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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**FORM 6-K**

**Report of Foreign Private Issuer**

**Pursuant to Rule 13a-16 or 15d-16  
of the Securities Exchange Act of 1934**

Date: **August 5, 2020**

Commission File Number **001-31528**

**IAMGOLD Corporation**

(Translation of registrant's name into English)

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(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F        Form 40-F   

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Indicate by check mark whether by furnishing the information contained in this Form, the registrant is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes        No   

If "Yes" is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b): 82-\_\_

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**Description of Exhibit**

<u>Exhibit</u>	<u>Description of Exhibit</u>
<a href="#">99.1</a>	<a href="#">NI 43-101 Technical Report for the Westwood Mine, Quebec, Canada (effective April 30, 2020) dated July 15, 2020.</a>

**Signatures**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

**IAMGOLD CORPORATION**

Date: August 5, 2020

By: /s/ Tim Bradburn  
Vice President, Legal and Corporate Secretary

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# IAMGOLD CORPORATION

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## TECHNICAL REPORT FOR THE WESTWOOD MINE, QUEBEC, CANADA

### NI 43-101 Report

#### Qualified Persons:

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Donald Trudel, Geo.

Cécile Charles, Geo.

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Philippe Chabot, Eng.

July 15, 2020

Effective Date: April 30, 2020

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**1 SUMMARY**

**1.1 Executive Summary**

IAMGOLD Corporation (IAMGOLD) has prepared an updated technical report for the Westwood mine located in the Doyon-Bousquet-LaRonde (DBL) gold mining camp in Quebec, Canada. The report documents the current Mineral Resource and Reserve estimates as of April 30, 2020, and was prepared according to Canadian National Instrument NI 43-101 Standards of Disclosure for Mineral Projects (NI 43-101). The NI 43-101 Technical Report was prepared following the completion of a revised Life of Mine (LOM) and follows in the recommended mining method changes due to an increase in understanding of the geotechnical conditions at the mine. All currency in this report is in Canadian dollars (\$) unless otherwise noted. This Technical Report was prepared by IAMGOLD and incorporates the work of IAMGOLD Qualified Persons.

IAMGOLD is a mid-tier mining company with three operating gold mines and several exploration properties on three continents.

The Westwood Mine is located entirely within the limits of the Doyon division mining property, which covers an area of 28 km<sup>2</sup> (2,875 ha). The Doyon division mining property and the Westwood Mine are held 100% by IAMGOLD. There are no agreements, joint venture partners, or third-party obligations attached to the property and all the necessary permits for continued mining operation and construction on surface have been obtained.

The development of the Westwood Mine began in 2008 with gold production at Westwood starting in March 2013. Commercial production was declared in July 2014.

In 2019, IAMGOLD conducted a comprehensive review of the Central Corridor of the Westwood Mine. The review was initiated due to a large seismic event that caused multiple fall of grounds on December 22, 2018. It was not the first time Westwood mine was affected by a large seismic event. A timeline of the events which triggered the review are as follows:

- August 2013	Central Corridor 104 Block	Fall of grounds in multiple drifts following production blasts
- December 2014	Central Corridor 104 Block	Major seismic event
- January 2015	Central Corridor 104 Block	Major seismic event
- December 2018	Central Corridor 132 Block	Large seismic event causing multiple fall of grounds

A risk analysis was completed for the mining of the Central Corridor and the results of the review established a geotechnical risk adjustment, which reduced the mining recovery of the zones. The mine design was also reviewed and specific adjustments (such as changing the mining method for specific zones) were made in order to mine the lenses safely in adverse ground conditions, but those changes increased the operating and sustaining costs.

Mineral Resources and Mineral Reserves have been prepared in accordance with Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves dated May 10, 2014 (CIM, 2014). The Westwood Mineral Resource and Mineral Reserve estimate as of April 30, 2020, is summarized in Table 1-1.

Table 1-1: Official Resource and Reserve Estimate - April 30, 2020

Mineral Resource and Reserve Statement as of April 30, 2020 <sup>(1)</sup> Underground resources : Cut-off of 5.5 g Au/t --- Underground reserves : Cut-off of 5.5 g Au/t Surface resources : Cut-off of 0.44 g Au/t --- Surface reserves : Cut-off of 0.56 g Au/t			
	Tonnes (x 1 000's)	Grade g Au/t	Ounces (x 1 000's)
<b>PROVEN RESERVES <sup>(2)</sup></b>	105	7.2	24
<b>PROBABLE RESERVES <sup>(2)</sup></b>	2,593	7.1	594
<b>TOTAL RESERVES</b>	2,698	7.1	618
<b>MEASURED RESOURCES <sup>(3)</sup></b>	941	13.3	402
<b>INDICATED RESOURCES <sup>(3)</sup></b>	3,823	9.4	1,155
<b>TOTAL MEASURED + INDICATED</b>	4,764	10.2	1,557
<b>INFERRED RESOURCES <sup>(4)</sup></b>	6,384	8.6	1,771

- (1) Westwood Mineral Resources and Reserves have been estimated as of April 30, 2020 in accordance with NI 43-101 regulation. Underground mineral resources and reserves were estimated using a 5.5 g Au/t grams per tonne gold cut-off over a minimum width of 2.4 metres. Cut-off grade was estimated using a gold price of US\$ 1,200 per ounce and an exchange rate of 1.25.  
CIM definitions were followed for Mineral Resources and Reserves Classification.
- (2) Underground Mineral reserve estimates include a dilution of 46-99% @ 0.5 g Au/t applied on tonnes and a 59-89% mining recovery applied on both tonnes and ounces as defined by the engineering department to reflect the mining estimates. Surface Mineral reserves include a dilution of 10% with a planned recovery of 100%.
- (3) Measured and indicated resources are inclusive of proven and probable reserves <5.5g Au/t (no dilution, 100% mining recovery).
- (4) All underground blocks categorised as inferred and exceeding 15 g Au/t were capped at 15 g Au/t when the grade of the total inferred lens exceeded 15 g Au/t at a low cut-off of 5.5 g Au/t.  
All surface blocks categorised as inferred have the high grades veins capped at 30 g Au/t and the disseminated low-grade envelope capped at 3.0 g Au/t with an economic cut-off grade of 0.44 g Au/t with a pit shell of US\$ 1,500.

There are different projects that are ongoing to minimize the uncertainty and to improve the capability of mining in adverse ground conditions. Further numerical modelling and analysis of zones with adverse ground conditions and of the mining methods used could result in significant improvement to recovery in the future. Westwood is also working with a committee of experts to promote and develop measures, controls and procedures associated to the ground control management. Additional work is planned in 2020 and beyond to evaluate the potential for increasing the mine recovery of specific zones.

It is the opinion of the authors, that sufficient work has been done to date to support the resource and reserve estimation presented in this report. The results to date are sufficiently attractive to continue drilling expenditures to expand and better define the resource and reserve base and further investigate the potential.

In the opinion of the authors, the data available to prepare this technical report is both credible and verifiable in the field. It is also the opinion of the authors that no material information relative to the Westwood Mine has been neglected or omitted from the database. Sufficient information is available to prepare this report and any statements in this report related to deficiency of information are directed at information, which in the opinion of the authors has not yet been gathered or is recommended to be collected as the mine moves forward. The authors' statements and conclusions in this report are based upon the information from underground mapping and sampling and the exploration database used for the April 30, 2020, resource and reserve estimate. Drilling work is ongoing at the Westwood Mine and it is anticipated that new data and drilling results may change some interpretations, conclusions, and recommendations.

### 1.1.1 Conclusions

#### 1.1.1.1 Westwood Geology and Mineral Resources

IAMGOLD has the following conclusions and observations on the Westwood and Grand Duc deposits:

- Mineral Resources have been prepared in accordance with the CIM (2014) definitions;
- Work completed to date by the geological staff is appropriate;
- The geological model employed by Westwood Mine geologists is reasonably understood and is well supported by field observations in both outcrop and drill intersections;
- The resource model has been prepared for using appropriate methodology and assumptions. These parameters include:
  - Treatment of high assays;
  - Specific gravity;
  - Compositing length;
  - Search parameters;
  - Bulk density;
  - Cut-off grade;
  - Classification.
- The block model was created using a reasonable level of rigour consistent with common industry practice;
- The current drill spacing in the Westwood and Grand Duc deposits is adequate to develop a reasonable model of the mineralization distribution and to quantify its volume and quality with a good level of confidence;
- Sampling and assaying is carried out following standard industry quality assurance and quality control (QA/QC) practices. These practices include, but are not limited to, sampling, assaying, chain of custody of the samples, sample storage, use of third-party laboratories, standards, blanks and duplicates.

### **1.1.1.2 Mining and Mineral Reserves**

IAMGOLD has the following conclusions and observations:

- The mine design and Mineral Reserve estimate have been completed to an operational detailed level;
- The economic assumptions and methodology used for estimation of the Mineral Reserves are appropriate;
- The Mineral Reserve estimate is consistent with the CIM (2014) definitions and is suitable for public reporting. As such, the Mineral Reserves are based on Measured and Indicated Mineral Resources, and do not include any Inferred Mineral Resources.

### **1.1.1.3 Metallurgical Testing and Mineral Processing**

IAMGOLD has the following conclusions and observations:

- Metallurgical testing programs were conducted on the three mineralized corridors (Zone 2, North Corridor and Westwood Corridor) as well as on the Grand Duc material. The existing grinding, leaching, adsorption and stripping circuits of the Doyon mill has performed in line with expectations. Test work and historical actual results are sufficient to support the recovery used in this Technical Report. Gold recovery is estimated to be 92.6% for Westwood underground and 89% for Grand Duc.

### **1.1.1.4 Environment**

IAMGOLD has the following conclusions and observations:

- No outstanding technical issues were identified for environment and permitting.

### **1.1.2 Recommendations**

The Westwood Mine presents a great opportunity for the continuing development of an economic mine within a well-established mining camp with good infrastructure, a skilled and experienced pool of manpower, and a low political risk environment that supports mining.

Geotechnical projects currently ongoing must continue to minimize the uncertainty and to improve the capability of mining in adverse ground conditions. Further numerical modelling and analysis must continue to improve the recovery in the future while maintaining a safe environment for the underground workers. Design guidelines should be continuously revised to account for local variability in rock mass characteristics.

The majority of the recently identified ore lenses are located in ground classified as moderate to poor. Ground conditions limit the dimension of the stopes and increase forecasted dilution. Poor ground conditions could also decrease productivity. There will need to be continued monitoring of the ground conditions with the ground-control program in place to manage this risk appropriately.

A significant investment in diamond drilling is recommended in order to increase Westwood ratio of indicated and measured resources versus inferred resources, to increase the definition of some probable and even proven reserves as well as discovering the full potential of Westwood Mine. Drilling and underground development is required to further delineate the mineralization and adequately constrain the resource models in the lower and east sections of the mine. An additional drilling program in the Westwood, North Corridor and Zone 2 corridors during the next years is planned in order to upgrade inferred resources to the indicated and measured categories. Mineralization is still open at depth and there is still a good potential to expand the resource with additional drill programs on both sides of the Bousquet Fault and closer to surface. Drilling on surface should not be excluded to better define potential targets and to unlock to full potential at Grand Duc.

An ongoing economic evaluation and mining method analysis is required to optimize the mine production and to ensure efficient recovery of the reserves since the cut-off grade for the Mineral Reserve was calculated at a gold price of US\$1,200 and at a USD/CAD exchange rate of 1.25. A higher gold price and/or a higher exchange rate could improve the profitability of some zones or production stopes. Stopes or zones which their grade is close to the cut-off grade needs to be reviewed and evaluated for profitability using a gold price and an exchange rate equivalent to the current market.

Engineering studies to reduce the dilution and improve the mine recovery by improving and optimizing the drill and blast practises at Westwood mine must continue since, if conclusive, could potentially have a positive impact on the Mineral Reserve.

Continue geology improvements such as an internal study to validate the Mineral Resource modelling parameters, such as variographic, reconciliation reserve estimate and mill production to evaluate upper capping grades as well as increasing density measurements by zone to determine if there is a difference with historical density used in the resource estimation.

Metallurgical testing should be extended to areas where it is planned to convert Mineral Resources into Mineral Reserves. A sampling program, including total sulphur and total carbon analyzes, has been developed by the Westwood team and testing will start in 2020.

## **1.2 Technical Summary**

### **1.2.1 Property Description and location**

The Westwood Mine is located in the province of Quebec, Canada at a latitude of 48°15' north and a longitude of 78°30' west. The mine is located in the municipality of Preissac, Bousquet Township, approximately 40 km east of Rouyn-Noranda's town and 80 km west of Val d'Or's town.

The Doyon division mining property extends over 8 km east-west by approximately 5 km north-south. The Agnico-Eagle LaRonde Property bounds it to the south and east. The Westwood Mining Lease covers an area of approximately 2 km<sup>2</sup> (B.M. 1002, 196.23 ha) and it is located in the eastern part of the Doyon division mining property which covers an area of 31 km<sup>2</sup> (3,118 ha).

The topography is relatively flat, at about 340 m above sea level, with hills generally less than 35 m in height. Glacial overburden thickness ranges from 0 to 35 m. The subvertical northeast striking Bousquet River Fault crosscuts the Westwood deposit into two parts with a 280 m sinistral movement.

### 1.2.2 Land Tenure

The Westwood property is part of the Doyon division mining property which consists of: one mining lease for the Westwood Mine (B.M. 1002, registered in 2012); one recently granted mining lease located west of the past producing Doyon Mine (B.M. 1046, also called Grand Duc and registered in 2017); one mining lease for the past producing Doyon Mine (B.M. 695); two mining leases for the past producing Mouska Mine (B.M. 800 and 843); and 75 map designated cells for a total surface area of 3,117.813 ha. In 2014, the "Ministère de l'Énergie et des Ressources Naturelles" (MERN) completed a conversion process to replace all ground-staked mineral claims forming the Doyon and Mouska mines properties in designated cells to simplify the land tenure system. In addition, three tailing surface leases (P.R. 999780, P.R. 999794 and P.R. 999803) are superimposed over parts of the property. The titleholder name of all those claims and leases is IAMGOLD Corporation at 100% and all those claims and leases are located in Bousquet Township.

The mining lease for the Westwood Mine (B.M. 1002) is valid for a period of 20 years, until April 22, 2032.

The Doyon division mining property is held 100% by IAMGOLD Corporation. There are no agreements, joint venture partners, or third party obligation at the Westwood Mine.

The Doyon division mining property and the Westwood Mine are not subject to any royalties or any other encumbrance.

### 1.2.3 History

In 2002, Cambior Inc.'s (Cambior) Exploration team initiated geological compilation work that led to target the favourable Bousquet Formation at depth where good alteration patterns were recognized. The first drilling phase from surface (2002) led to the Westwood and North corridors mineralization discovery at depth, on the eastern side of the Bousquet Fault. A five-year exploration program followed, targeting the favourable Westwood Corridor at depth. The original plan (Westwood and Mooshla) was to complete 50,000 m of drilling and 2.6 km of drift development towards the east from the Doyon Mine, excluding follow-up.

Following Phase 1 success, the initial planning was readjusted in 2004 to 2.89 km of an exploration drift towards the east from the Doyon Mine, 6,400 m of surface drilling and 50,280 m of underground drilling. In addition to these, some INFINITEM geophysical surveys were conducted in selected holes and geochemical samples were taken on a regular basis to quantify alteration.

Finally, in November 2006, IAMGOLD took over Cambior and acquired all of its assets including the Doyon Mine and Westwood project. The first bullion of Westwood Mine was poured on March 27, 2013.

#### **1.2.4 Geology and Mineralization**

The Westwood Mine and the Grand Duc open pit are part of the Doyon-Bousquet-LaRonde (DBL) gold mining camp, which is located within the Southern volcanic zone of the Abitibi subprovince. It is the largest gold-copper-zinc-silver producing district in the province of Quebec.

