 g/t
Variance	27.0
Standard Deviation	5.19 g/t
Coefficient of variation	2.07
97.5 Percentile	12.9 g/t

Table 14-4 Summary of the un-capped Composite Data Subdivided by Vein Domain

Variable	Gold (g/t)					
Vein Domains	VEINS1	VEINS2	VEINS3	VEINS4	VEINS5	VEINS6
Vein Models	21	58	11	17	13	2
Total # of Composites	1,587	5,808	447	785	722	12
Minimum value	0.00	0.00	0.00	0.00	0.00	0.00
Maximum value	47.9	153.8	33.5	24.9	185	24.1
Mean	2.80	2.22	3.07	2.12	2.67	3.37
Median	1.41	1.07	1.61	1.24	1.38	1.50
Variance	20.6	21.5	20.9	8.34	70.1	40.5
Standard Deviation	4.54	4.64	4.57	2.89	8.37	6.36
Coefficient of variation	1.62	2.09	1.49	1.37	3.14	1.89
97.5 Percentile	16.1	11.6	16.9	9.53	11.9	24.1

14.1.6 Grade Capping

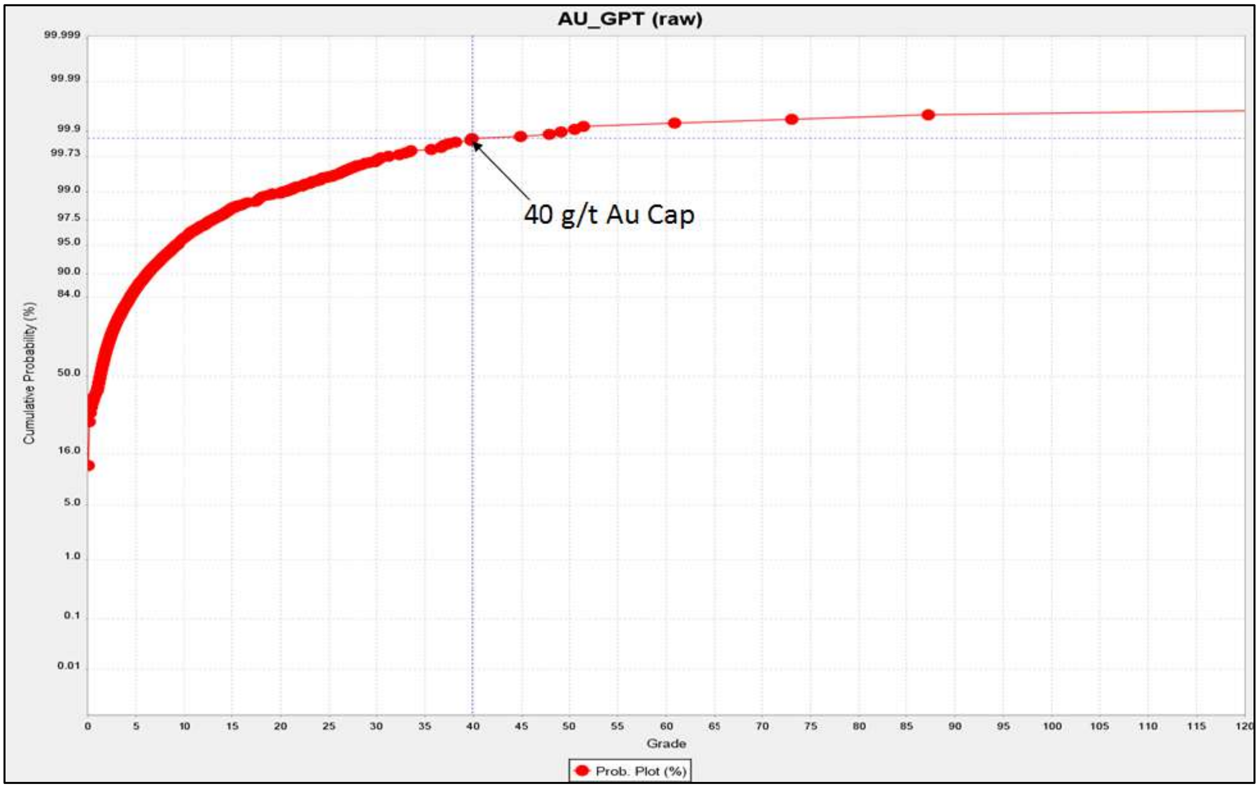
A statistical analysis of the cumulative composite database within the Barry wireframe models (the "resource" population) was conducted to investigate the presence of high grade outliers which can have a disproportionately large influence on the average grade of a mineral deposit. High grade outliers in the composite data were investigated using statistical data (Table 14-3), histogram plots, and cumulative probability plots (Figure 14-7) of the composite data. The statistical analysis was completed using GEMS.

After review, it is the Author's opinion that capping of high grade composites to limit their influence during the grade estimation is necessary. As a result, composites are capped at a value of 40.0 g/t gold. A summary of the results of the capping of the composites is presented in Table 14-5. A total of 10 composite samples were capped. The capped gold composites were used for grade interpolation into the Barry Deposit block model.

Table 14-5 Gold Grade Capping Summary of the Barry Deposit

Domain	Total # of Composites	Capping Value Au (g/t)	# of Capped Composites	Mean of Raw Composites	Mean of Capped Composites	CoV of Raw Composites	CoV of Capped Composites
Barry Deposit	9,366	40	12	2.51	2.44	2.01	1.62

Figure 14-7 Grade Capping Analysis of the Barry Deposit Composite Database



14.1.7 Specific Gravity

For previous Mineral Resource Estimates completed on the Barry Deposit, the specific gravity ("SG") database contained only 5 measurements. The S.G. used for the calculation of the resources for the Barry Deposit was fixed to 2.8.

As part of the Authors Site Visit and Data Verification program, a total of 38 core duplicates were collected from mineralized zones (including shoulder samples) from several drill holes for verification purposes and submitted for gold analysis at the SGS Minerals Laboratory in Lakefield, Ontario (See Section 12 above). All 38 samples were also submitted for SG analysis by Pycnometer.

The 38 SG measurements ranged from 2.68 to 2.98 and averaged 2.82 (Figure 14-8). The average grade of the 38 samples in the database is 1.61 g/t Au, ranging from 0.00 to 25.1 g/t. Despite the high grade of a number of the samples, there appears to be little correlation of density value and gold grade (Figure 14-9). Based on the results of the SG measurements from the SGS samples, a fixed SG of 2.82 is used to calculate the tonnage of the Barry resource.

SGS strongly recommends that additional SG measurements be collected on mineralized and unmineralized rocks from various locations throughout the Barry Deposit area.

Figure 14-8 Histogram of Specific Gravity A) All Samples and B) Samples from Within the Vein Domains

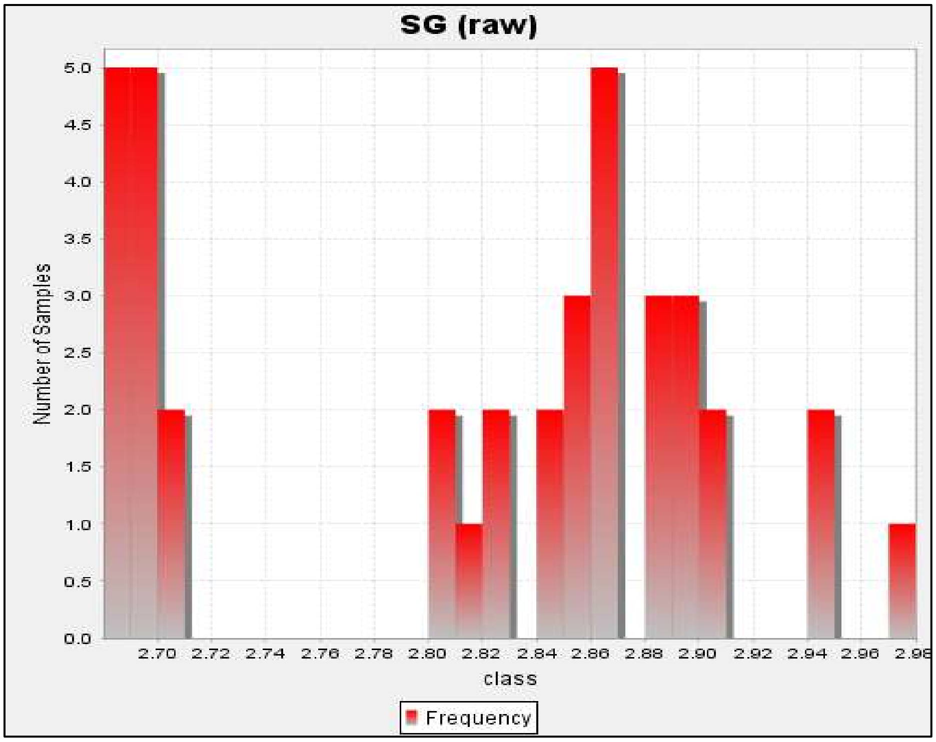
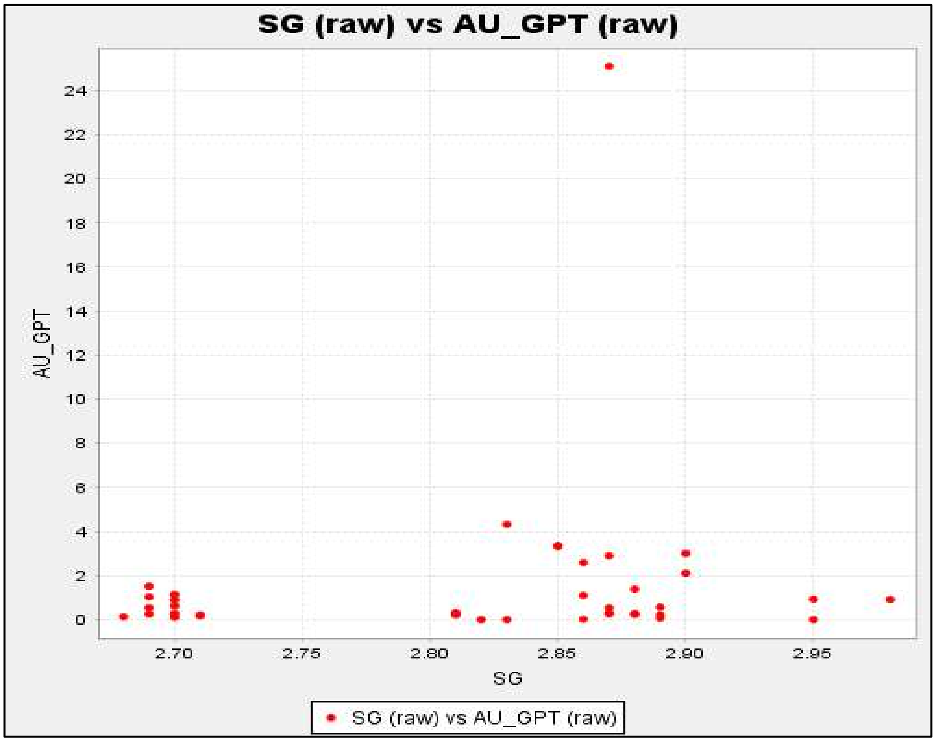


Figure 14-9 Specific Gravity versus Gold Grade for A) All Samples and B) Samples from within the Vein Domains (Samples capped at 120 g/t Au)



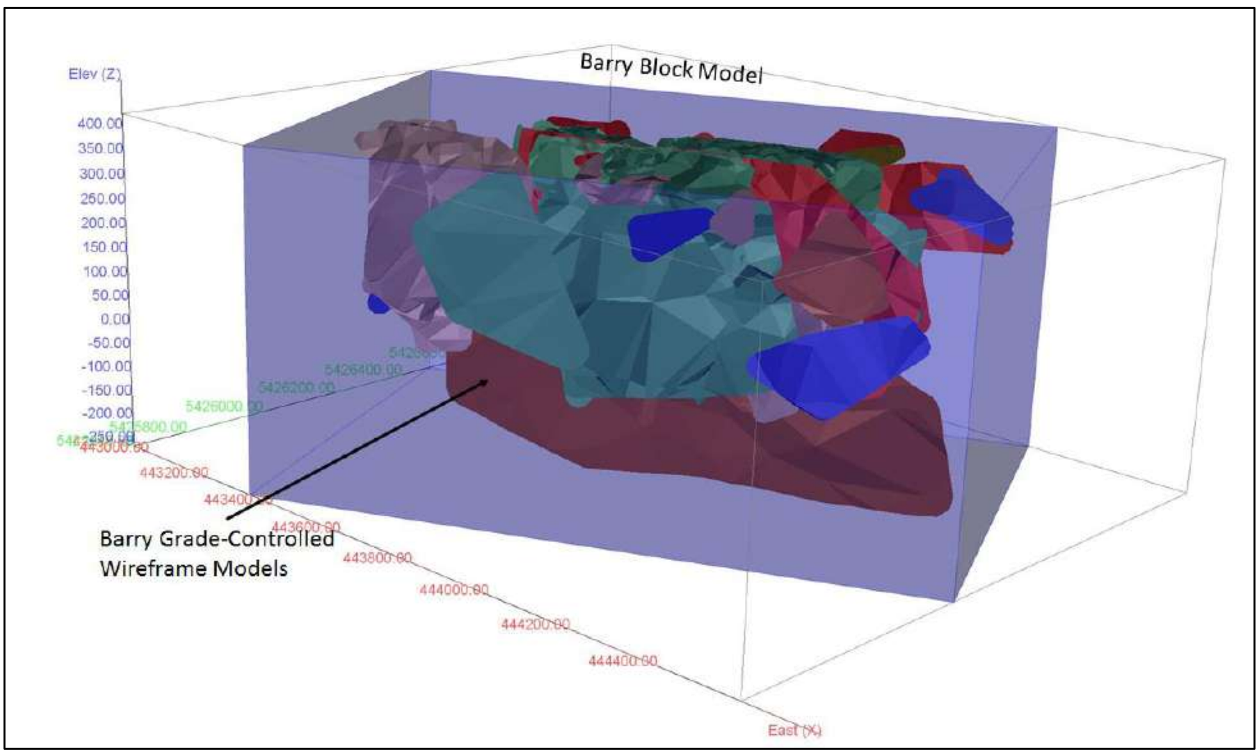
14.1.8 Block Model Parameters

The Barry Deposit wire frames were used to constrain composite values chosen for interpolation, and the mineral blocks reported in the estimate of the mineral resource. A block model (Table 14-6; Figure 14-10) within NAD83 / UTM Zone 18 space rotated 25° counter clockwise and with block dimensions of 3 x 3 x 3 m in the x (east), y (north) and z (level) directions was placed over the wireframe models with only that portion of each block inside the models recorded (as a percentage of the block) as part of the Mineral Resource Estimate (% Block Model). The block size was selected based on borehole spacing, composite assay length, the geometry of the vein structures, and the selected starting mining method (underground). At the scale of the Barry Deposit this provides a reasonable block size for discerning grade distribution, while still being large enough not to mislead when looking at higher cut-off grade distribution within the model. The model was intersected with a top-of-bedrock surface model to exclude blocks, or portions of blocks, that extend above the bedrock surface.

Table 14-6 Barry Deposit Block Model Geometry

Model Name	UH Deposit		
	X (East; Columns)	Y (North; Rows)	Z (Level)
Origin (NAD83 / UTM Zone 18)	443330	5425665	430
Extent	460	300	230
Block Size	3	3	3
Rotation (counter clockwise)	25°		

Figure 14-10 Isometric View Looking Northwest Showing the Barry Deposit Mineral Resource Block Model and Wireframe Grade-Controlled Models



14.1.9 Grade Interpolation

A 3D semi-variography analysis of mineralized points by vein domain was completed for a couple of the larger vein structures including the VEINS1 and VEINS2 vein structures using GEMS. The analysis did not determine search ellipses of sufficient quality to be used for geostatistical grade estimation (Ordinary Kriging). Search ellipses for each of the vein domains was interpreted based on drill hole (Data) spacing, and orientation and size of the resource wireframe models (Table 14-7). The search ellipse axes are generally oriented to reflect the observed preferential long axis (geological trend) of the vein structures and the observed trend of the mineralization down dip/plunge.

Grades for Au (g/t) were interpolated into blocks by the Inverse Distance Squared (ID^2) method. Three passes were used to interpolate grade into all of the blocks in the grade shells (Table 14-7). For Pass 1 the search ellipse size (in metres) for all vein domains was set at 20 x 20 x 10 in the X, Y, Z direction; for Pass 2 the search ellipse size for each domain was set at 45 x 45 x 15; for Pass 3 the search ellipse size was set at 100 x 100 x 20. Blocks were classified as Indicated if they were populated with grade during Pass 1 and Pass 2 of the interpolation procedure. Blocks were classified as Inferred if they were populated with grade during Pass 3 of the interpolation procedure.

Grades were interpolated into blocks using a minimum of 6 and maximum of 10 composites to generate block grades during Pass 1 and Pass 2 (maximum of 3 sample composites per drill hole), and a minimum of 2 and maximum of 10 composites to generate block grades during pass 3 (Table 14-7).

Table 14-7 Grade Interpolation Parameters by Vein Domain

Parameter	VEINS1			VEINS2		
	Pass 1	Pass 2	Pass 3	Pass 1	Pass 2	Pass 3
	Indicated	Indicated	Inferred	Indicated	Indicated	Inferred
Search Type	Ellipsoid			Ellipsoid		
Principle Azimuth	150°			150°		
Principle Dip	-85°			-50°		
Intermediate Azimuth	65°			60°		
Anisotropy X	20	45	100	20	45	100
Anisotropy Y	20	45	100	20	45	100
Anisotropy Z	10	15	20	10	15	20
Min. Samples	5	5	2	5	5	2
Max. Samples	10	10	10	10	10	10
Min. Drill Holes	3	2	1	3	2	1
Parameter	VEINS3			V		
	Indicated	Indicated	Inferred	Indicated	Indicated	Inferred
Search Type	Ellipsoid			Ellipsoid		
Principle Azimuth	150°			195°		
Principle Dip	-35°			-55°		
Intermediate Azimuth	55°			75°		
Anisotropy X	20	45	100	20	45	100
Anisotropy Y	20	45	100	20	45	100
Anisotropy Z	10	15	20	10	15	20
Min. Samples	5	5	2	5	5	2
Max. Samples	10	10	10	10	10	10
Min. Drill Holes	3	2	1	3	2	1
Parameter	VEINS5			VEINS6		
	Measured	Indicated	Inferred	Measured	Indicated	Inferred
Search Type	Ellipsoid			Ellipsoid		
Principle Azimuth	125°			325°		
Principle Dip	-50°			-45°		
Intermediate Azimuth	40°			55°		
Anisotropy X	20	45	100	20	45	100
Anisotropy Y	20	45	100	20	45	100
Anisotropy Z	10	15	20	10	15	20
Min. Samples	5	5	2	5	5	2
Max. Samples	10	10	10	10	10	10
Min. Drill Holes	3	2	1	3	2	1

14.1.10 Mineral Resource Classification Parameters

The Mineral Resource Estimate Barry Deposit was prepared and disclosed in compliance with all current disclosure requirements for mineral resources set out in the NI 43-101 Standards of Disclosure for Mineral Projects. The classification of the current Mineral Resource Estimate into Indicated and Inferred is consistent with current 2014 CIM Definition Standards - For Mineral Resources and Mineral Reserves, including the critical requirement that all mineral resources “have reasonable prospects for eventual economic extraction”.

Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction.

Interpretation of the word 'eventual' in this context may vary depending on the commodity or mineral involved. For example, for some coal, iron, potash deposits and other bulk minerals or commodities, it may be reasonable to envisage 'eventual economic extraction' as covering time periods in excess of 50 years. However, for many gold deposits, application of the concept would normally be restricted to perhaps 10 to 15 years, and frequently to much shorter periods of time.

The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

Indicated Mineral Resource

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit.

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.

Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource Estimate is of sufficient quality to support a Preliminary Feasibility Study which can serve as the basis for major development decisions
.

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.

An Inferred Mineral Resource is based on limited information and sampling gathered through appropriate sampling techniques from locations such as outcrops, trenches, pits, workings and drill holes. Inferred Mineral Resources must not be included in the economic analysis, production schedules, or estimated mine life in publicly disclosed Pre-Feasibility or Feasibility Studies, or in the Life of Mine plans and cash flow models of developed mines. Inferred Mineral Resources can only be used in economic studies as provided under NI 43-101.

There may be circumstances, where appropriate sampling, testing, and other measurements are sufficient to demonstrate data integrity, geological and grade/quality continuity of a Measured or Indicated Mineral Resource, however, quality assurance and quality control, or other information may not meet all industry norms for the disclosure of an Indicated or Measured Mineral Resource. Under these circumstances, it may be reasonable for the Qualified Person to report an Inferred Mineral Resource if the Qualified Person has taken steps to verify the information meets the requirements of an Inferred Mineral Resource.

14.1.11 Mineral Resource Statement

The general requirement that all mineral resources have “reasonable prospects for economic extraction” implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade taking into account extraction scenarios and processing recoveries. In order to meet this requirement, the Barry Deposit mineralization is considered amenable for underground extraction.

In order to determine the quantities of material offering “reasonable prospects for economic extraction” by underground mining methods, reasonable mining assumptions to evaluate the proportions of the block model (Indicated and Inferred blocks) that could be “reasonably expected” to be mined from underground are used. The underground parameters used are summarized in Table 14-8. A selected cut-off grade of 3.5 g/t Au is used to determine the Mineral Resource of the Barry Deposit.

The 2019 Mineral Resource Estimate for the Barry Deposit is presented in Table 14-9 (Figure 14-11 and Figure 14-12). Highlights of the Barry Deposit Mineral Resource Estimate are as follows:

- The underground mineral resource includes, at a cut-off grade of 3.5 g/t Au, 385,000 ounces of gold (2.05 million tonnes at an average grade of 5.84 g/t Au) in the Indicated category, and 453,000 ounces of gold (2.74 million tonnes at an average grade of 5.14 g/t Au) in the Inferred category.

Table 14-8 Parameters Used to Estimate the Underground Cut-off Grade for the 2019 Barry Mineral Resource Estimate

Parameter	Value	Unit
Gold Price	$1,300/$1733	US$/CDN$ per ounce
Exchange Rate	0.75	$US/$CDN
Gold Recovery	95	Percent (%)
Assumed Mining and Processing Costs		
Mining Cost	$69.00/$92.00	US$/CDN$ per tonne mined
Processing Cost	$18.75/$25.00	US$/CDN$ per tonne milled
General and Administrative	$22.50/$30.00	US$/CDN$ per tonne milled
Transportation Cost	$15.00/$20.00	US$/CDN$ per tonne milled
Mining Recovery	90	Percent (%)
Cut-Off Grade	3.50	g/t Au

Table 14-9 Barry Deposit 2019 Mineral Resource Estimate, May 24, 2019

Category	Tonnes	Grade (g/t Au)	Contained Au (oz)
Indicated	2,052,000	5.84	385,000
Inferred	2,740,000	5.14	453,000

(1) *The classification of the current Mineral Resource Estimate into Indicated and Inferred is consistent with current 2014 CIM Definition Standards - For Mineral Resources and Mineral Reserves*

(2) *Mineral resources which are not mineral reserves do not have demonstrated economic viability. An Inferred Mineral Resource has a lower level of confidence than that applying to a Measured and 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.*

(3) *All figures are rounded to reflect the relative accuracy of the estimate. Composites have been capped where appropriate.*

(4) *Resources are presented undiluted and in situ and are considered to have reasonable prospects for economic extraction.*

(5) *Underground mineral resources are reported at a cut-off grade of 3.5 g/t Au. Cut-off grade is based on a gold price of US$1,300 per ounce, a foreign exchange rate of US$0.75, and a gold recovery of 95%.*

(6) *High grade capping was done on composite data. A capping value of 40 g/t Au and was applied to all 122 3D grade controlled wireframe models.*

(7) *A fixed specific gravity value of 2.82 was used to estimate the tonnage from block model volumes.*

(8) Mineral Resources are exclusive of material that has been mined.

(9) The Authors are not aware of any known environmental, permitting, legal, title-related, taxation, socio-political or marketing issues, or any other relevant issue not reported in the technical report, that could materially affect the mineral resource estimate.

Figure 14-11 Isometric View Looking Northwest of the Barry Deposit Mineral Resource Block Grades and Mined Out Area

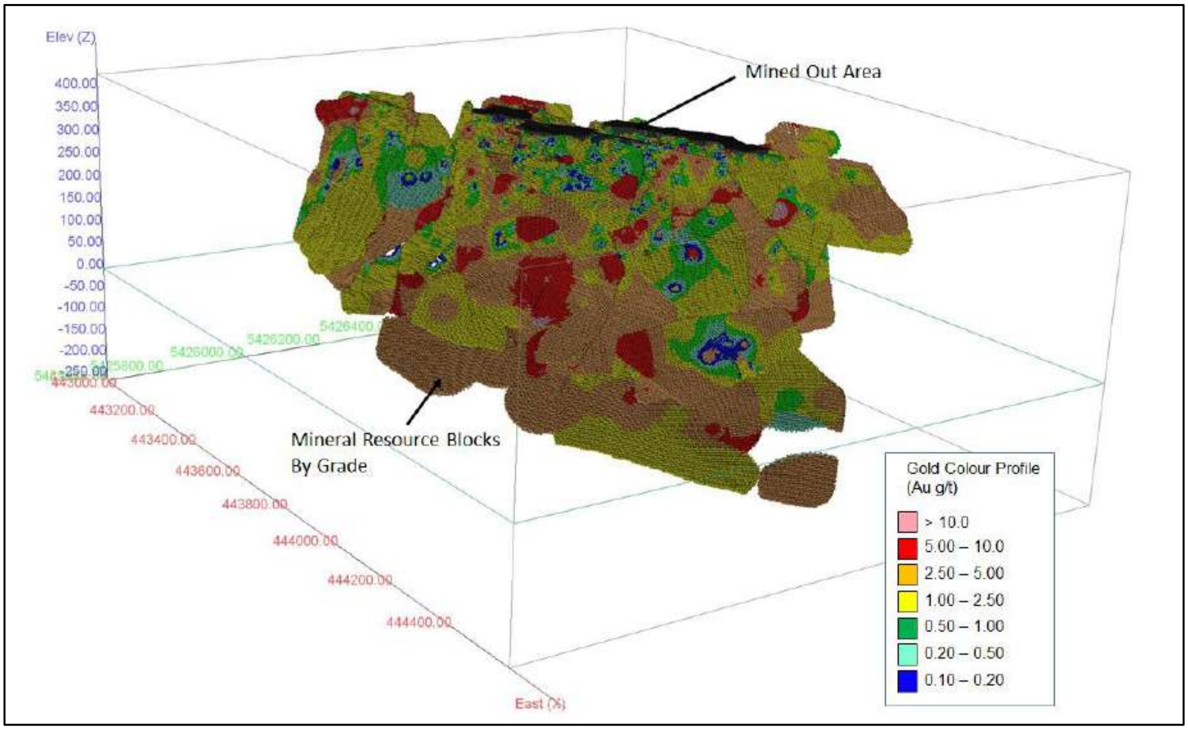
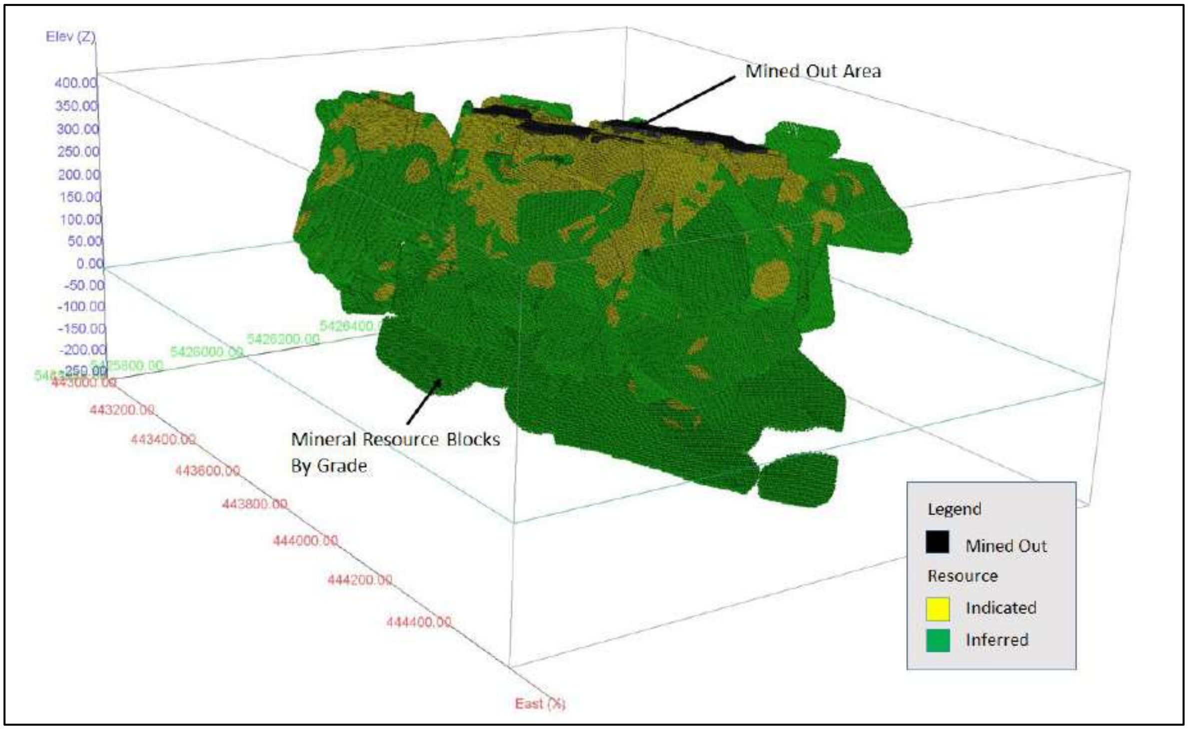


Figure 14-12 Isometric View Looking North of the of the Barry Deposit Indicated and Inferred Mineral Resource Blocks and Mined Out Area



14.1.12 Model Validation and Sensitivity Analysis

The total volume of the Barry Deposit resource blocks in the mineral resource model at a 0.0 g/t Au cut-off grade value compared well to the total volume of the vein structures with the total volume of the block model being 2.75% lower than the total volume of the vein structures (Table 14-10). The Vein models constructed for the current Barry Mineral Resource Estimate were also constructed for the purposes of future exploration and were extended between drill holes further than would normally have been done for resource estimation purposes (i.e. > 50-100 m from existing drill holes). As a result, not all of the wireframe models were populated with grade blocks.

Visual checks of block gold grades against the composite data on vertical section showed good correlation between block grades and drill intersections.

A comparison of the average gold composite grade with the average gold grade of all the Au blocks in the block model, at a 0.0 g/t Au cut-off grade was completed and is presented in Table 14-11. The average grade of the block model compares well with the average grade of the capped composites used for the resource estimate.

For comparison purposes, additional grade models were generated using the inverse distance cubed weighting (ID^3) and nearest neighbour (NN) interpolation methods. The results of these models are compared to the ID^2 models at various cut-off grades in a series of grade/tonnage graphs shown in Figure 14-13. In general the ID2 and ID3 models show similar results and both are more conservative and smoother than the NN model. For models well-constrained by wireframes and well-sampled (close spacing of data), ID2 should yield very similar results to other interpolation methods such as ID3 or Ordinary Kriging.