The Westwood Mine is located within the limits of the Doyon division mining property, which covers the Blake River Group (BRG) metavolcanic rocks, and a part of the metasedimentary Cadillac and Kewagama Groups (CG) located respectively to the south and north of the BRG. The Westwood deposit is hosted in a volcano-plutonic sequence composed of felsic hypabyssal volcanic rocks (Zone 2 Extension corridor), mafic to intermediate volcanic rocks (North Corridor) and intermediate to felsic volcanic rocks (Westwood Corridor) marked by a chlorite-biotite-carbonate-garnet-amphibole distal alteration and a pervasive quartz-muscovite-sericite-pyrite proximal alteration.

All lithologies of the DBL mining camp has been affected by a north-south compression event, which resulted in a sub-vertical to steeply south dipping homoclinal volcanic sequence with an east-west schistosity. High-strain anastomosing east-west corridors are observed throughout the property, mainly at geological contacts and in intense alteration zones. Outside of these narrow corridors, primary volcanic textures are typically well preserved.

The Westwood deposit consists of gold sulphide vein-type mineralization, similar to Zone 1 and Zone 2 of the formerly producing Doyon mine which is located 2 km west (Zone 2 ore zones), as well as gold-rich volcanogenic massive sulphide (VMS) - type semi-massive to massive sulphide lenses, veins and dissemination (Westwood and North Corridors ore zones) similar to the Bousquet 1, Bousquet 2-Dumagami and LaRonde Penna deposits in the eastern part of the mining camp. All mineralized zones are sub-parallel to parallel to the stratigraphy (sub-vertical to steeply south dipping).

The Grand Duc open pit is located in the western part of the Doyon property and hosted in the polyphase syn-volcanic Mooshla Intrusive Complex (MIC). The early stage of the MIC (Mouska stage) is composed of gabbros and diorites that are coeval with the Bousquet Formation lower member. The main zone of the past producing Mouska Mine is hosted in the Mouska stage. The late stage of the MIC (Doyon stage) is composed of diorites, tonalites, and trondhjemites that are coeval with the Bousquet Formation upper member. Most particularly, the Grand Duc Open pit is hosted in the tonalites and trondhjemites at the apex of the Doyon stage, near the contact with volcanic rocks.

The Grand Duc deposit consists of two golds mineralizing episodes. The first episode is closely associated with miarolitic facies. These facies host low-grade mineralization forming a long corridor oriented N105-N110 south dipping (50-70°). Gold mineralization occurs as either disseminated pyrite in shears zone, quartz-pyrite-carbonate-chlorite veins and veinlets, as fill in fractures or in centimetric pyritic band parallel to foliation. The second gold mineralizing element is associated with a series of veins and fractures oriented N175 and N045. Mineralization consists mainly of quartz-pyrite-chalcopyrite high grade remobilization veins and semi massive to massive sulphides veins.

### 1.2.5 Exploration Status

The exploration of the Westwood deposit has been carried out since the 1930s using both surface and subsurface methods. However, more recent exploration efforts have been concentrated in the Doyon mine area, which was in operation from 1980 to 2009. The Warrenmac and Westwood showings are located in the eastern part of the Doyon division mining property. The stratigraphy in the area is well defined (Bousquet Formation) and host rocks are the same as those hosting gold-rich VMS-type mineralization at the Bousquet 1, Bousquet 2-Dumagami and LaRonde Penna deposits.

In 2002, Cambior Inc.'s (Cambior) exploration team initiated compilation work based mainly on geological models that identified the Bousquet Formation upper member as a favourable target at depth (e.g., Warrenmac lens discovery in 1986) where anomalous alteration patterns had been recognized. An important surface diamond drill exploration program of 8,580 m on the Doyon property was initiated in 2002 and was very successful. Drilling programs identified high-grade gold mineralization at depth (now named the Westwood deposit), 2 km east of Cambior's Doyon gold mining operation.

Between 2003 and 2013, an underground exploration program was completed including 2.6 km of drift development towards the east from the Doyon Mine. From the beginning of exploration, activities in the Westwood and Warrenmac areas in the 1930s, more than 1,015,676 m of exploration, valuation and definition diamond drilling have contributed to resource and reserve estimation. The wealth of geological information has been compiled from the ongoing exploration and scientific activities.

Exploration activities targeting areas of potential resource expansions that were originally planned have been deferred to a later undetermined date. No exploration work has been done since September 2013.

The potential resource base of the Westwood Mine is quite important. However, the continuity of the resource can only be confirmed through additional drilling. There remains good potential to find additional resources, on both sides of the Bousquet fault. Significant additional drilling and underground development will be required to further delineate the mineralization, expand the resource base and adequately constrain the resource models and upgrade inferred resources to the indicated and measured categories. The ultimate size of mineralized bodies at the Westwood Mine is yet to be defined, especially at depth.

Recent scientific work has confirmed geochemical similarities between the host rocks of the main sulphide lenses at the LaRonde Penna mine and the rocks hosting the Westwood Mineralized corridor. Consequently, there is an excellent potential for gold-rich VMS-type mineralization to occur on the property (e.g., Warrenmac, WW10, WW25, etc.). Moreover, the Zone 2 Extension veins are located on the same stratigraphic level as the Doyon mine Zone 2 veins.

A total of 56,711 m was drilled in 2019, and 56,000 m of definition and valuation surface and underground drilling have been planned for 2020. This new data will contribute to an increased understanding of the geology and structure as well as increase the database to upgrade inferred resource to the indicated and measured categories.

### 1.2.6 Mineral Resources

The Westwood Mineral Resource estimate was prepared in accordance with CIM (2014) definitions and is reported in accordance with the NI 43-101 guidelines. Classification, or assigning a level of confidence to Mineral Resources, has been undertaken with strict adherence to CIM (2014) definitions. In the opinion of the responsible QP, the resource estimation reported herein is a reasonable representation of the Mineral Resources delineated at Westwood as of April 30, 2020.

The Mineral Resource estimate at April 30, 2020, for the Westwood Mine and the Grand Duc Open Pit is summarized in Table 1-2 and is reported on a 100% basis. The Mineral Resource estimate is inclusive of Mineral Reserves.

Table 1-2: Official Resource Estimate - April 30, 2020

Mineral Resource Statement as of April 30, 2020 <sup>(1)</sup>			
Underground resources : Cut-off of 5.5 g Au/t ; Surface resources : Cut-off of 0.44 g Au/t			
	Tonnes (x 1 000's)	Grade g Au/t	Ounces (x 1 000's)
<b>MEASURED RESOURCES ZONE 2</b>	736	14.6	346
<b>INDICATED RESOURCES ZONE 2</b>	2,232	13.6	972
<b>MEASURED RESOURCES CORRIDOR NORD</b>	0	0.0	0
<b>INDICATED RESOURCES CORRIDOR NORD</b>	59	9.0	17
<b>MEASURED RESOURCES WESTWOOD</b>	205	8.5	56
<b>INDICATED RESOURCES WESTWOOD</b>	486	8.5	133
<b>TOTAL MEASURED UNDERGROUND RESOURCES</b>	941	13.3	402
<b>TOTAL INDICATED UNDERGROUND RESOURCES</b>	2,777	12.6	1,122
<b>TOTAL MEASURED AND INDICATED UNDERGROUND RESOURCES <sup>(2)</sup></b>	3,718	12.7	1,524
<b>MEASURED RESOURCES GRAND DUC <sup>(3)</sup></b>	0	0.0	0
<b>INDICATED RESOURCES GRAND DUC <sup>(3)</sup></b>	1,046	1.0	33
<b>TOTAL MEASURED AND INDICATED SURFACE RESOURCES <sup>(4)</sup></b>	1,046	1.0	33
<b>TOTAL MEASURED AND INDICATED RESOURCES <sup>(5)</sup></b>	4,764	10.2	1,557
<b>INFERRED RESOURCES ZONE 2 <sup>(6)</sup></b>	2,826	10.7	975
<b>INFERRED RESOURCES CORRIDOR NORD <sup>(6)</sup></b>	641	7.8	161
<b>INFERRED RESOURCES WESTWOOD <sup>(6)</sup></b>	2,304	8.3	618
<b>TOTAL INFERRED UNDERGROUND RESOURCES</b>	5,771	9.5	1,754
<b>INFERRED RESOURCES GRAND DUC <sup>(7)</sup></b>	613	0.9	17
<b>TOTAL INFERRED SURFACE RESOURCES</b>	613	0.9	17
<b>TOTAL INFERRED RESOURCES</b>	6,384	8.6	1,771

- (1) Westwood Mineral Resources have been estimated as of April 30, 2020 in accordance with NI 43-101 regulation. Underground Mineral resources were estimated using a 5.5 grams per tonne gold cut-off over a minimum width of 2.4 metres. CIM definitions were followed for Mineral Resources and Reserves Classification. Resources as of April 30, 2020 are based on October 7, 2019 databases and mining from January to April 2020.
- (2) Measured and indicated underground resources are inclusive of proven and probable underground reserves <5.5g Au/t (no dilution, 100% mining recovery).
- (3) An economic cut-off grade of 0.44 g Au/t at a gold price of US\$ 1,500 and an exchange rate of 1.25 is applied for Grand Duc.
- (4) Measured and indicated surface resources are inclusive of proven and probable surface reserves (no dilution, 100% mining recovery).
- (5) Measured and indicated resources are inclusive of proven and probable reserves (no dilution, 100% mining recovery).
- (6) All blocks categorised as inferred and exceeding 15 g Au/t were capped at 15 g Au/t when the grade of the total inferred lens exceeded 15 g Au/t at a low cut-off of 5.5 g Au/t.
- (7) All blocks categorised as inferred have the high grades veins capped at 30 g Au/t and the disseminated low-grade envelope capped at 3.0 g Au/t with an economic cut-off grade of 0.44 g Au/t with a pit shell at a gold price of US\$ 1,500.

Since the previous Westwood Mineral Resource estimate as of December 31, 2019, the resource model has been updated with new drilling information. The modelling work was completed by Westwood mine personnel. As of April 30, 2020, the Westwood deposit contained Measured Mineral Resources is estimated to be 0.94Mt at an average grade of 13.3 g/t Au for a total of 402,000 oz Au and the Indicated Mineral Resource is estimated to be 2.78Mt at an average grade of 12.6 g/t Au for a total of 1,122,000 oz Au. The Inferred Mineral Resources are estimated to be 5.78Mt at an average grade of 9.5 g/t Au for a total of 1,754,000 oz Au.

Before December 31, 2019, the Grand Duc Mineral Resource estimate was not included into the Westwood Mineral Resource estimate. Since the previous estimate as of December 31, 2019, the resource model was not updated with new drilling information and was just depleted with the 2019 mining. As of April 30, 2020, the Grand Duc deposit mine contained Indicated Mineral Resource is estimated to be 1.05Mt at an average grade of 1.0 g/t Au for a total of 33,000 oz Au. The Inferred Mineral Resources are estimated to be 0.61Mt at an average grade of 0.9 g/t Au for a total of 17,000 oz Au.

**1.2.7 Mineral Reserves**

The Mineral Reserves were negatively impacted following the large seismic event that caused multiple fall of grounds on December 22, 2018. Following this large seismic event, IAMGOLD conducted a comprehensive review of the Central Corridor of the Westwood Mine in 2019, since it was not the first time Westwood mine was affected by a large seismic event. A timeline of the events which triggered the review is as follows:

- August 2013	Central Corridor 104 Block	Fall of grounds in multiple drifts following production blasts
- December 2014	Central Corridor 104 Block	Major seismic event
- January 2015	Central Corridor 104 Block	Major seismic event



Table 1-3: Official Reserve Estimate - April 30, 2020

Mineral Reserve Statement as of April 30, 2020 <sup>(1)</sup>			
Underground reserves : Cut-off of 5.5 g Au/t ; Surface reserves : Cut-off of 0.56 g Au/t			
	Tonnes (x 1 000's)	Grade g Au/t	Ounces (x 1 000's)
<b>PROVEN RESERVES ZONE 2<sup>(2)</sup></b>	105	7.2	24
<b>PROBABLE RESERVES ZONE 2<sup>(2)</sup></b>	1,956	8.9	561
<b>PROVEN RESERVES CORRIDOR NORD<sup>(2)</sup></b>	0	0.0	0
<b>PROBABLE RESERVES CORRIDOR NORD<sup>(2)</sup></b>	3	10.4	1
<b>PROVEN RESERVES WESTWOOD<sup>(2)</sup></b>	0	0.0	0
<b>PROBABLE RESERVES WESTWOOD<sup>(2)</sup></b>	71	5.6	13
<b>TOTAL PROVEN UNDERGROUND RESERVES</b>	105	7.1	24
<b>TOTAL PROBABLE UNDERGROUND RESERVES</b>	2,030	8.8	575
<b>TOTAL PROVEN AND PROBABLE UNDERGROUND RESERVE</b>	2,135	8.7	599
<b>PROVEN RESERVES GRAND DUC</b>	0	0.0	0
<b>PROBABLE RESERVES GRAND DUC<sup>(4)</sup></b>	563	1.1	19
<b>TOTAL PROVEN AND PROBABLE SURFACE RESERVES<sup>(5)</sup></b>	563	1.1	19
<b>TOTAL PROVEN AND PROBABLE RESERVES<sup>(6)</sup></b>	2,698	7.1	618

(1) Mineral have been estimated as of April 30, 2020 in accordance with NI 43-101 regulation. Underground Mineral resources were estimated using a 5.5 grams per tonne gold cut-off.

Cut-off grade was estimated using a gold price of US\$ 1,200 per ounce and an exchange rate of 1.25. CIM definitions were followed for Mineral Reserves Classification. Mineral Reserves as of April 30, 2020 are based on October 7, 2019 databases and mining from January to April 2020.

(2) Underground reserves as of April 30, 2020 include a dilution between 46-99% at a grade of 0.5 g/t. Recovery used for underground reserves as of April 30, 2020 varies between 59% and 89%.

(3) Proven and probable underground reserves (undiluted and 100% recovery) are included in the measured and indicated underground resources.

(4) Surface probable reserves <0.56 g/t (undiluted and 100% recovery) are included in the indicated surface resources.

(5) Surface reserves as of April 30, 2020 include a dilution of 10% with a planned recovery of 100%.

(6) Proven and probable reserves (undiluted and 100% recovery) are included in the measured and indicated resources.

As of April 30, 2020, there was 2.7Mt of Mineral Reserves defined at Westwood underground and Grand Duc pit and within stockpiles, at an average grade of 7.1 g Au/t Au for a total of 618,000 oz Au.

Westwood is in operation and the mine design and Mineral Reserve estimate has been completed to an operational detailed level. The Mineral Reserve estimate stated herein is consistent with the CIM (2014) definitions and is suitable for public reporting. As such, the Mineral Reserves are based on Measured and Indicated Mineral Resources and do not include any Inferred Mineral Resources.

The responsible QP is not aware of any mining, metallurgical, infrastructure, permitting, or other relevant factors that could materially affect the Mineral Reserve estimate.

### 1.2.8 Mining Method

Underground mining is carried out using long hole open stope (LHOS) mining method while surface mining uses a conventional drill, blast, load and haul surface mining method. Recent annual production has averaged 625,000 t. Going forward, IAMGOLD targets Westwood production of 600,000 tpa from underground only with additional production coming from surface operation.

Underground access is by a 6.4 m circular shaft with a length of 1,958 m. Main levels are spaced approximately 240 m apart with the majority of underground infrastructure on these levels. Level 840, Level 1,320, and Level 1,800 include track drifts designed for ore handling by trolley. Rock breaking and loading infrastructure is installed at 1,320 Level and 1,800 Level.

Sub-levels used for mining are spaced 25 to 30 m apart and a series of waste and ore passes are placed throughout the mine to move material between levels. The main ventilation raise of 6 m in diameter provides 800,000 cubic feet per minute (CFM) of fresh air for mining operations. A paste backfill system delivers paste from surface to production levels by gravity in order to fill mined out stopes. Extensions to infrastructure are planned during the mine life as areas are developed.

Development drifts in waste are generally 4.5 m high by 4.1 m wide with production drifts 4.5 m high by 4.5 m wide. Track drifts are 2.9 m high by 2.8 m wide, no further development of track drifts are planned. Vertical development used for ventilation and material movement are typically 2.4 x 2.4 m, although primary ventilation systems can reach up to 4.3 m in diameter.

Long hole open stope (LHOS) mining is completed with stopes of 25 to 30 m in height and from 12 to 15 m in length. Minimum mining width is 2.4 m. Historically, mining sequence at Westwood for long hole stopes has been carried out from bottom to top, either in a pillarless or in a primary and secondary stope configuration. As depth and stresses increase, an underhand (top to bottom) sequence is promoted in order to more properly manage geotechnical stresses. Stopes are drilled down from the upper level with 100 mm diameter holes on a 2 x 2 m drill pattern. In-the-hole (ITH) drills perform the drilling and are also used for the slot raise with the V-30 attachment. Stopes are blasted with emulsion explosives and electronic detonators. Load Haul Dump (LHD) units with remote capabilities move material out of the stope. Paste backfill is poured in all empty stopes and cures before adjacent stopes are mined.

Underground mining is completed utilizing a mobile fleet for development and production mining. The rubber tire fleet consists of Jumbo drills, mechanical rock bolters, 2.7 m<sup>3</sup> LHD machines, 20 and 30 t trucks and auxiliary service and personnel vehicles. Track locomotives are used for material haulage on levels and material is hoisted to surface from underground using two 20 t skips.

Open Pit mining is conducted conventionally using 10 m bench heights and all the work is completed by a contractor utilizing 35 t production trucks and hydraulic excavators.

#### **1.2.9 Mineral Processing**

Westwood ore is currently processed at the Doyon Mill using existing grinding, leaching, adsorption and stripping circuits. The Doyon Mill was constructed in the 1970s and refurbished between 2011 and 2013 in order to efficiently process Westwood material. Cyanide destruction was added to increase the process of the tailings and a paste backfill plant was built to supply the Westwood underground operational needs.

The mill has a design capacity of 0.85Mt per annum at 96% availability which exceeds the required needs of the Westwood and Grand Duc projects.

#### **1.2.10 Project Infrastructure**

The Westwood mine was developed using existing Doyon infrastructure and accesses due to the close proximity of the mines. A portion of the Doyon infrastructure is used and maintained for the life of the Westwood mine while others will be restored according to the Doyon closure plan.

Infrastructure is clustered either around the Doyon Mill or the Westwood shaft, with access to regional infrastructure including roads, power and natural gas is through the Doyon site. Offices and other administrative buildings are also on the Doyon site. Mining infrastructure such as the Warrenmac ramp portal, hoist room and headframe, paste plant, compressor room, primary ventilation fans, fuel storage and maintenance shops are located at the Westwood shaft area.

#### **1.2.11 Market Studies and Contracts**

The company does not have a hedging program. Gold production from the Westwood Mine is shipped from the mine site to the Metalor refinery in Massachusetts (USA) and sold at spot price. The refining contract and sales schedules are managed by IAMGOLD's corporate and include production from other operations.

Westwood mine has several contracts in place to support operations. These contracts cover a large range of activities such as underground work, diamond drilling, laboratory testing services, maintenance and equipment repairs, security as well as bulk commodities and consumables. The terms of the contracts are within the mining industry norms.

#### **1.2.12 Environmental Studies, Permitting, and Social or Community Impact**

The Westwood Mine environmental management systems are integrated with the Doyon Mine site infrastructure. A number of ongoing monitoring program and previous environmental studies have identified environmental impacts and allowed IAMGOLD to determine the most effective methods of mitigating effects and restoring the sites following the completion of mining activities.

Major environmental studies include:

- Westwood and Doyon Mine Reclamation Plans (2016 Update);
- Hydrogeological Study, Spring 2009;
- Evaluation of Acid-Rock Drainage (ARD) Potential;
- Environmental Effects Monitoring (EEM).

As the existing Doyon tailings facilities are nearing capacity, disposal of the Westwood tailings requires additional facilities. As mentioned, the most appropriate method is to use the Doyon open pit for disposal. The capacity of the pit is estimated at 7.1 MCUM of tailings and water at the targeted elevation of 4,956 m. In 2014, the Government of Quebec Ministry approved a Certificate of Authorization to raise the tailings storage facility 2, 3 east and 3 west by an additional 2 m. The raising of the facility provides an additional 3.5 MCUM capacity for tailings and water. The total storage capacity exceeds the required capacity of the Westwood and Grand Duc projects.

Waste rock is disposed of in a high-density polyethylene (HDPE) lined area and has a capacity of 45,000 m<sup>3</sup>. Some waste rock is also disposed of in the Doyon South Waste Rock storage facility or the former Doyon open pit.

All water from the site is collected at the Westwood Mine water pond, which has a capacity of 7,200 m<sup>3</sup> and treated with the water management system prior to release into the environment.

The project permitting is a continuation of the Doyon division mining property and maintains existing environmental compliance programs. In July 2008, the project obtained the authorization from the MDDELCC for the construction and utilization of an exploration shaft, a ventilation raise, a mine water pond and a waste rock storage facility. Additional certificates of authorization were received in 2012 to allow deposition of tailings in the Doyon pit and for the potable water system. A key permit was issued in March 2013 by the MDDELCC (provincial environment ministry), a depollution attestation. This permit, which is renewable every five years, identifies the environmental conditions that must be met by Westwood Mine operations when carrying out its activities. A modification of the depollution attestation was issued in January 2015. The renewal request was submitted to the MELCC in October 2017 as required by the legislation and the last version will still be valid until the approval of the depollution attestation renewal version as define in the legislation.

In 2019, the Grand Duc open pit operation began in accordance with its 2006 Certificate of Authorization and its 2016 closure plan.

No significant issues are expected regarding the social acceptability of the Westwood Mine and Grand Duc open pit. As the project's infrastructure are located on or near the past Doyon Mine site, which was in operation since 1980. As such, community and social impacts are likely positive or unchanged. IAMGOLD and the Westwood Mine invests thousands of dollars every year in local partnerships and make significant contributions to charitable organizations. The company's contribution to the community has been rewarded by the Rouyn-Noranda Chamber of Commerce (Business of the Year (2012), Sustainable Development (2013), Social Engagement (2014-2015), Work-Family Balance (2016), Innovative Human Resources Management (2017).

The *Mining Act*, and the regulations under it, includes provisions that require mining companies to rehabilitate the areas affected by their activities. The provisions cover extraction activities, exploration activities that require earthworks, and mine tailings sites. By law, companies are required to file a site rehabilitation plan and provide financial guarantees.

In February 2018, the closure plans for Westwood and Doyon mines were approved by the ministry. The financial guarantees were adjusted accordingly to the regulatory payment schedule (100% since Feb. 2020). These amounts were redistributed to each of these sites based on their use for operational purposes. These amounts include a contingency of 15% and indirect costs. The next closure plan update is required by October 14, 2021.

### **1.2.13 Capital and Operating Cost Estimates**

Capital expenditures for the Westwood Mine including sustaining capital required for the extraction of the current Mineral Reserves only amounts to \$201.7M over the mine life. The sustaining capital includes the capital required to develop and sustain the mine through production. Capital expenditures relating to new projects, improvements or expansions will be treated on a case-by-case basis and are excluded from this report.

The underground operating costs are based on the current Mineral Reserve. Consumables costs, labour agreement and contract with suppliers are based on the latest Life of Mine plan (LOM of December 2019). Operating costs are higher than operating costs from 2019 since the annual production based on the current Mineral Reserve is lower than the production of 2019. The operating costs are presented in Table 1-4.

**Table 1-4: Westwood underground life of mine operating costs**

		Unit Cost (Can\$/t)
Mining	Definition Drilling	3.23
	Stope Preparation	66.70
	Extraction	88.37
	Services	65.90
	<b>Total Mining</b>	<b>224.20</b>
Milling	Mill Operations	21.28
	Environment	4.81
	<b>Total Milling</b>	<b>26.09</b>
Administration	G & A	39.68
	Other	3.27
	<b>Total Admin.</b>	<b>42.95</b>
<b>Total Operating Cost</b>		<b>293.23</b>

The surface mining costs are based on the current Mineral Reserve. Mining costs of overburden are estimated at CAD\$3.50/t, mining costs of waste are estimated at CAD\$7.00/t and mining costs of ore are estimated at CAD\$7.8/t.

## 2 INTRODUCTION

### 2.1 Terms of References

This technical report is prepared by IAMGOLD, sole owners of the Westwood Mine. The purpose of this report is to describe and declare the Mineral Resource and Mineral Reserve estimates at the Westwood Mine as of April 30, 2020.

This report complies with disclosure and reporting requirements set forth in the Toronto Stock Exchange manual and National Instrument NI 43-101 Standards of Disclosure for Mineral Projects (NI 43-101). The Westwood Mine is 100% owned by IAMGOLD.

### 2.2 Definitions and Units

The metric (SI System) units of measure are used in this report. Analytical results are generally reported as parts per billion (ppb), parts per million (ppm), or grams per tonne (g/t) contained for gold (Au). Parts per million (ppm), or grams per tonne (g/t) for contained silver (Ag), and percentage for zinc (Zn) and copper (Cu). Monetary figures are expressed in Canadian dollars (\$) unless otherwise specified.

Tables and figures in this report are numbered consecutively and referenced to the major sections of the report (i.e.: Figures 10.1 through 10.6 for Figures in Section 10.0).

#### 2.2.1 Units of Measurements

The following list of conversions is provided for the convenience of readers that are more familiar with the Imperial system.

Linear measure:

1 centimetre (cm) = 0.394 inches;

1 metre (m) = 3.2808 feet;

1 kilometre (km) = 0.6214 miles.

Area measure:

1 hectare = 100 m by 100 m = 2.47 acres;

1 square kilometre = 247.1 acres = 0.3861 square miles.

Weight:

1 metric tonne = 2204.6 pounds = 1.1023 short tons;  
 1 kilogram (kg) = 35.274/oz. = 2.205 pounds = 32.151 troy ounces.

Analytical Values:

Gram/tonne (g/t) = 1.0 ppm = 0.0321507/oz;  
 Troy oz/tonne = 0.0291667/oz Troy/short tonne;  
 Oz Troy/tonne = 31.1035 g/t;  
 1.0/oz. Troy/short ton = 34.2857 g.

**2.2.2 List of Abbreviation and Acronyms**

Frequently used acronyms are listed below:

AA	Atomic absorption spectroscopy, an analytical procedure.
CF Plot	Cumulative Frequency Plot; a graphical statistical display of a range of data values.
CP Plot	Cumulative Probability Plot; a graphical statistical based on the probabilities.
ICP	Inductively coupled plasma emission spectroscopy, an analytical procedure.
QA/QC	Quality Assurance/Quality Control procedures.
G	Gram.
g Au/t	Grams of gold per tonne.
g Ag/t	Grams of silver per tonne.
m	Metre.
mg	Milligram.
ml	Millilitre.
oz/t	Ounces Troy per (metric) tonne.
oz/T	Ounces Troy per (short) ton.
ppb	Parts per billion.
ppm	Parts per million.
CFM	Cubic feet per minute, a measure of ventilation rates.
t/m <sup>3</sup>	Tonnes per cubic metre.
tpd	Tonnes per day, a measure of throughput.
tpy	Tonnes per year, a measure of throughput.

### 2.3 Sources of Information and Data

The source of information for this technical report is based on geological reports, maps and miscellaneous reports listed in the Reference section. The authors reviewed the available data and conducted field investigations to confirm the data. The data sources include hard copy data and files and digital files located in the offices of IAMGOLD.

Additional sources of information are data obtained from the Mineral Resources Reports produced between 2007 and 2017.

- IAMGOLD Corporation - Preliminary Assessment, August 2007;
- IAMGOLD Corporation - NI 43-101 Technical Report, February 27, 2009;
- IAMGOLD Corporation - Revised Scoping Study NI 43-101 Technical Report, December 2009 (internal report);
- IAMGOLD Corporation - Internal Technical Report, April 1, 2011;
- IAMGOLD Corporation - NI 43-101 Technical Report, March 5, 2012;
- IAMGOLD Corporation - NI 43-101 Technical Report, October 16, 2013;
- IAMGOLD Corporation - Internal Technical Report, March 15, 2014;
- IAMGOLD Corporation - Internal Technical Report, January 15, 2015;
- IAMGOLD Corporation - Internal Technical Report, January 15, 2016.
- IAMGOLD Corporation - NI 43-101 Technical Report, January 16, 2017

These documents were prepared by, or under the supervision, of geologists and engineers who are Qualified Persons as defined in Canadian National Instrument NI 43-101. In this sense, the information should be considered as reliable.

Geotechnical data such as laboratory tests, structures scanning and seismic data, were provided by several sources such as Montreal's École Polytechnique, Mirarco, University of Quebec in Chicoutimi (UQAC), ESG Solution Canada and DGI geoscience. Mine Engineering personnel reviewed all data and reports for inclusion in the mining plan. Report details are included in Section 27.

Metallurgical testing was performed by a number of external consultants, as detailed in Section 13. Current metallurgical processes are based in part on their findings and recommendations. Report details are included in Section 27.

In addition, the following material stored on the Westwood computer network has been used:

- Database containing the block model with different attributes (Vulcan);
- Drill hole database containing collar location, downhole survey, assay, geology, litho geochemistry and geotechnical data (Vulcan);

- Three-dimensional models of the interpreted mineralized lenses, topography and lithologies (Vulcan);
- Grade block models (Vulcan);
- Quality control data;
- Bulk density data (Vulcan);
- Cost parameters for calculation of economic cut-off grades;
- Past resources estimates;
- Description of the metallurgical process and operating statistics.

Other IAMGOLD personnel who also participated in the preparation of this technical report:

- Christopher L. MacDonald, Jr Eng., Junior, geological engineer, Westwood Mine;
- Marc-Antoine Bédard, Eng., Principal Mine Planning Engineer, Westwood Mine;
- Frédéric Gagnon, Senior Mining Technician, Westwood Mine;
- Marc-André Leblanc, Jr Eng., Mill Superintendent, Westwood Mine;
- Marie-France Bugnon, Geo. General Manager Exploration, IAMGOLD Corporation.
- Jay Kukreja, Senior Manager Operations Finance, IAMGOLD Corporation.

**2.4 Field Involvement by Report Authors**

Mrs. Cécile Charles, Geo. Chief Geologist, Westwood Mine, IAMGOLD, works onsite and is responsible for the Westwood geology department. She also conducted a review of data and maps in IAMGOLD's Westwood/Doyon office. Mrs. Charles is a "Qualified Person" as defined by NI 43-101. She is responsible for sections 1 to 10, 23 to 27 of this technical report.

Mr. Donald Trudel, Geo. Principal Geologist, Westwood Mine, IAMGOLD, works onsite and supervises the resource calculation. He is the resource geologist for this updated technical report and he is a "Qualified Person" as defined by NI 43-101. He is responsible for sections 12, 14 and all Grand Duc geological information of this technical report.

Mr. Mauril Gauthier, Eng., Principal Mining Engineer, Westwood Mine, IAMGOLD, works on site, supervises the long-term planning. Mr. Gauthier is the lead author of this updated Technical report and is a "Qualified Person" as defined by NI 43-101. He is responsible for sections 15, 16, 18, 19, 21 and 22 of this technical report.

Mr. Philippe Chabot, Eng., Director Mining, IAMGOLD, works outside the site but carries out visits on a regular basis. He participates in the Life of Mine and budget technical reviews of the Grand Duc operations. Mr. Chabot is a "Qualified Person" as defined by NI 43-101 and is responsible for all technical information related to Grand Duc of this report.

Mrs. Martine Deshaies, Eng., Corporate Metallurgist, IAMGOLD, works outside the site but carries out visits on a regular basis. Mrs. Deshaies is a "Qualified Person" as defined by NI 43-101 and is responsible for sections 13 and 17.