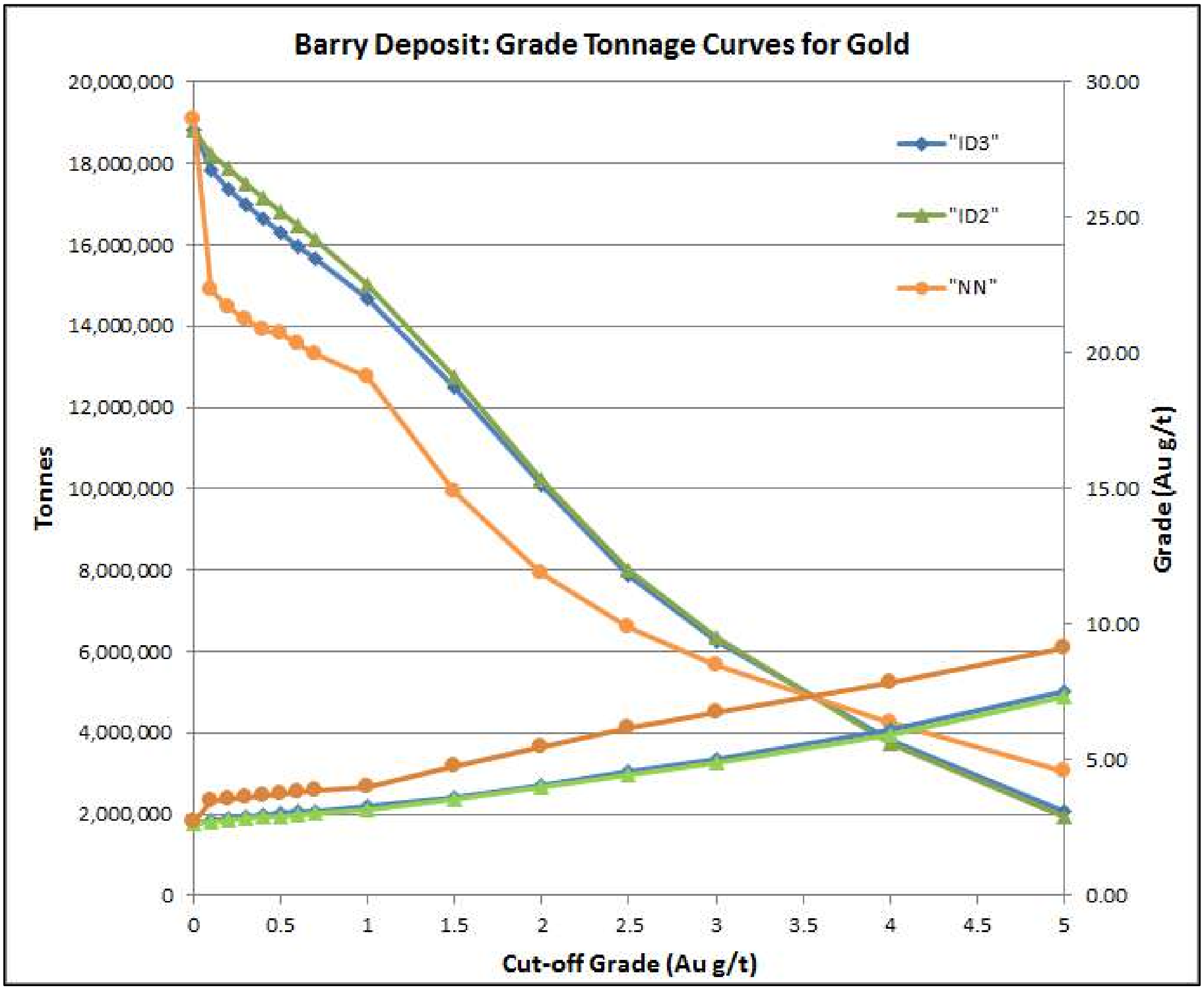
Table 14-10 Comparison of Block Model Volume with Total Volume of the Vein Structures (exclusive of mined out material)

Deposit	Total Domain Volume	Block Model Volume	Difference %
Barry Deposit	6,867,047	6,676,879	2.75%

Table 14-11 Comparison of Average Composite Grades with Block Model Grades

Deposit	Variable	Total	AU (g/t)
Barry Deposit	Composites	9,366	2.51
	Composites Capped	9,366	2.44
	Blocks	709,808	2.60

Figure 14-13 Comparison of Inverse Distance Cubed ("ID^3"), Inverse Distance Squared ("ID^2") & Nearest Neighbour ("NN") Models for the Barry Deposit Global Mineral Resource



14.1.13 Sensitivity to Cut-off Grade

The Barry Deposit mineral resource has been estimated at a range of cut-off grades presented in Table 14-12 to demonstrate the sensitivity of the resource to cut-off grades. The current mineral resource is reported at a base case cut-off grade of 3.5 g/t Au.

Table 14-12 Barry Deposit Mineral Resource at Various Gold Cut-off Grades

	Indicated			Inferred		
Cut-off Au g/t	Tonnes	Au (g/t)	Contained Au (oz)	Tonnes	Au (g/t)	Contained Au (oz)
2.0	4,507,000	4.11	595,000	5,716,000	3.87	712,000
2.5	3,449,000	4.67	518,000	4,577,000	4.28	630,000
3.0	2,662,000	5.25	449,000	3,675,000	4.66	551,000
3.5	**2,052,000**	**5.84**	**385,000**	**2,740,000**	**5.14**	**453,000**
4.0	1,587,000	6.47	330,000	2,127,000	5.54	379,000
5.0	983,000	7.69	243,000	940,000	6.98	211,000

(1) Values in this table reported above and below the base case cut-off grade of 3.5 g/t Au should not be misconstrued with a Mineral Resource Statement. The values are only presented to show the sensitivity of the block model estimates to the selection of cut-off grade.

(2) All figures are rounded to reflect the relative accuracy of the estimate. Composites have been capped where appropriate.

(3) Mineral Resources are exclusive of material that has been mined.

14.1.14 Disclosure

All relevant data and information regarding the Barry Deposit is included in other sections of this Technical Report. There is no other relevant data or information available that is necessary to make the technical report understandable and not misleading.

The Authors are not aware of any known mining, processing, metallurgical, environmental, infrastructure, economic, permitting, legal, title, taxation, socio-political, or marketing issues, or any other relevant factors not reported in this technical report, that could materially affect the Mineral Resource Estimate.

14.2 Gladiator Resource Estimate

14.2.1 Introduction

The current Mineral Resource Estimate for the Gladiator Deposit is an update to a 43-101 Mineral Resource Estimate completed for Bonterra in 2012, the results of which were reported on June 13, 2012 (see Bonterra news release June 13, 2012, which is filed on SEDAR under Bonterra's profile). Bonterra announced, using a 1.0 g/t cutoff, the Gladiator Deposit contains inferred gold resources of 4,337,000 tonnes grading 3.53 g/t for 492,000 ounces. The estimate was prepared by Snowden and is presented in a NI 43-101 Technical Report titled "2012. NI 43-101 Technical Report, BonTerra Resources Inc.: Eastern Extension Property Project No. V1216, 26 July 2012, and is filed on SEDAR under Bonterr's profile.

The database used by Snowden contained 108 surface diamond drill holes (for a total of 23,165 m; average length 214.5 m). All 108 drillholes were completed in the period from 1997 to 2011.

Completion of the current updated Mineral Resource Estimate for the Gladiator Deposit involved the assessment of a drill hole database, which included all data for surface drilling completed through early 2019, updated three-dimensional (3D) mineral resource models, and available written reports. Armitage conducted a site visit to the Gladiator Deposit on September 18 and 19, 2018. The effective date of the updated Mineral Resource Estimate is May 24, 2019.

Inverse Distance Squared ("ID2") restricted to mineralized domains was used to Interpolate gold grades (g/t Au) into a block model. Indicated and Inferred mineral resources are reported in the summary tables in Section 14.1.10. The current Mineral Resource Estimate takes into consideration that the Gladiator Deposit will be mined by underground mining methods.

14.2.2 Drill Hole Database

In order to complete an updated Mineral Resource Estimate for the Gladiator Deposit, a database comprising a series of comma delimited spreadsheets containing drill hole information was provided by Bonterra. The database included diamond drill hole location information (NAD83 / UTM Zone 18), survey data, assay data, and lithology data. The data was then imported into GEMS for statistical analysis, block modeling and resource estimation. The current Mineral Resource Estimate includes all drill holes completed on the Project, including those holes used to define the extend and distribution of mineralization in the Gladiator Deposit.

The database used for the current Mineral Resource Estimate comprises data for 408 surface drill holes otaling 195,957 metres completed in the Gladiator Deposit area between 1997 and 2019 (Table 14-3). The database totals 107,993 drill core assay samples representing 110,230 metres of drilling (average of 1.03 m per sample).

The database was checked for typographical errors in drill hole locations, down hole surveys, lithology, assay values and supporting information on source of assay values. Overlaps and gapping in survey, lithology and assay values in intervals were checked. Minor errors have been noted and corrected during the validation process but have no material impact on the 2019 Mineral Resource Estimate for the Gladiator Deposit. The database is of sufficient quality to be used for the current Mineral Resource Estimate.

Table 14-13 Gladiator Deposit Area Drill Hole Database Summary (includes wedge holes and restarted holes)

Drilling Period	Company	No. of Surface Drill Holes	Metres of Surface Drilling
1997 - 2001	Xemac	59	8,650
2010 - 2011	Bonterra	49	13,987.11
2012 Resource Estimate			
2012	Bonterra	17	5,007.3
2015	Bonterra	5	1,722.4
2016	Bonterra	54	27,432.9
2017	Bonterra	65	49,656.7
2018	Bonterra	124	76,690.8
2019	Bonterra	35	12,809.3
Total		**408**	**195,956.51**

14.2.3 Topography and Overburden Surface

Bonterra provided SGS with a 3D DXF surface models representing topography and the base of overburden/top of bedrock. The topographic surface model was created based on topographic data collected during a LiDAR survey completed in 2016. The overburden surface model representing the base of overburden/top of bedrock is built based on drill hole information. The topographic surface model and top-of-bedrock (base of overburden) surface model will be used to exclude resource blocks, or portions of resource blocks, that extend above the bedrock surface or topography.

14.2.4 Mineral Resource Modelling and Wireframing

For the 2019 Mineral Resource Estimate for the Gladiator Deposit, a total of 39 3D grade controlled wireframe models, representing separate vein structures, were constructed by SGS (Figure 14-14 to Figure 14-16) (Table 14-12). The 3D grade controlled models were built by visually interpreting mineralized intercepts from cross sections using gold values. The 3D modelling was conducted using Genesis© software developed by SGS.

SGS conducted the interpretation of the 3D wireframe solids of the mineralization, based on the drill hole data. For the purpose of modeling, sections (looking West-southwest) were generated every 25m, with intermediate section where necessary to tie in the solids. The modeling was first completed on sections to define mineralized prisms using the analytical data for gold. A minimum grade of ~1.0 g/t Au over a minimum drill width of 1.0 m to 1.5 m was generally used as a guideline to define the width of mineralized prisms. In cases where mineralized intercepts were < 1.5m (drill width), lower grade material (< 1.0 g/t Au) was used to expand a mineralized intercept to the minimum 1.5m width. The final 3D wireframe models were constructed by meshing the defined mineralized prisms based on the geological interpretation. All models have been clipped to the base-of-overburden surface.

The Gladiator Deposit models define a series of parallel to subparallel vein structures which extend for approximately 1,750 m along strike (trending 70° and dipping steeply to the south-southeast) and to depths of up to 900 m in the eastern end of the Deposit area.

Figure 14-14 Plan View Showing the Distribution of Drill holes, and Gladiator Deposit Grade-Controlled Wireframe Models

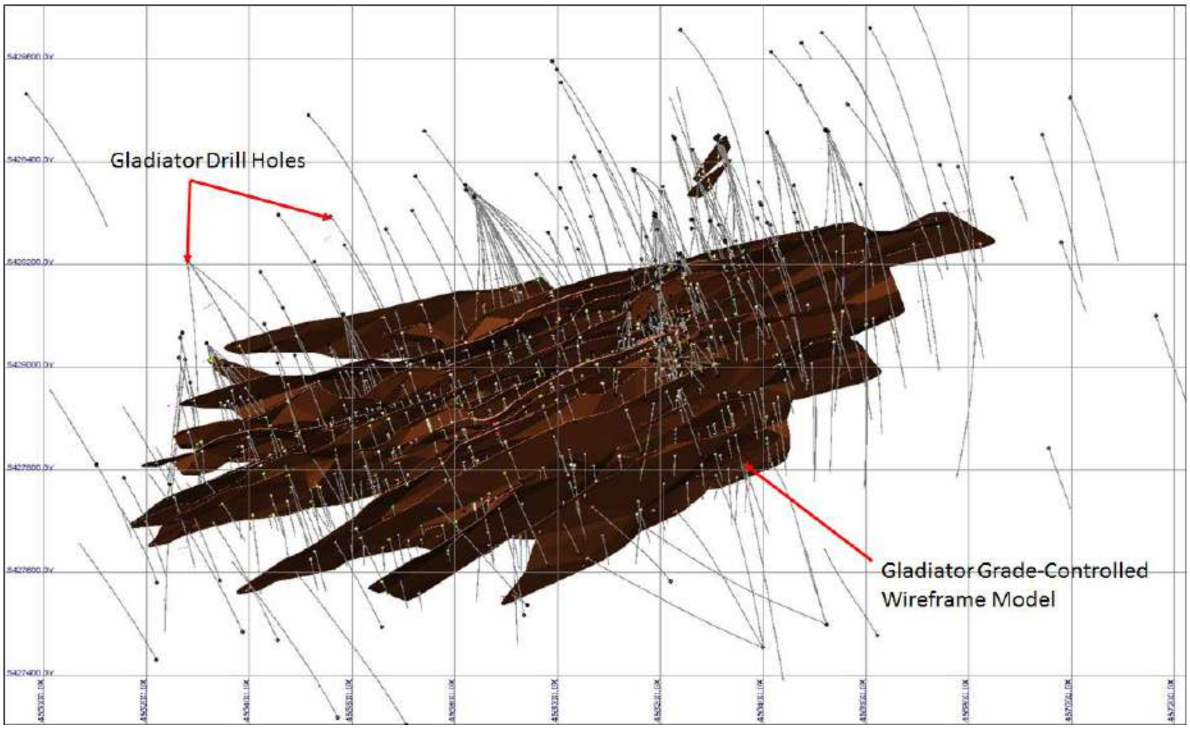


Figure 14-15 Isometric View Looking West-Southwest Showing the Distribution of the Drill holes, and the Gladiator Deposit Grade-Controlled Wireframe Models

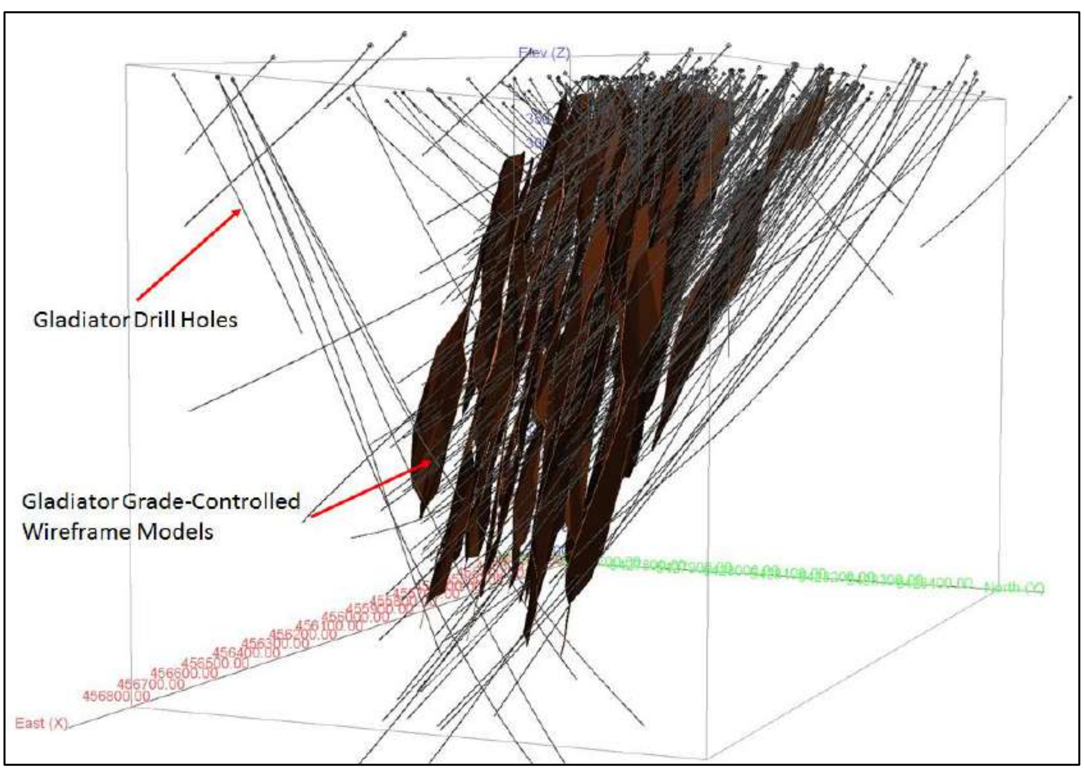


Figure 14-16 Isometric View Looking Northwest Showing the Distribution of the Drill holes, and the Gladiator Deposit Grade-Controlled Wireframe Models (clipped to the base of overburden)

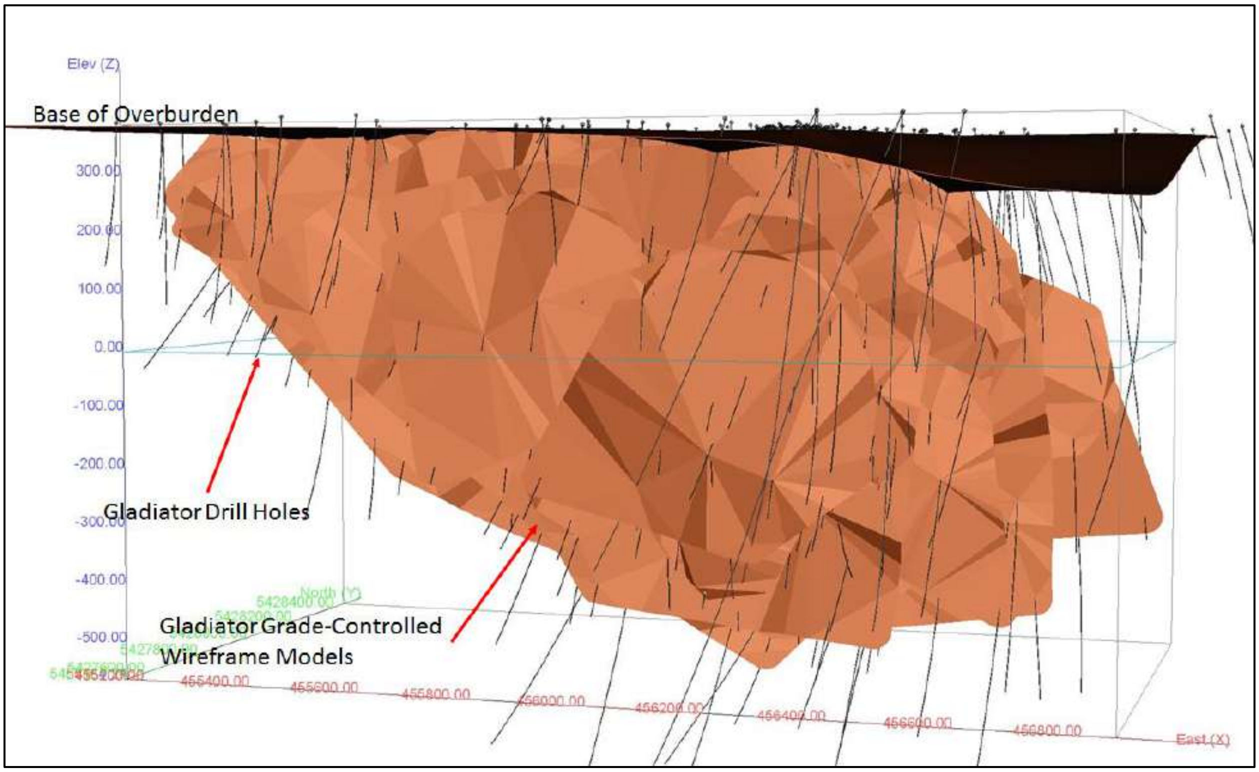


Table 14-14 Gladiator Deposit - Vein Domain Description

Vein Structure/ Orientation	Vein Domain	Rock Code	# of Vein Models	Domain Volume	Density	Domain Tonnage
Trending 70° and dipping steeply to the south-southeast	VEINS	200	39	7,161,037	2.78	**19,907,683**
	Total:		**39**	**7,161,037**		**19,907,683**

14.2.5 Compositing

The assay sample database available for the current resource modelling totalled 107,993 assays representing 110,230 metres of drilling (average of 1.03 m per sample). Of these assays, 3,106 assays from the 304 drill holes which intersect the Gladiator Deposit mineral domains. A statistical analysis of the drill core assay data from within the mineralized domains is presented in (Table 14-15). Average width of the drill core sample intervals is 0.97, within a range of 0.18 m to 2.0 m. Of the total assay population approximately 84% are 1.00 m or less (Figure 14-17; Figure 14-18).To minimize the dilution and over smoothing due to compositing, a composite length of 1.00 m was chosen as an appropriate composite length for the Gladiator Deposit resource estimation.

One metre composites for gold were generated starting from the collar of each hole. Un-assayed intervals were given a value of 0.0001 g/t Au. Composites were then constrained to the mineral domains. The constrained composites were extracted to point files for statistical analysis and capping studies.

A total of 3,696 composite sample points occur within the resource grade-controlled models (Table 14-16); the average grade of all composites is 3.02 g/t Au.

Table 14-15 Statistical Analysis of the Drill Core Data from Within the Gladiator Deposit Mineral Domains

Variable	Drill Core
Total # Assay Samples	3,106
Average Sample Length	0.97 m
Minimum and Maximum Length	0.18 to 2.0 m
Total Sample Length	3,014 m
Minimum Grade	0.00 g/t
Maximum Grade	677.0 g/t
Mean	4.82 g/t
Median	0.33 g/t
Variance	426
Standard Deviation	20.6 g/t
Coefficient of variation	4.28
97.5 Percentile	38.9 g/t

Figure 14-17 Sample length histogram for Drill Core Assay Samples from Within the Gladiator Deposit Mineral Domains

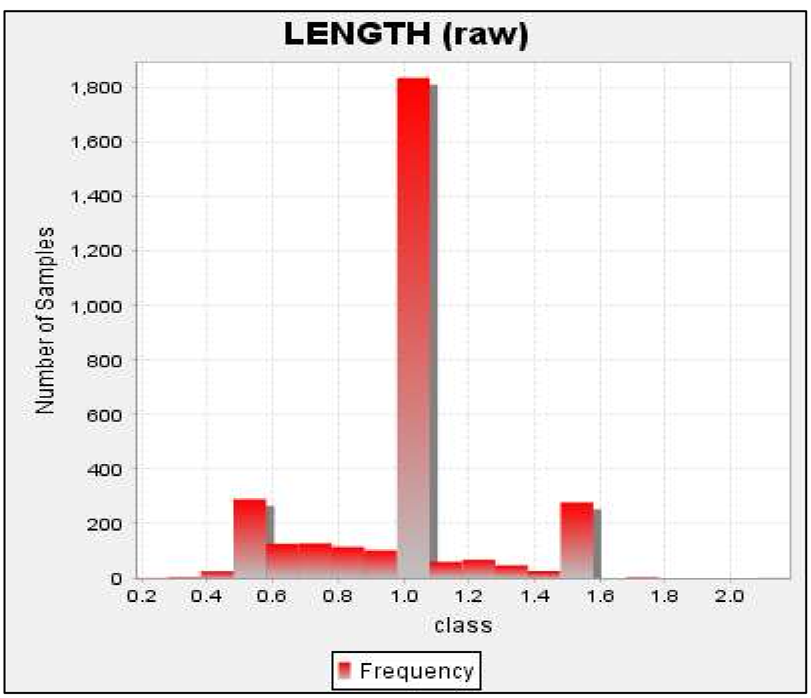


Figure 14-18 Assay Sample Length versus Assay Value of Drill Core Samples from Within the Gladiator Deposit Mineral Domains

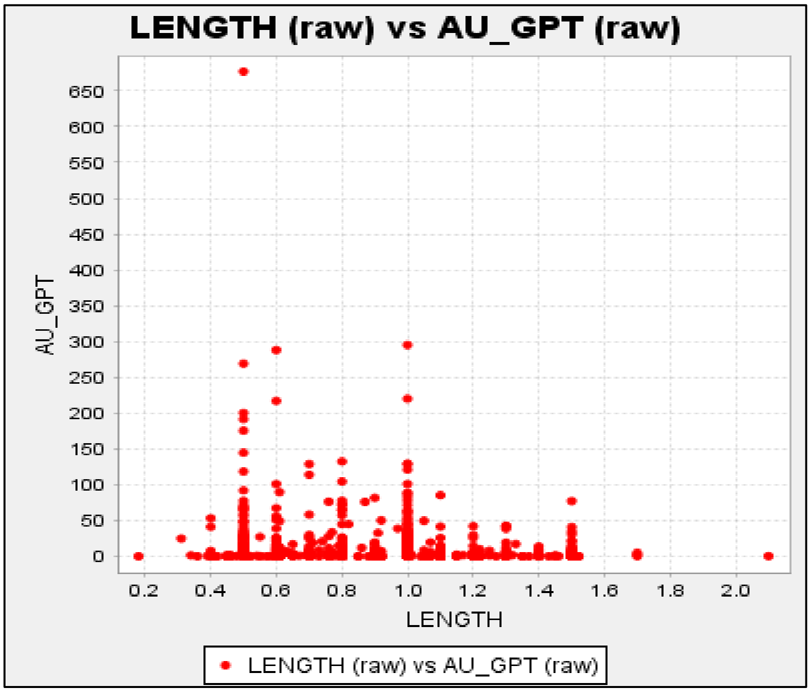


Table 14-16 Summary of the 1.0 metre Composite Data Constrained by the Gladiator Mineral Resource Models

Variable	Gold
Total # of Composites	3,683
Average Composite Length	1.00 m
Minimum value	0.00 g/t
Maximum value	220.0 g/t
Mean	3.02 g/t
Median	0.07 g/t
Variance	118
Standard Deviation	10.9 g/t
Coefficient of variation	3.60
97.5 Percentile	27.2 g/t

14.2.6 Grade Capping

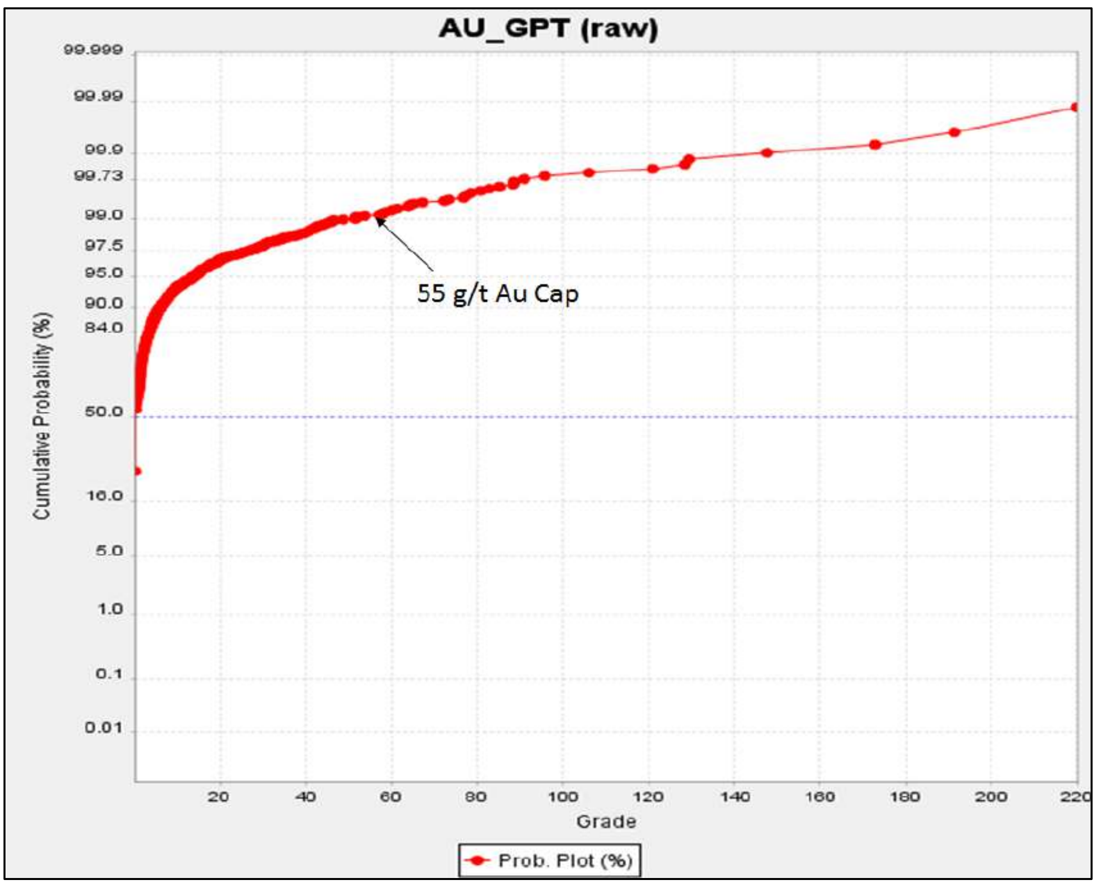
A statistical analysis of the cumulative composite database within the Gladiator wireframe models (the "resource" population) was conducted to investigate the presence of high grade outliers which can have a disproportionately large influence on the average grade of a mineral deposit. High grade outliers in the composite data were investigated using statistical data (Table 14-16), histogram plots, and cumulative probability plots (Figure 14-19) of the 1.00 m composite data. The statistical analysis was completed using GEMS.

After review, it is the Author's opinion that capping of high grade composites to limit their influence during the grade estimation is necessary. As a result, composites are capped at a value of 55.0 g/t gold. A summary of the results of the capping of the composites is presented in Table 14-17. A total of 33 composite samples were capped. The capped gold composites were used for grade interpolation into the Gladiator Deposit block model.

Table 14-17 Gold Grade Capping Summary of the Gladiator Deposit

Domain	Total # of Composites	Capping Value Au (g/t)	# of Capped Composites	Mean of Raw Composites	Mean of Capped Composites	CoV of Raw Composites	CoV of Capped Composites
Barry Deposit	3,696	55	33	3.02	2.69	3.60	2.82

Figure 14-19 Grade Capping Analysis of the Gladiator Deposit Composite Database



14.2.7 Specific Gravity

For previous Mineral Resource Estimates completed on the Gladiator Deposit, the SG database contained only 10 measurements. The S.G. used for the previous calculation of the resources for the Gladiator Deposit was fixed to 2.78.

Bonterra has since collected an additional 390 mineralized and un-mineralized core samples (shoulder samples) from 101 drill holes for SG measurements by the weight in water/weight in air (WW/WA) method.

The 390 SG measurements ranged from 2.41 to 3.33 and averaged 2.81. The average grade of the 390 samples in the database is 6.41 g/t Au, ranging from 0.00 to 269 g/t. Of the 390 samples, 163 samples graded > 1.0 g/t (average 13.2 g/t Au). The average SG of the 163 mineralized samples is 2.78 (range from 2.41 to 3.04) (Figure 14-20). Despite the high grade of a number of the samples, there appears to be little correlation of density value and gold grade (Figure 14-21). Based on the results of the SG measurements from the samples collected by Bonterra, a fixed SG of 2.78 is used to calculate the tonnage of the Gladiator mineral resource.

Figure 14-20 Histogram of Specific Gravity Measurements for Mineralized Samples (Samples >1.0 g/t Au) from the Gladiator Deposit

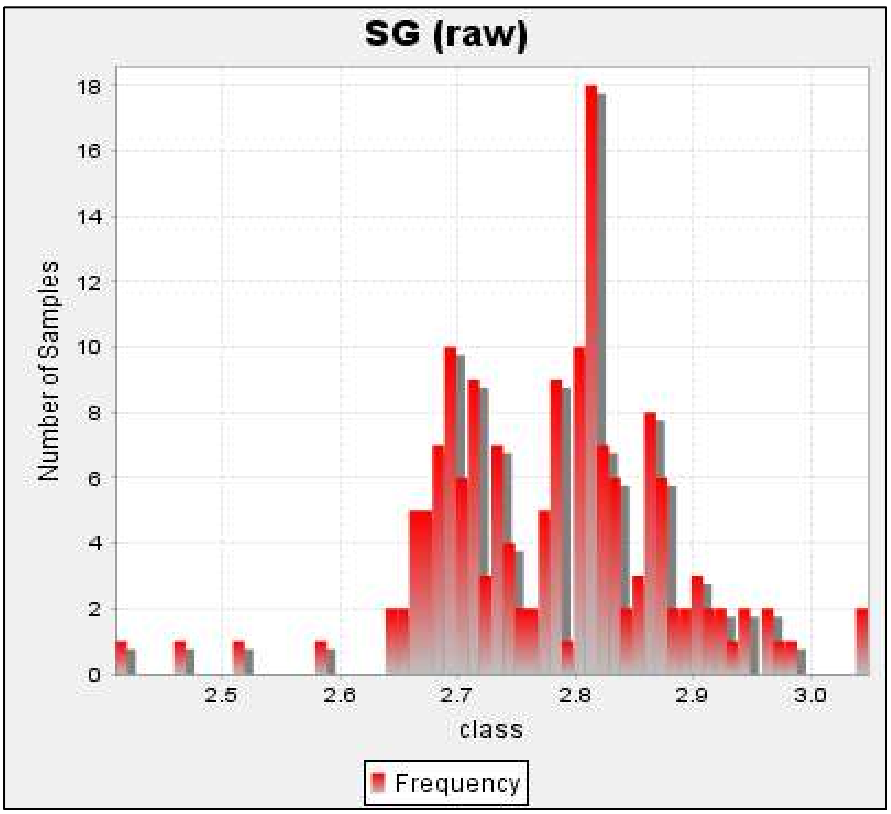
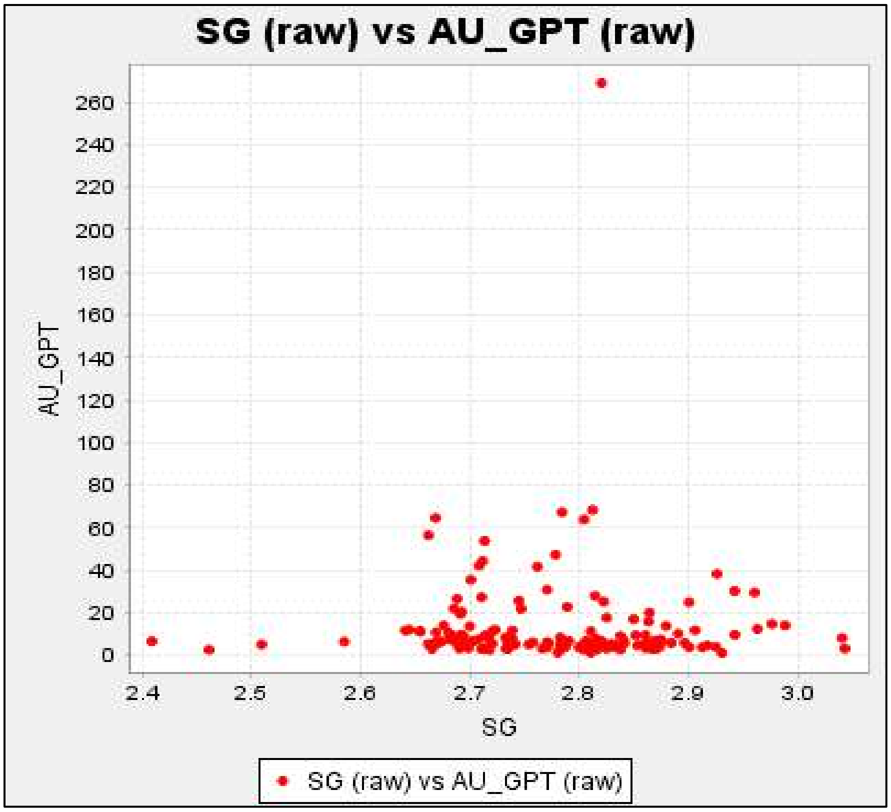


Figure 14-21 Specific Gravity versus Gold Grade for Mineralized Samples from the Gladiator Deposit (Samples >1.0 g/t Au)



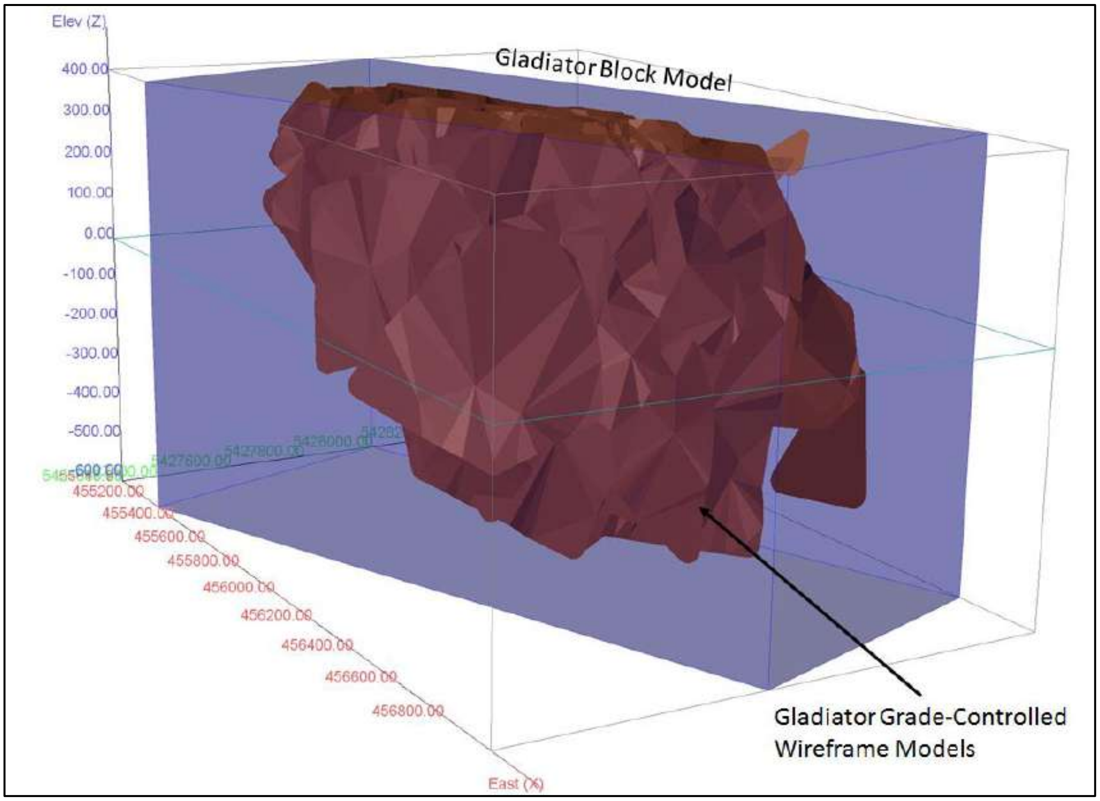
14.2.8 Block Model Parameters

The Barry Deposit wire frames were used to constrain composite values chosen for interpolation, and the mineral blocks reported in the estimate of the mineral resource. A block model (Table 14-18; Figure 14-22) within NAD83 / UTM Zone 18 space rotated 20° counter clockwise and with block dimensions of 5 x 2 x 5 m in the x (east), y (north) and z (level) directions was placed over the wireframe models with only that portion of each block inside the models recorded (as a percentage of the block) as part of the Mineral Resource Estimate (% Block Model). The block size was selected based on borehole spacing, composite assay length, the geometry of the vein structures, and the selected starting mining method (underground). At the scale of the Gladiator Deposit this provides a reasonable block size for discerning grade distribution, while still being large enough not to mislead when looking at higher cut-off grade distribution within the model. The model was intersected with a top-of-overburden surface model to exclude blocks, or portions of blocks, that extend above the bedrock surface.

Table 14-18 Gladiator Deposit Block Model Geometry

Model Name	UH Deposit		
	X (East; Columns)	Y (North; Rows)	Z (Level)
Origin (NAD83 / UTM Zone 18)	455295	5427310	410
Extent	360	365	205
Block Size	5	2	5
Rotation (counter clockwise)	20°		

Figure 14-22 Isometric View Looking Northwest Showing the Gladiator Deposit Mineral Resource Block Model and Wireframe Grade-Controlled Models



14.2.9 **Grade Interpolation**

A 3D semi-variography analysis of 1.0 m composites within the Gladiator wireframe models was completed using GEMS. The analysis did not determine semi-variograms and search ellipses of sufficient quality to be used for geostatistical grade estimation (Ordinary Kriging). However the variography analysis did provide useful guidelines for the size and orientation of the search ellipse used for grade interpolation. Search ellipses for each of the Gladiator vein domains was interpreted based on variography, drill hole (Data) spacing, and orientation and size of the resource wireframe models. The search ellipse axes are generally oriented to reflect the observed preferential long axis (geological trend) of the vein structures and the observed trend of the mineralization down dip/plunge.

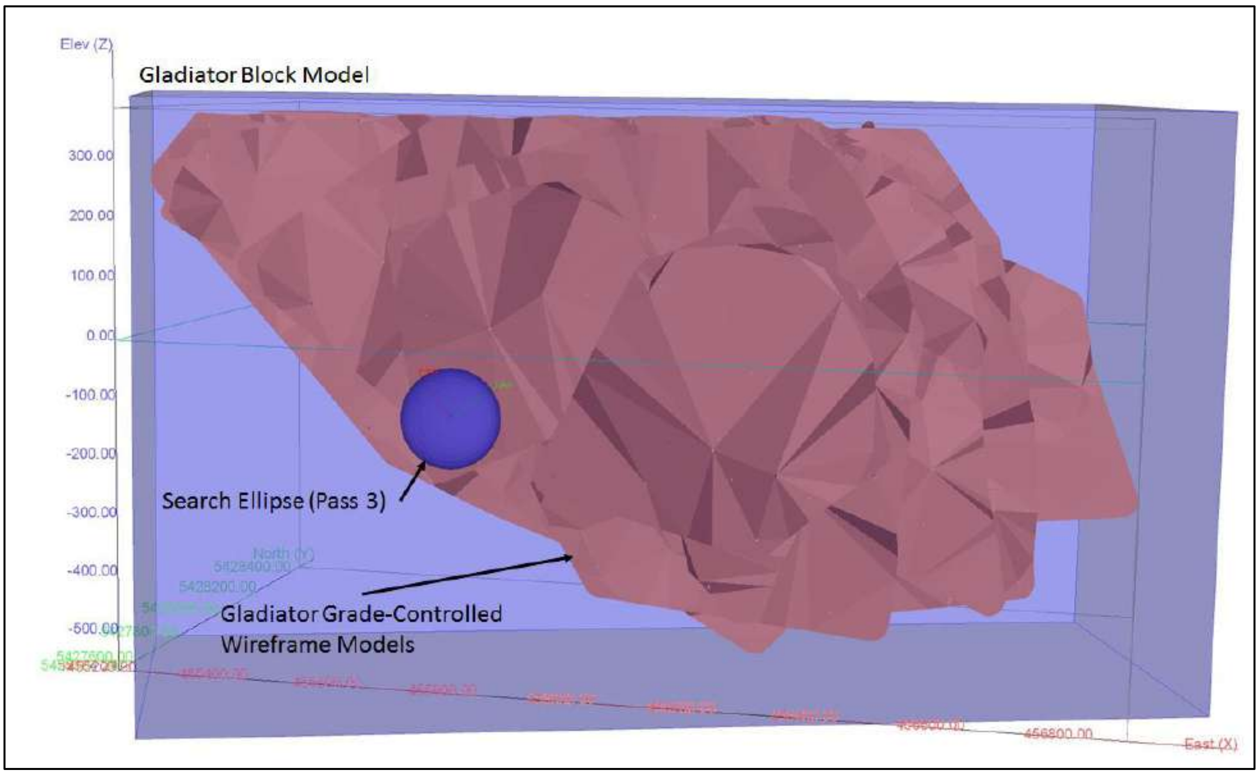
Grades for Au (g/t) were interpolated into blocks by the Inverse Distance Squared (ID^2) method. Three passes were used to interpolate grade into all of the blocks in the grade shells (Table 14-19). For Pass 1 the search ellipse size (in metres) for all vein domains was set at 22.5 x 22.5 x 10 in the X, Y, Z direction; for Pass 2 the search ellipse size for each domain was set at 45 x 45 x 15; for Pass 3 the search ellipse size was set at 80 x 80 x 20 (Figure 14-23). Blocks were classified as Indicated if they were populated with grade during Pass 1 and Pass 2 of the interpolation procedure. Blocks were classified as Inferred if they were populated with grade during Pass 3 of the interpolation procedure.

Grades were interpolated into blocks using a minimum of 5 and maximum of 10 composites to generate block grades during Pass 1 (maximum of 2 sample composites per drill hole) and Pass 2 (maximum of 3 sample composites per drill hole), and a minimum of 2 and maximum of 10 composites to generate block grades during pass 3 (Table 14-19).

Table 14-19 Gladiator Grade Interpolation Parameters

Parameter	VEINS		
	Pass 1	Pass 2	Pass 3
	Indicated	Indicated	Inferred
Search Type	Ellipsoid		
Principle Azimuth	258°		
Principle Dip	55°		
Intermediate Azimuth	60°		
Anisotropy X	22.5	45	80
Anisotropy Y	22.5	45	80
Anisotropy Z	10	15	20
Min. Samples	5	5	2
Max. Samples	10	10	10
Min. Drill Holes	3	2	1

Figure 14-23 Isometric View Looking Northwest Showing the Gladiator Deposit Mineral Resource Block Model and Wireframe Grade-Controlled Models and Search Ellipse Orientation



14.2.10 Mineral Resource Classification Parameters

The Mineral Resource Estimate for the Gladiator Deposit Technical Report was prepared and is disclosed in compliance with all current disclosure requirements for mineral resources set out in the NI 43-101 Standards of Disclosure for Mineral Projects. The classification of the current Mineral Resource Estimate into Indicated and Inferred is consistent with current 2014 CIM Definition Standards - For Mineral Resources and Mineral Reserves, including the critical requirement that all mineral resources "have reasonable prospects for eventual economic extraction".

Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. An Inferred Mineral Resource has a lower level of confidence than that applied to an Indicated Mineral Resource. An Indicated Mineral Resource has a higher level of confidence than an Inferred Mineral Resource but has a lower level of confidence than a Measured Mineral Resource.

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction.

Interpretation of the word 'eventual' in this context may vary depending on the commodity or mineral involved. For example, for some coal, iron, potash deposits and other bulk minerals or commodities, it may be reasonable to envisage 'eventual economic extraction' as covering time periods in excess of 50 years. However, for many gold deposits, application of the concept would normally be restricted to perhaps 10 to 15 years, and frequently to much shorter periods of time.

The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

Indicated Mineral Resource

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit.

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.

Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource Estimate is of sufficient quality to support a Preliminary Feasibility Study which can serve as the basis for major development decisions
.

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.

An Inferred Mineral Resource is based on limited information and sampling gathered through appropriate sampling techniques from locations such as outcrops, trenches, pits, workings and drill holes. Inferred Mineral Resources must not be included in the economic analysis, production schedules, or estimated mine life in publicly disclosed Pre-Feasibility or Feasibility Studies, or in the Life of Mine plans and cash flow models of developed mines. Inferred Mineral Resources can only be used in economic studies as provided under NI 43-101.

There may be circumstances, where appropriate sampling, testing, and other measurements are sufficient to demonstrate data integrity, geological and grade/quality continuity of a Measured or Indicated Mineral Resource, however, quality assurance and quality control, or other information may not meet all industry norms for the disclosure of an Indicated or Measured Mineral Resource. Under these circumstances, it may be reasonable for the Qualified Person to report an Inferred Mineral Resource if the Qualified Person has taken steps to verify the information meets the requirements of an Inferred Mineral Resource.

14.2.11 Mineral Resource Statement

The general requirement that all mineral resources have “reasonable prospects for economic extraction” implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade taking into account extraction scenarios and processing recoveries. In order to meet this requirement, the Gladiator Deposit mineralization is considered amenable for underground extraction.

In order to determine the quantities of material offering “reasonable prospects for economic extraction” by underground mining methods, reasonable mining assumptions to evaluate the proportions of the block model (Indicated and Inferred blocks) that could be “reasonably expected” to be mined from underground are used. The underground parameters used are summarized in Table 14-20. A selected cut-off grade of 3.5 g/t Au is used to determine the Mineral Resource of the Gladiator Deposit Deposit.

The 2019 Mineral Resource Estimate for the Gladiator Deposit is presented in Table 14-21 (Figure 14-24 and Figure 14-25). Highlights of the Gladiator Deposit Mineral Resource Estimate are as follows:

- The underground mineral resource includes, at a cut-off grade of 3.5 g/t Au, 202,000 ounces of gold (0.74 million tonnes at an average grade of 8.46 g/t Au) in the Indicated category, and 897,000 ounces of gold (3.07 million tonnes at an average grade of 9.10 g/t Au) in the Inferred category.

Table 14-20 Parameters Used to Estimate the Underground Cut-off Grade for the 2019 Barry Mineral Resource Estimate

Parameter	Value	Unit
Gold Price	$1,300/$1733	US$/CDN$ per ounce
Exchange Rate	0.75	$US/$CDN
Gold Recovery	95	Percent (%)
Assumed Mining and Processing Costs		
Mining Cost	$69.00/$92.00	US$/CDN$ per tonne mined
Processing Cost	$18.75/$25.00	US$/CDN$ per tonne milled
General and Administrative	$22.50/$30.00	US$/CDN$ per tonne milled
Transportation Cost	$15.00/$20.00	US$/CDN$ per tonne milled
Mining Recovery	90	Percent (%)
Cut-Off Grade	3.50	g/t Au

Table 14-21 Gladiator Deposit 2019 Mineral Resource Estimate, May 24, 2019

Category	Tonnes	Grade (g/t Au)	Contained Au (oz)
Indicated	743,000	8.46	202,000
Inferred	3,065,000	9.10	897,000

(1) *The classification of the current Mineral Resource Estimate into Indicated and Inferred is consistent with current 2014 CIM Definition Standards - For Mineral Resources and Mineral Reserves*

(2) *Mineral resources which are not mineral reserves do not have demonstrated economic viability. An Inferred Mineral Resource has a lower level of confidence than that applying to a Measured and 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.*

(3) *All figures are rounded to reflect the relative accuracy of the estimate. Composites have been capped where appropriate.*

(4) *Resources are presented undiluted and in situ and are considered to have reasonable prospects for economic extraction.*

(5) *Underground mineral resources are reported at a cut-off grade of 3.5 g/t Au. Cut-off grade is based on a gold price of US$1,300 per ounce, a foreign exchange rate of US$0.75, and a gold recovery of 95%.*

(6) *High grade capping was done on composite data. A capping value of 55 g/t Au and was applied to all 39 3D grade controlled wireframe models.*

(7) *A fixed specific gravity value of 2.78 was used to estimate the tonnage from block model volumes.*

(8) The Authors are not aware of any known environmental, permitting, legal, title-related, taxation, socio-political or marketing issues, or any other relevant issue not reported in the technical report, that could materially affect the mineral resource estimate.

Figure 14-24 Isometric View Looking Northwest of the Gladiator Deposit Mineral Resource Block Grades

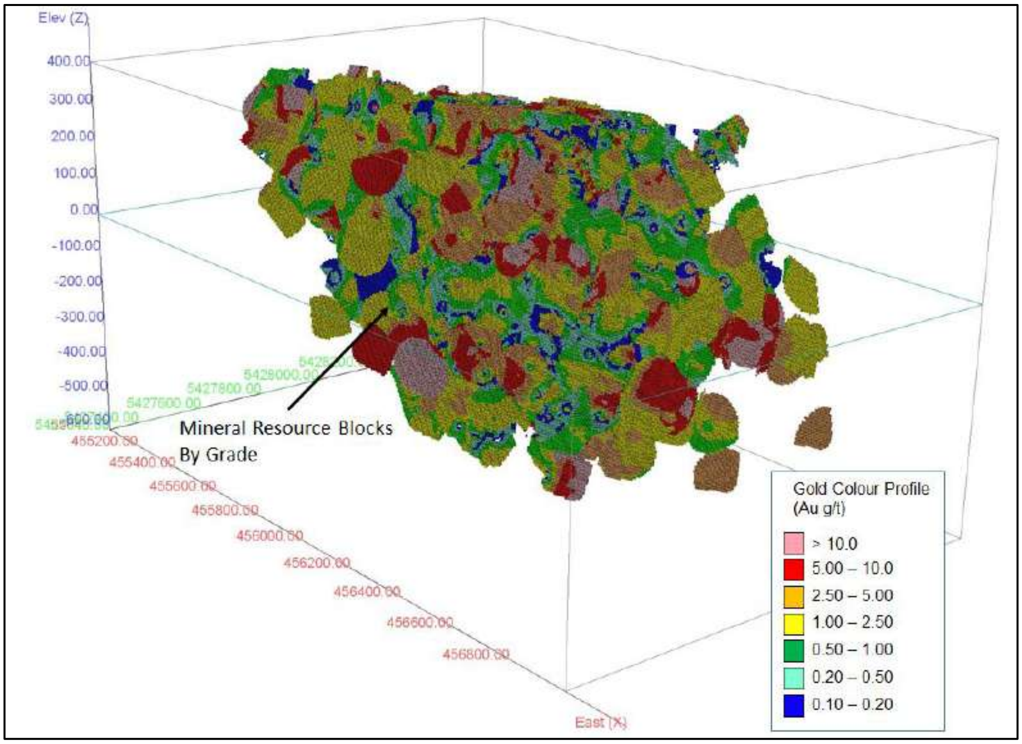
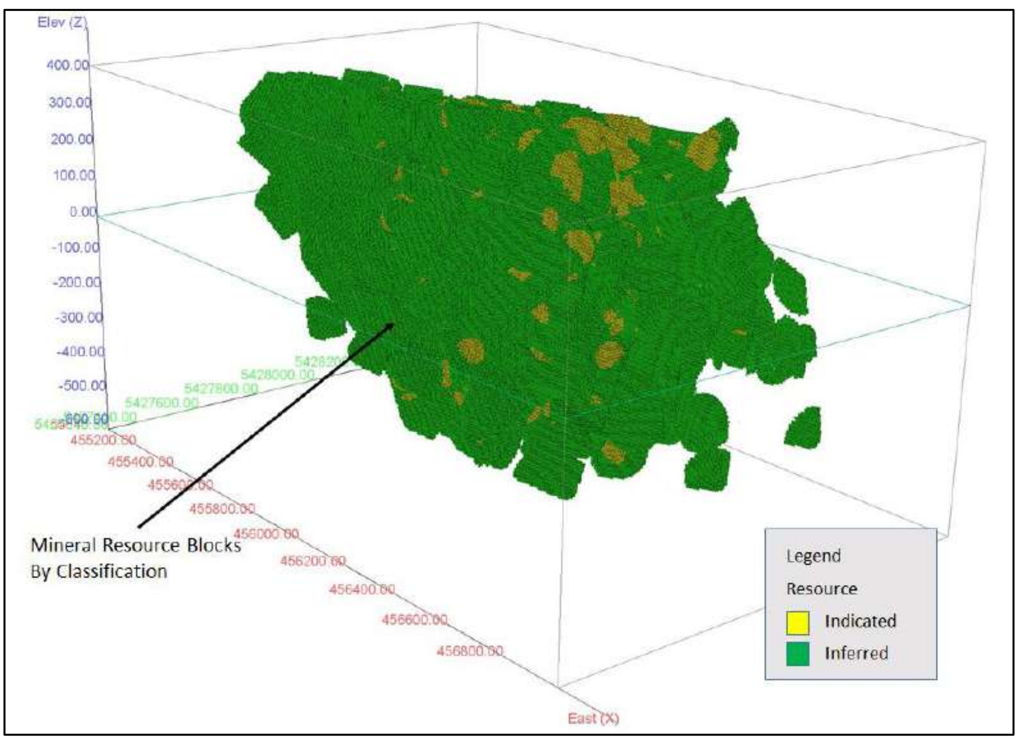


Figure 14-25 Isometric View Looking North of the of the Gladiator Deposit Indicated and Inferred Mineral Resource Blocks



14.2.12 Model Validation and Sensitivity Analysis

The total volume of the Gladiator Deposit resource blocks in the mineral resource model at a 0.0 g/t Au cut-off grade value varied by 10.5 % compared to the total volume of the vein structures (Table 14-22). The Vein models constructed for the current Gladiator Mineral Resource Estimate were also constructed for the purposes of future exploration and were extended between drill holes further than would normally have been done for resource estimation purposes (i.e. > 50-100 m from existing drill holes). As a result, not all of the wireframe models were populated with grade blocks.

Visual checks of block gold grades against the composite data on vertical section showed good correlation between block grades and drill intersections.

A comparison of the average gold composite grade with the average gold grade of all the Au blocks in the block model, at a 0.0 g/t Au cut-off grade was completed and is presented in Table 14-23. The average grade of the block model compares well with the average grade of the capped composites used for the resource estimate.

For comparison purposes, additional grade models were generated using the inverse distance cubed weighting (ID^3) and nearest neighbour (NN) interpolation methods. The results of these models are compared to the ID^2 models at various cut-off grades in a series of grade/tonnage graphs shown in Figure 14-26. In general the ID^2 and ID^3 models show similar results and both are more conservative and smoother than the NN model. For models well-constrained by wireframes and well-sampled (close spacing of data), ID^2 should yield very similar results to other interpolation methods such as ID3 or Ordinary Kriging.

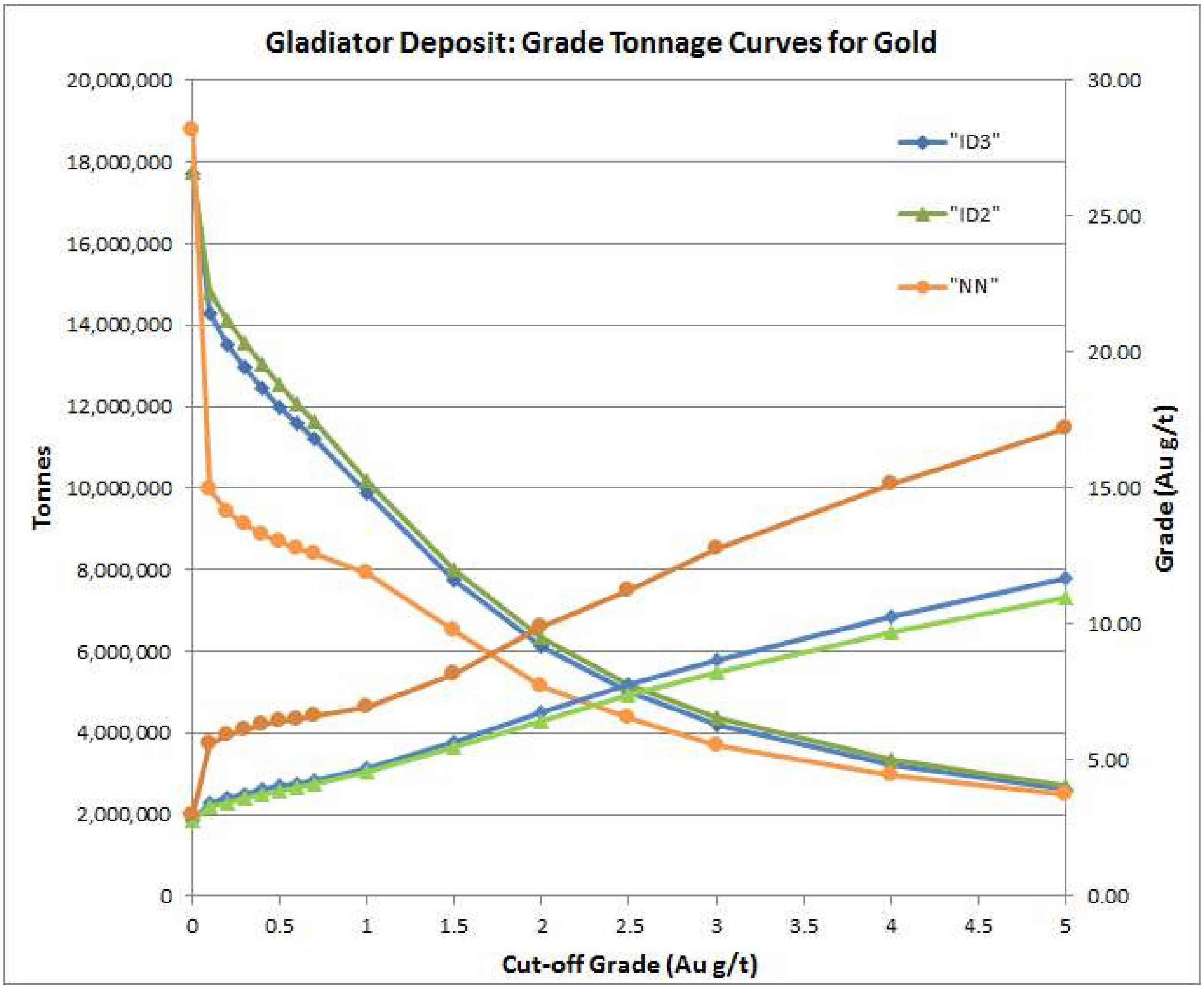
Table 14-22 Comparison of Block Model Volume with Total Volume of the Vein Structures (exclusive of mined out material)

Deposit	Total Domain Volume	Block Model Volume	Difference %
Gladiator Deposit	7,127,551	6,379,662	10.5%

Table 14-23 Comparison of Average Composite Grades with Block Model Grades

Deposit	Variable	Total	AU (g/t)
Gladiator Deposit	Composites	3,683	3.02
	Composites Capped	3,683	2.69
	Blocks	542,395	2.69

Figure 14-26 Comparison of Inverse Distance Cubed ("ID³"), Inverse Distance Squared ("ID²") & Nearest Neighbour ("NN") Models for the Gladiator Deposit Global Mineral Resource



14.2.13 Sensitivity to Cut-off Grade

The Gladiator Deposit mineral resource has been estimated at a range of cut-off grades presented in Table 14-24 to demonstrate the sensitivity of the resource to cut-off grades. The current mineral resource is reported at a base case cut-off grade of 3.5 g/t Au.

Table 14-24 Gladiator Deposit Mineral Resource at Various Gold Cut-off Grades

	Indicated			Inferred		
Cut-off Au g/t	Tonnes	Au (g/t)	Contained Au (oz)	Tonnes	Au (g/t)	Contained Au (oz)
2.0	1,244,000	6.13	245,000	5,079,000	6.53	1,067,000
2.5	1,019,000	6.99	229,000	4,162,000	7.48	1,001,000
3.0	859,000	7.78	215,000	3,511,000	8.35	943,000
3.5	**743,000**	**8.46**	**202,000**	**3,065,000**	**9.10**	**897,000**
4.0	653,000	9.10	191,000	2,696,000	9.83	852,000
5.0	509,000	10.45	171,000	2,180,000	11.10	778,000

(1) Values in this table reported above and below the base case cut-off grade of 3.5 g/t Au should not be misconstrued with a Mineral Resource Statement. The values are only presented to show the sensitivity of the block model estimates to the selection of cut-off grade.