Mr. Steve Pelletier, Eng. Environment Superintendent, Westwood Mine, IAMGOLD, works on site, ensures respect with environmental laws, liabilities, and permits. Mr. Pelletier is a "Qualified Person" as defined by NI 43-101 and is responsible for sections Sections 4.8 to 4.10, 5 and 20).

Mrs. Nathalie Landry, Geo. Geologist at Westwood Mine for IAMGOLD Corporation works onsite as a database administrator. She supervises database transition to acQuire and implementation of Vulcan software. Mrs. Landry is a "Qualified Person" as defined by NI 43-101. She is responsible for section 11 of this technical report.

### **3 RELIANCE ON OTHER EXPERTS**

The authors relied upon Mrs. Marie-France Bugnon, Geo. General Manager Exploration, IAMGOLD Corporation with respect to the land tenure and title (sections 4.1 to 4.7, Appendix). The information contained in these sections was validated by Mrs. Bugnon and transmitted by email to the authors on April 30, 2020.

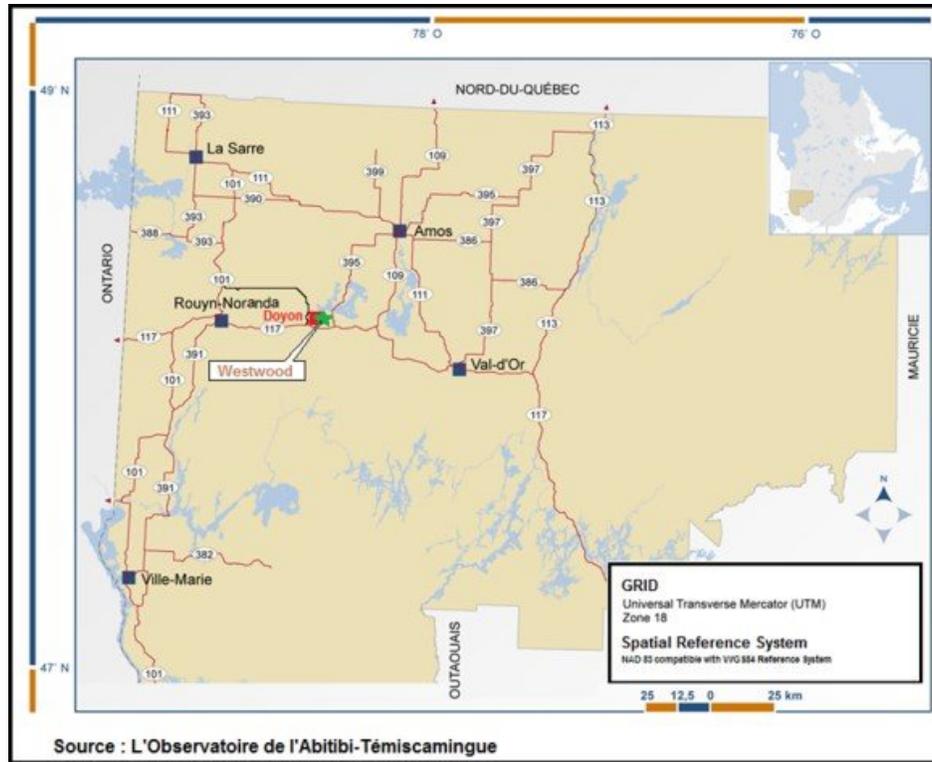
The authors consider the information presented in this report to be reliable.

**4 PROPERTY DESCRIPTION AND LOCATION**

**4.1 Location**

The Westwood Mine is located in the province of Quebec, Canada at a latitude of 48° 15' north and a longitude of 78° 30' west (Figure 4-1). The mine is located in the municipality of Preissac, Bousquet Township, approximately 40 km east of the town of Rouyn-Noranda and 80 km west of the town of Val d'Or.

**Figure 4-1: Westwood Mine Location Map**

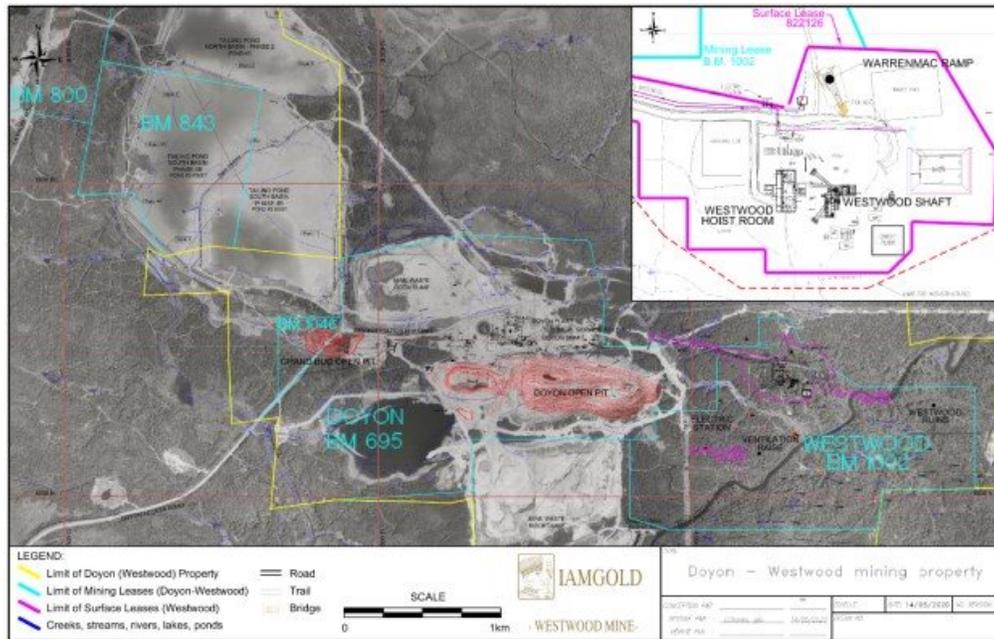


**4.2 Property Description**

The Doyon division mining property extends over 8 km east-west by approximately 5 km north-south (Figure 4-2). The Agnico-Eagle Property bounds it on the south and east. The Westwood Mining Lease covers an area of approximately 2 km<sup>2</sup> (B.M. 1002, 196.23 ha) and it is located in the eastern part of the Doyon division mining property which covers an area of 28 km<sup>2</sup> (2,875 ha).

The topography is relatively flat, at about 340 m above sea level, with hills generally less than 35 m in height. Glacial overburden thickness ranges from 0 to 35 m. The sub-vertical northeast striking Bousquet River Fault crosscuts the Westwood deposit into two parts with a 280 m sinistral movement.

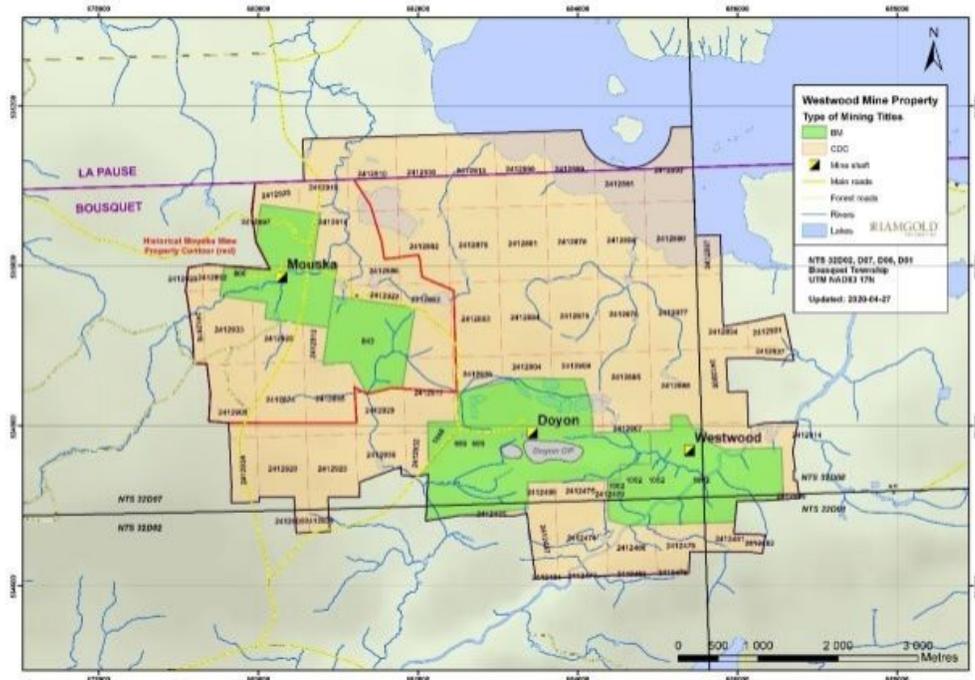
**Figure 4-2: Doyon/Westwood Mining Areas**



**4.3 Mining Titles**

The Westwood property is part of the Doyon division mining property which consists of one mining lease for the Westwood Mine (B.M. 1002, registered in 2012); one recently granted mining lease located west of the past producing Doyon Mine (B.M. 1046, also called Grand Duc and registered in 2017); one mining lease for the past producing Doyon Mine (B.M. 695); two mining leases for the past producing Mouska Mine (B.M. 800 and 843); and 75 map designated cells for a total surface area of 3,117.813 ha (Figure 4-3). In 2014, the "Ministère de l'Énergie et des Ressources Naturelles" (MERN) completed a conversion process to replace all ground-staked mineral claims forming the Doyon and Mouska mines properties in designated cells to simplify the land tenure system. In addition, three tailing surface leases (P.R. 999780, P.R. 999794 and P.R. 999803) are superimposed over parts of the property. The titleholder name of all those claims and leases is IAMGOLD Corporation at 100% and all those claims and leases are located in Bousquet Township. Details are listed in Item 30 (APPENDIX - Mineral Claims and Mining Leases).

Figure 4-3: Mining Titles - Doyon Division Mining Property



In 2008, a surface lease (No. 822126) was surveyed to define areas for the Westwood exploration shaft site, the Warrenmac ramp and access roads (Figure 4-3). Note that this lease is not included in the Appendix. A part of surface lease 822126 is still outside the B.M. 1002 (a part of the access road between the Doyon Mine and the Westwood Mine).

On April 16, 2010, an application was filed with the MERN to request a mining lease for the Westwood site development and referred as B.M. 1002. The Westwood mining lease was granted on April 23, 2012, for a total of 196.23 ha. It covers the lots 4301148, 4399767, 4606905, 4606906, 4606907 and 4606971 of the Quebec Cadastre, as well as non-registered land in the river bed of the Bousquet River, in the township of Bousquet, Registration Division of Rouyn-Noranda (Figure 4-3). Mining lease 1002 is valid for a period of 20 years, until April 22, 2032.

#### 4.4 Legal Surveys

Doyon division mining property boundary was surveyed by J.-P. Deslauriers, A.G., in April 1978. This survey covers the southeastern part of the actual Doyon division mining property starting from the western border of the mining lease 0695 (Figure 4-3) to the eastern limit of the claims.

The legal survey for the Westwood mining lease B.M. 1002 was performed in 2010 by J. L. Corriveau, A.G. This mining lease is included inside the Doyon division mining property (Figure 4-3).

Other surveys were conducted over different blocks inside and around the Doyon division mining property including, 1979 (J.-P. Deslauriers, A.G. - Mouska area), 1982-83 (J.-L. Corriveau, A.G. - around BM 0695), 1990 (J.-L. Corriveau, A.G. - Mouska and West areas) and 1992 (J.-L. Corriveau, A.G. - Tailing ponds areas). All these surveys supported the MERN conversion of ground-staked mineral claims into map designated cells. Maps are available in the Westwood Mine office.

#### **4.5 Requirements to Maintain the Claims in Good Standing**

The fees for mining leases and tailing surface leases are due at the MERN yearly at their dates of anniversary, which are spread across from January to July. A mining lease is initially valid for 20 years and may be extended for additional periods of ten years. The initial Doyon Mine's B.M. 695 was extended for a second period of ten years up to July 2, 2020, while the Westwood mining lease B.M. 1002 was granted on April 23, 2012, for a period of 20 years until April 22, 2032. The recently granted Grand Duc mining lease 1046 was granted on January 19, 2017, for a period of 20 years until January 18, 2032. The first Mouska mining lease (B.M. 800) is in the first extension of ten years up to August 6, 2021, as well as the second Mouska mining lease (B.M. 843) which is in its first extension for ten years until April 5, 2028.

All other mineral claims are held in good standing. In Quebec, the rent of each mineral claim depends mainly on its holding time and location. For the Doyon division mineral claims, the rent per full-size cell mineral claim is \$66.25 per two-year period while mineral claims formed from a small fraction of the cell is \$33.75 per two-year period. Work requirements per mineral claim vary from \$1,000 to \$2,500 per two-year period in general depending of its size. Any excess of work credits may be applied for subsequent renewals. To accumulate credits on mineral claims, a technical report explaining exploration activities (type, time, location, costs, results, responsible persons and utilized contractor (s)) must be filled with the MERN as statutory work. This report should be registered within two years after the expenditures have been incurred.

In the renewal process, the excess of accumulated work credits on a claim can also be applied to renew claims located in a radius of 4.5 km. For the Doyon division mining property, the work credits totals over \$10.9M. However recent changes in the regulation has reduced the period accumulated work credits may be kept to renew the claim to 6 periods of renewal (so up to a maximum of 12 years). This will require that some exploration works are filed before end of 2027 on the Doyon division property, date by which the existing accumulated assessment work credits will expire.

The global requirement for the Doyon division property is about \$141,000 of work credits and \$3,961 of claim fees for every two years. All claims are currently in good standing until December 2021, when the standard renewal process will continue.

#### **4.6 Titles and Obligations/Agreements**

The Doyon division mining property is held 100% by IAMGOLD Corporation. There are no agreements, joint venture partners, or third party obligation at the Westwood Mine.

#### **4.7 Royalties and Other Encumbrances**

The Doyon division mining property and the Westwood Mine are not subject to any royalties or any other encumbrance.

#### **4.8 Environmental Liabilities**

From 1980 to 2009, the Doyon Mine produced 5.3M/oz of gold from sulphide-bearing ores extracted using open-pit and underground infrastructures. Mining activity resulted in mill tailings, sulphide bearing mine waste storage facilities, and mine water effluent. Rehabilitation work began in 2008 with the trucking of sulphide bearing waste back into the inactive open pit. In February 2011, the Westwood underground mine certificate of authorization was approved and reach the official commercial production on July 1, 2014. The production still ongoing.

The *Mining Act*, and the regulations under it, includes provisions that require mining companies to rehabilitate the areas affected by their activities. Under the *Mining Act*, companies must submit a rehabilitation plan to the MERN. Following consultation with the MELCC, the MERN may approve the plan and the companies are required to provide financial guarantees (100% of the anticipated rehabilitation cost of the entire mine site) over a three-year period. The closure plan must be updated every five years. The closure plan must be approved by MERN before work can begin.

In February 2016, the Grand Duc open pit closure plan (\$0.08M) has been submitted and approved in July by the MERN. As requested by the ministry, the Grand Duc closure plan will be included in the next Doyon mine closure plan update. In September 2016, IAMGOLD submitted an updated closure plan for both Doyon Mine and Westwood Mine to the MERN. The closure plans for Doyon (\$97.14M) and Westwood (\$69.14M) mines were approved in February 2018, with a combined cost estimate of \$166.54M. The financial guarantees were adjusted accordingly to the regulatory payment schedule (100% since Feb. 2020). The next closure plans update is required by October 14, 2021. Sections 20.3 and 20.5 has additional information regarding mine closure plans.

#### **4.9 Permits and Licences**

Permitting for exploration activities in Quebec is associated with the claim staking process. For more advanced exploration projects (bulk sample, development work), a surface lease or mining lease is required. As described in section 4.3, all claims and mining leases are in good standing (see Appendix).