(2) All figures are rounded to reflect the relative accuracy of the estimate. Composites have been capped where appropriate.

(3) Mineral Resources are exclusive of material that has been mined.

14.2.14 **Disclosure**

All relevant data and information regarding the Gladiator Deposit is included in other sections of this Technical Report. There is no other relevant data or information available that is necessary to make the technical report understandable and not misleading.

The Authors are not aware of any known mining, processing, metallurgical, environmental, infrastructure, economic, permitting, legal, title, taxation, socio-political, or marketing issues, or any other relevant factors not reported in this technical report, that could materially affect the Mineral Resource Estimate.

15 Mineral Reserve Estimates

There are no mineral reserve estimates stated on this project. This section does not apply to the Technical Report.

16 MINING METHODS

This section does not apply to the Technical Report.

17 RECOVERY METHODS

This section does not apply to the Technical Report.

18 PROJECT INFRASTRUCTURE

This section does not apply to the Technical Report.

19 MARKET STUDIES AND CONTRACTS

This section does not apply to the Technical Report.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

This section does not apply to the Technical Report.

21 CAPITAL AND OPERATING COSTS

This section does not apply to the Technical Report.

22 ECONOMIC ANALYSIS

This section does not apply to the Technical Report.

23 ADJACENT PROPERTIES

The Barry and Gladiator Deposits lie within an area of active exploration and development. Several mining companies are active including Osisko Mining Inc. ("Osisko") located directly north of the Barry-Gladiator Property. The information presented regarding the Widfall Lake Deposit of Osisko has been publicly disclosed by Osisko on their website www.osiskomining.com.

The Authors have been unable to verify the information from the Windfall Lake Deposit, and the information is not necessarily indicative of the mineralization on the Barry-Gladiator Property.

There is no other information on properties adjacent to the Barry-Gladiator Property necessary to make the technical report understandable and not misleading.

23.1 Osisko Mining Inc. – Windfall Lake Deposit

The Windfall Lake Deposit is located approximately 12 km northeast of the Barry Deposit and 8 km northwest of the Gladiator Deposit (Figure 23-1).

The Windfall Lake property is 100% owned by Osisko Mining Inc. and consisted of 285 individual claims covering an aggregate area of 12,467 hectares.

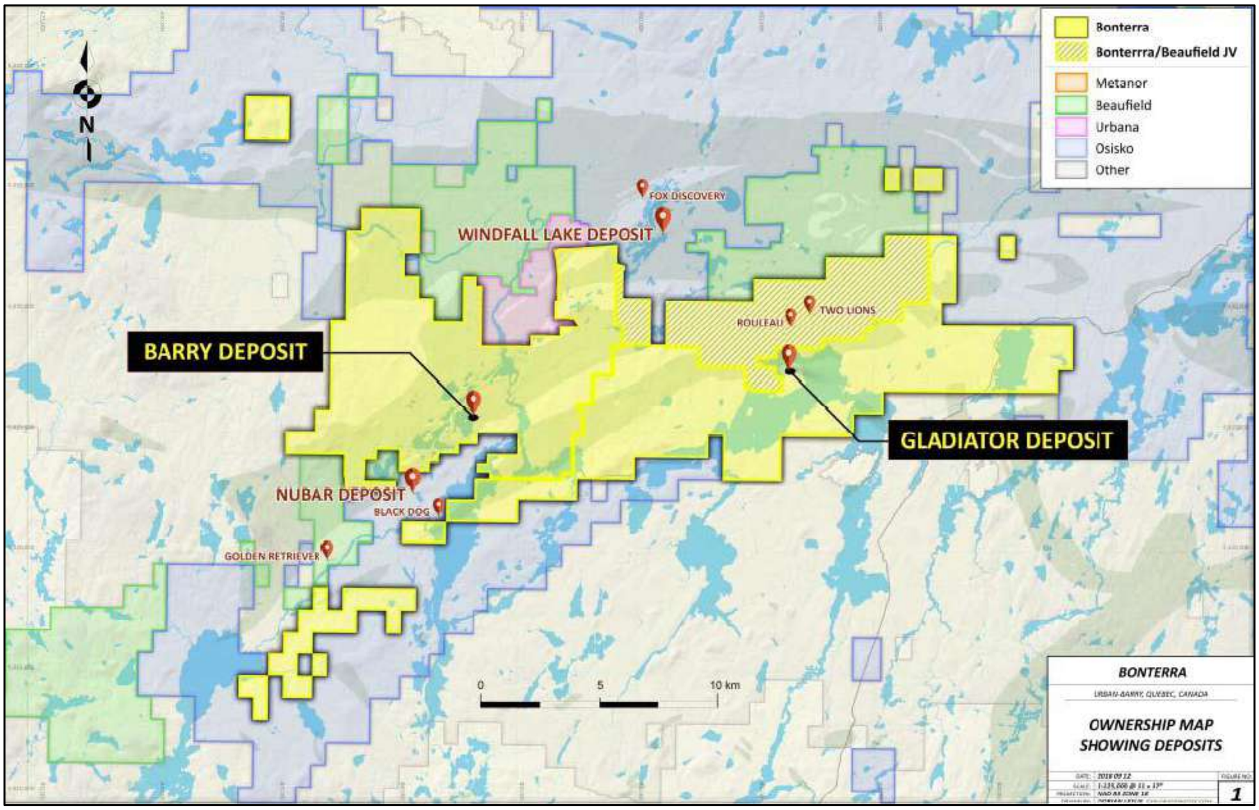
The Windfall Lake deposit occurs within the Urban-Barry greenstone belt in the Northern Volcanic Zone of the Abitibi geological subprovince. The Urban-Barry greenstone belt has an east-west extent of 135 kilometres and is 4 to 20 kilometres wide. The Urban Barry greenstone belt contains mafic to felsic volcanic rock units and is cross-cut by several east-trending and east-northeast trending shear zones that delineate major structural domains. In the Windfall Lake deposit area, volcanic rocks are intruded by a series of younger quartz-feldspar porphyry dikes. All dikes and volcanic rocks are affected by the regional foliation. The intensity of the foliation and the overall strain vary greatly within individual rock units. At Windfall, the main gold event is temporally and spatially constrained by the emplacement of quartz porphyry dikes. The major dikes found at the Windfall Lake deposit are separated into 3 groups: pre-mineral dikes, syn-mineral dikes and post mineral dikes.

The Windfall Lake deposit most likely represents an Archean intrusion-related hydrothermal gold system. The term intrusion-related gold systems ("IRGS") is a relatively newly defined gold deposit class and has been described in recent years by many publications. IRGS are defined as magmatic-hydrothermal systems where gold mineralization is hosted primarily within the intrusions or in the immediate wall rocks of these intrusions. The porphyry intrusions in the Windfall Lake area are likely the source and a major factor controlling the occurrence of gold mineralization.

Based on data density, search ellipse criteria, drill hole density and interpolation parameters, the Indicated mineral resource for the Windfall Lake Project is estimated at 2,382,000 tonnes with an average grade of 7.85 g/t Au for 601,000 ounces of gold and the Inferred mineral resource is estimated at 10,605,000 tonnes with an average grade of 6.70 g/t Au for 2,284,000 ounces of gold, using a 3.00 g/t Au lower cut-off grade.

The most significant gold mineralization defined to date is currently known for a vertical extent of approximately 1200 metres in 4 zones; Main Zone (Zone 27, Caribou and Mallard), Underdog, Lynx, and F-Zones. Additional gold mineralization was discovered in July 2018 in the new "Triple 8 Zone".

Figure 23-1 Location of the Windfall Lake Deposit of Osisko Mining Inc.



Main Zone (Zone 27, Caribou and Mallard)

The Main Zone is subdivided into a series of sub parallel lenses along the corridors of Zone 27, Caribou, and Mallard, that all have the same style of mineralization. The gold mineralization occurs in several sub-vertical, northeast-trending lenses measuring between 2 to 12 metres. The gold mineralization contains gold bearing pyrite veinlets that are controlled by the contacts of the quartz porphyry dikes and can expand into the dike or several metres into the hanging wall and footwall rocks. Pyrite dominantly occurs as disseminations and as diffuse stockworks (breccias) of veinlets that locally contain significant amounts of tourmaline, Fe-carbonates and locally traces of chalcopyrite and sphalerite. Proximal to the mineralized intervals, the rocks have an alteration assemblage consisting of sericite > pyrite > silica > chlorite. The volcanic rocks and quartz-feldspar porphyry dikes that are spatially close to the mineralized zone contain strong pervasive and/or banded sericite, and pervasive or patchy silica alteration.

Underdog Zone

The main lithological feature of the Underdog mineralized zone is a large composite felsic to intermediate porphyritic stock hosted in low angle dipping felsic to mafic volcanic rocks. The stock is later intruded by two smaller volumetric phases, including a quartz-feldspar-plagioclase porphyry dike with biotitic and sericitic alteration, and a quartz porphyry dike with silica-sericite (tourmaline) alteration. The dikes may have acted as conduits for gold-rich hydrothermal fluids, an interpretation that is reinforced by the presence of strong sericite (+/-) silica alteration coupled with gold mineralization found proximal to the dike contacts. The gold mineralization is recognized as sub-vertical to steeply dipping envelopes with true widths averaging 2 to 8 metres and oriented east-northeast. Sulphide minerals include pyrite ± sphalerite-chalcopyrite-molybdenite and occur as disseminations and as stringers typically millimetric in size.

Lynx Zone

The geological interpretation for the Lynx zone is based on the relative timing of rock units and the spatial relationship of the gold mineralization with the syn-mineral dikes. The Lynx zone is often constrained to the silicified-sericitized contacts of the large quartz eyes felsic porphyry intrusive with the other rock types. A second significant gold mineralization is hosted within crustiform veins generally occurring near the upper contacts of the gabbro with the other rock types. The most significant mineralized intervals, locally with visible gold, are often related to pervasive silica flooding or crustiform-like veining. Mineralization in the Lynx zone is recognized as sub-vertical to steeply dipping envelopes, with true widths averaging 2 to 6 metres and oriented east-northeast.

F-Zone (F-17, F-51 and F-11)

The mineralized F-zones are of second order in terms of scale compared to the zones composing the main Windfall Lake deposit. The F-17 and F-51 zones are two separate zones of gold mineralization containing typical orogenic gold mineralization (also termed greenstone-hosted quartz-carbonate vein mineralization). The two zones, located approximately 450 m north-northeast from the Main zone, trend subparallel to the Main zone along a shear zone and dip steeply to the north. Both zones are aligned along the same trend but separated by approximately 500 m. Zones F-17 and F-51 are characterized by multiple quartz-feldspar porphyry dikes cross-cutting host mafic volcanic rocks. Gold mineralization is spatially associated with quartz-porphyry dikes restricted to the shear zone. Gold-associated alteration in F-17 and F-51 mineral zones consists of pervasive sericite-carbonate ± silica alteration. Gold mineralization is hosted in pyrite veinlets, quartz-ankerite-pyrite veins and silica-tourmaline-pyrite breccias.

Triple 8

The new “Triple 8 Zone” was discovered in Deep Underdog hole DDH OSK-W-18-1603. Triple 8 was an unanticipated zone of mineralization intersected at approximately 1500 metres downhole. Triple 8 does not correlate with any known zone and is approximately 660 metres east from the closest known mineralized intercept in the Underdog Zone. This appears to be a new style of mineralization at Windfall, as mineralizing fluids followed flow contacts inside the andesite host rather than felsic intrusive contacts (no intrusion is directly associated with this Triple 8 intersection). The zone also contains minor, chalcopyrite, pyrrhotite, arsenopyrite and anomalous molybdenum and zinc values. The new discovery zone falls well outside the area of the recently announced mineral resource estimate for the Windfall gold deposit.

24 OTHER RELEVANT DATA AND INFORMATION

The following risks and opportunities were identified that could affect the future economic outcome of the project. The following does not include external risks that apply to all exploration and development projects (e.g., changes in metal prices, exchange rates, availability of investment capital, change in government regulations, etc.).

There is no other relevant data or information available that is necessary to make the technical report understandable and not misleading. To the Authors knowledge, there are no additional risks or uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information or mineral resource estimate.

24.1 RISKS

24.1.1 Mineral Resource Estimate

Approximately 55% of the contained metal of the Barry Deposit and 82 % of the Gladiator Deposit, at the reported cut-off grades for the current Mineral Resources, are in the Inferred Mineral Resource classification. The Inferred Resources are based on limited information and although it is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated or Measured Mineral Resources with infill drilling, it is not guaranteed.

The vein structures (mineralized domains) in both the Barry and Gladiator Deposits have complex geometries. The mineralization zones might be of slightly variable shapes from what have been modeled. A different interpretation from the current mineralization models may adversely affect the current Mineral Resource Estimates. Underground mapping (Barry Deposit) and definition drilling may help define with more precision the shapes of the zones and confirm the geological and grade continuities of the zones.

There are currently no litho-structural models for the Barry and Gladiator Deposits. As discussed above, the vein structures (mineralized domains) in both the Barry and Gladiator Deposits have complex geometries. A detailed litho-structural study and development of detailed litho-structural models may result in a different interpretation of the current mineralization models and adversely affect the current Mineral Resource Estimates.

As discussed in section 11 above, during the initial analysis of the results of the CRM's for the Gladiator Deposit QA/QC, numerous mislabelled standards were identified by SGS and were corrected by Bonterra prior to the final analysis of the QA/QC data. After discussions with the Bonterra geologists, it became apparent that the QA/QC data was not being monitored on a regular basis. Although the results of the QA/QC programs to date on the Gladiator Property indicate there are no significant issues with the drill core assay data, the Authors strongly recommend that Bonterra monitor and review all QA/QC data on a more regular basis, preferably upon receipt of each and every lab report. Minor modification of resource estimation may occur due to poor QA/QC results resulting in a lack of confidence in the assay database. Issues with QA/QC results need to be addressed in a timely manner.

24.2 OPPORTUNITIES

24.2.1 Mineral Resource Estimate

There is an opportunity on both the Gladiator and Barry Deposits to extend known mineralization at depth and elsewhere on the Property and to potentially convert Inferred Mineral Resource to Indicated Mineral Resources. Bonterra's intentions are to direct their exploration efforts towards resource growth in 2019 with a focus on extending the limits of known mineralization and testing other targets on the greater Property.

The Barry Deposit is permitted for initial mine development access and bulk sampling, with decline and cross cut development currently underway. Recent drilling has resulted in the expansion of high-grade areas down plunge at each known strike extent. Bonterra expects to rapidly increase the size of the Barry Deposit especially at depth, given that very little drilling has previously taken place below 300 metres depth over a one kilometer strike length.

25 CONCLUSIONS

SGS was contracted by Bonterra Resources Inc. to complete Mineral Resource Estimates for the Gladiator and Barry Deposits of the Urban Barry Property ("Property"), located approximately 185 km northeast of the community of Val-d'Or, Quebec, Canada, and to prepare a technical report written in support of the updated Mineral Resource Estimates. The reporting of the Mineral Resource Estimates comply with all disclosure requirements for Mineral Resources set out in the NI 43-101 Standards of Disclosure for Mineral Projects. The classification of the updated Mineral Resource is consistent with current CIM Definition Standards - For Mineral Resources and Mineral Reserves (2014).

The updated Mineral Resource Estimates presented in this report were estimated by Allan Armitage, Ph.D., P. Geo. The current report is authored by Armitage and Olivier Vadnais-Leblanc, B.Sc., géo., both of SGS. Armitage and Vadnais-Leblanc are independent Qualified Persons as defined by NI 43-101.

Completion of the current Mineral Resource Estimates for the Barry and Gladiator Deposits involved the assessment of drill hole databases, which included all data for drilling completed through early 2019, updated three-dimensional (3D) grade-controlled wireframe models, review of the classification of the mineral resource estimate (Measured, Indicated and Inferred) and review of available written reports.

Inverse Distance Squared ("ID^2") restricted to grade-controlled wireframe models was used to Interpolate gold grades (g/t Au) into block models. The Mineral Resource Estimates for the Barry and Gladiator Deposits take into consideration that the current Barry and Gladiator Deposit mineralization are amenable for underground extraction.

Highlights of the *Barry Deposit* Mineral Resource Estimate are as follows (Table 25-1):

- The underground mineral resource includes, at a cut-off grade of 3.5 g/t Au, 385,000 ounces of gold (2.05 million tonnes at an average grade of 5.84 g/t Au) in the Indicated category, and 453,000 ounces of gold (2.74 million tonnes at an average grade of 5.14 g/t Au) in the Inferred category.

Highlights of the *Gladiator Deposit* Mineral Resource Estimate are as follows (Table 26-2):

- The underground mineral resource includes, at a cut-off grade of 3.5 g/t Au, 202,000 ounces of gold (0.74 million tonnes at an average grade of 8.46 g/t Au) in the Indicated category, and 897,000 ounces of gold (3.07 million tonnes at an average grade of 9.10 g/t Au) in the Inferred category.

Table 25-1 Barry Deposit 2019 Mineral Resource Estimate, May 24, 2019

Category	Tonnes	Grade (g/t Au)	Contained Au (oz)
Indicated	2,052,000	5.84	385,000
Inferred	2,740,000	5.14	453,000

Table 25-2 Gladiator Deposit 2019 Mineral Resource Estimate, May 24, 2019

Category	Tonnes	Grade (g/t Au)	Contained Au (oz)
Indicated	743,000	8.46	202,000
Inferred	3,065,000	9.10	897,000

(1) *The classification of the current Mineral Resource Estimates into Indicated and Inferred is consistent with current 2014 CIM Definition Standards - For Mineral Resources and Mineral Reserves*

(2) *Mineral resources which are not mineral reserves do not have demonstrated economic viability. An Inferred Mineral Resource has a lower level of confidence than that applying to a Measured and 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.*

(3) *All figures are rounded to reflect the relative accuracy of the estimate. Composites have been capped where appropriate.*

(4) *Resources are presented undiluted and in situ and are considered to have reasonable prospects for economic extraction.*

(5) *Underground mineral resources are reported at a cut-off grade of 3.5 g/t Au. Cut-off grade is based on a gold price of US$1,300 per ounce, a foreign exchange rate of US$0.75, and a gold recovery of 95%.*

(6) *High grade capping was done on composite data. A capping value of 40 g/t Au for Barry and 55 g/t Au for Gladiator was applied to all 3D grade controlled wireframe models.*

(7) *A fixed specific gravity value of 2.82 for Barry and 2.78 for Gladiator was used to estimate the tonnage from block model volumes.*

(8) Mineral Resources are exclusive of material that has been mined (Barry Deposit).

(9) The Authors are not aware of any known environmental, permitting, legal, title-related, taxation, socio-political or marketing issues, or any other relevant issue not reported in the technical report, that could materially affect the mineral resource estimate.

The Mineral Resource Estimates for the Barry and Gladiator Deposits were prepared and disclosed in compliance with all current disclosure requirements for mineral resources set out in the NI 43-101 Standards of Disclosure for Mineral Projects. The classification of the current Mineral Resource Estimate into Indicated and Inferred is consistent with current 2014 CIM Definition Standards - For Mineral Resources and Mineral Reserves, including the critical requirement that all mineral resources "have reasonable prospects for eventual economic extraction".

The general requirement that all mineral resources have "reasonable prospects for economic extraction" implies that the quantity and grade estimates meet certain economic thresholds and that the mineral resources are reported at an appropriate cut-off grade taking into account extraction scenarios and processing recoveries.

In order to determine the quantities of material offering "reasonable prospects for economic extraction" by underground mining methods, reasonable mining assumptions to evaluate the proportions of the block model (Indicated and Inferred blocks) that could be "reasonably expected" to be mined from underground are used. The underground parameters used are summarized in Table 25-3. A selected cut-off grade of 3.5 g/t Au is used to determine the Mineral Resource of the Barry and Gladiator Deposits.

Table 25-3 Parameters Used to Estimate the Underground Cut-off Grade for the 2019 Barry Mineral Resource Estimate

Parameter	Value	Unit
Gold Price	$1,300/$1733	US$/CDN$ per ounce
Exchange Rate	0.75	$US/$CDN
Gold Recovery	95	Percent (%)
Assumed Mining and Processing Costs		
Mining Cost	$69.00/$92.00	US$/CDN$ per tonne mined
Processing Cost	$18.75/$25.00	US$/CDN$ per tonne milled
General and Administrative	$22.50/$30.00	US$/CDN$ per tonne milled
Transportation Cost	$15.00/$20.00	US$/CDN$ per tonne milled
Mining Recovery	90	Percent (%)
Cut-Off Grade	3.50	g/t Au

All geological data for the Barry and Gladiator Deposits was reviewed and verified by the Authors as being accurate to the extent possible and to the extent possible all geologic information was reviewed and confirmed. The Authors are of the opinion that the assay sampling and extensive QA/QC sampling of core by Bonterra provides adequate and good verification of the data. The Authors believe the data is of sufficient quality to be used for the current resource estimate.

There is no other relevant data or information available that is necessary to make the technical report understandable and not misleading. The Authors are not aware of any known mining, processing, metallurgical, environmental, infrastructure, economic, permitting, legal, title, taxation, socio-political, or marketing issues, or any other relevant factors not reported in this technical report, that could materially affect the current Mineral Resource Estimate.

26 RECOMMENDATIONS

The Authors consider that the Gladiator and Barry Deposits contain significant underground Mineral Resources that are associated with well-defined gold mineralized trends and models.

The Authors consider that both the Barry and Gladiator Properties of the Urban-Barry Property have significant potential for delineation of additional Mineral Resources and that further exploration is warranted. Bonterra's intentions are to continue to drill the Barry and Gladiator Deposits through the second half of 2019 and plan to direct their exploration efforts towards resource growth (underground), with a focus on extending the limits of known mineralization along strike and at depth, as well as infill drill the existing deposit in order to convert portions of Inferred mineral resources into Indicated or Measured.

Given the prospective nature of the Urban-Barry Property, it is the Author's opinion that the Urban-Barry Property merits further exploration and that a proposed plan for further work by Bonterra are justified. A proposed work program by Bonterra will help advance the Deposits toward a pre-development stage and will provide key inputs required to evaluate the economic viability of a mining project (underground) at a Preliminary Economic Assessment ("PEA") or Pre-feasibility ("PFS") level.

SGS is recommending Bonterra conduct further exploration, subject to funding and any other matters which may cause the proposed exploration program to be altered in the normal course of its business activities or alterations which may affect the program as a result of exploration activities themselves.

For the second half of 2019, a total of 17,000 metres of drilling is being budgeted for the Gladiator Property. The focus of the drilling on the Gladiator Deposit will be on extending the limits of known mineralization along strike and at depth, as well as infill drill the existing deposit in order to convert portions of Inferred mineral resources into Indicated or Measured. The total cost of the recommended work program on the Gladiator Deposit is estimated at C$2,300,896 million (Table 26-1).

Infill drilling on both the Gladiator Deposit will provide additional information to better define the vein structures (mineralized domains) which host the current Mineral Resource. Definition may help define with more precision the shapes of the zones and confirm the geological and grade continuities of the zones.

There are currently no litho-structural models for the Gladiator Deposit. A detailed litho-structural study and development of detailed litho-structural models may help interpretation of the current mineralization models for the Gladiator Deposit and help better define Mineral Resources.

A total of 18,000 metres of surface drilling is being budgeted for the Barry Property. The focus of the drilling on the Barry Deposit will be on extending the limits of known mineralization along strike. The total cost of the recommended work program on the Barry Property is estimated at C$2,135,550 million (Table 26-2).

There are currently no plans to continue underground development of underground drilling on the Barry Property.

Table 26-1 Recommended 2019 Work Program for the Gladiator Property

Gladiator	
Item	**Program 17,000 m Infill and Step Out**
Drilling ($80 per m)	**1,360,000 $**
Internal Assay - Barry Mill ($16/sample)	**173,706 $**
External Check Assay 10% ($25/sample)	**21,250 $**
Chief geologist	**76,800 $**
Log Geo	**100,800 $**
Geotech	**58,800 $**
Cutter	**90,540 $**
Ice brdige building /Barge	**20,000 $**
Cutting recovery system	**28,000 $**
	- $
Exploration materials	**18,000 $**
Gyro + reflex	**102,000 $**
	- $
Env Consultant	**- $**
Opening access	**10,000 $**
claims	**6,000 $**
Geophysics IP	**200,000 $**
Geophysics Air Mag	**35,000 $**
Total:	**2,300,896 $**

Table 26-2 Recommended 2019 Work Program for the Barry Property

Barry	
Item	**Program 18,000 m Infill and Step Out**
Drilling ($80 per m)	**1,440,000 $**
Internal Assay - Barry Mill ($17/sample)	**198,900 $**
External Check Assay 10% ($25/sample)	**29,250 $**
Chief geologist	**77,400 $**
Log Geo	**96,000 $**
Core Cutter	**30,000 $**
Exploration materials	**18,000 $**
Mobilization	**- $**
Reflex	**9,000 $**
Core orienter	**18,000 $**
Env Permtiing and consultant	**4,000 $**
Opening Drill access	**30,000 $**
Geophysics Air Mag	**85,000 $**
Soil Gechemistry	**100,000 $**
Total:	**2,135,550 $**

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28 DATE AND SIGNATURE PAGE

This report titled "Technical Report on the Resource Estimates for the Barry and Gladiator Deposits, Urban Barry Exploration Camp, Lebel-sur-Quévillon, Quebec, Canada" dated July 11, 2019 (the "Technical Report") for Bonterra Resources Inc. was prepared and signed by the following authors:

The effective date of the report is May 24, 2019.
The date of the report is July 11, 2019.

Signed by:

Qualified Persons	Company
Allan Armitage, Ph. D., P. Geo.	SGS Geological Services ("SGS")
Olivier Vadnais-Leblanc, B.Sc., géo.	SGS Geological Services ("SGS")

July 11, 2019

29 CERTIFICATES OF QUALIFIED PERSONS

QP CERTIFICATE – ALLAN ARMITAGE

To Accompany the Report titled "**Technical Report on the Resource Estimates for the Barry and Gladiator Deposits, Urban Barry Exploration Camp, Lebel-sur-Quévillon, Quebec, Canada"** dated July 11, 2018 (the "Technical Report") for Bonterra Resources Inc.

I, Allan E. Armitage, Ph. D., P. Geol. of 62 River Front Way, Fredericton, New Brunswick, hereby certify that:

1. I am a Senior Resource Geologist with SGS Canada Inc., 10 de la Seigneurie E blvd., Unit 203 Blainville, QC, Canada, J7C 3V5 (www.geostat.com).

2. I am a graduate of Acadia University having obtained the degree of Bachelor of Science - Honours in Geology in 1989, a graduate of Laurentian University having obtained the degree of Masters of Science in Geology in 1992 and a graduate of the University of Western Ontario having obtained a Doctor of Philosophy in Geology in 1998.

3. I have been employed as a geologist for every field season (May - October) from 1987 to 1996. I have been continuously employed as a geologist since March of 1997.

4. I have been involved in mineral exploration and resource modeling for gold, silver, copper, lead, zinc, nickel, and uranium in Canada, Mexico, Honduras, Chile, Cuba and Peru at the grass roots to advanced exploration stage since 1991, including resource estimation since 2006.

5. I am a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta and use the title of Professional Geologist (P.Geol.) (License No. 64456; 1999), I am a member of the Association of Professional Engineers and Geoscientists of British Columbia and use the designation (P.Geo.) (Licence No. 38144; 2012), and I am a member of The Association of Professional Geoscientists of Ontario (APGO) and use the designation (P.Geo.) (Licence No. 2829; 2017),

6. I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation of my professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person".

7. I am an author of this report and responsible for sections 1, 2 to 8, 13, 14, 23, 24, 25 and 26. I have reviewed these sections and accept professional responsibility for these sections of this technical report.

8. I conducted a site visit to the Gladiator Deposit on September 18 and 19, 2018. I conducted a site visit to the Barry Deposit on August the 8 and 9, 2018.

9. I have had no prior involvement in the Barry or Gladiator Deposits of the Urban Barry Exploration Camp.

10. I am independent of Bonterra Resources Inc.as defined by Section 1.5 of NI 43-101.

11. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

12. I have read NI 43-101 and Form 43-101F1 (the "Form"), and the Technical Report has been prepared in compliance with NI 43-101 and the Form.

Signed and dated this 11th day of July, 2019 at Fredericton, New Brunswick.

"Original Signed and Sealed"

Allan Armitage, Ph. D., P. Geo., SGS Canada Inc.

QP CERTIFICATE – OLIVIER VADNAIS-LEBLANC

To Accompany the Report titled "**Technical Report on the Resource Estimates for the Barry and Gladiator Deposits, Urban Barry Exploration Camp, Lebel-sur-Quévillon, Quebec, Canada"** dated July 11, 2018 (the "Technical Report") for Bonterra Resources Inc.

I, Olivier Vadnais-Leblanc, B.Sc., géo. of 5427 Lafond, Montréal, QC do hereby certify that:

1. I am a Project Geologist with SGS Canada Inc. (SGS Geostat), located at 10 boul. de la Seigneurie E, Unit 203, Blainville, Québec, Canada, J7C 3V5.
2. I graduated with a Bachelor degree in Geology from UQAM in 2006 and have practiced the profession of geoscience since graduation. I have previously worked with Les Mines Opinaca (Goldcorp) from 2006 to 2016. From 2016 to 2017 I worked as a Geologist for Englobe. I have a total of 12 years' experience in the mining industry including a background in international mineral exploration, and production geology. Additional experience includes ground support surveillance for the digging of tunnels.
3. I am a registered Professional Geologist (géo.) registered with the Ordre des Géologues du Québec (No. 1082).
4. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5. I have completed a site visit to the Barry property that is the subject of this technical report on August 09 to August 10, 2018, but I have not completed a site visit to the Gladiator property .
6. I am an author of this report and responsible for sections 9, 10, 11 and 12 of the Technical Report. I have reviewed these sections and accept professional responsibility for these sections of this technical report.
7. I have no prior involvement with Bonterra Resources Ltd., their Principals or their shareholders.
8. I am independent of the issuer as defined in section 1.5 of National Instrument 43-101.
9. I have had no prior involvement with the Barry or Gladiator Project that is the subject of this report. I have read NI 43-101 and Form 43-101F1 and the Report has been prepared in compliance therewith.
10. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
11. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Signed and dated this 11th day of July, 2019

"Original Signed and Sealed"

Olivier Vadnais-Leblanc, B.Sc., géo.

APPENDIX A

Drilling Collar Coordinates, Azimuth, Dip, and Hole Depth

2012 – 2019 Gladiator Deposit

Hole Name	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
BA-12-01	456266.00	5427901.00	390.00	340.45	-61	423
BA-12-02	456266.00	5427901.00	390.00	340.45	-61	525
BA-12-03	456282.00	5427986.00	390.00	340.45	-60	141
BA-12-04	456313.00	5427983.00	390.00	340.45	-60	141
BA-12-05	456290.00	5428042.00	390.00	340.45	-60	201
BA-12-06	456228.00	5427913.00	390.00	340.45	-60	201
BA-12-07	456037.00	5428060.00	390.00	160.45	-45	429
BA-12-08	455220.00	5427581.00	390.00	340.45	-65	354
BA-12-09	456136.00	5428141.00	390.00	160.45	-55	274
BA-12-10	455262.80	5428019.40	391.56	160.45	-50	429
BA-12-11	456221.00	5428140.00	390.00	160.45	-60	140.3
BA-12-12	455285.00	5427971.00	390.00	165.45	-50	378
BA-12-13	455262.71	5428019.63	391.57	160.45	-57	447
BA-12-14	455265.45	5428058.61	391.89	165.45	-60	492
BA-12-15	455317.00	5428048.00	390.00	160.45	-50	331
BA-15-01	456130.00	5428134.00	396.00	166.45	-57	15
BA-15-01A	456133.30	5428133.64	390.76	166.92	-56.96	378
BA-15-02	456132.52	5428133.93	390.98	174.45	-62	501
BA-15-03	456131.99	5428133.78	390.99	192.45	-60	504.4
BA-15-04	456134.72	5428137.17	391.27	154.84	-58.05	324
BA-16-01	455972.72	5428105.55	382.00	153.45	-54	480
BA-16-02	455985.16	5428153.15	380.00	155.05	-61	552
BA-16-03	456024.39	5427999.83	382.00	160.45	-50	195
BA-16-04	456121.25	5428069.11	382.00	160.45	-50	255
BA-16-05	456068.23	5428029.54	382.00	160.45	-50	354
BA-16-06	456041.05	5428151.95	382.00	154.45	-65	465
BA-16-07	456002.00	5428051.00	382.00	155.45	-52	432
BA-16-08	455933.09	5428067.92	382.00	154.05	-53.2	393
BA-16-09	455981.39	5427984.83	382.00	160.45	-50	405
BA-16-10	455928.96	5428069.79	382.00	154.45	-62	555
BA-16-11	455982.06	5427980.98	382.00	156.45	-62.06	369
BA-16-12	455914.47	5427973.25	382.00	157.47	-51.49	333
BA-16-13	456023.22	5428108.72	382.00	154.95	-50	324
BA-16-14	455880.53	5427989.87	382.00	162.66	-50	399
BA-16-15	455895.71	5428060.27	382.00	158.45	-50	432.6
BA-16-16	455837.31	5427991.67	382.00	165.45	-50.04	375
BA-16-17	455894.66	5428056.35	382.00	157.94	-60	579
BA-16-18B	455837.35	5427986.37	382.00	165.45	-60	450
BA-16-19	455864.00	5428037.00	381.00	163.90	-60.51	516
BA-16-20	456192.75	5428168.71	394.36	158.45	-55	348
BA-16-21	456192.29	5428169.21	394.43	173.45	-55	168
BA-16-21B	456192.50	5428169.73	394.53	173.45	-55	363
BA-16-22	456239.01	5428223.00	396.40	166.04	-52.89	462

Hole Name	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
BA-16-23	456238.80	5428222.66	396.50	148.73	-51.17	474
BA-16-24	456346.91	5428247.07	392.74	153.45	-60	402
BA-16-25	456296.67	5428285.05	396.96	155.45	-60.59	474
BA-16-26	456272.31	5428367.93	395.94	145.72	-55.5	696
BA-16-27	456270.96	5428367.79	395.73	143.95	-62	804
BA-16-28	456391.13	5428361.97	394.39	157.45	-60	681
BA-16-29	456389.13	5428291.40	392.26	155.45	-56	483
BA-16-30	456150.62	5428384.60	390.86	140.45	-55	702
BA-16-31	456145.80	5428387.50	390.00	162.45	-60	777
BA-16-32	456345.36	5428171.31	391.08	145.45	-50	198
BA-16-33	456365.80	5428224.90	390.00	150.45	-50	393
BA-16-34A	456407.55	5428282.49	391.34	150.45	-48	363
BA-16-35	456471.65	5428262.59	391.18	150.45	-47	390
BA-16-36	456503.33	5428272.53	391.19	156.19	-50	498
BA-16-37	456753.00	5428320.00	390.00	155.45	-47	390
BA-16-38	456147.18	5428384.40	390.20	115.45	-67	816
BA-16-39	456149.57	5428384.21	390.90	142.45	-67	894
BA-16-40	455582.06	5428103.22	394.60	142.45	-47	582
BA-16-41	456311.00	5428451.00	390.00	172.45	-68	968
BA-16-42	455582.77	5428104.07	395.18	154.45	-47	639
BA-16-43	456311.24	5428449.88	394.24	148.45	-68	999
BA-16-44	455582.62	5428104.37	395.14	154.45	-58	729
BA-16-45	455583.40	5428103.96	394.86	170.45	-47	657
BA-16-46	456271.19	5428367.58	395.52	156.45	-65	944
BA-16-47	455354.19	5428004.71	391.52	138.45	-48	579
BA-16-48	455352.72	5428004.11	391.50	160.45	-50	585
BA-16-49	456272.25	5428368.06	395.78	180.45	-60	924
BA-16-50	455268.70	5428067.70	392.58	180.45	-50	502
BA-16-51	455268.67	5428067.98	392.53	180.95	-60	501
BA-17-01	456200.14	5428344.15	392.86	163.95	-52	624
BA-17-02	456521.90	5428463.50	392.00	164.45	-68	896
BA-17-03	456314.00	5428452.00	394.00	152.45	-72	1347
BA-17-04	455908.00	5428130.00	385.00	165.95	-65	645
BA-17-05	455812.00	5428068.00	385.00	158.45	-65	714
BA-17-06	455790.00	5427972.00	385.00	159.45	-48	522
BA-17-07	455747.00	5428089.00	385.00	158.45	-63.57	732
BA-17-08	455694.00	5427939.00	385.00	159.45	-49.22	504
BA-17-09	455726.26	5428053.26	385.00	162.91	-52.6	618
BA-17-10	455625.44	5427912.72	390.00	160.52	-47.86	444
BA-17-11	455665.49	5428031.18	385.00	160.45	-51	543
BA-17-12	455557.88	5427900.74	385.00	160.45	-45.03	396
BA-17-13	455836.79	5428334.03	391.87	168.45	-60	1005
BA-17-14	455836.84	5428333.94	391.99	165.45	-55	996
BA-17-15	455837.67	5428333.21	392.03	140.45	-60	1056
BA-17-16	456521.90	5428463.50	392.00	160.45	-55	750
BA-17-17	456521.00	5428463.00	390.00	140.45	-60	528
BA-17-18	456524.00	5427499.00	388.00	295.45	-63	1497
BA-17-19	455837.67	5428333.52	392.01	142.45	-55	807.9
BA-17-20	455837.64	5428332.86	391.99	146.45	-56	960
BA-17-21	455836.82	5428332.83	391.91	155.45	-58	1041
BA-17-22	456400.00	5427454.00	388.00	294.45	-54	1314
BA-17-23	455837.96	5428332.97	391.77	153.45	-50	696
BA-17-24	455837.11	5428332.32	391.90	164.14	-50.17	1095

Hole Name	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
BA-17-25	455821.00	5428356.00	390.00	126.45	-45.3	609
BA-17-26	456622.00	5427478.00	386.00	330.45	-60	450
BA-17-27	455837.25	5428332.74	392.06	145.45	-49	969
BA-17-28	455821.00	5428356.00	390.00	130.45	-49	999
BA-17-29	456400.00	5427454.00	390.00	353.45	-60	1290
BA-17-30	455837.20	5428332.92	391.99	157.45	-59	1101
BA-17-31	455820.09	5428356.18	391.29	125.45	-57	1065.6
BA-17-32	455837.28	5428333.00	391.93	145.35	-64	1114
BA-17-33	455820.26	5428355.88	391.40	135.45	-58	1065
BA-17-34	455836.58	5428333.03	391.83	160.45	-66	1185
BA-17-35	456400.00	5427454.00	388.00	324.45	-62	1368
BA-17-36	456189.95	5428295.68	392.33	137.45	-50	1098
BA-17-37	456307.04	5428446.30	394.38	156.45	-48	867
BA-17-38	455820.62	5428356.17	391.48	129.45	-55	1158
BA-17-39	456306.93	5428446.57	394.44	154.45	-58	135
BA-17-39A	456306.59	5428447.36	394.39	154.45	-58	120
BA-17-39B	456306.81	5428446.89	394.45	152.45	-57	954
BA-17-40	456523.00	5427499.00	386.00	343.45	-62	360
BA-17-40A	456523.00	5427499.00	386.00	343.45	-62	993
BA-17-41	455821.35	5428347.26	391.44	134.45	-65	1350
BA-17-42	456190.09	5428293.85	392.23	160.45	-50	192
BA-17-42A	456190.06	5428294.33	392.38	158.45	-50	732
BA-17-43	456312.75	5428450.23	394.37	153.45	-64	39
BA-17-43A	456314.01	5428451.55	393.98	154.45	-62	90
BA-17-43B	456306.78	5428447.50	394.39	150.45	-62	1131
BA-17-44	456188.84	5428293.86	392.31	176.55	-51.4	924
BA-17-45A	455823.00	5428345.00	388.00	130.45	-52	18
BA-17-45B	455823.00	5428345.00	388.00	130.45	-52	1107
BA-17-46	456224.00	5428451.00	390.00	160.45	-52	1047
BA-17-47	456188.94	5428294.09	392.18	174.45	-56	180
BA-17-48	456189.52	5428294.14	392.30	165.45	-52	819
BA-17-49	456187.00	5428302.00	390.00	186.45	-54	60
BA-17-49A	456187.00	5428302.00	390.00	182.45	-58	120
BA-17-49B	456189.02	5428294.46	392.19	182.45	-58	897
BA-17-50	455821.78	5428347.50	391.61	150.45	-48	898
BA-17-51	455821.00	5428356.00	388.00	120.45	-58	34
BA-17-51B	455821.69	5428347.59	391.59	120.45	-58	1050
BA-17-52	456779.35	5428391.34	391.68	160.45	-65	918.2
BA-17-53	456318.76	5428437.92	394.91	158.45	-60	132
BA-17-53A	456318.56	5428438.09	394.89	151.45	-68	33
BA-17-53B	456312.00	5428443.00	372.00	151.45	-68	1254
BA-18-01	456173.36	5428077.34	391.06	158.45	-62	99
BA-18-02	456522.00	5428461.00	384.00	168.45	-58	942
BA-18-03	456318.46	5428437.67	394.90	160.45	-67	105
BA-18-03A	456318.43	5428438.33	394.86	160.45	-67	1243.5
BA-18-04	455960.30	5428018.20	385.00	157.45	-58	480
BA-18-05	455958.50	5428377.30	385.00	140.45	-60	1092
BA-18-06	456063.90	5428294.00	385.00	160.45	-50	804
BA-18-07	455592.00	5427909.00	385.00	160.45	-50	546
BA-18-08	455661.40	5427923.50	385.00	160.45	-50	399
BA-18-09	456039.90	5428230.90	385.00	158.45	-55	788.3
BA-18-10	456032.00	5428410.00	385.00	156.45	-53	121.5
BA-18-10A	456026.30	5428400.00	385.00	156.45	-53	924

Hole Name	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
BA-18-11	455952.90	5427981.50	385.00	159.45	-51	501
BA-18-12	455726.70	5427950.20	385.00	160.45	-50	429
BA-18-13	455396.40	5427880.60	385.00	160.45	-50	318
BA-18-14	456017.70	5428272.00	385.00	159.45	-56	834
BA-18-15	455769.20	5427964.00	385.00	160.45	-50	414
BA-18-16	455374.30	5427930.00	385.00	160.45	-50	402
BA-18-17	455772.70	5428040.60	385.00	161.45	-49	432
BA-18-18	455419.70	5427943.00	385.00	160.45	-50	402
BA-18-19	456004.40	5428350.00	385.00	154.45	-58	993
BA-18-20	455697.85	5428029.64	385.00	159.45	-51	529
BA-18-21	455467.87	5427954.61	385.00	160.45	-50	408
BA-18-22	455981.00	5428264.00	385.00	155.45	-48	99
BA-18-22A	455982.33	5428262.93	385.00	153.45	-50	718
BA-18-23	455630.47	5428010.02	385.00	160.45	-50	501
BA-18-24	455853.65	5428125.59	385.00	165.45	-58	637
BA-18-25	455454.36	5428009.13	384.99	160.45	-50	501
BA-18-26	455564.40	5427981.40	385.00	160.45	-50	444
BA-18-27	456072.00	5428375.00	385.00	158.45	-52	210
BA-18-27A	456073.80	5428373.00	384.99	158.45	-52	846
BA-18-28	455488.30	5428024.40	384.98	160.45	-50	464.5
BA-18-29	455514.80	5427971.80	385.00	160.45	-50	456
BA-18-30	456224.00	5428451.00	390.00	162.45	-56	1002
BA-18-31	456082.00	5428421.00	385.20	152.45	-53	882
BA-18-32	456228.58	5428446.82	391.26	158.45	-59	963
BA-18-33	455555.40	5428044.90	385.07	160.45	-50	528
BA-18-34	455555.31	5428045.04	385.07	148.45	-48	561
BA-18-35	456189.64	5428164.40	394.08	154.45	-54	627
BA-18-36	456522.00	5428461.00	384.00	158.45	-65	1128
BA-18-37	456312.00	5428443.00	390.00	156.45	-68	1377
BA-18-38	455317.00	5428047.00	390.00	138.45	-54	681
BA-18-39	456189.25	5428294.27	392.20	154.45	-52	678
BA-18-40	455317.00	5428047.00	390.00	155.45	-54	594
BA-18-41	456526.95	5428460.61	391.98	159.45	-68	1308
BA-18-42	456262.00	5428288.00	371.00	152.45	-56	768
BA-18-43	455317.00	5428047.00	390.00	165.45	-54	588
BA-18-44	455317.00	5428047.00	390.00	165.45	-48	528
BA-18-45	456271.00	5428366.00	390.00	154.45	-56	804
BA-18-46	456227.77	5428445.68	391.20	160.45	-53	96.8
BA-18-46A	456227.89	5428446.00	391.32	162.45	-53	924
BA-18-47	455317.00	5428047.00	390.00	145.45	-48	603
BA-18-48	456409.00	5428459.00	390.00	160.45	-61	1059
BA-18-49A	455317.00	5428047.00	390.00	130.45	-58	855
BA-18-50	456296.00	5428286.00	390.00	146.45	-58	701.6
BA-18-51A	456409.00	5428459.00	390.00	152.45	-59	477
BA-18-52	456240.00	5428220.00	391.00	160.45	-48	546
BA-18-53	456262.00	5428425.00	390.00	162.45	-62	157
BA-18-53A	456262.00	5428425.00	390.00	158.45	-64	1124
BA-18-54	456409.00	5428459.00	390.00	152.45	-66	1242
BA-18-55	455317.00	5428047.00	390.00	146.45	-60	837
BA-18-56	456240.00	5428220.00	390.00	151.45	-55	540
BA-18-57	456194.00	5428269.00	390.00	157.45	-64	50.5
BA-18-57A	456194.00	5428269.00	390.00	156.45	-64	831
BA-18-58	455717.00	5428306.00	390.00	148.45	-50	963

Hole Name	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
BA-18-59	456408.00	5428458.00	390.00	162.45	-64	258
BA-18-59A	456407.62	5428458.45	390.00	165.45	-63	1005
BA-18-60	456262.00	5428425.00	390.00	152.45	-63	1194
BA-18-61B	456192.00	5428170.00	390.00	162.45	-62	798
BA-18-62	456205.00	5428353.00	390.00	158.45	-55	837
BA-18-63	456194.00	5428269.00	390.00	175.45	-56	738
BA-18-64	456205.00	5428353.00	390.00	166.45	-58	993
BA-18-65	456262.00	5428425.00	390.00	148.45	-69	996.7
BA-18-66	456297.00	5428285.00	388.00	161.45	-48	41.6
BA-18-66A	456297.00	5428285.00	388.00	161.45	-48	579
BA-18-67	456194.00	5428269.00	390.00	155.45	-56	132
BA-18-67A	456194.00	5428269.00	390.00	155.45	-56	702
BA-18-68	455723.00	5428373.00	390.00	143.45	-57	1161
BA-18-69	455429.00	5428085.00	390.00	155.45	-52	606
BA-18-70	455526.00	5428206.00	390.00	148.45	-50	936
BA-18-71	455989.00	5428597.00	390.00	144.45	-55	30
BA-18-71A	455999.00	5428581.00	385.00	145.45	-55	1215
BA-18-72	455465.00	5428116.00	390.00	150.45	-54	654
BL-2000-08	456280.00	5428064.00	390.00	340.45	-75	101.19
BL-2000-09	456461.00	5428302.00	390.00	160.45	-45	71.93
BL-2001-01	456189.00	5428300.00	390.00	160.45	-70	1043.03
BL-2001-02	456325.00	5428248.00	390.00	340.45	-45	128.02
BL-2001-03	456325.00	5428247.00	390.00	340.45	-60	166.73
BL-2001-04	456326.00	5428244.00	390.00	160.45	-45	99.67
BL-2001-05	456394.00	5428321.00	390.00	160.45	-50	157.58
BL-2001-07	456237.00	5428197.00	390.00	160.45	-47	83.21
BL-2001-07A	456237.00	5428196.00	390.00	160.45	-52	17.68
BL-2001-08	456238.00	5428195.00	390.00	160.45	-58	284.68
BL-97-03	456885.00	5428370.00	390.00	160.45	-45	125.2
BL-97-04	456980.00	5428244.00	390.00	160.45	-45	199.6
BL-97-05	457354.00	5428244.00	390.00	160.45	-45	131.06
BL-97-06	456190.00	5428084.00	391.00	160.45	-42	201.02
BL-97-07	456187.00	5428093.00	390.00	160.45	-45	213.12
BL-97-09	456181.00	5428014.00	390.00	340.45	-70	76.2
BL-97-10	456184.00	5428015.00	390.00	84.45	-45	100.58
BL-97-11	456240.00	5428013.00	390.00	94.45	-45	106.68
BL-97-12	456243.00	5428029.00	390.00	340.45	-45	76.2
BL-97-13	456243.00	5428028.00	390.00	340.45	-60	76.2
BL-97-14	456244.00	5428028.00	390.00	340.45	-72	84.43
BL-97-15	456210.00	5428077.00	388.00	160.45	-57	198.12
BL-97-16	456182.00	5428066.00	390.00	160.45	-57	198.12
BL-97-19	456239.00	5428015.00	390.00	106.45	-45	78.33
BL-97-20	456243.00	5428012.00	390.00	140.45	-45	87.48
BL-97-21	456263.00	5428052.00	390.00	140.45	-45	84.43
BL-97-22	456249.00	5428068.00	390.00	340.45	-45	78.33
BL-97-23	456257.00	5428054.00	390.00	340.45	-50	66.14
BL-97-24	456258.00	5428053.00	390.00	340.45	-70	78.33
BL-97-25	456188.00	5428013.00	390.00	285.45	-67	117.96
BL-97-26	456279.00	5428069.00	390.00	340.45	-62	78.33
BL-97-27	457164.00	5428101.00	390.00	160.45	-50	334.37
BL-98-01	456164.00	5427833.00	390.00	340.45	-45	243.23
BL-98-02	456034.00	5427894.00	390.00	340.45	-45	142.34
BL-98-03	455989.00	5427876.00	382.00	340.45	-45	129.54

Hole Name	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
BL-98-04	455895.00	5427842.00	390.00	340.45	-45	124.05
BL-98-05	456022.00	5427783.00	390.00	340.45	-45	124.05
BL-98-06	456956.00	5427843.00	390.00	160.45	-45	183.18
BL-98-07	456280.00	5427825.00	390.00	340.45	-50	288.65
BL-98-08	456414.00	5428053.00	390.00	340.45	-45	173.13
BL-98-09	456189.00	5428208.00	390.00	340.45	-65	123.44
BL-98-10	456189.00	5428208.00	390.00	160.45	-70	489.81
BL-98-11	456744.00	5428395.00	390.00	160.45	-50	306.93
BL-98-12	456414.00	5428278.00	390.00	160.45	-45	224.64
BL-98-13	456314.00	5428278.00	390.00	160.45	-55	227.69
MT-18-01	456178.00	5428073.00	389.00	158.45	-54	90
MT-18-02	456190.61	5428087.29	391.94	162.25	-45	81
MT-18-03	456232.31	5428100.45	391.45	154.55	-60.1	120
BA-18-100	456998.00	5428526.00	391.00	155.00	-50	417
BA-18-101	455515.00	5428492.00	390.00	135.20	-50.2	552
BA-18-102	455343.00	5427585.00	385.00	336.00	-50	426
BA-18-103	455387.00	5427485.00	385.00	334.00	-50	498
BA-18-104	454966.00	5428533.00	401.00	139.80	-50.2	426
BA-18-105	455456.00	5428298.00	390.00	142.00	-53	846
BA-18-106	455275.00	5428016.00	388.00	185.00	-45	675
BA-18-108	455281.00	5428207.00	390.00	145.00	-55	711
BA-18-73	455666.00	5428270.00	390.00	153.00	-50	900
BA-18-74	455927.74	5427778.24	385.00	340.00	-50	429
BA-18-75	455741.00	5428461.00	389.00	141.00	-53	1200
BA-18-76	456297.00	5428285.00	390.00	146.00	-53	38.8
BA-18-76A	456297.00	5428285.00	390.00	146.00	-53	558
BA-18-77	455845.00	5427804.00	385.00	340.00	-50	405
BA-18-78	456514.00	5428653.00	389.00	140.00	-62	1206
BA-18-79	455844.00	5427885.00	389.00	339.00	-50	264
BA-18-80	455788.00	5427855.00	389.00	339.20	-50	261
BA-18-81	455817.00	5427720.00	385.00	338.80	-47.9	414
BA-18-82	455585.00	5428239.00	390.00	147.00	-52	900
BA-18-83	455709.00	5427764.00	389.00	343.00	-51	378
BA-18-84	456416.00	5428615.00	390.00	140.00	-63	1218
BA-18-85	456220.32	5427583.57	385.00	322.00	-62	840
BA-18-86	456460.00	5428355.00	388.00	159.00	-52	519
BA-18-87	456589.00	5428357.00	386.00	160.00	-55	492
BA-18-88	456297.00	5428285.00	390.00	350.00	-60	426
BA-18-89	456514.00	5428653.00	389.00	138.00	-60	1002
BA-18-90	455981.00	5427613.00	385.00	340.00	-45	540
BA-18-91	456271.00	5428366.00	390.00	350.00	-50	273
BA-18-92	455421.00	5428187.00	390.00	145.00	-57	834
BA-18-93	455683.00	5428116.00	385.00	165.00	-53	258
BA-18-93A	455683.00	5428116.00	385.00	165.00	-53	561
BA-18-94	456564.00	5428513.00	387.00	141.00	-54	597
BA-18-95	455558.00	5428295.00	390.00	143.00	-60	900
BA-18-96	456042.00	5427637.00	385.00	336.00	-45	93
BA-18-97	455658.00	5427495.00	385.00	335.00	-45	444
BA-18-98	456943.00	5428454.00	390.00	157.00	-50	402
BA-18-99	455455.00	5427469.00	385.00	335.00	-47	462
BA-19-01	457828.00	5429104.00	410.00	160.00	-45	573
BA-19-02	456608.00	5428662.00	390.00	151.70	-60.2	760.4
BA-19-03	456006.00	5428556.00	385.08	149.90	-50	108

Hole Name	Easting	Northing	Elevation	Azimuth	Dip	Length (m)
BA-19-03A	456006.00	5428556.00	385.08	149.90	-50.2	1050
BA-19-04	456472.12	5428550.08	390.00	156.20	-64.2	42
BA-19-04A	456472.11	5428550.08	390.00	156.00	-64.1	48
BA-19-04B	456472.00	5428550.00	390.00	155.60	-63.8	84.9
BA-19-04C	456472.11	5428550.00	390.00	153.10	-65	75
BA-19-05	456474.42	5428632.62	392.00	153.90	-64	78
BA-19-06	455102.00	5427812.00	385.00	150.50	-55	252
BA-19-07	455302.00	5427793.00	385.00	140.00	-59.8	282
BA-19-08	456667.78	5428752.45	389.62	149.00	-62.1	930
BA-19-09	455156.00	5427785.00	385.00	149.90	-55	324
BA-19-10	455302.00	5427793.00	385.00	350.10	-44.6	240
BA-19-11	455941.00	5427537.00	385.00	306.80	-45.2	51
BA-19-11A	455940.00	5427536.00	385.00	320.00	-44.7	358
BA-19-12	455245.00	5427772.00	385.00	159.90	-49.8	252
BA-19-13	456239.00	5428658.00	389.00	137.90	-65.1	1251
BA-19-14	455245.00	5427772.00	385.00	330.00	-44.8	246
BA-19-16	455102.00	5427810.00	385.00	330.20	-44.8	231
BA-19-17	455572.00	5427318.00	385.00	334.90	-45.2	474
BA-19-18	455443.00	5427882.00	385.00	159.90	-49.9	450
BA-19-19	455219.34	5427430.65	385.00	332.30	-45.1	363
BA-19-20	455522.62	5427823.98	389.81	143.00	-45.1	387
BA-19-21	455934.00	5427518.00	385.00	353.00	-52	366
BA-19-22	455468.00	5427815.00	385.00	160.30	-50	378
BA-19-23	455705.63	5427303.40	385.00	329.80	-51.6	516
BA-19-24	456178.00	5428116.00	385.00	174.40	-51	486
BA-19-25	455278.10	5428209.30	390.00	170.70	-50.2	33
BA-19-25A	455278.10	5428209.30	390.00	171.90	-49.4	390
BA-19-26	456230.00	5428089.00	389.00	169.70	-49.8	108
BA-19-26A	456230.00	5428089.00	389.58	177.10	-50.4	432
BA-19-27	455280.50	5428207.46	390.00	145.00	-44.8	402
BA-19-28	455280.00	5428207.00	390.00	130.00	-54	417
BA-19-29	456199.00	5428048.00	387.93	187.00	-45	371

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Hole Name	Easting	Northing	Elevation	Azimuth	Dip	Length
BR18-01	443632.81	5426581.96	348.12	164.78	-13.75	396
BR18-03	443633.25	5426582.13	348.08	158.74	-14.02	399
BR18-05	443633.42	5426582.21	347.94	152.49	-14.15	402
BR18-06	443633.61	5426582.19	348.10	149.32	-14.16	402
BR18-07	443633.94	5426582.32	348.10	142.00	-14.00	354
BR18-08	443634.45	5426582.56	348.14	131.25	-13.00	351
BR18-09	443634.85	5426582.63	348.24	119.72	-11.97	381
BR18-10	443632.64	5426581.75	348.14	172.06	-13.52	402
BR18-11	443632.99	5426581.98	348.04	158.30	-19.00	366
BR18-12	443634.06	5426582.40	347.99	152.00	-16.00	225
BR18-12B	443634.06	5426582.40	347.99	152.00	-19.00	402
BR18-13	443631.27	5426582.30	347.74	201.10	-30.00	180
BR18-14	443631.52	5426582.21	347.65	188.30	-37.00	162
BR18-15	443634.06	5426582.46	347.45	149.30	-40.00	140
BR18-16	443634.61	5426582.73	347.41	131.20	-39.00	150
BR18-17	443632.40	5426581.75	348.14	172.00	-25.00	201
BR18-18	443633.50	5426582.19	348.00	149.18	-26.00	192
BR18-19	443634.22	5426582.49	347.77	131.20	-25.00	201
BR18-20	443634.76	5426582.65	347.79	119.70	-23.00	210
BR18-21	443633.50	5426582.09	348.21	158.70	-12.00	381
BR18-23	443634.44	5426582.38	348.53	116.50	-12.00	362
BR19-22	443632.14	5426582.07	347.91	183.00	-24.00	201
BR19-24	443635.76	5426582.95	348.26	109.00	-9.00	51
BR19-24A	443636.07	5426583.11	348.26	109.00	-9.00	402
BR19-25	443633.83	5426582.28	348.02	149.30	-9.00	270.3
MB16_01	443820.10	5426357.32	396.81	270.50	-68.00	186
MB16_02	443820.09	5426376.41	395.85	260.70	-76.00	51
MB16_03	443689.20	5426401.96	405.25	271.40	-66.06	87
MB16_04	443705.27	5426441.85	404.72	272.30	-62.85	27
MB16_05	443626.33	5426357.78	400.60	268.00	-50.34	99
MB16_06	443606.72	5426315.18	401.05	262.30	-55.00	60
MB16_07	443390.13	5426099.33	403.81	283.70	-58.70	78
MB16_08	443928.65	5426445.28	395.16	264.70	-70.00	102
MB16_09	443886.94	5426412.68	397.13	272.60	-69.55	171
MB16_10	443828.53	5426436.85	401.17	263.30	-65.00	95
MB16_11	443848.74	5426454.67	400.27	264.90	-60.00	90
MB16_12	443859.70	5426473.05	400.04	264.10	-56.00	75
MB16_13	443907.16	5426498.02	397.56	261.30	-60.00	54
MB16_14	444002.64	5426588.23	393.54	266.60	-53.24	63
MB16_15	443395.37	5426018.18	401.76	354.30	-50.00	132
MB-16-16	443602.49	5426450.00	409.91	330.00	-45.00	63
MB-16-17	443430.52	5426342.28	407.70	330.00	-45.00	138.9
MB-16-18	443409.69	5426300.79	406.24	330.90	-44.70	102
MB-16-19	443546.90	5426448.09	409.81	330.00	-50.00	123
MB-16-20	443510.05	5426511.15	411.25	330.00	-45.00	75
MB-16-21	443469.48	5426482.01	411.33	330.00	-45.00	87
MB-16-22	443492.11	5426454.78	411.16	330.00	-45.00	81
MB-16-23	443579.18	5426096.99	400.10	330.00	-45.00	126
MB-16-24	443517.03	5426100.92	402.14	330.00	-45.00	255
MB-16-25	443517.03	5426100.92	402.14	330.00	-80.00	375

Hole Name	Easting	Northing	Elevation	Azimuth	Dip	Length
MB-16-26	443460.19	5426098.64	402.99	330.00	-45.00	66
MB-16-27	443386.15	5426018.64	402.08	330.00	-45.00	243
MB-16-28	443440.58	5426027.19	401.75	330.00	-65.00	264
MB-17-100	443928.13	5426276.44	394.67	330.00	-62.00	375
MB-17-101	443638.42	5426130.50	399.86	330.00	-55.00	552
MB-17-102	443928.24	5426276.27	394.69	330.00	-70.00	381
MB-17-103	444051.24	5426419.02	393.38	330.00	-50.00	498
MB-17-104	443997.80	5426363.63	393.91	330.00	-61.00	312
MB-17-105	444074.18	5426381.82	393.45	330.00	-52.00	537
MB-17-106	443958.95	5426362.45	394.25	330.00	-61.00	264
MB-17-107	443978.26	5426337.59	394.03	330.00	-61.00	342
MB-17-108	444093.84	5426339.60	392.98	330.00	-53.00	573.65
MB-17-109	443916.27	5426346.64	394.77	330.00	-61.00	288
MB-17-110	443964.29	5426262.67	394.13	330.00	-66.00	546
MB-17-111	444115.53	5426294.09	392.26	330.00	-60.00	471
MB-17-112	444067.42	5426269.49	393.21	330.00	-68.00	531
MB-17-113	443987.46	5426281.63	393.94	330.00	-62.00	474
MB-17-114	443868.59	5426261.60	395.41	330.00	-51.00	504
MB-17-115	443883.62	5426303.05	395.10	330.00	-47.00	486
MB-17-116	443888.22	5426216.37	394.77	330.00	-56.00	537
MB-17-117	444038.55	5426199.66	393.72	330.00	-57.00	513
MB-17-118	444038.61	5426199.54	393.61	330.00	-64.00	561
MB-17-119	443943.37	5426237.39	394.30	330.00	-64.00	549
MB-17-120	444017.45	5426182.43	393.88	330.00	-60.00	597
MB-17-121	443935.01	5426306.34	394.49	330.00	-60.00	345
MB-17-122	444017.41	5426182.53	393.93	340.00	-55.00	759
MB-17-123	443758.92	5426177.12	397.43	330.00	-77.00	276
MB-17-124	443758.44	5426176.65	397.32	150.00	-88.00	312
MB-17-125	443985.71	5426202.81	393.87	330.00	-64.00	566.35
MB-17-126A	443591.60	5426140.89	400.76	330.00	-49.00	564
MB-17-127	443631.57	5426205.58	399.91	330.00	-45.00	435
MB-17-128	443583.56	5426283.12	404.27	330.00	-45.00	351
MB-17-129	443611.92	5426195.43	402.53	330.00	-51.00	501
MB-17-130	443616.28	5426102.95	402.62	330.00	-50.00	558
MB-17-131	443760.67	5426134.11	401.95	330.00	-60.00	543
MB-17-132	443724.00	5426084.00	400.08	330.00	-57.00	552
MB-17-133	443977.34	5425783.24	396.62	330.00	-58.00	1299.8
MB-17-134	443668.64	5426076.02	402.41	330.00	-57.00	361.5
MB-17-135	443579.56	5426061.54	407.36	330.00	-52.00	600
MB-17-136	443690.65	5426144.23	399.49	330.00	-55.00	540
MB-17-137	443720.49	5426216.54	398.45	330.00	-62.00	429
MB-17-138	443867.98	5426160.80	395.06	330.00	-53.00	576
MB-17-139	443798.56	5425691.88	402.71	330.00	-55.00	1173
MB-17-140	443864.46	5426346.70	396.26	329.91	-46.00	342
MB-17-141	443958.08	5426316.85	394.36	335.00	-66.00	486
MB-17-142	443776.46	5426202.78	397.06	330.00	-49.00	453
MB-17-143	443810.26	5426196.11	396.47	330.00	-43.00	530.2
MB-17-144	444042.81	5426449.06	393.55	329.93	-46.00	450
MB-17-145	443998.78	5426302.59	394.18	330.00	-65.00	423
MB-17-146	443809.42	5426295.57	397.53	330.00	-52.00	462
MB-17-147	443982.56	5426403.64	394.34	330.00	-59.00	480
MB-17-29	443564.78	5426199.75	404.79	330.00	-45.00	372
MB-17-30	443509.49	5426217.74	408.46	330.00	-45.00	386.4