It is expected that Westwood's operations will continue to be within the parameters of the existing Doyon permits and approvals. As described in Section 20, project development is carried out in accordance with the requirements of Directive 019 (version March 2012) on the mining industry of the Quebec Ministry of Sustainable Development, Environment, and Climatic Changes (MDDELCC). This directive is a commonly used tool for the analysis of mining projects requiring the issuance of a certificate of authorization under the Environment Quality Act (EQA). The final effluent is also under the federal regulations according to the federal Metal Mining Effluent Regulations.

A key permit was issued in March 2013 by the MDDELCC, a depollution attestation. This permit, which is renewable every five years, identifies the environmental conditions that must be met by Doyon-Westwood when carrying out its activities. The depollution attestation compiles all the environmental requirements regarding effluent discharge, noise, waste management, etc., related to the operation of Doyon-Westwood. A modification of the depollution attestation was issued in January 2015. The renewal request was submitted to the MELCC in October 2017 as required by the legislation and the last version will still be valid until the approval of the depollution attestation renewal version as define in the legislation.

On February 1, 2016, Doyon received a new authorization to custom mill ore from another company. From this authorization, in 2016, Doyon processed muck from Ressources Nottoway Inc. Promec Mine. Doyon also received authorization for custom milling of Gold Bullion Development Corporation ore. The authorization has been issued by the MDDELCC.

For the Westwood Mine, all necessary permits were obtained for infrastructure construction, including the access road, woodcutting, electric power line, communication line and water line. All are located inside the mining lease and the existing surface leases. Certificates of authorization were obtained for the following activities: Warrenmac ramp, exploration shaft, ventilation raises, waste pad and water ponds, ore extraction, septic installations, well for potable water, Grand Duc open pit and use of the former Doyon open pit for the storage of Westwood's tailings.

#### **4.10 Other Significant Factors and Risks**

To the extent known by the authors, there are no other significant factors and/or risks that may affect access, title, or the right or ability to perform work on the property.

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

### **5.1 Topography and Elevation**

The Westwood Mine is located in glaciated terrain, underlain by volcanic rocks. The topography is relatively flat (less than 35 m differential elevation) and at about 340 m above sea level. Overburden varies from 0 to 35 m thick. Even with good drainage (multiple permanent and intermittent creeks), the clayey soil can be waterlogged during the summer season.

### **5.2 Vegetation**

Spruce, pine, fir, larch, poplar, birch and cedars are the main varieties of the mature forest covering the Westwood area. In November 2008, the required permits were secured and woodcutting was completed over the Westwood surface lease area. As the project is close to a Quebec National Park, local wild animals are observed on the property from time to time.

### **5.3 Accessibility**

The property is located on Arthur Doyon Road, 4 km east from the intersection of Mont-Brun Road and Arthur Doyon Road. There are presently two routes leading to this intersection:

- From the south, the intersection is accessible via the paved Provincial road No. 117 which connects Rouyn-Noranda and Val-d'Or, then one kilometre towards the north via the secondary paved road leading to Mont-Brun and Aiguebelle National Park (Mont-Brun Road);
- From the north, the intersection is accessible via the Mont-Brun Road, which connects to the paved Provincial road No. 117 and the paved Regional road No. 101 through the municipalities of Mont-Brun, Cléricky and D'Alembert. This access is controlled by a locked barrier.

### **5.4 Climate and Operating Seasons**

The regional climate varies from dry hot (up to 35°C) in summer time (end of June to September) to cold with snowfalls (down to -40°C) in winter (end of December to March). There is no rainy season but in the summer, muddy trail conditions can slow surface exploration activities, as there is a need to avoid releasing suspended materials into the streams (environmental condition). However, access is available year-round. Climatic conditions have little effect on mine operations, although heating may be required in winter to keep ventilation infrastructures and ore bins free of ice.

### 5.5 Local Resources and Infrastructure

The Abitibi region is an important mining area in Canada containing several deposits. The local workforce has skilled and experienced mineworkers (miners and staff) that are available. The workforce comes mostly from Rouyn-Noranda and Val d'Or as well as from the surrounding municipalities. There are also many suppliers

Westwood mine is very attractive to potential employees due to its potential longevity, its accessible location and the competitive working conditions offered by IAMGOLD.

Westwood mine is an active mining operation and there are sufficient surface rights for mining operations.

Reliable communications, fast network links and water supply facilities are readily available at the Doyon Mine Site. These were extended to the Westwood Mine in 2008. 25 kV power lines were also built to supply the Westwood exploration shaft and the ventilation raise.

The nearest railway line is located less than 10 km south of the mine. The nearest active airport is the Rouyn-Noranda airport located less than 25 km east of the mine.

## 6 HISTORY

Prior to 2004, all exploration-drilling activities were performed from the surface. In order to begin underground exploration, the following surface and underground activities have been completed since 2004:

- Development of an exploration drift (approximately 3 km long) towards the east starting from the Doyon 014 Level at elevation 4,120 m (2004-2008);
- Deforestation of surface areas needed for the construction of the surface infrastructures: headframe, hoist room;
- Surface infrastructures construction: mine water pond with a capacity of 7,200 m<sup>3</sup>, a waste rock storage facility with a capacity of 45,000 m<sup>3</sup>;
- Frame, hoist room, service buildings, wastewater treatment basin and stockpile pads (2008);
- Development of the Warrenmac ramp from surface (elevation 4,970 m) down to Level 036 (elevation 4,568 m) (2008-2010);
- Construction of an exploration shaft headframe, a hoist room and service buildings (2008-2010);
- Raise-boring and sinking of an exploration shaft initiated in 2008 and completed in 2013 (1,958 m deep by the end of 2013, 21 feet in diameter);
- Raise-boring (20 feet in diameter) for a ventilation raise between surface and Level 084 (elevation 4,120 m) (2009-2010);
- Development of Level 036 (elevation 4,568 m), Level 060 (elevation 4,354 m), Level 084 (elevation 4,120 m), Level 104 (elevation 3,920 m), Level 132 (elevation 3,646 m), Level 140 (loading station), Level 156 (elevation 3,412 m), Level 180 (elevation 3,165 m) and Level 192 (elevation 3,040 m) and connecting ramps between levels;
- Refurbishing of the original Doyon mill between 2011 and 2013 in order to efficiently treat Westwood ore;
- Hydrostatic plug installed on Level 084 of the Westwood Mine to flood the entire Doyon Mine (2013-2014);
- Westwood Mine first gold ingot poured on March 27, 2013;
- Westwood Mine official commercial gold production started on July 1, 2014.

The first resource estimation was performed in the first quarter of 2007 for IAMGOLD. This triggered a Scoping study in order to evaluate the economic potential of the Westwood deposit.

Other resource estimates were performed in July 2008 (IAMGOLD, February 27, 2009), in June 2009 (IAMGOLD, December 2009), in October 2010 (IAMGOLD, April 1, 2011), in May 2011 (IAMGOLD, March 5, 2012), in May 2012 (internal revision, non-published report), in September 2012 (IAMGOLD, October 16, 2013), in September 2013 (IAMGOLD, March 15, 2014), in September 2014 (IAMGOLD, January 15, 2015), in October 2015 (IAMGOLD, January 15, 2016), in April 2016 (internal revision, non-published report), in October 2016 (IAMGOLD, January 5, 2017), in November 2017 (IAMGOLD, January 9, 2018), in November 2018 (IAMGOLD, January 15, 2019) is based on additional drilling information. In December 2019, the resource estimation was produced with the 2018 resource calculation and the depletion of the 2019 mining (IAMGOLD, January 29, 2020).

October 7, 2019, was the cut-off date for diamond drill data being used in this resources and reserves estimate. This report presents the updated resources and reserves estimate, which is based on assay results returned from 4,355 diamond drill holes.

### 6.1 Ownership

Table 6-1 summarizes the different owners of the Doyon division mining property over time. From 1977, ownership changes resulted from privatization, takeover or acquisition. During this time, the mining concession and property borders remained approximately the same, modification being limited to within the property limits when additional blocks were surveyed for tailings disposal (claims transformation). IAMGOLD Corporation has held 100% of property interest since November 2006.

Table 6-1: History of the Doyon and Westwood Mines

Date	Owners	Work
1910		First exploration activities reported on the Doyon (Westwood) property.
1930's - 1940's	Mooshla G.M. Company	Development work (shallow exploration shafts and drifts) over the Mooshla-A and Mooshla-B occurrences both located in the western part of the Doyon (Westwood) property (Production of Mooshla-A : 4 444 tonnes at 27.0 g/t Au).
	O'Leary Malartic G.M. Ltd.	Working on the Westwood occurrence in the eastern part of the Doyon (Westwood) property (surface work, shallow shaft and drifts)
1960's		More intense prospecting work by the prospector Arthur Doyon on the Doyon Mine site.
1972-1977	Silverstack Mines Company Ltd (50%) SOQUEM (50%)	Exploration work between 1972 and 1975 on the Doyon occurrence.
1977-1986	Long Lac Mineral Exploration Ltd (50%) SOQUEM (50%)	A drilling survey of 120 diamond drill holes brought the Doyon deposit into production in February 1980. In 1983, a surface exploration campaign led to the discovery of Doyon West Zones.
	Long Lac Mineral Exploration Ltd (50%) Cambior Inc. (50%)	Exploration programs were then conducted on Doyon from underground and on the Warrenmac-Westwood areas from surface. The Warrenmac sulphide lens was delimited at that time. In 1989, Doyon essentially became an underground mining operation.
1994-1998	Barrick Gold (50%) Cambior Inc. (50%)	Surface diamond drilling campaigns on Warrenmac-Westwood occurrence. These drill holes were located South and East of the Doyon open pit on both eastern and western sides of the Bousquet Fault.
		Surface diamond drilling campaigns on Warrenmac-Westwood occurrence until 2001.
January 1998 to November 2006	Cambior Inc. (100%)	Geological compilation in 2002 by the Cambior's Exploration team : the Bousquet Formation is targeted at depth where good patterns were recognized. The first drilling phase from surface (2002) led to the Westwood and North Corridor mineralisation discovery at depth, on the eastern side of the Bousquet Fault.
		A five-year exploration program was started in 2002, targeting the favourable Warrenmac-Westwood corridor at depth. In the original scheme, project expenses for the entire program (Westwood and Mooshla) totalled \$11.3 M to realize 50 000 metres of drilling and 2.6 kilometres of drift development excluding follow-up.
Since November 2006	Iamgold Corporation (100%)	Acquired all of Cambior's assets including the Doyon Mine and Westwood Mine (which was a project at that time).
		Surface and underground diamond drilling campaigns on Westwood occurrence.
		Construction of the Westwood Mine (2008-2013).
		Closure of the Doyon Mine (end of 2009).
		Official commercial production : July 1, 2014.

## 6.2 Historical Project Exploration and Development

Table 6-2 summarizes previous exploration activities from 1938 to 2004 for the Westwood area.

**Table 6-2: Historical (1938-2004) Exploration Drilling - Westwood Mineralization**

Previous Exploration Drilling Warrenmac - Westwood area						
Year	Surface/Underground Exploration	Area	Total holes	Total metres	Dimension	Companies
1938	Shaft	WW		76.2m		O'Leary Malartic G.M. Ltd
1938-95	From surface and underground	WW-Warrenmac	47 holes	23 604 m		Siscoe Gold Mine (1930's and 1940's)
		Cadillac Group	2 holes	252 m		Silverstack Mines Company Ltd & SOQUEM (1972-1977)
		North Zone	5 holes	1 290 m		Long Lac Mineral Exploration Ltd & SOQUEM (1977-1986) Long Lac Mineral Exploration Ltd & Cambior (1986 -1994) Cambior & Barrick Gold Corp. (1994-1995)
1995	Surface	Schiste / WW	6 holes	6 430 m	BQ/NQ	Cambior & Barrick Gold Corp.
1996	Surface	Warrenmac	10 holes	3 283 m	BQ/NQ	Cambior & Barrick Gold Corp.
1999	Surface	Schiste / WW	2 holes	864 m	BQ/NQ	Cambior
2001	Surface	Schiste / WW	7 holes	5 661 m	BQ/NQ	Cambior
2002	Surface	Schiste / WW	6 holes	5 855 m	AQ/BQ/NQ	Cambior
	Underground	Schiste / WW	2 holes	1 989 m	NQ	
2003	Underground	10-2/J-125	2 holes	2 707 m	NQ	Cambior
2004	Underground	14-01/J-125/WW	6 holes	5 240 m	NQ/BQ	Cambior
<b>TOTAL</b>			<b>95 HOLES</b>	<b>57 251 m</b>		

In 2002, Cambior's Exploration team initiated geological compilation work that led to target the favourable Bousquet Formation at depth where good alteration patterns were recognized. The first drilling phase from surface (2002) led to the Westwood and North corridors mineralization discovery at depth, on the eastern side of the Bousquet Fault. A five-year exploration program followed, targeting the favourable Westwood Corridor at depth. The original plan (Westwood and Mooshla) was to complete 50,000 m of drilling and 2.6 km of drift development towards the east from the Doyon Mine, excluding follow-up.

Following Phase 1 success (see the years 2002-2004 in Table 6-2), the initial planning was readjusted in 2004 to 2.89 km of an exploration drift towards the east from the Doyon Mine, 6,400 m of surface drilling and 50,280 m of underground drilling. In addition to these, some INFINITEM geophysical surveys were conducted in selected holes and geochemical samples were taken on a regular basis to quantify alteration. Table 6-3 summarizes the exploration activities for the Westwood area, during the second exploration phase on the Westwood occurrences (2004 - 2006).

Table 6-3: Cambior Phase 2 Exploration Program (2004-2006) - Westwood Mineralization

Year	Drifting (m)	Surface drilling (holes/ wedges)	Surface drilling (m)	Underground drilling (holes / wedges)	Underground drilling (m)
Total 2004	Lateral 752	Exploration 1 h / 5 w	4 233	Exploration 2 h	3 064
Total 2005	Lateral 910	Exploration 7 h	6 303	Exploration 9 h	9 727
Total 2006	Lateral 976	Exploration 0 h	-	Exploration 22 h	16 972
Total	Lateral 2 638	Valuation 8 h / 5 w	-	1 037 h / 2 w	-
	Vertical	Exploration 69 h / 24 w	10 536	214 h / 71 w	29 763
	Shaft/Raise	Engineering 5 h	-	58 h / 4 w	-
<b>Grand-Total 2004-2006</b>	<b>2 638</b>	<b>113 h / 32 w</b>	<b>10 536</b>	<b>1 309 h / 77 w</b>	<b>29 763</b>

Finally, in November 2006, IAMGOLD took over Cambior and acquired all of its assets including the Doyon Mine and Westwood project. No historical Mineral Resources and Mineral Reserves estimates was disclosed except the ones prepared by Cambior/IAMGOLD.

### 6.3 Historical Production

Table 6-4 summarizes previous ore production at Westwood mine. All the ore production occurred under IAMGOLD ownership.

Table 6-4: Historical Production at Westwood Mine

WESTWOOD MINE	2014	2015	2016	2017	2018	2019
Gold production (ounces)	80,000	60,000	65,000	125,000	129,000	91,000
Tonnage milled (tonnes)	328,000	375,000	347,000	624,000	693,000	625,000
Grade (g Au/t)	7.98	5.26	6.14	6.61	6.11	4.82

## 7 GEOLOGICAL SETTING AND MINERALIZATION

### 7.1 Regional Geology

The Westwood Mine is part of the DBL mining camp (Figure 7-1) which is located within the Southern Volcanic Zone of the Abitibi subprovince. The deposit is hosted within the Archean volcanic and intrusive rocks of the Bousquet Formation (2699-2696 Ma) which is one of the youngest assemblages of the Blake River Group (2703-2694 Ma). The DBL mining camp hosts several world-class deposits (e.g., Doyon, Bousquet 1, Bousquet 2-Dumagami and LaRonde Penna mines). It is the largest gold-copper-zinc-silver producing district in the Province of Quebec with a total production, current resources and reserves record of more than 164Mt averaging 5.0 g Au/t for more than 26.2M/oz.

Five deposit styles are recognized in the camp: 1) gold-rich VMS-type lenses, 2) VMS-type related gold-rich vein stock works and sulphide disseminations (Au±Cu-Zn), 3) intrusion-related gold- and copper-rich veins, 4) shear-hosted gold- and copper-rich veins and 5) syn-deformation auriferous quartz-pyrite-tourmaline veins (e.g., Mercier-Langevin et al., 2007 and Yergeau et al., 2015). After more than 30 years of exploration and mining activity, two mines are still in operation in the DBL mining camp (Westwood and LaRonde Penna). Recent scientific work (Mercier-Langevin et al., 2009; Wright-Holfeld et al., 2010; Yergeau, 2015; Yergeau et al., 2015) have confirmed geochemical similarities between the host rocks of the main VMS-type lenses at the LaRonde Penna Mine and the rocks hosting the Westwood mineralized corridor. Moreover, the Zone 2 Extension veins are located at the same stratigraphic level as the Doyon Zone 2 veins.

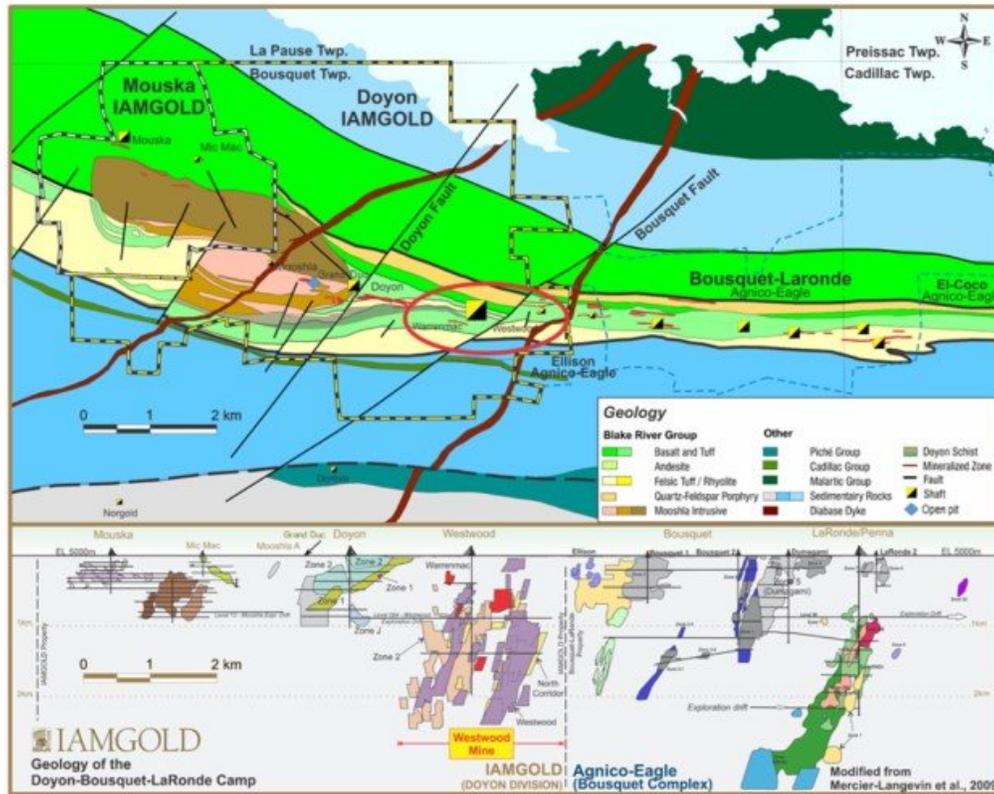
### 7.2 Local and Property Geology

The Westwood Mine is located within the limits of the Doyon division mining property. Figure 7-1: Regional / Local Geology / Westwood Mine Location (Plan & Composite Longitudinal Views) covers the Blake River Group (BRG) metavolcanic rocks and a part of the metasedimentary Cadillac (CG) and Kewagama (KG) groups located respectively to the south and to the north of the BRG. The BRG in this area is limited to a highly strained relatively thin band of metavolcanic and intrusive rocks that form a south dipping (70-80°) homoclinal sequence. The stratigraphy generally strikes east-west (N100-110°) and is parallel to the main regional foliation.

The Mooshla Intrusive Complex (MIC), a polyphase syn-volcanic pluton, is comagmatic with the Bousquet Formation and intrudes the volcanic rocks in the western part of the property.

Excluding the West Zone, which is hosted within the Mooshla intrusion, most of the former Doyon Mine production comes from felsic hypabyssal volcanic rocks (Zone 2); mafic to intermediate volcanic rocks (Central Zone) and the sericite schist zone (Zone 1). Gold-bearing VMS-type lenses and disseminated sulphide zones occurring in the eastern part of the Doyon division mining property are known as the Warrenmac and Westwood showings (now part of the Westwood Mine), respectively to the west and to the east of the NE-SW trending Bousquet Fault (BF).

Figure 7-1: Regional / Local Geology / Westwood Mine Location (Plan & Composite Longitudinal Views)



The deformation is heterogeneous and varies in intensity from moderate to strong throughout the DBL mining camp. The regional foliation is east-west with dips varying from sub-vertical to 70° towards the south. The stratigraphic units and most of the mineralized zones are strongly transposed in the regional foliation. The regional metamorphism grade is transitional from upper greenschist in the upper part of the deposit to lower amphibolite facies in the lower part of the deposit (> 1,500 m depth).

### 7.2.1 Lithology and Stratigraphy

Following the research thesis works performed by Yergeau (2015), the stratigraphic column for the Bousquet formation has been reviewed and divided into several distinguishable subunits, based on textural and/or geochemical parameters (Figure 7-2). Substantial efforts have been undertaken in 2019 and 2020 conjunctly with SRK (2019) and InnovExplo (2019, 2020) in order to refine further the lithological model based on the updated stratigraphic column. In additions, a comprehensive structural model of the mine has also been constructed on Leapfrog ©. A third-party review of SRK's geological and structural model was conducted by InnovExplo in early 2020 (InnovExplo, 2020). Those models are currently been improved based on their recommendations. From north to south (base to the top of the stratigraphic column) these units are:

From north to south (bottom to top of the stratigraphic column) these units are:

**Unit #1 (Hébécourt Formation):** This unit consists of tholeiitic basalt with pillowed, brecciated and massive flow textures with local glomeroporphyritic horizons. Numerous gabbroic sills and rare narrow fine tuff beds are also noted.

In the DBL, the Hébécourt Formation, which represents the base of the BRG, is overlain by the Bousquet Formation, which is subdivided as follows:

**Bousquet Formation lower member:** Mafic to intermediate composition and tholeiitic to transitional affinity.

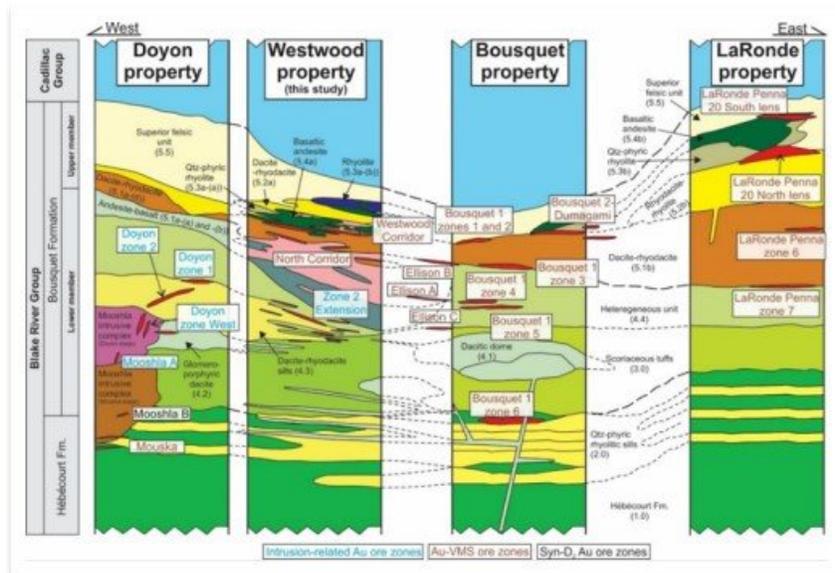
**Unit #2.0:** Overlying and intercalated with the Hébécourt Formation, unit #2 is mainly composed of tholeiitic quartz- and feldspar-phyric felsic rocks of intrusive origin (but initially interpreted as tuffs). The Zone 6 of the Bousquet 1 Mine is located in this unit.

**Unit #3.3.0 and #3.3.1:** This complex unit corresponds to tholeiitic to transitional and mafic to intermediate volcanic rocks displaying tuffaceous, breccia and flow textures that are interpreted as submarine high-density flow deposits. Far to the east of the Bousquet Fault, the southern (upper) contact with overlying units is not obvious as unit #3 is in contact with similar rock types of unit #4.4. Unit #3 hosts minor parts of the Doyon Mine's Zone 2 and Westwood Zone 2 Extension.

**Units #4.2.0 and #4.3.0:** These units represent hypabyssal intrusive felsic rocks that are genetically associated with the Bousquet Formation upper member. Unit #4.2 has a tholeiitic to transitional affinity and felsic to intermediate composition whereas unit #4.3 is transitional in affinity and dacitic to rhyolitic in composition. Units #4.2 and #4.3 hosts most of the Doyon Mine Zone 2 and most of Westwood Mine Zone 2 Extension ore zones. The upper part of unit #4.3 is affected by an intense sericite alteration (i.e., sericite schist) zone, which pinches at depth and eastward from the Doyon Mine area. This alteration zone (hosting the Doyon Mine's Zone 1) also affects other units (i.e., #4.2 and the base of #4.4).

**Unit #4.4.0 and #4.4.1:** This heterogeneous unit presenting a transitional affinity is essentially composed of mafic to intermediate tuffs, volcanic breccias and lavas. This unit hosts the Bousquet 1 Mine's Zones 4 and 5 as well as parts of the Westwood Mine's Zone 2 Extension.

Figure 7-2: DBL Mining Camp Regional Stratigraphic Sequence



**Bousquet Formation upper member:** Intermediate to felsic composition and transitional to calc-alkaline affinity.

**Subunits #5.1.1 and 5.1.2:** Those two subunits form the base of the Bousquet Formation upper member. They are mainly composed of basaltic to andesitic massive lavas and associated volcanoclastic rocks of transitional affinity. Those rocks contain centimetric amygdules filled with quartz and carbonate. They host the North Corridor ore zones as well as some ore zones of the Bousquet 1 Mine.

**Subunit #5.1.4 and 5.1.5:** This subunit forms local felsic effusive centres on top of unit 5.1a and is mainly composed of dacitic lapilli to blocky tuffs with feldspar phenocrysts, when poorly altered. This subunit has a transitional to calc-alkaline affinity and represents the footwall of the Westwood Corridor as well as Bousquet 1 and Bousquet 2-Dumagami main ore zones.

**Unit #5.2.1:** This calc-alkaline to transitional rhyodacitic unit is located in the immediate hanging wall of the Westwood Corridor ore zones and is composed mainly of volcanic breccias and feldspar-phyric massive lobes and domes. It also represents the footwall unit of the LaRonde Penna Mine 20 North lens.

**Unit #5.5.1 and #5.5.2 and #5.5.3:** The uppermost unit of the Bousquet Formation is composed of calc-alkaline rhyodacitic to rhyolitic dome-breccia complexes that are poorly altered, generally feldspar-phyric, and rich in biotite porphyroblasts. It is in contact with the metasediments of the Cadillac Group (CG) to the south, with a level of semi-massive to massive barren pyrrhotite overlain by black shale, which generally lies at the contact.

**Subunits #5.3.1 and 5.3.2:** The Bousquet Formation upper member is crosscut by several felsic to mafic sills, dykes and cryptodomes. Subunit 5.3 a represents a series of metric rhyolitic quartz - and feldspar-phyric dykes and sills that intrudes the felsic volcanic rocks. These dykes and sills are mainly recognized in the vicinity of the Westwood Corridor and they locally act as impermeable cap rocks that help focus the auriferous hydrothermal fluids (Yergeau et al., in prep.). Subunit 5.3a-(b) is a thick feldspar-phyric calc-alkaline rhyolitic cryptodome found in the upper and eastern parts of the Westwood Mine. It lies in the hanging wall of the Westwood Corridor and is thus poorly altered and not related to any ore zone.

**Subunit #5.1.3 and unit #5.4.0:** These andesitic to basaltic tholeiitic sills and dykes represent the latest stage of hypabyssal volcanism in the Westwood Mine. Initially encountered only on the LaRonde Penna and Bousquet 2-Dumagami properties, these are now also recognized on the Doyon division mining property. They are found in the different units of the Bousquet Formation upper member, but are mostly located in the immediate hanging wall and footwall of the Westwood and North corridors ore zones. Similar to subunits #5.3a and #5.3a-(b), they acted as cap rocks as well as reactive sinks for base metals and gold. At LaRonde Penna, this unit is spatially and genetically related to the Zone 20N and Zone 20S massive sulphide lenses.

The BRG southern contact is sub-concordant with the CG metaturbidites. The metric semi-massive to massive pyrrhotite level at the contact between the BRG and the CG is barren and possibly represent a hiatus between the BRG volcanic episode and the beginning of the Archean submarine sedimentation of the CG.

**Graphitic Argillites:** Two black graphitic argillite horizons which the thickness does not exceed three metres were identified in The Bousquet Formation upper member. An example of graphitic argillites in an underground diamond drill hole is shown in picture 7-3. These argillites are locally bedded and sometimes contain pyrite and pyrrhotite rich bands. The first horizon is located at the West of the Bousquet Fault at the contact between unit #5.2.1 and unit #5.5 close to Level 084-00 with limited lateral extend. The second horizon is located at the East of the Bousquet Fault and is of limited horizontal and vertical extend. This horizon is located between Level 154-00 and Level 060-00 and is at the contact of units #5.1.4 and unit #5.2.1 or at the contact of unit #5.3.1 or unit #5.3.2 and unit #5.5. The contact between The Bousquet Formation upper member and the Cadillac group is characterized by a disseminated or massive to semi-massive pyrite/pyrrhotite mineralized horizon. Argillites are generally much more deformed than adjacent volcanic and sedimentary rocks. Several elements suggest that the setting of the Black River Group is submarine in the Doyon-Bousquet-LaRonde mining camp.

Figure 7-3: Graphitic Argillites in an Underground Definition Drill Hole



**Mooshla Intrusion:** In the western part of the Doyon property, units #3.0, #4.2 and #4.3 are intruded by the polyphase syn-volcanic Mooshla Intrusive Complex (MIC). The early stage of the MIC (Mouska stage) is composed of gabbros and diorites that are coeval with the Bousquet Formation lower member. The main zone of the past producing Mouska Mine is hosted in the Mouska stage. The late stage of the MIC (Doyon stage) is composed of diorites, tonalities, and trondhjemites that are coeval with the Bousquet Formation upper member. The Doyon Mine's West Zone and the actual Grand Duc open pit are hosted in the tonalities and trondhjemites at the apex of the Doyon stage, near the contact with the volcanic rocks. An apophysis of the MIC's trondhjemite hosted in unit #3.0 plunges underneath the Westwood Mine in the western part of the deposit. No mineralized zones in the Westwood Mine area are currently associated with the MIC.

Figure 7-4 shows a geological plan view of Level 132-00 of the Westwood Mine while Figure 7-5 shows a south-north cross-sectional interpretation of the Westwood deposit.