Hole Name	Easting	Northing	Elevation	Azimuth	Dip	Length
MB-17-31	443566.62	5426118.73	400.94	330.00	-45.00	555
MB-17-32	443487.59	5426150.03	404.22	330.00	-45.00	246
MB-17-33	443442.69	5426136.80	406.45	330.00	-45.00	60
MB-17-34	443465.19	5426074.09	402.15	330.00	-56.00	105
MB-17-35	443421.67	5425971.28	401.91	330.00	-45.00	270
MB-17-36	443318.22	5426047.87	402.47	330.00	-45.00	144
MB-17-37	443731.60	5426142.47	402.24	330.00	-52.00	555
MB-17-38	443793.35	5426172.29	397.21	330.00	-52.00	554
MB-17-39	443440.64	5426149.55	406.31	150.00	-55.00	101.6
MB-17-40	443441.70	5426145.66	406.22	148.00	-57.00	54
MB-17-41	443372.54	5426144.16	404.70	148.00	-57.00	123
MB-17-42	443979.85	5426374.50	394.26	330.00	-60.00	504
MB-17-43	443996.81	5426470.09	394.60	330.00	-50.00	513.45
MB-17-44	444077.95	5426502.03	394.10	330.00	-70.00	111
MB-17-45	444177.13	5426536.89	393.74	330.00	-45.00	267
MB-17-46	444212.06	5426569.92	394.12	330.00	-45.00	228
MB-17-47	443920.52	5426368.34	394.77	330.00	-62.00	180
MB-17-48	443884.52	5426336.95	395.02	330.00	-60.00	159
MB-17-49	443909.66	5426308.91	394.76	330.00	-60.00	201
MB-17-50	443859.83	5426299.00	394.91	330.00	-55.00	204
MB-17-51	443809.35	5426295.73	397.82	330.00	-60.00	180
MB-17-52	443981.97	5426403.90	394.56	330.00	-45.00	405
MB-17-53	444050.22	5426550.31	394.25	330.00	-70.00	344.7
MB-17-54	444111.91	5426540.18	393.96	330.00	-45.00	258
MB-17-55	444149.80	5426581.06	393.90	330.00	-45.00	222
MB-17-56	444192.03	5426607.99	394.07	330.00	-45.00	171
MB-17-57	443900.66	5426830.94	394.41	330.00	-45.00	138.2
MB-17-58	443940.28	5426854.65	396.43	330.00	-45.00	180
MB-17-59	443793.83	5426033.81	400.20	330.00	-63.00	699
MB-17-60	443813.54	5426137.43	400.79	330.00	-65.00	552
MB-17-61	443345.83	5426110.58	405.72	330.00	-45.00	210
MB-17-62	443258.22	5426148.27	403.63	330.00	-45.00	108
MB-17-63	443246.79	5426163.30	401.28	330.00	-45.00	159
MB-17-64	443258.13	5426048.98	401.24	330.00	-45.00	114
MB-17-65	443221.18	5426102.62	403.08	330.00	-45.00	114
MB-17-66	443205.26	5426154.69	400.10	330.00	-45.00	78
MB-17-67	443193.59	5426062.36	399.93	330.00	-65.00	57
MB-17-68	443166.25	5426119.37	399.41	330.00	-65.00	57
MB-17-69	443300.46	5426178.01	400.95	330.00	-45.00	126
MB-17-70	444026.24	5426281.84	393.90	330.00	-65.00	450
MB-17-71	443870.27	5426381.67	397.47	330.00	-45.00	159
MB-17-72	443876.29	5426370.78	396.93	300.00	-45.00	201
MB-17-73	443928.55	5426276.49	394.69	330.00	-45.00	531
MB-17-74	444014.56	5426163.47	393.39	330.00	-67.00	399
MB-17-75	443853.94	5426217.04	396.05	330.00	-55.00	531
MB-17-76	443905.25	5426234.72	394.96	330.00	-55.00	552
MB-17-77	444186.87	5425920.66	392.68	328.30	-53.70	1005
MB-17-78	443810.94	5426195.50	396.47	330.00	-55.00	570
MB-17-79	443833.16	5426182.07	397.49	330.00	-60.00	561
MB-17-80	443923.60	5426191.40	394.59	330.00	-55.00	555
MB-17-81	444036.95	5426261.34	393.44	330.00	-73.00	546.7
MB-17-82	443944.71	5426333.29	394.68	330.00	-60.00	564
MB-17-83	444094.90	5426255.76	392.78	330.00	-55.00	585

Hole Name	Easting	Northing	Elevation	Azimuth	Dip	Length
MB-17-84	443965.51	5426295.76	394.34	330.00	-63.00	597
MB-17-85	444114.17	5426329.61	392.91	330.00	-55.00	573
MB-17-86	443999.05	5426330.07	394.18	330.00	-63.00	564
MB-17-87	444070.47	5426302.05	393.54	330.00	-55.00	564
MB-17-88	444042.48	5426352.16	393.55	330.00	-53.00	576
MB-17-89	443875.35	5426269.02	395.73	330.00	-55.00	552
MB-17-90	444036.27	5426390.98	393.80	330.00	-50.00	558
MB-17-91	443828.66	5426275.11	396.89	330.00	-57.00	552
MB-17-92	444086.18	5426436.86	393.55	330.00	-51.00	570
MB-17-93	443757.84	5426178.17	397.39	330.00	-55.00	555
MB-17-94	444097.85	5426394.87	393.43	330.00	-54.00	549
MB-17-95	443698.45	5426198.26	398.61	330.00	-52.00	552
MB-17-95a	443698.51	5426198.15	398.50	330.00	-52.00	45
MB-17-96	444041.39	5426316.09	393.51	330.00	-64.00	378
MB-17-97	443651.27	5426171.80	399.10	330.00	-55.00	546
MB-17-98	443884.23	5426358.27	395.53	330.00	-55.00	276
MB-17-99	443678.79	5426111.23	402.66	330.00	-55.00	603
MB-18-148	444369.85	5426062.28	389.33	330.00	-55.00	1002
MB-18-149	444168.42	5426263.34	391.62	329.00	-57.00	477
MB-18-150	444550.45	5426170.03	388.15	330.00	-55.00	1134
MB-18-151	444139.93	5426418.62	392.91	330.00	-56.50	510
MB-18-152	444191.93	5426335.13	391.03	330.00	-57.00	474
MB-18-153	444212.95	5426396.02	392.87	330.00	-57.00	597.5
MB-18-154	444253.79	5426323.56	390.67	329.53	-56.70	510
MB-18-155	444266.98	5425993.26	390.95	330.00	-55.00	1002
MB-18-156	444248.54	5426222.03	390.81	330.00	-52.00	957
MB-18-157	444139.32	5426018.54	392.58	330.00	-51.00	999
MB-18-158	444365.51	5426231.03	390.05	330.00	-58.00	651
MB-18-159	444227.05	5426157.46	393.97	330.00	-58.00	660
MB-18-160	444171.83	5426468.91	392.73	330.00	-51.00	426
MB-18-161	444287.37	5426359.34	390.28	330.00	-53.00	675
MB-18-162	444241.80	5426448.12	391.83	330.00	-46.00	426
MB-18-163	444279.79	5426467.69	392.18	330.00	-50.00	465
MB-18-164	444148.44	5426491.21	393.07	330.00	-50.00	432
MB-18-165	444214.34	5426397.09	391.49	330.00	-45.00	477
MB-18-166	444104.62	5426488.84	393.25	330.00	-49.00	333
MB-18-167	444326.36	5426384.53	390.12	330.00	-56.00	705
MB-18-168	444189.35	5426338.77	391.49	330.00	-48.00	375
MB-18-169	444014.37	5426548.92	394.90	330.00	-56.00	621
MB-18-170	444165.96	5426264.94	391.25	330.00	-65.00	504
MB-18-171	444253.99	5426324.19	390.53	330.00	-69.00	477
MB-18-172	444163.59	5426173.97	392.49	330.00	-54.00	804
MB-18-173	443617.51	5426101.13	402.24	330.00	-60.00	600
MB-18-174	444280.50	5426383.39	390.70	330.00	-47.00	561
MB-18-175	443579.38	5426061.52	406.90	330.00	-65.00	600
MB-18-176	444331.48	5426311.44	389.86	330.00	-45.00	516
MB-18-177	444337.23	5426157.55	390.98	330.00	-57.00	654
MB-18-178	443518.80	5426098.78	401.50	330.00	-72.00	450
MB-18-179	444383.13	5426291.98	389.92	330.00	-54.00	561
MB-18-180	444300.36	5426137.15	391.01	330.00	-52.00	810
MB-18-181	443518.66	5426099.08	401.54	330.00	-60.00	450
MB-18-182	443456.73	5426089.32	402.47	330.00	-48.50	462
MB-18-183	443433.34	5426038.58	401.69	330.00	-49.00	324

Hole Name	Easting	Northing	Elevation	Azimuth	Dip	Length
MB-18-184	443457.13	5426088.58	402.55	330.00	-73.50	447
MB-18-185	443352.18	5426008.11	401.79	330.00	-53.00	261
MB-18-186	443399.38	5425905.92	398.95	330.00	-63.00	372
MB-18-187	443675.09	5426023.30	401.84	330.00	-67.00	402
MB-18-188	443972.14	5426053.86	394.89	330.00	-53.00	687
MB-18-189	443454.71	5425901.73	399.81	330.00	-62.00	354
MB-18-190	443675.38	5426023.13	401.82	280.00	-65.00	420
MB-18-191	443455.00	5425901.02	399.79	330.00	-47.00	366
MB-18-192	443580.97	5426063.51	406.85	307.00	-81.00	369
MB-18-193	443466.50	5425779.88	396.03	330.00	-57.00	462
MB-18-194	443828.14	5426177.91	397.16	330.00	-68.00	486
MB-18-195	443495.36	5425922.67	400.48	359.00	-63.00	444
MB-18-196	443910.80	5426121.57	394.78	330.00	-53.00	525
MB-18-197	443499.68	5425765.21	398.51	358.00	-60.00	459
MB-18-198	443499.68	5425765.51	398.82	330.00	-57.00	378
MB-18-199	443494.74	5425923.25	400.49	350.50	-46.00	351
MB-18-200	443911.93	5426122.95	394.54	330.00	-72.00	612

APPENDIX B

Highlights from Gladiator and Barry Drilling Results

2012 – 2019 Gladiator Deposit

Drill Hole	From (m)	To (m)	Width (m)	Au (g/t)	Comment / Zone
BA-12-12	176.0	177.0	1	2.42	
BA-12-12	202.0	203.0	1	3.74	
BA-12-12	277.0	278.0	1	2.16	
BA-12-12	300.0	301.0	1	2.74	
BA-12-01	219.0	222.0	3	2.29	
BA-12-01	334.0	335.0	1	1.28	
BA-12-02	179.0	180.0	1	4.47	
BA-12-02	233.0	252.0	19	0.97	
Including	248.0	252.0	4	4.13	
Including	249.0	250.0	1	10.2	
BA-12-02	326.0	334.0	8	1.39	
Including	326.0	327.0	1	7.86	
BA-12-02	399.0	400.0	1	1.56	
BA-12-02	425.0	426.0	1	1.4	
BA-12-03	24.0	25.0	1	1.63	
BA-12-03	115.0	121.0	6	2.07	
Including	118.0	121.0	3	3.74	
BA-12-10	230.0	231.0	1	2.95	
BA-12-10	254.0	257.0	3	73.82	
Including	254.0	255.0	1	220	
Including	255.0	257.0	2	0.73	
BA-12-10	340.0	342.0	2	1.2	
BA-12-05	60.2	61.2	1	2.75	
BA-12-05	112.4	112.9	0.5	1.15	
BA-15-01A	210.6	217.2	6.6	14.0	
BA-15-01A	215.9	216.7	0.8	104.5	
BA-15-01A	62.5	66.0	3.5	9.1	FW
BA-15-01A	210.6	217.2	6.6	14	Main
Including	215.9	216.7	0.8	104.5	FW
BA-15-02	107.6	110.2	2.6	4.7	Gab
BA-15-02	224.3	225.2	0.9	7.6	Intr
BA-15-02	320.5	476.0	155.5	0.5	Main
BA-15-02	476.0	483.7	7.7	7.2	
BA-16-01	126.0	127.0	1	5.2	FW
BA-16-01	240.0	378.0	138	0.4	Intr.
Including	299.0	302.4	3.4	1.7	Main
Including	353.8	357.0	3.2	1.9	Main
BA-16-03	4.0	9.0	5	9	Main
Including	4.0	6.9	2.9	13.5	Main
BA-16-02	11.0	55.0	44	0.4	New (North Shear 2)
BA-16-02	79.0	137.0	58	2.5	New (North Shear 1)
Including	79.0	95.0	16	6.1	New (North Shear 1)
Including	79.0	84.0	5	15.3	New (North Shear 1)
Including	92.5	95.0	2.5	7.5	New (North Shear 1)

Drill Hole	From (m)	To (m)	Width (m)	Au (g/t)	Comment / Zone
BA-16-04	64.0	70.0	6	10.4	Main
BA-16-05	25.0	26.5	1.5	3.5	Main
BA-16-05	184.0	186.0	2	12.7	Main
BA-16-05	290.7	294.0	3.3	29	New (South)
BA-16-06	20.8	30.0	9.2	2.1	FW
BA-16-06	336.0	337.5	1.5	2.5	Intrusive
BA-16-06	416.0	420.0	4	1.7	Main
BA-16-09	21.7	27.4	5.7	24.3	Main
BA-16-09	110.1	111.2	1.1	41.7	Main
BA-16-09	364.0	369.0	5	1.8	New (South)
BA-15-01A	62.5	66.0	3.5	9.1	Footwall
BA-15-01A	210.6	217.2	6.6	14	Main
Including	*215.9*	*216.7*	*0.8*	*104.5*	Main
BA-15-02	107.6	110.2	2.6	4.7	Footwall
BA-15-02	224.3	225.2	0.9	7.6	Gabbro
BA-15-02	320.5	476.0	155.5	0.5	Intrusive
BA-15-02	476.0	483.7	7.7	7.2	Main
BA-15-03	187.0	188.5	1.5	4.3	Footwall
BA-15-03	200.0	204.0	4	1.3	Gabbro
BA-15-03	219.0	220.0	1	3.8	Gabbro
BA-15-03	339.0	379.0	40	0.4	Intrusive
BA-15-03	392.8	397.0	4.2	1.6	Intrusive
BA-15-03	479.0	499.4	20.4	0.9	Intrusive
BA-15-04	224.0	235.4	11.4	1.5	Main
Including	*234.1*	*235.4*	*1.3*	*8*	Main
BA-16-01	126.0	127.0	1	5.2	Footwall
BA-16-01	240.0	378.0	138	0.4	Intrusive
Including	299.0	302.4	3.4	1.7	Main
Including	353.8	357.0	3.2	1.9	Main
BA-16-02	11.0	55.0	44	0.4	New (North Shear 2)
BA-16-02	79.0	137.0	58	2.5	New (North Shear 1)
Including	79.0	95.0	16	6.1	New (North Shear 1)
Including	79.0	84.0	5	15.3	New (North Shear 1)
Including	92.5	95.0	2.5	7.5	New (North Shear 1)
BA-16-02	103.0	145.0	42	1	Local Shear
BA-16-03	4.0	9.0	5	9	Footwall
Including	4.0	6.9	2.9	13.5	Footwall
BA-16-04	64.0	70.0	6	10.4	Main
BA-16-05	25.0	26.5	1.5	3.5	Main
BA-16-05	184.0	186.0	2	12.7	Main
BA-16-05	290.7	294.0	3.3	29	New (South)
BA-16-06	20.8	30.0	9.2	2.1	Footwall
BA-16-06	336.0	337.5	1.5	3	Intrusive
BA-16-06	416.0	420.0	4	1.7	Main
BA-16-07	142.6	147.0	4.4	8	Main
Including	144.2	147.0	2.8	11.9	Main
Including	155.0	156.0	1	14.9	Main
BA-16-07	378.0	381.0	3	20.7	New South
BA-16-08	245.0	332.8	87.8	0.31	Intrusive
BA-16-08	368.0	371.0	3	3	New South
BA-16-09	21.7	27.4	5.7	24.3	Main
BA-16-09	110.1	111.2	1.1	41.7	Main
BA-16-09	364.0	369.0	5	1.8	New (South)

Drill Hole	From (m)	To (m)	Width (m)	Au (g/t)	Comment / Zone
BA-16-10	318.0	328.0	10	9.3	Main
Including	321.0	324.0	3	27.5	Main
BA-16-10	438.0	445.5	7.5	1.1	New South
BA-16-11	35.0	36.7	1.7	13.6	Main
BA-16-11	40.9	44.0	3.1	4.6	
BA-16-11	187.4	187.9	0.5	24.4	
BA-16-12	75.0	84.0	9	1.9	Main
BA-16-13	82.5	83.5	1	2.4	Main
BA-16-14	107.0	110.5	3.5	12	Main
BA-16-14	193.0	203.0	10	1	Intrusive
BA-16-15	124.0	126.6	2.6	8.6	Footwall
BA-16-15	224.0	226.0	2	6.2	Main
BA-16-16	144.0	153.0	9	3	Footwall
BA-16-16	205.1	207.3	2.2	4.3	Main
BA-16-17	186.0	189.0	3	15	Footwall
BA-16-18	197.0	200.0	3	2.7	Footwall
BA-16-18	245.0	251.0	6	1.4	Main
BA-16-19	288.5	291.0	2.5	137.4	Main
Including	288.5	289.0	0.5	677	Main
BA-16-26	412.0	413.0	1	19.6	Mid East
BA-16-27	392.7	396.0	3.3	2.9	Mid East
and	420.0	423.0	3	2.6	Mid East
BA-16-29	169.0	170.0	1	4.8	Upper East
BA-16-30	370.0	373.0	3	4.7	Upper East
BA-16-31	628.6	634.0	5.4	1.7	Mid East
BA-16-38	769.0	733.0	4	12.4	Deep East
Including	769.0	771.0	2	24.3	
BA-16-39	723.0	733.0	10	1.5	New
and	813.5	819.0	5.5	70	Mid East
Including	814.5	816.5	2	191.4	
and	846.0	851.0	5	3.1	New
BA-16-40	152.0	154.0	2	64.3	Rivage Gap
BA-16-42	507.0	510.0	3	8.7	Rivage Gap
BA-17-01	262.0	272.0	10	1.6	New (East Side)
BA-17-01	367.0	375.5	8.5	15.7	Footwall
BA-17-01	566.0	571.0	5	20.7	Main
BA-17-04	88.8	93.0	4.2	9.5	North
BA-17-04	233.0	237.0	4	10	Footwall
BA-17-04	272.0	297.0	25	1.4	Porph/Main
including	272.0	275.0	3	3.6	
BA-17-07	355.0	358.0	3	12	Main
BA-17-08	210.0	211.0	1	7.5	North
BA-17-08	264.0	265.0	1	8	Mid
BA-17-08	300.2	302.0	1.8	6.4	Footwall
BA-17-08	390.0	395.7	5.7	3.4	Main
BA-17-09	67.0	68.8	1.8	9	Footwall
BA-17-10	177.5	179.0	1.5	5.6	North
BA-17-10	198.5	202.0	3.5	8.4	Footwall
BA-17-10	212.5	215.0	2.5	5.2	Mid
BA-17-10	237.0	239.0	2	5.3	Main
BA-17-06	37.0	38.0	1	7.1	Footwall
BA-17-06	477.0	479.0	2	1.4	Main
BA-17-11	424.0	427.6	3.6	12.7	Main

Drill Hole	From (m)	To (m)	Width (m)	Au (g/t)	Comment / Zone
BA-17-12	17.0	19.0	2	11.1	Main
BA-17-12	32.0	34.0	2	3.5	Mid
BA-17-12	346.7	349.7	3	8.8	New South
BA-17-15	920.0	924.0	4	9.1	Main
BA-17-16	418.0	420.0	2	3.1	North
BA-17-21	572.0	575.0	3	21.5	North
BA-17-21	618.0	621.0	3	2.2	FW
BA-17-22	712.2	716.0	3.8	12	New South
BA-17-20	779.0	782.0	3	10.4	Main
BA-17-23	541.5	544.5	3	10.1	Footwall Zone
BA-17-28	700.5	704.0	3.5	5.3	Main
BA-17-30	630.0	632.0	2	6	North
BA-17-31	661.0	669.3	8.3	5.1	North
BA-17-31	810.5	813.3	2.8	3.8	Main
BA-17-32	901.0	905.0	4	5.6	Main
BA-17-33	791.0	792.0	1	13.9	Main Zone
BA-17-35	1272.0	1273.0	1	6.4	North Zone
BA-17-36	551.0	553.0	2	14	Footwall Zone
BA-17-36	658.0	660.0	2	11.2	South Zone
BA-17-37	644.5	646.0	1.5	17.6	South Zone
BA-17-38	706.0	710.0	4	7.3	North Zone
BA-17-38	862.6	872.0	9.4	8.2	Main Zone
BA-17-39B	639.0	641.0	2	10.4	Main Zone
BA-17-39B	474.0	479.0	5	11.5	Footwall Zone
BA-16-05	290.7	294.0	3.3	28.5	Barbeau Zone
BA-16-07	378.0	381.0	3	20.7	Barbeau Zone
BA-17-12	346.7	349.7	3	8.8	Barbeau Zone
BA-17-22	712.2	716.0	3.8	11.9	Barbeau Zone
BA-17-24	983.0	985.0	2	7.8	Barbeau Zone
BA-17-40A	911.5	913.4	1.9	22.2	Barbeau Zone
BA-17-42	179.0	182.0	3	9.6	North Zone
BA-17-42A	269.0	271.0	2	5.2	Footwall Zone
BA-17-42A	556.0	560.0	4	18.5	South Zone
BA-17-43B	472.0	474.0	2	5.8	North Zone
BA-17-44	575.8	579.0	3.2	11.9	South Zone
BA-17-46	425.8	428.5	2.7	10.9	North Zone
BA-17-48	250.7	257.0	6.3	10.1	Footwall Zone
BA-17-45B	783.0	786.3	3.3	15.8	Main Zone
BA-17-45B	909.0	912.0	3	4.3	South Zone
BA-17-46	425.8	428.5	2.7	12.4	North Zone
BA-17-46	450.9	454.0	3.1	26.7	North Zone
BA-17-46	660.5	663.5	3	8.8	Main Zone
BA-17-48	250.7	257.0	6.3	10.1	Footwall Zone
BA-17-48	266.9	268.9	2	4.6	Main Zone
BA-17-49B	602.0	604.0	2	4.9	Main
BA-17-49B	765.0	767.0	2	4.7	South
BA-17-50	501.6	503.0	1.4	6.6	Main Zone
BA-17-53B	651.0	652.9	1.9	6.2	North Zone
BA-17-53B	884.5	888.0	3.5	4.8	Footwall Zone
BA-17-53B	930.2	932.0	1.8	4.9	Main Zone
MT-18-01	56.1	59.0	2.9	8.4	Main Zone
MT-18-01	60.4	64.0	3.6	8.6	Main Zone
MT-18-02	39.7	43.7	4	9.3	Main Zone

Drill Hole	From (m)	To (m)	Width (m)	Au (g/t)	Comment / Zone
BA-18-03A	956.0	958.0	2	3.5	Main Zone
BA-18-04	153.5	160.0	6.5	16.9	Main Zone
BA-18-04	294.4	295.9	1.5	14.1	South Zone
BA-18-05	655.5	658.6	3.1	9.3	North Zone
BA-18-05	777.7	779.2	1.5	4.2	Footwall Zone
BA-18-05	787.0	788.3	1.3	6.9	Main Zone
BA-18-05	1017.3	1018.5	1.2	3.5	Barbeau Zone
BA-18-06	257.0	259.0	2	4.7	North Zone
BA-18-06	575.0	577.5	2.5	6.1	South Zone
BA-18-07	12.7	14.0	1.3	8.8	North Zone
BA-18-07	115.0	116.0	1	3	Main Zone
BA-18-07	299.0	300.2	1.2	5.8	South Zone
BA-18-08	309.0	312.0	3	17.8	South Zone
BA-18-09	170.0	172.0	2	3.9	North
BA-18-09	375.7	377.0	1.3	5.9	FW
BA-18-09	438.0	439.1	1.1	3.5	Main
BA-18-09	764.0	766.6	2.6	11.8	New
BA-18-10A	681.5	683.7	2.2	16.5	Main
BA-18-11	61.5	63.0	1.5	4.9	Main
BA-18-11	103.0	105.0	2	8.5	South
BA-18-11	118.8	120.4	1.6	7.7	South
BA-18-11	177.0	179.4	2.4	10.1	Barbeau
BA-18-11	308.0	310.0	2	6.4	New
BA-18-12	266.0	269.4	3.4	16.3	South
BA-18-14	600.0	602.0	2	10.2	Main
BA-18-14	733.6	734.6	1	6.4	South
BA-18-15	116.0	118.0	2	13.9	Main
BA-18-17	67.4	68.5	1.1	5.5	North
BA-18-17	141.4	144.3	2.9	8	Footwall
BA-18-17	147.0	148.0	1	4.6	Footwall
BA-18-18	61.0	62.3	1.3	4	North
BA-18-19	679.0	680.0	1	13.4	Footwall
BA-18-20	68.0	69.0	1	14.2	North
BA-18-20	203.0	204.0	1	7.3	Footwall
BA-18-22A	274.7	275.8	1.1	4.5	North
BA-18-22A	637.8	639.0	1.2	19.8	South
BA-18-23	406.0	408.0	2	4.6	South
BA-18-24	308.0	308.6	0.6	16.3	Footwall
BA-18-24	353.5	355.0	1.5	5.1	Footwall
BA-18-25	274.2	277.0	2.8	34.3	North
BA-18-27A	406.0	408.0	2	7.2	North
BA-18-27A	614.0	617.0	3	4.6	Main
BA-18-28	355.7	357.0	1.3	5.3	North
BA-18-30	441.5	442.6	1.1	5.3	North
BA-18-30	708.0	713.0	5	24.3	Main
BA-18-31	677.0	680.5	3.5	9.6	Main
BA-18-34	337.0	340.0	3	44.9	Footwall
BA-18-35	467.8	469.0	1.2	4.3	South
BA-18-36	510.0	513.0	3	8.4	North
BA-18-39	480.5	482.0	1.5	19.8	Main Zone
BA-18-39	555.0	557.0	2	30.5	South Zone
BA-18-39	579.0	583.0	4	4.2	Barbeau Zone
BA-18-40	422.0	423.0	1	6.3	North Zone

Drill Hole	From (m)	To (m)	Width (m)	Au (g/t)	Comment / Zone
BA-18-41	558.2	560.0	1.8	7.1	North Zone
BA-18-41	582.9	585.0	2.1	10.3	Footwall Zone
BA-18-42	332.9	334.9	2	18.7	Footwall Zone
BA-18-42	538.1	539.1	1	5.7	Barbeau Zone
BA-18-43	431.0	432.0	1	11.4	North Zone
BA-18-44	355.0	357.0	2	9.1	Footwall Zone
BA-18-45	406.0	407.3	1.3	4.9	Footwall Zone
BA-18-45	585.0	586.0	1	7.9	Main Zone
BA-18-47	285.0	286.0	1	8.4	North Zone
BA-18-47	469.0	470.0	1	7.1	Main Zone
BA-18-48	458.5	459.8	1.3	12.6	North Zone
BA-18-49A	464.5	466.0	1.5	12.2	North Zone
BA-18-50	544.0	547.0	3	8.4	South Zone
BA-18-54	743.0	744.0	1	12.6	North Zone
BA-18-54	781.0	783.7	2.7	15.3	Footwall Zone
BA-18-53A	605.0	607.0	2	6.5	North
BA-18-53A	614.0	617.0	3	4	North
BA-18-53A	684.0	687.0	3	4.5	Footwall
BA-18-53A	988.0	991.0	3	29.6	South
BA-18-54	564.0	567.0	3	9.4	North
BA-18-56	466.0	468.0	2	6	South
BA-18-57A	607.0	608.0	1	9.5	Main
BA-18-58	741.0	742.5	1.5	4.1	Main
BA-18-58	882.0	883.5	1.5	12.3	South
BA-18-61B	443.6	444.8	1.2	4.3	Main
BA-18-61B	504.0	505.1	1.1	5.6	South
BA-18-61B	722.0	724.0	2	6.9	Barbeau
BA-18-62	540.5	542.5	2	17.7	Main
BA-18-62	585.0	586.0	2	5.8	South
BA-18-62	594.0	596.0	2	9.8	South
BA-18-62	614.3	615.0	0.7	8.8	Barbeau
BA-18-62	619.2	622.5	3.3	5.5	Barbeau
BA-18-60	96.0	103.0	7	27.4	New
BA-18-60	777.2	784.2	7	14.8	Main
BA-18-60	851.0	852.0	1	7.1	Other
BA-18-60	904.2	905.9	1.7	7	South
BA-18-63	484.3	485.3	1	9.1	Main
BA-18-63	502.0	503.0	1	8.9	Main
BA-18-63	564.7	568.0	3.3	37.5	South
BA-18-64	602.0	604.0	2	5.9	Main
BA-18-64	608.0	609.0	1	7.6	Main
BA-18-65	460.0	462.0	2	11.9	North
BA-18-65	663.9	665.5	1.6	13.3	Main
BA-18-65	847.0	849.0	2	9.8	South
BA-18-67A	444.0	446.0	2	8.5	Main
BA-18-69	494.0	496.0	2	9	Main
BRS-17-06	95.0	97.6	2.6	7.4	Titan
BRS-17-10	18.5	21.5	3	8.7	Titan
BRS-17-11	439.7	442.7	3	7.7	Titan
BA-18-109	155.0	156.5	1.5	5.6	Titan
CL-17-31	257.0	260.0	3	5.5	Coliseum
BA-18-71A	965.0	967.0	2	5.5	Footwall
BA-18-72	262.9	265.0	2.1	7.3	New North