Figure 7-4: Geological Map - Plan View of Level 132-00

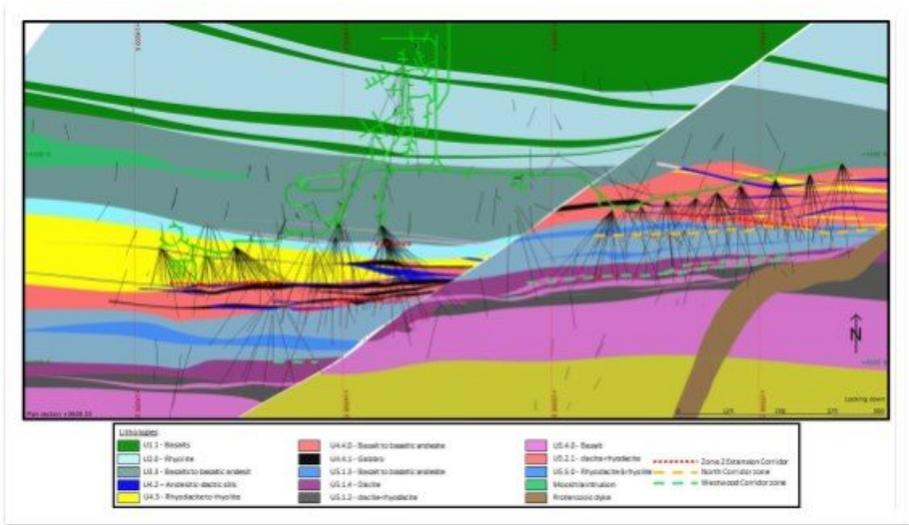
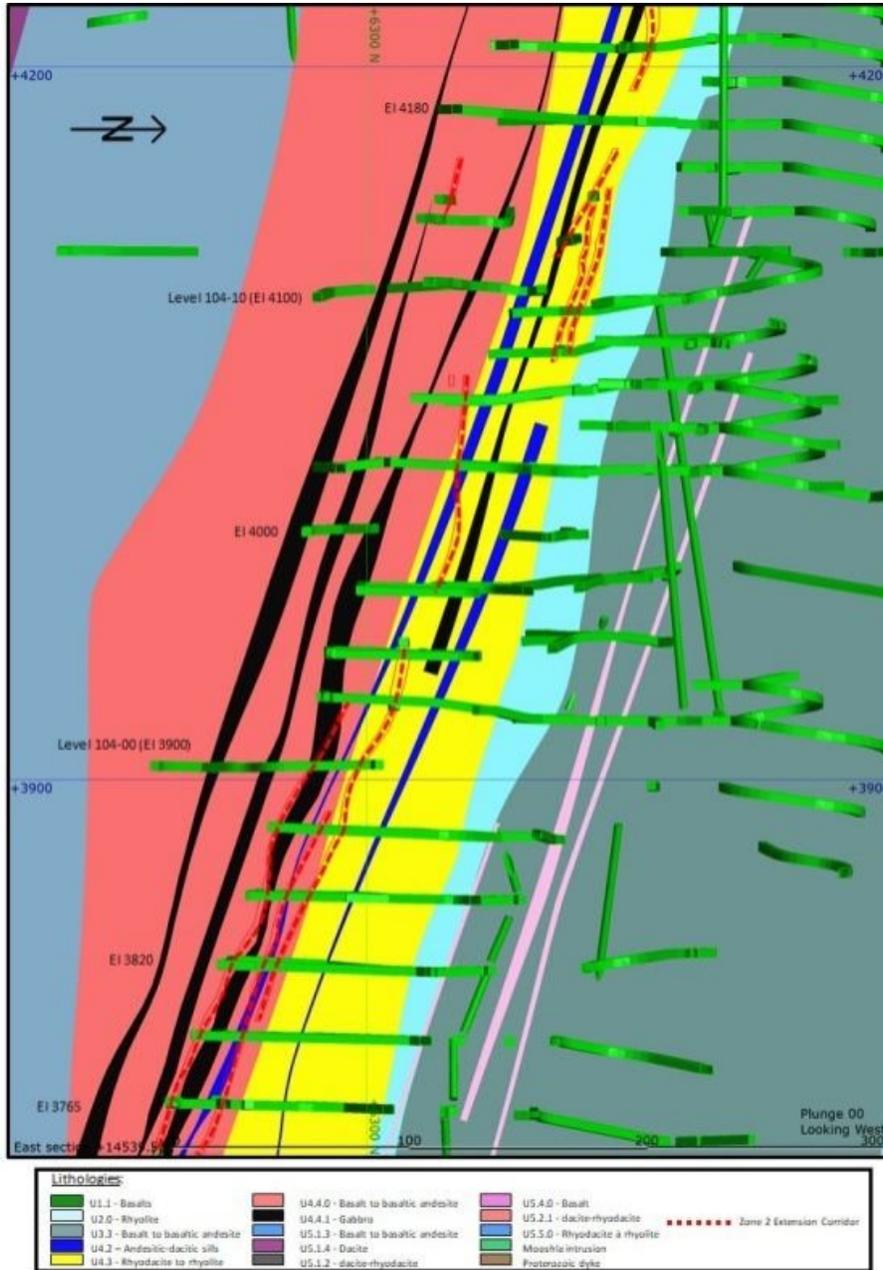


Figure 7.5: Subvertical South-North Cross-Section in the Centre of the Deposit, in the Bousquet Formation Lower Member (14,540 m E)



**7.2.2 Structural and Metamorphic Geology**

All lithologies of the DBL mining camp have been influenced by a north-south compression event, which resulted in a subvertical to steeply south dipping east-west penetrative schistosity. High-strain anastomosing east-west corridors is observed throughout the property, mainly at the geological contacts and within highly altered zones. Figure 7-5 shows some of the major continuous faults and shears. These East-West structures (F2), as illustrated in Figure 7-6, have notably a significant influence on infrastructure stability, including seismicity and drive closures. Outside of these narrow corridors, primary volcanic textures are typically well preserved.

A dominant east-west alteration zone is present on the Doyon division mining property and is marked by a sericite schist made of highly deformed rocks occupying a 150 m wide corridor. The sericite alteration affects partially or completely part of units #4.2, #4.3, and #4.4. The sericite schist dips at about 65° towards the south. The intensity of sericitization and associated deformation appears to reduce with depth and to the east. We can observe the alteration and deformation up to 700 m eastward of the Bousquet Fault, all the way to the Proterozoic dyke. At Level 104 and Level 132, it also becomes thinner and less pervasive at depth.

Late sub-vertical conjugated brittle faults (north-east to south-west and north-west to south-east) and joints occur throughout the Doyon division mining property as shown in Figure 7-7. Most of those structures exhibit limited offset on the lithology (a very few metres), except for the Doyon Fault (north-east to south-west orientation and ±50°south-east dip) and the Bousquet Fault (north-east to south-west orientation and ±80°north-west dip). The latter shows an apparent sinistral displacement of about 280 m that shifts Westwood Mineralized zones. The vertical movement related to this fault is not well documented but seems negligible based on field observations. Globally, these structures contribute to the seismicity at depth.

**Figure 7-5: Some of the Major Continuous Faults or Shears Currently Modelled on the Property**

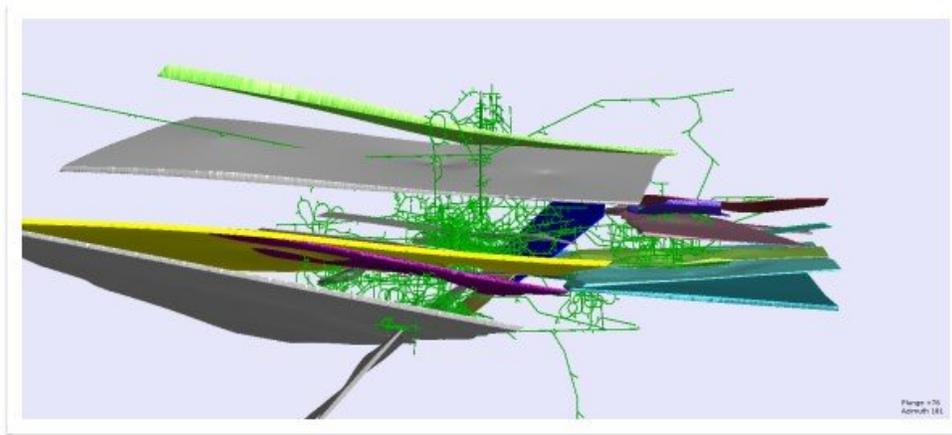


Figure 7-6: Relationship between F2 faults and Stratigraphy Creating Irregular Dykes (adapted from SRK, 2019)

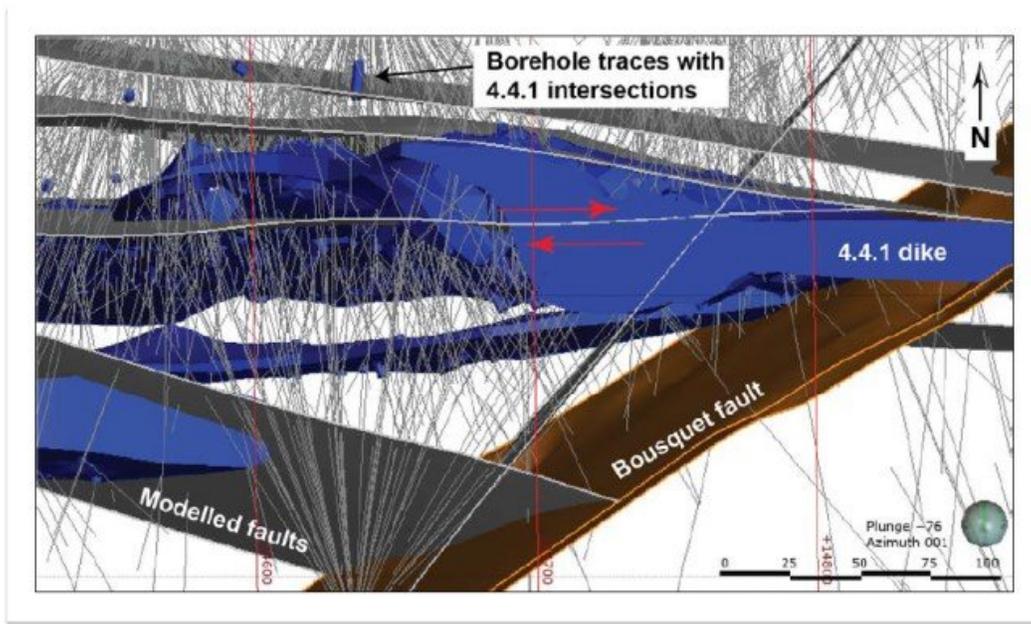


Figure 7-7: Example of Late Subvertical Conjugated Brittle Faults (Fault 24, Fault 26, Fault 16) that Offset Slightly the Lithology (adapted from InnovExplo, 2020)



The DBL mining camp is metamorphosed to the upper greenschist/lower amphibolite facies. At Westwood, the upper part of the deposit is metamorphosed to the upper greenschist facies whereas in the lower part of the deposit (i.e. > 1,500 m depth) the rocks are metamorphosed to the lower amphibolite facies. This does not affect the geometry or grade of the mineralized corridors but changes the mineralogy of the host rocks (e.g., amphibole instead of chlorite, apparition of aluminosilicate minerals, etc.).

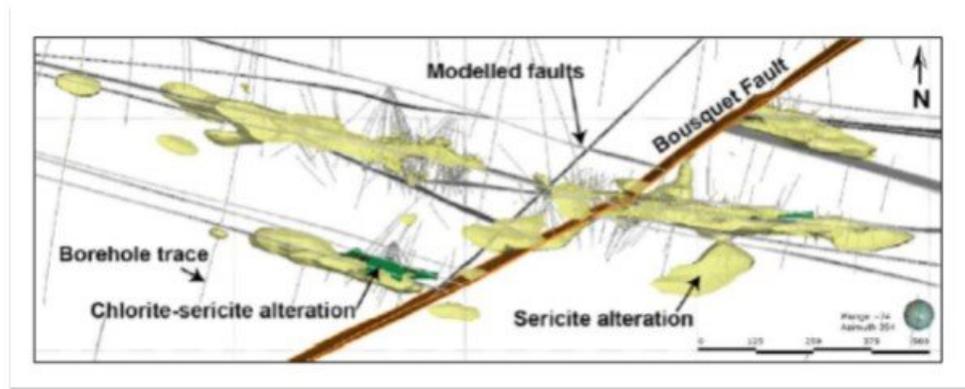
### 7.2.3 Alteration

The Westwood area covers three pervasively altered, east-west trending mineralized corridors that are stacked from north to south. Recent studies reveal that these three corridors share similarities in terms of alteration assemblages. The alteration minerals described in the Westwood deposit area are the result of an upper greenschist/lower amphibolite facies metamorphism of syn-volcanic alterations.

Zone 2 Extension footwall and hanging wall proximal alteration are composed of a quartz-pyrite-sericite-albite±gypsum assemblage that overprints a chlorite-biotite-carbonate-amphibole±garnet-sericite background alteration. North Corridor proximal alteration is composed of quartz-sericite-pyrite±garnet-chlorite-biotite-calcite whereas the distal alteration assemblage is composed of chlorite-biotite-carbonate-amphibole±garnet sericite. The footwall of the Westwood Corridor is marked by a distal chlorite-biotite-carbonate-amphibole ±garnet-sericite alteration, which is overprinted by a proximal quartz-sericite-pyrite alteration assemblage. The hanging wall of the Westwood Corridor is in part, poorly altered because alteration is asymmetrical and located mainly in the footwall. An aluminous alteration assemblage composed of zinc-rich staurolite, magnetite, kyanite, and andalusite with quartz, sericite and pyrite is replacing the typical alteration assemblages cited above at depth (> 1,500 m) to the east of the Bousquet Fault within the Westwood and North corridors. This alteration assemblage is similar to the one found at depth in the LaRonde Penna, Bousquet 1, and Bousquet 2-Dumagami deposits. However, in the case of the Westwood deposit, it is thought to be solely related to the increased P-T conditions at depth, and not to a particularly acidic hydrothermal fluid. Multiple geochemical samples were collected during the drilling campaigns for further analysis and geochemical vectoring.

Good spatial alteration relationship is typically observed between lithology and major faults as shown in Figure 7-8.

Figure 7-8: Plan View Showing Relationship between Alteration Logged and Faulting System (adapted from SRK, 2019)



### 7.3 Mineralization

VMS-type mineralized zones of the DBL camp are mainly associated with units #5.1.4 and #5.2.1 of the Bousquet Formation upper member. These units host gold-rich VMS-type semi-massive to massive sulphide lenses as well as stringer zones such as the Bousquet 1, Bousquet 2-Dumagami and LaRonde Penna deposits as well as the Westwood and North corridors. Intrusion-related mineralized zones composed of gold sulphide veins are mostly hosted in units #4.2.1, #4.3.0 and #4.4.0 as well as in the apex portion of the MIC such as zones 1, 2, and West at the Doyon Mine and Zone 2 Extension at Westwood.

**The Zone 2 Extension:** Mineralized zones consisting of quartz-pyrite veins and veinlets with variable but usually minor amounts of chalcopyrite and rare sphalerite. They are generally less than 15 cm thick and are hosted in strongly sericitized wall rock containing 2% to 10% disseminated pyrite. The alteration corridor is weaker at depth and towards to eastern part of the property, but the veins and the gold grade remain. The vein system is roughly oriented N85-105° with a dip varying between 60-70°S and is slightly discordant to the regional foliation and  $S_0$  planes (direction and dip). Remobilized free gold, at the origin of high-grade values, is frequently observed in these veins which are located within units #4.3.0 and #4.4.0, which are, felsic and mafic volcanic respectively.

The mineralized corridor of the Zone 2 Extension was first intersected in late 2008 over a distance of 225 m and showed better continuity than expected (see Figure 7-9 and Figure 7-10). Mapping confirmed that the mineralization is slightly oblique in both strike and dip relative to the stratigraphy. The mineralization distribution and the ore shoot patterns are becoming better understood with the increase in the quantity of diamond drill holes. The majority of ore shoots are parallel to the stretching lineation that plunges at  $\pm 80$  south-west on the main foliation plane but a minority of them are perpendicular to the stretching lineation.