Drill Hole	From (m)	To (m)	Width (m)	Au (g/t)	Comment / Zone
BA-18-72	377.5	378.7	1.2	14.1	North
BA-18-73	536.0	538.0	2	4.9	Footwall
BA-18-74	91.2	93.0	1.8	5.4	South
BA-18-75	803.0	805.0	2	4.1	North
BA-18-78	1003.9	1005.0	1.1	5.4	North
BA-18-81	289.5	291.5	2	7.1	Footwall
BA-18-81	354.0	356.6	2.6	18	North
BA-18-82	200.8	201.8	1	5.2	New North
BA-18-83	141.4	148.7	7.3	13.7	Main
BA-18-88	127.9	130.0	2.1	6.5	New North
BA-18-90	427.0	429.0	2	25.9	Footwall
BA-18-93	68.5	70.0	1.5	4.8	New North
BA-18-93	79.0	81.0	2	4.7	New North
BA-18-95	59.0	60.0	1	4.4	New North
BA-18-95	220.0	223.8	3.8	4.8	New North
BA-18-95	460.5	462.3	1.8	4.7	New North
BA-18-95	502.9	505.0	2.1	5.7	New North
BA-18-95	580.0	581.0	1	4	New North
BA-18-95	650.0	651.0	1	7.7	North
BA-18-95	860.0	862.0	2	4.8	Footwall
BA-18-102	203.0	205.0	2	3.7	Rivage
BA-18-102	252.1	253.5	1.4	10.6	Rivage
BA-18-102	269.8	271.2	1.4	5.6	Rivage
BA-18-108	293.5	296.0	2.5	11.4	New North
BA-19-01	444.3	445.4	1.1	4.9	Titan 1
BA-19-01	565.0	567.0	2	7	Titan 2
BA-19-07	103.6	105.1	1.5	20.7	North
BA-19-09	142.4	143.9	1.5	7.3	Rivage
BA-19-09	153.3	155.3	2	40.2	North
BA-19-11A	240.4	242.6	2.2	7.8	Barbeau
BA-19-24	420.9	425.5	4.6	14.6	Barbeau

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Hole	From (m)	To (m)	Length (m)	Grade (g/t)	Zone
MB-16-04	1.6	6	4.4	2.1	
MB-16-04	17	27	10	2.5	
MB-16-06	28	58	30	1.8	
including	28	41	13	3.6	
MB-16-07	58	78	20	0.8	
MB-16-14	52	61	9	5.4	
MB-16 01	95	109	14	1.5	
Including	103	109	6	3	
MB-16-02	22	30	8	0.8	
MB-16-03	43	46	3	3.4	
MB-16, 05	38	52	14	2	
MB-16-05	63	71	8	1.7	
MB-16-08	36	63	27	1.6	
Including	36	41	5	5.4	
MB-16-09	28	32	4	1	
MB-16-09	54	59	5	1.5	
MB-16-09	79	84	5	2.1	
MB-16-09	140	143	3	3.2	
MB-16-12	7	40	33	1.9	
Including	16	40	24	2.4	
Including	22	40	18	3.1	
Including	22	30	8	4.4	
Including	35	39	4	4.9	
MB-16-12	50	59	9	1.2	
Including	50	53	3	2.2	
MB-16-13	33	37	4	1.2	
MB-16-13	43	51	8	4.1	
MB-16-14	21	61	40	2.1	
Including	52	61	9	5.4	
MS-16-15	101	126	25	0.9	
Including	101	106	5	2.2	
Including	110	119	9	0.9	
MB-16-10	5	60	55	1.3	
Including	5	9	4	2.2	
Including	33	40	7	3.7	
Including	50	60	10	1.2	
MB-16-11	18	78	60	2.3	
Including	18	32	14	2.6	
Including	37	49	12	1.6	
Including	60	78	18	4.6	
BE-16-09	248.4	250.6	2.2	9.2	
BE-16-09	328.9	331.5	2.6	70.9	
MB-16-17	24	27.6	3.6	4.14	
MB-16-17	34	36.3	2.3	2.07	
MB-16-17	82	83.5	1.5	1.6	
MB-16-17	131	133	2	2.5	
MB-16-18	93.4	97.9	4.5	0.69	
MB-16-19	26.8	29.7	2.9	1.15	
MB-16-19	70.7	72	1.3	1.31	
MB-16-19	108.6	110.6	2	1.91	

MB-16-23	80.2	83.4	3.2	1.22	
MB-16-24	61.2	64.6	3.4	0.81	
MB-16-24	187	203.7	16.7	4.25	
including	191.2	196	4.8	11.89	
MB-16-26	36.15	53.2	15.45	1.3	
including	36.15	43	6.85	2.18	
MB-16-27	101.7	126	16.8	2.33	
including	118	126	8	3.58	
MB-16-28	89.4	92.5	3.1	1.01	
MB-16-28	118.5	136.5	16.6	2.27	
including	122.1	127.6	5.5	3.67	
MB-16-28	158	162.8	4.8	3.38	
MB-16-25	282.4	288.9	6.5	1.6	
MB-17-29	34.8	69.9	35.1	1	
including	34.8	41.5	6.7	2.3	
including	51.7	53.3	1.6	5.1	
including	66.6	69.9	3.3	1.5	
MB-17-30	64.4	67	2.6	1.9	
MB-17-30	126.5	130.8	4.3	2.2	
MB-17-30	174.1	178.5	4.4	3.3	
MB-17-31	53.7	62.5	8.8	1.3	
MB-17-32	17.6	20.7	3.1	2	
MB-17-32	170.1	176.7	6.6	2.5	
MB-17-33	13.7	14.7	1	1.4	
MB-17-34	55.2	57.2	2	0.7	
MB-17-35	141.7	180	38.3	1.2	
including	149	157	8	3.6	
including	149	153	4	5.4	
including	160	164.4	4.4	1.6	
MB-17-35	234.5	236.5	2	2.5	
MB-17-36	56	64	8	0.9	
including	61.7	64	2.3	2.6	
MB-17-36	84.2	97.4	13.2	1.6	
including	92.7	97.4	4.7	3.8	
MB-17-36	130.7	132.5	1.8	2.4	
MB-17-37	49.3	50.8	1.5	2.5	
MB-17-37	140.3	143.3	3	6.4	
MB-17-37	184.2	188.2	4	3.3	
MB-17-37	195.3	195.8	0.5	11.2	
MB-17-38	132.7	134.9	2.2	6.5	
MB-17-38	147.2	164	16.8	1	
MB-17-38	195.9	196.6	0.7	4.9	
MB-17-38	224.8	232.2	7.4	3	
including	230.1	232.2	2.1	9.4	
MB-17-38	339	341	1.6	2	
MB-17-39	3	76.2	73.2	1.1	
MB-17-40	8	8.5	0.5	11.6	
MB-17-40	29.7	38.7	9	3.6	
MB-17-41	3.7	118.3	114.6	1.6	
including	22.9	23.9	1	2.4	
including	33.3	75	41.8	2.8	
including	33.3	49.3	16.2	4.9	
including	69.7	75	5.3	4.4	
including	83.9	86.1	2.2	4.5	

including	97.1	99.6	2.5	9.8	
including	108.2	111	2.9	3.7	
MB-17-42	75.8	76.3	0.5	3.8	
MB-17-42	104.9	106.6	1.7	5.4	
MB-17-42	116.8	118.7	1.9	6.9	
MB-17-43	11.1	13.9	2.8	5.1	
MB-17-43	59.2	117	57.8	0.7	
including	66.3	70.5	4.2	3.1	
including	116	117	1	13.6	
Hole	From	To	Length	Grade	Location
MB-17-44	52.4	53.3	0.9	7.9	shear zone
MB-17-44	61.4	62.2	0.85	9.2	shear zone
MB-17-45	40.6	41.2	0.6	3	shear zone
MB-17-45	192.8	193.3	0.5	3.1	shear zone
MB-17-46	68.5	69.5	1	2.7	Contact of Intrusive(CoI) (hangingwall)
MB-17-46	204.3	207.3	3	1.9	CoI (Footwall)
MB-17-47	93	94	1	4.2	CoI (Footwall)
MB-17-47	169.6	172.3	2.7	4.4	shear zone
MB-17-48	72.3	73	0.7	6.7	shear zone
MB-17-48	112.3	118.4	6.1	1.7	CoI (Footwall)
MB-17-49	71.7	72.5	0.8	3.6	CoI (hangingwall)
MB-17-49	114	114.8	0.8	5.2	CoI (Footwall)
MB-17-49	144	145	1	8	shear in intrusive
MB-17-49	171.6	175.6	4	11.5	CoI (Footwall)
MB-17-50	53.1	62.5	9.4	2.1	shear zone
MB-17-50	139	148.5	9.5	2.7	CoI (Footwall)
MB-17-51	109	123.5	14.5	2.5	CoI (Footwall)
MB-17-53	48.6	49.6	1	3	intrusive dyke
MB-17-53	66.9	67.6	0.7	3.9	shear zone
MB-17-53	69.6	70.5	0.9	3.4	shear zone
MB-17-54	44.9	47.2	2.3	2.2	shear zone
MB-17-59	233.7	234.7	1	4.3	shear zone
MB-17-59	252.5	256.1	3.6	1.4	shear zone
MB-17-59	260	261.2	1.2	7.6	shear zone
MB-17-59	329.9	332.7	2.8	3.5	shear zone
MB-17-60	296	302.4	6.4	2	CoI (Footwall)
MB-17-60	522.6	524.7	2.1	6.4	South shear zone
MB-17-61	26.3	41.4	15.1	4	CoI (hangingwall)
MB-17-61	93.3	96.3	3	3.7	CoI (Footwall)
MB-17-62	11.7	12.4	0.7	5	shear zone
MB-17-62	51	53.6	2.6	1.9	CoI (hangingwall)
MB-17-62	102.2	102.7	0.5	4.9	shear zone
MB-17-63	16.3	25.7	9	1	shear zone
MB-17-64	63.8	65.3	1.5	5.6	shear zone
MB-17-65	32.1	35	2.9	1.4	shear zone
MB-17-65	96.7	98.7	1	2.5	shear zone
MB-17-67	32	38	6	2.2	shear zone
MB-17-69	35	35.9	0.9	2.8	shear in intrusive
MB-17-70	222	223	1	2.5	shear zone
MB-17-70	233	237	4	2.7	CoI (Footwall)
MB-17-70	291	304.9	13.9	3.3	South shear zone
MB-17-71	64.3	67	2.7	1.3	CoI (hangingwall)
MB-17-71	85.3	86.7	1.4	4.6	shear zone
MB-17-71	122.7	125.6	2.9	2.1	shear zone

MB-17-71	140.7	141.7	1	31.8	shear zone in intrusive
MB-17-71	151.8	153.2	1.4	2.8	shear zone
MB-17-72	65.5	66.3	0.8	3.2	shear zone
MB-17-72	90.4	91.1	0.7	2.6	shear zone
MB-17-72	102	103.9	1.9	3.8	CoI (hangingwall)
MB-17-72	135.3	139.3	4	9.7	shear zone
MB-17-72	186	186.7	0.7	18	shear zone + Qtz
MB-17-73	156	158.3	2.3	2.1	inside of intrusion
MB-17-73	182.4	185	2.6	4.9	CoI (Footwall)
MB-17-74	310.8	312.2	1.4	2.8	shear zone in intrusive
MB-17-74	344	352	8	5.3	(4.8 cut) shear zone
MB-17-75	150.6	153.1	2.5	1.8	CoI (hangingwa
MB-17-75	165	167	2	3.4	CoI (Footwall)
MB-17-75	165	167	2	3.4	CoI (Footwall)
MB-17-76	239	241	2	2.8	CoI (Footwall)
MB-17-76	365	369	4	9.9	shear zone + VG
MB-17-76	365	369	4	9.9	shear zone + VG
MB-17-76	429	430	1	4.4	shear zone
MB-17-77	471.5	473	1.5	6.7	CoI (hangingwall)
MB-17-77	526.8	528.6	1.8	2.7	CoI (Footwall)
MB-17-78	47.5	48.5	1	3.9	shear zone
MB-17-78	169	174	5	3	CoI (Footwall)
MB-17-78	205	205.5	0.5	3	Vqtz + VG
MB-17-78	350	354	4	2.5	Altered zone + 0.01 py
MB-17-78	415.9	418.1	2.2	5.4	Shear Zone
MB-17-79	161.7	166	4.3	1.6	COI
MB-17-79	181	182.7	1.7	2.3	COI (Footwall)
MB-17-79	265.7	268.7	3	2.3	SHR, COI (Footwall)
MB-17-79	420	424	4	2.4	SHR
MB-17-80	176	185	9	2.4	COI (hangingwall)
MB-17-80	299	299.5	0.5	9.3	COI (Footwall), VG
MB-17-81	28	29	1	14.8	SHR
MB-17-81	207.2	207.7	0.5	4.8	Vqtz, COI (Hangingwall)
MB-17-81	318.2	319.9	1.7	5.1	SHR
MB-17-81	323.1	325.6	2.5	1.9	SHR
MB-17-82	101.1	102.1	1	7.5	SHR
MB-17-82	152.8	155	2.2	5.3	SHR, COI (Footwall)
MB-17-82	223	224	1	4.6	SHR
MB-17-82	414	415	1	36.7	SHR, VG
MB-17-83	313	322	9	4.8	SHR
MB-17-83	361	362	1	3.2	SHR
MB-17-83	365	366	1	3.7	SHR
MB-17-84	205.4	206.2	0.8	4.2	SHR
MB-17-84	208.2	212.2	4	4.9	SHR
MB-17-84	220	222	2	5.4	SHR
MB-17-84	278.7	279.3	0.6	35.3	SHR
MB-17-85	223.1	226.2	3.1	8.1	SHR, COI (Footwall)
MB-17-86	189	192	3	3.2	SHR, COI (Footwall)
MB-17-86	426	427	1	4.3	COI
MB-17-86	459	461	2	1.4	SHR
MB-17-87	239	243	4	1.4	SHR, COI
MB-17-88	160.9	166.4	5.5	4.4	SHR, COI (Footwall)
MB-17-88	473.4	480.6	7.2	6.2	SHR
MB-17-89	14.3	14.8	0.5	5	SHR

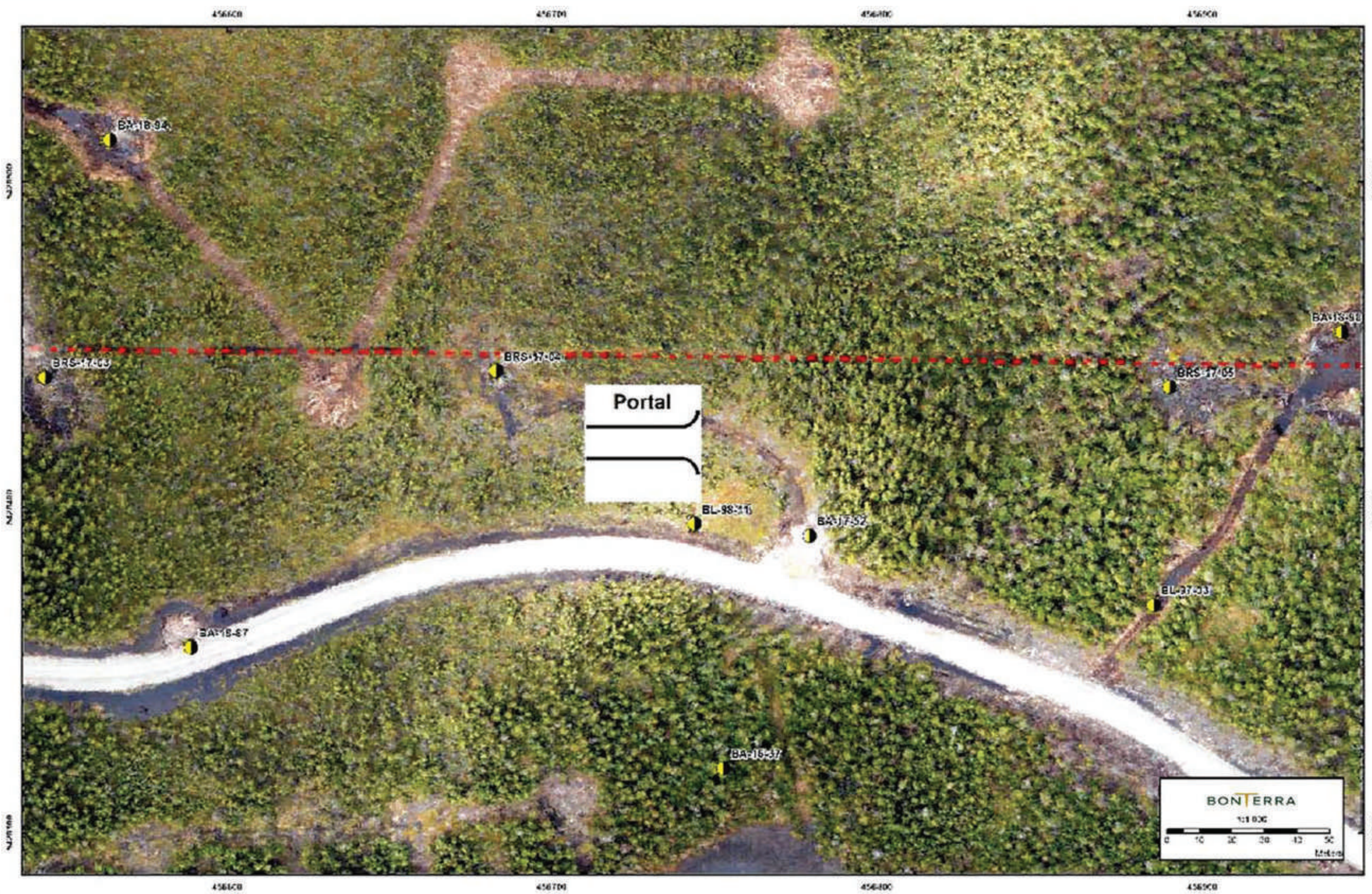
MB-17-89	190.5	195.2	4.7	1.3	Vqtz
MB-17-89	350.8	355.3	4.5	7.1	SHR
MB-17-90	110.5	117.5	7	2.1	SHR, COI
MB-17-90	175	178	3	3.8	SHR
MB-17-91	133	143	10	3	SHR, COI
MB-17-92	88.4	90.5	2.1	7	SHR
MB-17-92	123.5	126	2.5	2.4	SHR
MB-17-92	308	309	1	20	SHR
MB-17-92	342.4	347.4	5	2.5	SHR, COI (Footwall)
MB-17-93	145	149	4	4.7	Vqtz, VG
MB-17-93	180	187	7	3.4	SHR, VG
MB-17-93	394	399	5	5.5	SHR
MB-17-94	127	130	3	1.8	COI (hanging wall)
MB-17-94	248	250	2	2.8	SHR
MB-17-94	281	283	2	1	SHR
MB-17-94	301	303	2	4.7	SHR
MB-17-94	317.4	317.9	0.5	23.6	Vqtz, VG
MB-17-94	320	472	Pending	assay	results
MB-17-95	28.8	29.3	0.5	8.3	SHR, VG
MB-17-95	146.9	148	1.2	2.1	SHR
MB-17-95	154	161	7	3.2	SHR, VG
Including	159	161	2	9.5	Vqtz, VG
MB-17-95	313	317	4	3.9	SHR
MB-17-96	241.3	246.3	5	3.5	SHR
Including	244.3	246.3	2	5.4	SHR
MB-17-97	83.2	83.7	0.5	8.1	COI
MB-17-97	162	165.4	3.4	1.7	Vqtz
MB-17-97	191	193	2	4	SHR
MB-17-97	202	203	1	5.4	SHR
MB-17-97	283	285	2	1.6	SHR
MB-17-98	146.6	150	3.4	2.5	SHR
Including	149.2	150	0.9	8.5	SHR
MB-17-98	153.3	154.3	1	3.8	SHR, COI
MB-17-98	172.4	173.4	1	4.3	SHR
MB-17-99	389.3	397.5	8.2	7.1	SHR
Including	389.3	389.8	0.5	27.3	SHR
Including	395.2	396.8	1.7	24.3	SHR
MB-17-99	487	492.5	5.5	9.4	SHR
MB-17-100	147.3	148.8	1.5	2.7	
MB-17-101	122	124	2	5.9	
MB-17-101	137	138	1	4.4	
MB-17-101	231	234	3	2	
MB-17-102	199	203	4	8.4	
MB-17-102	358	360	2	5.5	VG
MB-17-103	178	178.7	0.7	35.1	VG
MB-17-103	302.5	303.5	1	3.9	
MB-17-103	334.1	336	1.9	3.4	
MB-17-104	138.8	140.3	1.5	6.2	
MB-17-104	208.8	209.3	0.5	8.2	
MB-17-105	134.2	135.8	1.6	3.9	
MB-17-105	139.2	141.6	2.4	6	VG
MB-17-105	139.2	141.6	2.4	6	VG
MB-17-105	413	416	3	5.1	
MB-17-106	196	197	1	5.2	

MB-17-106	233	235	2	7	
MB-17-107	172	175	3	3.5	
MB-17-108	193	198	5	5.9	
MB-17-108	512	515	3	4.1	
MB-17-109	117	123	6	5.3	
MB-17-110	166.7	168.2	1.5	6.7	
MB-17-110	208.2	214.6	6.4	3.1	
MB-17-110	238.7	239.4	0.7	15.7	
MB-17-110	243.1	243.6	0.5	30.5	
MB-17-110	495	498.6	3.6	2.6	
MB-17-111	305.7	308.7	3	27.8	VG
MB-17-113	165	167.6	2.6	7.8	
MB-17-113	266	267	1	3.8	
MB-17-114	174	175	1	3.6	
MB-17-114	204	205.5	1.5	5.1	VG
MB-17-114	227.3	228.3	1	3.2	
MB-17-114	432	436	4	4.8	
MB-17-115	69	71.5	2.5	2.1	
MB-17-115	149.7	151.2	1.5	2.5	
MB-17-115	217	218	1	14.2	
MB-17-115	377	378	1	4.5	
MB-17-116	360.8	362	1.2	4.3	
MB-17-117	243.6	344.7	1.1	3.7	
MB-17-118	70	71	1	6	
MB-17-118	230	234	4	5.2	
MB-17-118	311	312	1	4.7	
MB-17-118	332.7	333.7	1	4.7	
MB-17-118	350.5	353.4	2.9	2.4	
MB-17-118	398.8	399.5	0.7	25.1	VG
MB-17-119	176	179	2	4.8	
MB-17-119	210	211	1	3.8	
MB-17-119	251	255	4	2.9	
MB-17-119	484.4	485.8	1.4	9.9	
MB-17-119	530	531	1	8.8	
MB-17-120	220.8	221.4	0.6	20.2	
MB-17-120	299.4	300.4	1	4.5	
MB-17-120	341.9	344.4	2.5	3.1	
MB-17-120	422	426.3	4.3	5.8	
MB-17-121	84	84.8	0.8	3.1	
MB-17-121	149	149.5	0.5	7.6	
MB-17-121	177.7	180.1	2.4	6.5	
MB-17-122	308	310	2	14.5	
MB-17-123	61.5	62.4	0.9	4.1	VG
MB-17-123	143.8	144.5	0.7	8.3	VG
MB-17-123	266	270	4	3	
MB-17-124	65.5	66.2	0.7	22.5	
MB-17-124	288.8	291.8	3	5.5	
MB-17-127	121.6	123.6	2	6.9	
MB-17-127	336.7	337.7	1	3.5	
MB-17-127	341.2	342.2	1	7.9	
BR18-01	283.6	286	2.4	9.9	800
BR18-03	285.7	286.7	1	17.9	800
BR18-03	307.4	310.6	3.2	13.4	H3
BR18-05	206.9	208.2	1.3	7.8	H7

BR18-05	278.2	283.4	5.2	8.2	800
BR18-07	291.5	296	4.5	4.8	800
BR18-10	296.6	299	2.4	12.5	800
BR18-10	330.5	331.5	1	7.3	H3
BR18-08	246.4	248.2	1.8	8.4	H7
BR18-10	292.3	296.2	3.9	3	800
BR18-10	343.9	346.2	2.3	15.4	H3
BR18-09	168.5	172.2	3.7	4.6	950
BR18-09	253.3	254.3	1	12.3	H7
BR18-11	77.7	79.2	1.5	16.5	1000
BR18-11	297.6	303.4	5.8	2	800
BR18-11	334.6	336.5	1.9	10.8	H3
BR18-12	220.7	222.2	1.5	8.6	H7
BR18-12B	213	214.9	1.9	4.1	H7
BR18-12B	224.5	226	1.5	3.6	H7
BR18-12B	231.1	232.4	1.3	157.6	850
BR18-12B	290	291.2	1.2	7.8	800
BR18-18	121.8	123.4	1.6	6.2	950
BR18-18	151.9	153.3	1.4	1.6	950
BR18-21	143	144.1	1.1	5.2	950
BR18-21	305	310.1	5.1	4.1	H3
BR19-24A	280.5	282.2	1.7	7.6	H7
BR19-24A	287.5	291.5	4	10.1	H7
BR19-24A	296.5	300.6	4.1	4.8	H7
BR19-24A	344.7	349	4.3	2.2	800
BR19-25	194.8	199.3	4.5	15.5	H7
BR19-25	263.4	264.5	1.1	7.4	800

APPENDIX C

PLAN AND SECTIONS OF THE PORTAL



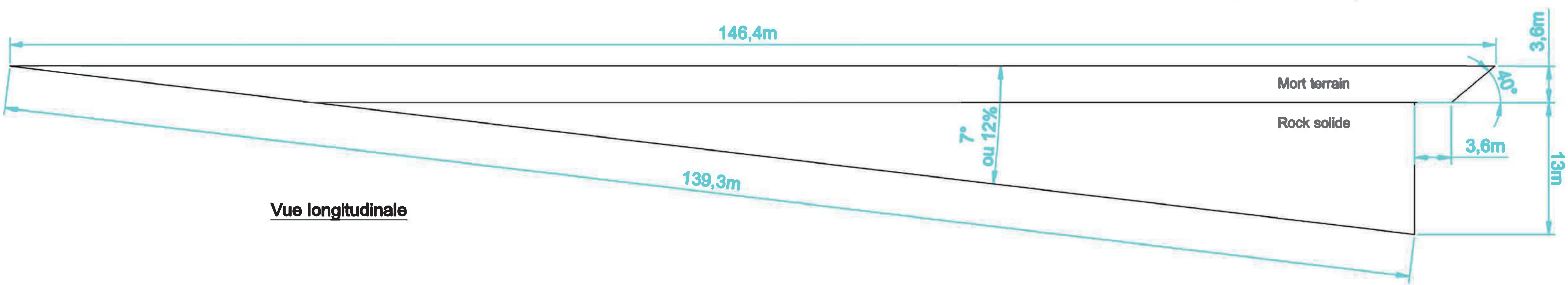
Note:

L'épaisseur du mort terrain provient des données des trous de forage présentés sur le plan.
Résultat disponible sur demande.

Volume d'excavation:

Volume de mort terrain = 8 140 m^3
Volume de rock solide = 6 338 m^3

Vue en section



Vue longitudinale

BONTERRA

PROJET_GLADIATOR

DESSI NÉPAR :	LP_MO D_SG	DATE:	17/07/19
DESSI NÉ PAR :	DESSINATEUR2	DATE:	DA TE
VÉRI FI ÉPAR:	INGÉNIEUR	DATE:	DA TE
APPROUVÉ PAR :	A DMINIS TRA TEUR	DATE:	DA TE
ÉCHELLE:	1:375		

TITRE :

PLAN_D'EXCAVATION
PORTAIL_POUR_RAMPE
PLAN_PRÉLIMINAIRE

FICHIER: FILE

APPENDIX D

TECHNICAL NOTE ON WATER MANAGEMENT AND TREATMENT

Lac Barry, Nord-du-Québec (Québec)

NOTE TECHNIQUE
GESTION ET TRAITEMENT DES EAUX POUR L'AMÉNAGEMENT DU SITE ET FONÇAGE D'UNE RAMPE D'EXPLORATION SUR LA PROPRIÉTÉ GLADIATOR

RTE0688-5501-01

No de référence GCM : 19-0696-0688

Préparé par : Stacy Paré, ing. jr, no OIQ : 6010981
Sous la direction et la supervision immédiates de Charles Veilleux, ing.

2020-02-11

Vérifié par : Charles Veilleux, ing., no OIQ : 5038360
GCM Consultants

Révision	Émission	Date
01	**FINALE**	**2020.02.10**

HISTORIQUE DES RÉVISIONS

Révision					Commentaires (Raison de la révision)
Rév.	**Préparé par**	**Vérifié par**	**Date**	**Pages révisées**	
00	SP	CV	2020.01.07		Finale
01	SP	CV	2020.02.10		Finale

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1.0 INTRODUCTION

1.1 Mise en contexte

Afin de pouvoir réaliser diverses campagnes d'exploration souterraine du gisement d'or situé sous le lac Barry, Ressources Bonterra inc. (Bonterra) souhaite mettre en place une rampe sur la propriété Gladiator. Ce site est situé sur le territoire d'Eeyou Istchee Baie-James, dans la région administrative du Nord-du-Québec, à environ 100 km à l'est de Lebel-sur-Quévillon. Le site est sur des terres de catégorie lll, soit sur des terres publiques faisant partie du domaine de l'état. Les coordonnées centrales de localisation du projet Gladiator sont (selon le système de référence géodésique NAD83) :

- Latitude : 49,006842°
- Longitude : -75,584155°

Afin d'obtenir les autorisations requises pour le fonçage d'une rampe et l'aménagement du site, un plan de gestion des eaux doit être réalisé.

1.2 Mandat

Dans le cadre de la demande d'attestation de non-assujettissement déposée au ministère en octobre 2019, un plan préliminaire de localisation des infrastructures futures a été réalisé (voir Annexe 1). Une caractérisation sur le milieu avait également été réalisée dans le cadre de la mise en place du campement à proximité. Le plan de gestion des eaux, sur lequel GCM est mandaté, permettra de déterminer de quelle manière les eaux seront gérées lors des travaux d'exploration avancée souhaités sur le site Gladiator. Il est prévu que la gestion des eaux sur le site soit principalement effectuée par un réseau de fossés collecteurs et de bassins.

1.3 Gestion des eaux sur le site

Les eaux de ruissellement qui n'auront pas été en contact avec le site Gladiator seront détournées dans l'environnement sans traitement. Un réseau de fossés de captation autour du site permettra de recueillir la majorité des eaux provenant du bassin versant.

Un réseau de fossés collecteurs placés autour des aires d'entreposage et des différentes infrastructures permettra de recueillir les eaux de ruissellement pendant les opérations nécessitant une gestion. Celles-ci seront redirigées gravitairement vers un fossé principal, qui permettra l'acheminement direct vers le bassin de sédimentation.

Les eaux du site transiteront par un bassin de sédimentation et par un bassin de polissage avant d'être rejetées à l'effluent (lac Barry). L'équipe de Bonterra ne prévoit actuellement pas l'installation d'un système de traitement des eaux supplémentaire. Dans l'éventualité où la qualité des eaux ne respecterait pas les critères de la Directive 019, un système de traitement complémentaire sera ajouté. Le plan de gestion des eaux est présenté à l'Annexe 3.

2.0 MÉTHODOLOGIE

2.1 Directives et guides de conception

Les calculs hydrologiques ainsi que la conception des fossés, du bassin de sédimentation et du bassin de polissage sont basés principalement sur les directives et guides de conception suivants :

Tableau 1 – Principales références de conception utilisées

Directive ou guide	Référence
Manuel de calcul et de conception des ouvrages municipaux de gestion des eaux pluviales	(MINISTÈRE DU DÉVELOPPEMENT DURABLE, DE L'ENVIRONNEMENT ET DE LA LUTTE CONTRE LES CHANGEMENTS CLIMATIQUES, 2017)
Directive 019 sur l'industrie minière	(MINISTÈRE DU DÉVELOPPEMENT DURABLE, ENVIRONNEMENT ET PARCS, 2012)
Guide de gestion des eaux pluviales	(MINISTÈRE DU DÉVELOPPEMENT DURABLE, DE L'ENVIRONNEMENT, DE LA FAUNE ET DES PARCS (MDDEFP) et MINISTÈRE DES AFFAIRES MUNICIPALES, DES RÉGIONS ET DE L'OCCUPATION DU TERRITOIRE (MAMROT), 2019)
Manuel de conception des ponceaux	(Ministère des Transports du Québec (MTQ), 2014)
Bassin de stockage d'eau et de sédimentation	(MINISTÈRE DE L'AGRICULTURE, PÊCHERIES ET ALIMENTATION (MAPAQ), 2013)
Evaluation of Design Criteria for Construction Sediment Control Ponds – Markham, Ontario	(TORONTO AND REGION CONSERVATIONT, UNIVERSITY OF GUELPH, 2006)

2.2 Hydrologie

La station météorologique CHAPAIS 2 a été sélectionnée afin d'évaluer les précipitations sur la région à l'étude. Étant donnée sa proximité d'environ 107 km avec le site Gladiator et la quantité de données disponibles, les données recueillies devraient refléter les conditions réelles du site à l'étude. Le Tableau 2 ci-dessous présente les caractéristiques principales de la station météorologique sélectionnée.

Tableau 2 – Principales caractéristiques de la station météorologique sélectionnée

	Station Chapais 2
Plateforme	Info-Climat
Numéro	7091305
Années disponibles	1962-2004
Années traitées	1963-1998
Latitude	49°47'00,000" N
Longitude	74°51'00,000" O
Altitude	396,20 m

Selon la nature du site et le type de drainage, la période de récurrence de conception choisie est de 100 ans (Directive 019). Afin de refléter des données représentatives, un minimum de 25 années ont été analysées (30 années étaient disponibles). Également, le Ministère de l'Environnement et de la lutte contre les changements climatiques (MELCC) suggère de majorer les intensités des précipitations de 18% afin de tenir compte des effets des changements climatiques.

2.3 Topographie

Les courbes topographiques utilisées dans le cadre du présent mandat ont été fournies par Bonterra et proviennent d'un relevé LiDAR réalisé et fourni en septembre 2019. Avec une altitude maximale de 400 m et une altitude minimale de 389 m, le site présente peu de dénivelé. L'eau de ruissellement n'est donc pas dirigée à un seul point. Selon la caractérisation effectuée par Services Envirosynergie lors de la mise en place du campement minier, « le sol des milieux terrestres se compose d'un sable brun grossier avec un drainage subhydrique. Dans les milieux humides, le sol est constitué majoritairement d'une couche de matière organique reposant parfois sur un sable limoneux et parfois directement sur le roc » (ENVIROSYNERGIE, 2017).

Selon l'aménagement des infrastructures, il est possible de distinguer 5 zones caractérisées par la nature des sols en place. Cette caractérisation permet également d'établir un coefficient de ruissellement (Cr) qui permettra d'évaluer la quantité d'eau à gérer. Le Tableau 3 présente ces zones ainsi que les coefficients établis.

Tableau 3 – Délimitation des aires de captation sur le site Gladiator

Caractéristique de la zone	Surface (ha)	Cr (été)	Cr (hiver)
Halde à stériles	1,93	0,5	1.0
Halde à morts-terrains	0,55	0,5	1.0
Halde à matières organiques	1,12	0,5	1.0
Terrain boisé	12,56	0,3	0.4
Terrain déboisé (sable et gravier)	2,69	0,7	1.0
TOTAL	**18,85**		

2.4 Bilan d'eau

Afin de réaliser le bilan d'eau du site, les données météorologiques ont été analysées et les différentes zones identifiées ont été caractérisées afin de déterminer la portion de précipitations qui va soit ruisseler directement, s'évaporer ou s'infiltrer. Le volume d'eau à collecter pour chaque zone peut ainsi être déterminé. L'évaluation du débit d'eau à gérer a été évalué pour des conditions moyennes, des conditions humides et des conditions sèches de précipitations. Ces conditions sont établies à l'aide d'une loi normale bivariée.

Selon l'information fournie par Bonterra, le besoin en eau pour les opérations de forage est estimé à 38,4 m^3/jour. Il est considéré que cette quantité d'eau sera celle du dénoyage de la rampe à cette étape de l'analyse et que cette valeur sera raffinée suivant l'évolution du projet. Cette quantité d'eau à traiter est incluse dans le volume d'eau à traiter total présenté dans la section 0 (dénoyage de la rampe).

2.5 Fossés collecteurs

Le réseau de captage de l'eau de percolation autour des haldes à stériles, à mort-terrain et à matières organiques comprend des fossés de collecte permettant d'acheminer l'eau vers le fossé de collecte principal. Les fossés sont conçus afin d'évacuer une crue de récurrence 1 : 100 ans et sont de forme trapézoïdale. La conception préliminaire des fossés a été effectuée selon les caractéristiques présentées au Tableau 4.

Tableau 4 – Caractéristiques préliminaires des fossés de collecte des eaux

	Fossé de déviation des eaux propres	Fossé de collecte des infrastructures	Fossé de collecte principal
Largeur min du fond (m)	1,0	1,0	1,0
Hauteur min (m)	1,0	1,5	1,5
Pente latérale *	3H : 1V	3H : 1V	3H : 1V
Pente longitudinale (%)	0,3 - 10,0	0,3 - 10,0	0,3 - 10,0
Revanche (mm)	300	500	500
Calibre min d'enrochement (mm)**	-	100-300	100-300
Épaisseur min d'enrochement (mm)**	-	400	400
Coefficient de rugosité de l'enrochement	0,033	0,033	0,033

* Selon la stabilité du sol en place, il sera possible de réduire les pentes latérales à 2H : 1V. La stabilité des pentes devra être confirmée par un ingénieur en géotechnique lors de la prochaine phase d'ingénierie.

** La Directive 019 prescrit des valeurs minimales d'enrochement d'une épaisseur de 300 mm et d'un calibre de 0-200 mm.

Il est à noter qu'un fossé de déviation s'avère nécessaire afin de limiter la quantité d'eau propre qui sera en contact avec les différentes infrastructures du site minier. Aucune exigence précise n'est définie pour ce type de fossé. L'analyse du bassin versant naturel permet d'évaluer le volume d'eau qui sera à dévier. Ce volume n'est pas présenté dans les résultats, mais sera quantifié selon une période de récurrence de 25 ans. Les dimensions exactes de chaque classe de fossé seront précisées lors d'une phase future de conception. Un détail type pour chaque classe de fossé est présenté à l'Annexe 4.

2.6 Bassin de sédimentation

La conception du réseau de drainage comprend également un bassin de sédimentation pour collecter les eaux de ruissellement en provenance de la halde à stériles, de la halde à mort-terrain, de la halde à matières organiques, ainsi que de la zone industrielle. Le bassin de sédimentation a été conçu pour capter adéquatement une crue 1 : 100 ans lors d'une pluie 24 h tout en favorisant la diminution de la charge sédimentaire à des concentrations acceptables avant le rejet dans l'environnement de façon gravitaire. La conception prend en compte le temps de sédimentation moyen des différents types de particules rejoignant le bassin.

Étant donné que le site n'est pas encore en exploitation, les caractéristiques physiques des particules retrouvées dans les haldes sont basées sur des hypothèses. Bien que le diamètre des particules soit plus près d'un gravier pour la halde à stériles, on peut croire qu'une bonne proportion des particules sera de faible diamètre étant donnée la nature des sols naturels présents, plutôt composés de sable fin. Les hypothèses de conception quant à la caractérisation préliminaire des particules à sédimenter sont présentées au Tableau 5 suivant. Finalement, il est prévu que le passage entre le bassin de sédimentation et le bassin de polissage s'effectuera au moyen de ponceaux de manière à réguler le débit s'y échappant.

Tableau 5 – Caractéristiques et hypothèses pour les particules à sédimenter

Diamètre minimum acceptable des particules (mm)	Masse volumique des particules (kg/m³)	Pertes de sol (T/ha/an)	Délai entre 2 curages (ans)
0.15	2 145	3.00	2

(MINISTÈRE DE L'AGRICULTURE, DES PÊCHERIES ET ALIMENTATION DU QUÉBEC (MAPAQ), 2013)

2.7 Bassin de polissage

Dans le cadre de ce projet, aucune usine de traitement n'est prévue. Le surnageant en provenance du bassin de sédimentation sera acheminé vers le bassin de polissage. Le bassin de polissage agira à titre de second point de décantation et à titre de bassin tampon avant le rejet à l'effluent. Le rejet s'effectuera de façon gravitaire via un fossé dont la capacité hydraulique sera équivalente à celle du débit d'entrée. L'Annexe 4 présente une coupe type des bassins.

3.0 PRÉSENTATION DES RÉSULTATS

3.1 Bilan d'eau

3.1.1 Données météorologiques

Les données recueillies par la station de Chapais ont été synthétisées afin d'obtenir une moyenne mensuelle de précipitations liquides et solides s'échelonnant sur une période de 12 mois. L'hypothèse qu'un centimètre de neige représente un centimètre de pluie a été posée. Ces données sont présentées au Tableau 6. À partir des données en conditions moyennes, les précipitations en conditions humides et sèches ont été obtenues selon une loi normale bivariée pour une récurrence 1 :100 ans afin d'obtenir les précipitations maximales et minimales probables. Ces résultats sont présentés au Tableau 7 et au Tableau 8 suivants.

Tableau 6 – Données météorologiques en conditions moyennes

Mois	Précipitations		
	Pluie (mm)	Neige (cm)	Total (mm)
Janvier	2,3	64,3	66,6
Février	1,8	44,5	46,3
Mars	10,0	45,2	55,7
Avril	31,0	27,7	58,7
Mai	81,7	6,3	88,0
Juin	117,3	0,4	117,7
Juillet	144,5	0,0	144,5
Août	130,2	0,0	130,2
Septembre	140,2	1,6	141,7
Octobre	77,2	23,8	101,1
Novembre	40,2	59,2	99,4
Décembre	4,3	66,9	71,2
TOTAL ANNUEL	**780,6**	**339,7**	**1121,0**

Tableau 7 – Données météorologiques en conditions humides

Mois	Précipitations		
	Pluie (mm)	Neige (cm)	Total (mm)
Janvier	3,1	86,6	89,7
Février	2,5	59,9	62,4
Mars	13,4	60,8	75,1
Avril	41,8	37,3	79,1
Mai	110,1	8,5	118,5
Juin	158,0	0,5	158,5
Juillet	194,7	0,0	194,7
Août	175,4	0,0	175,4
Septembre	188,9	2,1	191,0
Octobre	104,1	32,1	136,2
Novembre	54,1	79,8	133,9
Décembre	5,8	90,1	95,9
TOTAL ANNUEL	**1051,7**	**457,8**	**1510,4**

Tableau 8 – Données météorologiques en conditions sèches

Mois	Précipitations		
	Pluie (mm)	Neige (cm)	Total (mm)
Janvier	1,4	39,0	40,4
Février	1,1	27,0	28,1
Mars	6,0	27,4	33,9
Avril	18,8	16,8	35,7
Mai	49,6	3,8	53,4
Juin	71,2	0,2	71,5
Juillet	87,8	0,0	87,8
Août	79,1	0,0	79,1
Septembre	85,1	1,0	86,1
Octobre	46,9	14,5	61,4
Novembre	24,4	36,0	60,4
Décembre	2,6	40,6	43,2
TOTAL ANNUEL	**474,1**	**206,4**	**680,9**

Les données météorologiques d'évaporation et d'évapotranspiration considérées sont invariables selon les conditions (sèches, moyennes et humides). Il est présumé, à ce stade de l'analyse, que les données sont les mêmes pour l'évaporation et l'évapotranspiration du secteur.

Tableau 9 – Données météorologiques d'évaporation et d'évapotranspiration

Mois	Évaporation (mm)	Évapotranspiration (mm)
Janvier	0,0	0,0
Février	0,0	0,0
Mars	0,0	0,0
Avril	6,4	6,4
Mai	63,1	63,1
Juin	96,2	96,2
Juillet	111,8	111,8
Août	95,8	95,8
Septembre	61,1	61,1
Octobre	22,4	22,4
Novembre	0,1	0,1
Décembre	0,0	0,0
TOTAL ANNUEL	**457,0**	**457,0**

3.1.2 Bassin de sédimentation

Les Tableau 10, Tableau 11 et Tableau 12 résument les scénarios précédemment décrits. Il est possible d'observer que le plus gros apport en eau provient de la zone industrielle. La variation entre les débits est relativement faible.

Tableau 10 – Volumes d'eau acheminés au bassin de sédimentation en conditions moyennes

Mois	Vol. en provenance				Vol. total acheminé au bassin de sédimentation
	Secteur halde à stériles	Secteur haldes à matières organiques et mort-terrain	Secteur portail et zone industrielle	Dénoyage rampe en opération	
	(m^3)	(m^3)	(m^3)	(m^3)	(m^3)
Janvier	1 761	1 028	2 146	1 190	6 126
Février	1 417	828	1 727	1 075	5 047
Mars	2 865	1 673	3 492	1 190	9 220
Avril	4 279	2 498	5 214	1 152	13 144
Mai	3 163	1 712	4 179	1 190	10 244
Juin	3 809	2 062	5 032	1 152	12 055
Juillet	4 669	2 527	6 169	1 190	14 556
Août	4 207	2 277	5 558	1 190	13 233
Septembre	4 585	2 482	6 057	1 152	14 276
Octobre	3 497	1 893	4 620	1 190	11 201
Novembre	3 237	1 752	4 276	1 152	10 416
Décembre	1 622	878	2 143	1 190	5 833
TOTAL MOY. ANNUEL	**39 111**	**21 609**	**50 614**	**14 016**	**125 351**

Tableau 11 – Volumes d'eau acheminés au bassin de sédimentation en conditions humides

Mois	Vol. en provenance				Vol. total acheminé au bassin de sédimentation
	Secteur halde à stériles	Secteur haldes à matières organiques et mort-terrain	Secteur portail et zone industrielle	Dénoyage rampe en opération	
	(m^3)	(m^3)	(m^3)	(m^3)	(m^3)
Janvier	2 373	1 385	2 892	1 190	7 840
Février	1 910	1 115	2 327	1 075	6 427
Mars	3 861	2 254	4 704	1 190	12 010
Avril	5 766	3 366	7 026	1 152	17 309
Mai	4 262	2 307	5 630	1 190	13 389
Juin	5 132	2 778	6 780	1 152	15 842
Juillet	6 291	3 405	8 312	1 190	19 199
Août	5 668	3 068	7 489	1 190	17 416
Septembre	6 177	3 344	8 162	1 152	18 835
Octobre	4 712	2 550	6 225	1 190	14 678
Novembre	4 361	2 360	5 761	1 152	13 635
Décembre	2 185	1 183	2 887	1 190	7 445
TOTAL MAX. ANNUEL	**52 698**	**29 116**	**68 196**	**14 016**	**164 026**

Tableau 12 – Volumes d'eau acheminés au bassin de sédimentation en conditions sèches

Mois	Vol. en provenance				Vol. total acheminé au bassin de sédimentation
	Secteur halde à stériles	Secteur haldes à matières organiques et mort-terrain	Secteur portail et zone industrielle	Dénoyage rampe en opération	
	(m^3)	(m^3)	(m^3)	(m^3)	(m^3)
Janvier	1 070	625	1 303	1 190	4 188
Février	861	503	1 049	1 075	3 488
Mars	1 740	1 016	2 121	1 190	6 068
Avril	2 599	1 517	3 167	1 152	8 435
Mai	1 921	1 040	2 538	1 190	6 689
Juin	2 313	1 252	3 056	1 152	7 774
Juillet	2 836	1 535	3 747	1 190	9 308
Août	2 555	1 383	3 376	1 190	8 505
Septembre	2 785	1 507	3 679	1 152	9 123
Octobre	2 124	1 150	2 806	1 190	7 270
Novembre	1 966	1 064	2 597	1 152	6 779
Décembre	985	533	1 301	1 190	4 010
TOTAL MIN. ANNUEL	**23 755**	**13 125**	**30 741**	**14 016**	**81 638**

Les eaux, une fois acheminées au bassin de sédimentation, devront décanter et l'eau emmagasinée par le bassin sera également décantée. Cette quantité d'eau s'ajoutera au débit acheminé au bassin de polissage et dépendra de la surface miroir du bassin de sédimentation. Dans le cas présent, une perte d'eau (infiltration) du bassin est considérée. Le Tableau 13, le Tableau 14 et le Tableau 15 présentent les volumes traités dans le bassin de sédimentation selon le dimensionnement préliminaire.

Tableau 13 – Volumes d'eau traités dans le bassin de sédimentation en conditions moyennes

Mois	Vol. acheminé au bassin de sédimentation	Vol. emmagasiné par le bassin de sédimentation	Vol. total traité au bassin de sédimentation
	(m^3)	(m^3)	(m^3)
Janvier	6 126	76	6 202
Février	5 047	54	5 101
Mars	9 220	157	9 377
Avril	13 144	265	13 408
Mai	10 244	160	10 404
Juin	12 055	178	12 232
Juillet	14 556	276	14 832
Août	13 233	290	13 523
Septembre	14 276	667	14 943
Octobre	11 201	475	11 676
Novembre	10 416	400	10 816
Décembre	5 833	97	5 930
TOTAL MOY. ANNUEL	**125 351**	**3 094**	**128 445**

Tableau 14 – Volumes d'eau traités dans le bassin de sédimentation en conditions humides

Mois	Vol. acheminé au bassin de sédimentation	Vol. emmagasiné par le bassin de sédimentation	Vol. total traité au bassin de sédimentation
	(m^3)	(m^3)	(m^3)
Janvier	7 840	102	7 942
Février	6 427	73	6 500
Mars	12 010	212	12 221
Avril	17 309	375	17 685
Mai	13 389	400	13 790
Juin	15 842	521	16 363
Juillet	19 199	699	19 899
Août	17 416	672	18 087
Septembre	18 835	1 078	19 913
Octobre	14 678	706	15 384
Novembre	13 635	539	14 173
Décembre	7 445	131	7 576
TOTAL MAX. ANNUEL	**164 026**	**5 509**	**169 535**

Tableau 15 – Volumes d'eau traités dans le bassin de sédimentation en conditions sèches

Mois	Vol. acheminé au bassin de sédimentation (m^3)	Vol. emmagasiné par le bassin de sédimentation (m^3)	Vol. total traité au bassin de sédimentation (m^3)
Janvier	4 188	46	4 234
Février	3 488	33	3 521
Mars	6 068	96	6 163
Avril	8 435	139	8 575
Mai	6 689	0	6 689
Juin	7 774	0	7 774
Juillet	9 308	0	9 308
Août	8 505	0	8 505
Septembre	9 123	203	9 326
Octobre	7 270	215	7 485
Novembre	6 779	242	7 021
Décembre	4 010	59	4 069
TOTAL MIN. ANNUEL	**81 638**	**365**	**82 003**

Le Tableau 16 présente les dimensions préliminaires du bassin de sédimentation.

Tableau 16 – Dimensions préliminaires du bassin de sédimentation

Largeur du fond (m)	Longueur du fond (m)	Pente latérale	Hauteur utile (m)	Revanche (mm)	Volume utile (m^3)
20.00	160.00	2.5H : 1.0V	4.00	1000	9 870

3.1.3 Bassin de polissage

Comme pour le bassin de sédimentation, l'eau s'accumulant dans le bassin de polissage doit également s'ajouter au volume à traiter. Le Tableau 17 montre les débits mensuels à traiter dans le bassin de polissage selon les conditions moyennes, humides et sèches.

Tableau 17 – Volumes d'eau traités dans le bassin de polissage en conditions moyennes

Mois	Vol. acheminé au bassin de polissage	Vol. emmagasiné par le bassin de polissage	Vol. total traité au bassin de polissage
	(m^3)	(m^3)	(m^3)
Janvier	6 202	24	6 225
Février	5 101	17	5 118
Mars	9 377	49	9 427
Avril	13 408	83	13 491
Mai	10 404	50	10 454
Juin	12 232	56	12 288
Juillet	14 832	86	14 919
Août	13 523	91	13 613
Septembre	14 943	209	15 153
Octobre	11 676	149	11 825
Novembre	10 816	125	10 941
Décembre	5 930	30	5 960
TOTAL MOY. ANNUEL	**128 445**	**970**	**129 415**

Tableau 18 – Volumes d'eau traités dans le bassin de polissage en conditions humides

Mois	Vol. acheminé au bassin de polissage	Vol. emmagasiné par le bassin de polissage	Vol. total traité au bassin de polissage
	(m^3)	(m^3)	(m^3)
Janvier	7 942	32	7 974
Février	6 500	23	6 523
Mars	12 221	66	12 288
Avril	17 685	118	17 802
Mai	13 790	126	13 915
Juin	16 363	163	16 527
Juillet	19 899	219	20 118
Août	18 087	211	18 298
Septembre	19 913	338	20 251
Octobre	15 384	221	15 605
Novembre	14 173	169	14 342
Décembre	7 576	41	7 617
TOTAL MAX. ANNUEL	**169 535**	**1 727**	**171 262**

Tableau 19 – Volumes d'eau traités dans le bassin de polissage en conditions sèches

Mois	Vol. acheminé au bassin de polissage (m^3)	Vol. emmagasiné par le bassin de polissage (m^3)	Vol. total traité au bassin de polissage (m^3)
Janvier	4 234	14	4 249
Février	3 521	10	3 531
Mars	6 163	30	6 193
Avril	8 575	44	8 619
Mai	6 689	0	6 689
Juin	7 774	0	7 774
Juillet	9 308	0	9 308
Août	8 505	0	8 505
Septembre	9 326	64	9 390
Octobre	7 485	67	7 552
Novembre	7 021	76	7 097
Décembre	4 069	19	4 088
TOTAL MIN. ANNUEL	**82 003**	**114**	**82 117**

Le Tableau 20 présente les dimensions préliminaires du bassin de polissage.

Tableau 20 – Dimensions préliminaires du bassin de polissage

Largeur du fond (m)	Longueur du fond (m)	Pente latérale	Hauteur utile (m)	Revanche (mm)	Volume utile (m^3)
25.00	30.00	3.0H : 1.0V	3.0	1000	2 183

3.2 Diagrammes d'écoulement des eaux de ruissellement

Un schéma de gestion de l'eau de ruissellement a été créé pour chacun des trois types de conditions (sèches, moyennes et humides) afin d'illustrer les apports et les pertes d'eau sur l'ensemble des futures infrastructures du site. Ces schémas sont présentés à l'Annexe 2. Il est à noter que certaines valeurs peuvent différer entre les débits à l'effluent présentés dans la section des résultats et ceux présentés dans les diagrammes, dû au fait que l'infiltration négative a été négligée pour l'obtention du débit maximal à traiter.

Les calculs de débit selon les trois types de conditions (sèches, moyennes et humides) ont permis d'obtenir un débit de sortie du bassin de polissage vers l'effluent. Dans le cas où les eaux devaient être traitées, ces débits devront être ajustés en fonction de la capacité de traitement de l'usine.

Tableau 21 – Débit minimal, moyen et maximal à l'effluent

Conditions	Débit à l'effluent (m^3/h)
Sèches (débit minimal)	10
Moyennes (débit moyen)	15
Humides (débit maximal)	20

3.2.1 Évaluation des débits d'étiage

Dans le but de définir les objectifs environnementaux de rejet à l'effluent (OER), il est nécessaire de préciser les débits en période d'étiage. En accord avec la méthode d'évaluation proposée par le MDDELCC, les débits à estimer sont les débits d'étiage de récurrence 1:2 ans et 1:10 ans pour une durée de 7 jours consécutifs, ainsi que de récurrence 1:5 ans pour une durée de 30 jours consécutifs.

Dans le cas présent, les eaux traitées sur le site Gladiator sont rejetées en aval au Lac Barry. Dans ce cas, le calcul de l'OER est basé sur une analyse de l'ensemble des apports du milieu et non sur la dilution au bout d'une zone de mélange. Une modélisation hydrodynamique est plus appropriée pour déterminer les limites maximales de la zone de mélange.

Le débit de l'effluent est régulé par les structures de traitement des eaux mises en place sur le site, soit les fossés, le bassin de sédimentation et le bassin de polissage. Selon les débits moyens mensuels en période sèche présentés précédemment, le débit minimal de rejet serait d'environ 5 m^3/h.

4.0 OBSERVATIONS ET RECOMMANDATIONS

L'analyse des résultats présentés précédemment permet de déterminer la plage des débits qui pourraient devoir être gérés dans le cadre des opérations à venir. Afin de raffiner les données de conception évoquées, une étude géotechnique du site devrait être réalisée avant le début des travaux afin de valider la nature des sols en place et les pentes sécuritaires acceptables pour les talus des bassins projetés. De plus, afin de confirmer qu'aucun traitement de l'eau n'est requis ou ne sera requis dans le futur, il serait pertinent de pousser l'analyse géochimique pour les eaux d'exhaure afin de valider s'il y a présence de métaux ou autres substances.

5.0 CONCLUSION

L'objectif du mandat de GCM était de produire un bilan des eaux de surface ainsi qu'un plan de gestion des eaux afin de démontrer la maîtrise des eaux par Bonterra sur le site d'exploration Gladiator. Pour ce faire, les calculs hydrologiques ont été réalisés afin de comprendre les précipitations et le réseau d'écoulement de la région et de son bassin versant; puis les débits d'eau à traiter, selon plusieurs conditions, ont été déterminés afin de connaître la quantité d'eau de ruissellement qui devra être gérée. Finalement, en fonction de la position et de la dimension des futures infrastructures sur le site, un réseau de fossés de collecte et de bassins a été conçu afin de recueillir les eaux et de les traiter, pour ensuite les acheminer à l'effluent final tout en respectant les normes de rejet de la Directive 019. Les résultats obtenus ont permis de réaliser une conception préliminaire des infrastructures. La conception pourra être étoffée lors de l'ingénierie détaillée, suite à l'obtention de l'autorisation pour l'aménagement du site et le fonçage de la rampe.

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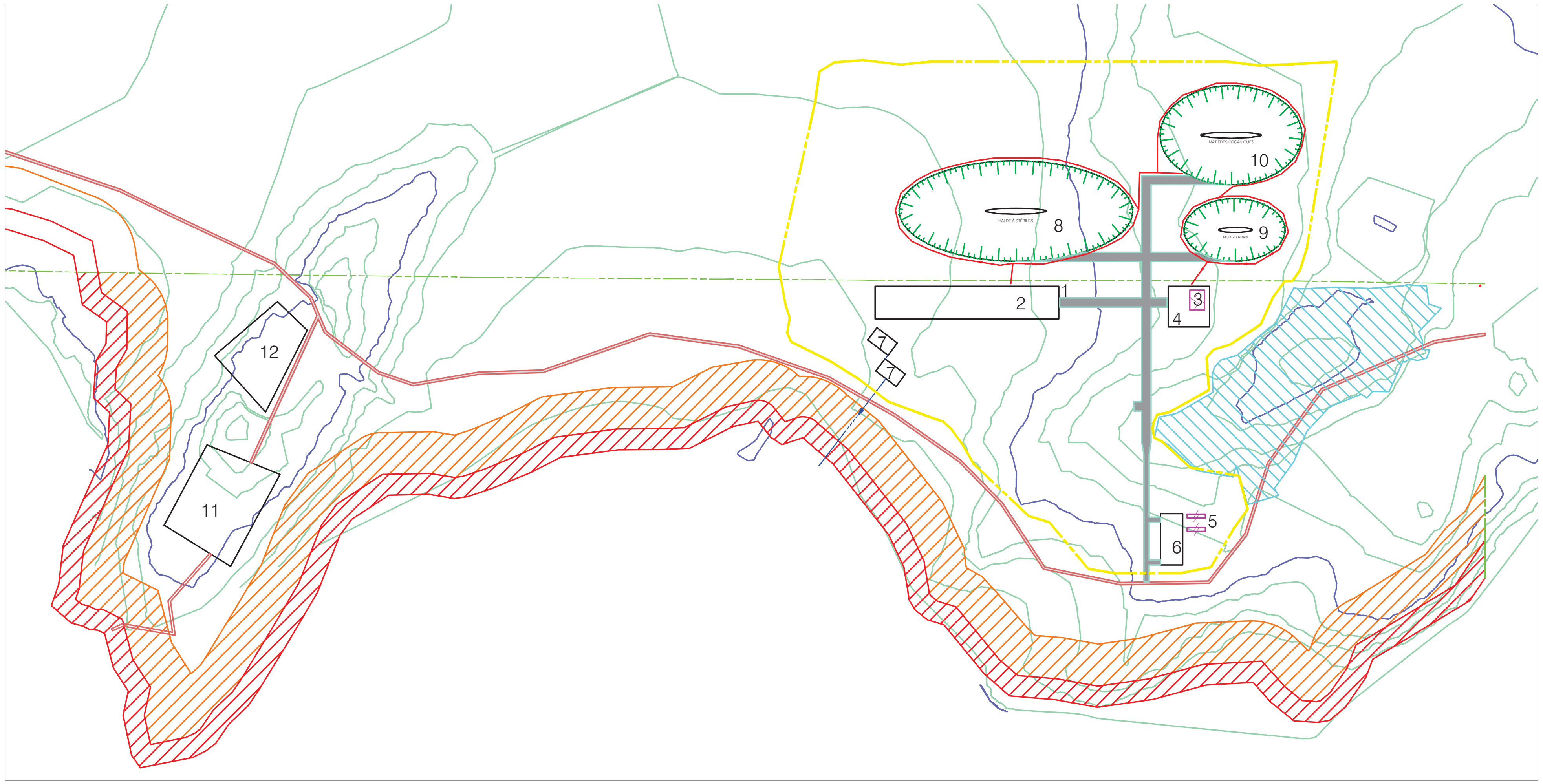
ANNEXE 1

PLAN DE LOCALISATION PRÉLIMINAIRE DES INFRASTRUCTURES



LÉGENDE

EXISTANT — PROJETÉ

AMÉNAGEMENTS DE SURFACE

- CHEMIN D'ACCÈS
- BAS DE TALUS
- HAUT DE TALUS
- BÂTIMENT
- FOSSÉ D'EAU PROPRE
- FOSSÉ D'EAU USÉE
- EFFLUENT FINAL

- BANDE DE PROTECTION DE 60m
- BANDE DE PROTECTION DE 20m
- BAIL DE LOCATION ACTUEL
- BAIL DE LOCATION EN COURS DE PRÉPARATION

1. VENTILATION ET CHAUFFAGE POUR RAMPE
2. RAMPE
3. GARAGE
4. AIRE DE SERVICE
5. BUREAUX
6. STATIONNEMENT
7. BASSINS
8. HALDE À STÉRILE
9. MORT-TERRAIN
10. MATIÈRE ORGANIQUE ENTASSÉE
11. AIRE DE SERVICE POUR ENTREPRENEURS
12. AIRE D'ATTÉRISSAGE D'URGENCE

NE PAS UTILISER POUR CONSTRUCTION

GCM

STAMP

CLIENT: BONTERRA

TITLE: PROJET GLADIATOR VUE EN PLAN

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