Figure 7-9: Zone 2 Extension Block-Test Mining of the Z230 Vein

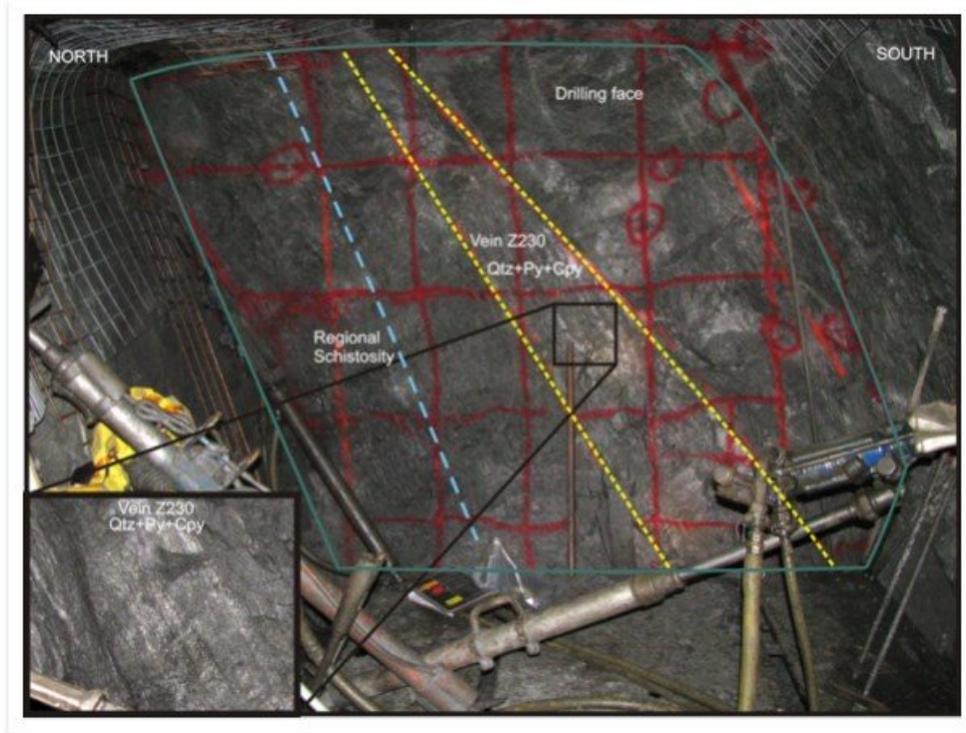


Figure 7-10: Zone 2 Extension Close Up of the Z230 Vein



The North Corridor: Mineralization characterized by quartz-pyrite veins and concentrations with locally abundant sphalerite-chalcopyrite±pyrrhotite-galena (see Figure 7-11). The amount of sulphide is variable within centimetres to decimetre wide veins and veinlets. The system is generally parallel to the Zone 2 Extension with a dip ranging from 70-80°S and is weakly discordant to the regional foliation. Occasional free gold is also present in the veins. Mafic to intermediate volcanic rocks (units #5.1.1 and #5.1.2) host the North Corridor.

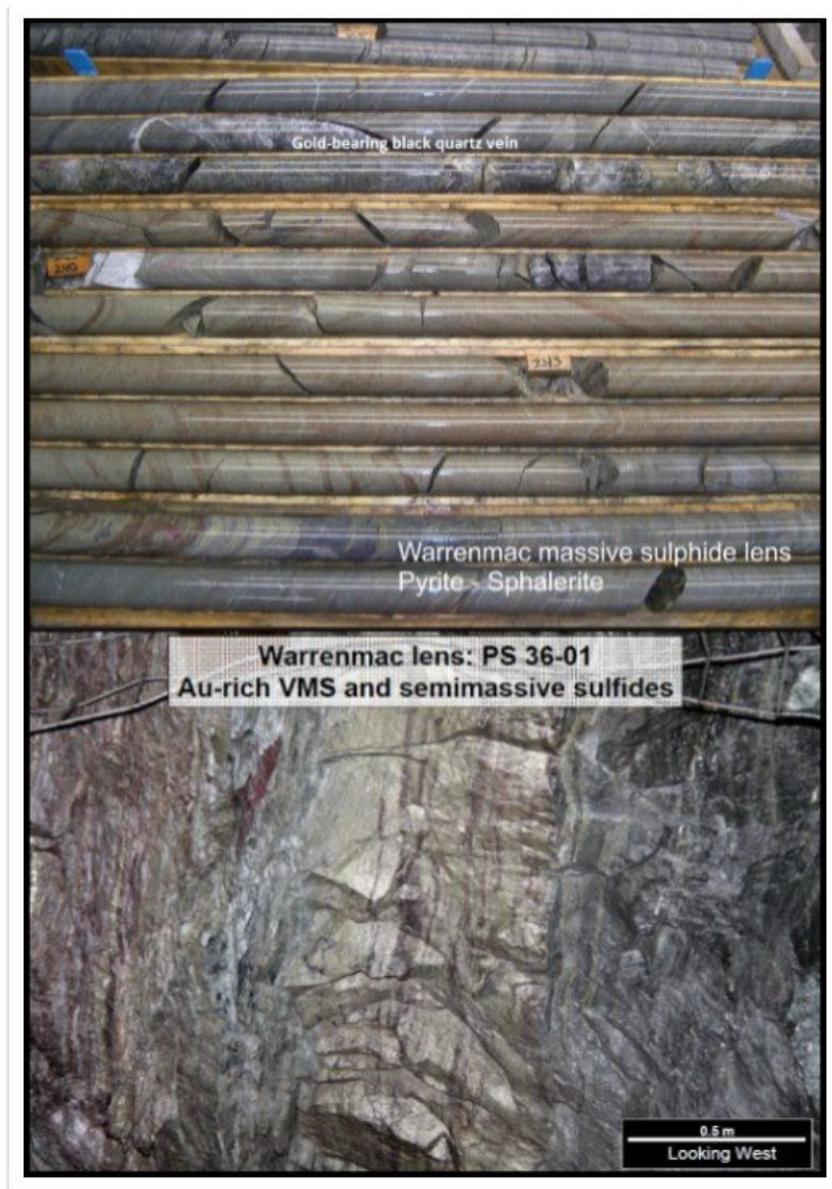
Figure 7-11: North Corridor Semi-Massive Sulphide Lens



The Westwood Corridor: Auriferous semi-massive to massive sulphide lenses, veins and dissemination containing variable but significant amounts of Cu, Zn and Ag. The mineralization is characterized by pyrite-sphalerite-chalcopyrite-pyrrhotite±galena veins, stringers and massive sulphides associated with variable amounts of quartz and rare visible gold. The sulphides are also enriched in the epithermal suite of elements (i.e., As, Sb, Bi, Pb, Se, Te, and Hg). These mineralized zones are a few centimetres to more than 50 cm thick in a disseminated pyrite halo and in some places reach thicknesses of up to 10 m. Local massive to semi-massive sulphide lenses ranging from 1 to 14 m are also present within the corridor (Figure 7-12). This corridor is thought to be associated with a gold-rich VMS-type hydrothermal system. The corridor is generally parallel to the Zone 2 Extension and North Corridor with dip ranging from 70-80°S.

Gold distribution is variable throughout the Westwood Corridor, however significant association with sphalerite and/or chalcopyrite is frequently observed. The zinc and copper distribution remains misunderstood. High content in zinc is observed to the west of the Bousquet Fault (Warrenmac and WW10 lenses) whereas to the east of the fault, the upper levels are generally richer in zinc while the copper content increases at depth. Gold remobilization into syn-deformation, spatially related to the mineralized zones, black quartz veins with chalcopyrite traces is common (Figure 7-12), but not systematically found along both sides of the massive sulphide lens.

Figure 7-12: Example of Warrenmac Banded Massive Sulphide Lens (part of the Westwood Corridor)



The **Grand Duc mineralization** is at the late stage of the Moushla pluton. The late stage includes the injection of plagioclases-amphibole porphyry dykes and sills, plagioclase-quartz porphyry, aphyric and phenocrystalline quartz trondhjemite located south of the other two intrusive stage. Mineralization in the West zone of Doyon Mine (Savoie et al., 1991) as well as the Mooshla A and Grand Duc pit gold showings are hosted in rocks of this late stage. The trondhjemite is massive, homogeneous and competent, and little deformed by the main foliation that systematically affects the volcanic rocks of the mining camp. Locally, the rock contains up to 15% miarolitic cavities filled with chlorite, amphibole, epidote, quartz and/or pyrite (Galley et Lafrance, 2007). These cavities are generally interpreted as an indicator of the exsolution of volatile components during magma crystallization (Candela, 1997; Galley et Lafrance, 2007).

A gold mineralizing episode of Grand Duc is closely associated with the miarolitic facies. This facies host low-grade mineralization forming a long corridor oriented N105-N110 south dipping (50-70°). Gold mineralization occurs as either disseminated pyrite in shears zone, quartz-pyrite-carbonate-chlorite veins and veinlets, as fill in fractures or in centimetric pyritic band parallel to foliation. The pyrite is fine to coarse but the grade is higher in the presence of coarse pyrite. Generally, samples containing more than 2% Py exceed the cut-off grade (0.56 g/t Au).

The second gold mineralizing element is associated by a series of veins and fractures oriented N175 and N045. The veins are generally centimetric and rarely exceed 10 cm. At this time, two north-south corridors are recognized in the Grand Duc pit and they are 60 m apart. Mineralization in these corridors consists mainly of quartz-pyrite-chalcopryrite high-grade remobilization veins. Semi massive to massive sulphides bands are located in these corridors but for now, their orientation is unknown. Part of the sulphides (and gold) is remobilized within these quartz veins at the paroxysm of the main deformation since they are much more competent than surrounding schist and mineralized zones. These remobilizations within the main syn-deformation quartz veins therefore generate metal-enriched structural ore shoots, which may suggest that gold is associated with the emplacement of these veins (Marshall et al., 2000). Grab samples have returned values in excess of 50 g/t Au in these shoots.

#### 7.4 **Geophysics**

The Westwood area has been surveyed with most of the traditional geophysical prospecting methods including ground magnetic, aeromagnetic, very low frequency (VLF), Induced Polarization (IP) and pulse- electromagnetics (EM) in drill holes. Compilation maps were produced and are available on site.

The INFINITEM-method has been used in the past in selected deep holes to help locate major conductors within the favourable volcanic sequence. These holes are starting from 900 m below surface to a 2 km depth and required huge loops to induce a sufficient electromagnetic field to detect conductors. Some weak in-hole and off-hole anomalies were detected and can be explained by pyrite concentrations and veins within known mineralized corridors.

In 2008, an INFINITEM test survey was conducted in three short holes crossing and adjacent to the Warrenmac lens. The test was inconclusive due to the pyrite type encountered and the high sphalerite content.

After the survey of the Warrenmac lens, it was concluded that the application of this method was inadequate for the investigation at depth because of the weak sulphide conductivity and the high operating costs. There was no new geophysical survey performed in holes from 2009 to 2019 considering the results obtained in 2008.

From 2018, acoustic televiewer campaigns were performed inside some geotechnical diamond drill holes. The objective of this work is to extract information about stress from borehole breakout data collected in multiple deviated boreholes using Acoustic Televiewer (ATV) borehole logging technology. Between 2018 and 2019, KORE Geosystems Inc (KORE) conducted three campaigns. Two campaigns were to characterize stress between Level 132-09 and Level 156-00 and on Level 132-02 close to the Bousquet Fault following the seismic events of 2013, 2015 and 2017. The third campaign was to characterize stress on Level 132-10 following the seismic events of December 2018.

## 8 DEPOSIT TYPES

### 8.1 Deposit Types

The origin of the gold in the DBL mining camp has been extensively debated in the past and three models have been proposed: syn-volcanic, multi-stage, and syn-deformation. Recent studies at the LaRonde Penna and Westwood deposits, and within the MIC, combined with the geological synthesis of the DBL mining camp, have provided further proof for the syn-volcanic model for the introduction of the gold, with substantial remobilization during regional deformation.

Five deposit styles are recognized in this camp:

- gold-rich base metal massive sulphide lenses (LaRonde Penna, Bousquet 2-Dumagami and Westwood Corridor);
- gold-rich vein stockworks and sulphide disseminations (Bousquet 1, North and Westwood corridors, and Ellison);
- intrusion-related Au-Cu sulphide-rich vein systems (Grand Duc, Doyon, Mooshla A, Zone 2 Extension);
- shear-hosted Au-Cu-sulphide-rich veins (Mouska and MicMac);
- syn-deformation auriferous quartz-pyrite-tourmaline veins (Mooshla B).

At the Westwood Mine, the Zone 2 Extension share similarities with the Doyon Mine intrusion-related veins system while the Westwood Corridor is related with the VMS-type lenses of the LaRonde Penna and Bousquet 2-Dumagami mines. The North Corridor mineralization represent the base of the Westwood Corridor.

## 9 EXPLORATION

Most of the exploration work performed on the property since the 1930s is from diamond drilling programs (see Section 6 for the exploration history and ownership). Through the years, major exploration efforts were concentrated on the Doyon Mine site but since 2002, the focus has turned to the gold-rich VMS-type potential of the Blake River Group, especially in the Westwood area. The stratigraphy in the area is well defined (Bousquet Formation) and host rocks are comparable to the one-hosting gold-rich VMS-type mineralization at the Bousquet 2-Dumagami and LaRonde Penna mines located a few kilometres east of the Westwood Mine.

From 2002, surface infrastructures and underground development have continued to support exploration diamond drilling work. Highlights of activities completed or still in progress are:

- Development of 2.6 km of an exploration drift towards the east (Westwood occurrence) starting from Level 014 of Doyon Mine, now named the Westwood main drift, Level 084 (Cambior and IAMGOLD);
- Some Pulse-EM and INFINITEM geophysical surveys conducted in selected holes (IAMGOLD);
- Development of a second exploration drift started from the Westwood main drift (Level 084) to reach the southern part of the project, crossing the three mineralized corridors and the Bousquet Fault, permitting better access for drilling (IAMGOLD);
- Sinking of an exploration shaft, started in 2008 and reached 1 958 m below surface on January 25, 2013 (IAMGOLD);
- Sinking of the Warrenmac ramp between 2008 and 2010 from surface to Level 036 (360 m below ground surface) (IAMGOLD);
- Two bulk samples on Level 084 (Z230 lens) to confirm grade and mining method (IAMGOLD);

Other exploration work on the Westwood Mine area include:

- Exhaustive surface mapping of the Doyon division mining property by Mr. Armand Savoie, M.Sc.Geo., Special Project Geologist since the mid-1980s (Cambior);
- In 2005 stripping, mapping and sampling of Grand Duc area;
- Underground mapping of parts of Westwood exploration drifts since 2004 by the Westwood geologists and technicians (Cambior and IAMGOLD);
- From 2004 to 2015, geochemical samples were taken on a regular basis along drill holes to characterize alteration and rock composition. For most of the exploration holes (large spacing) samples corresponding to a 10-20 cm piece of core were taken at about every 30 m mainly in units 4.2 to 5.2. Samples were sent to ALS Chemex laboratory to be analyzed for whole rock and some traces elements. Over the years, a geochemical database of about 5,330 samples, has been built up and frequently used by geologists to distinguish facies. From 2015 to present, core samples are analyzed in the Westwood core shack using an X-ray fluorescence (XRF) gun to determine trace elements. (Cambior and IAMGOLD);

- In 2008-2009, surface mapping of outcrops located in the vicinities of the Warrenmac ramp portal, Westwood Shaft and raise boring collars (IAMGOLD);
- Stratigraphic interpretation of the Westwood Corridor ore zones by Geological Survey of Canada in 2009 (Geological Survey of Canada, CR 2009-3), (IAMGOLD);
- Master's degree on the alterations by A. Wright-Holfeld (Wright-Holfeld, 2011; IAMGOLD-GSC-INRS-ETE);
- A multidisciplinary Ph.D. thesis on the Westwood deposit by D. Yergeau (Yergeau, 2015; IAMGOLD-GSC-INRS-ETE);
- Summer of 2011, outcropping of the surface extension of the Warrenmac lens was done. It corresponds essentially to the area outcropped in the early 1980s. Mapping and sampling were done in the summer of 2012 (IAMGOLD).
- From 2010 to 2013 south to north exploration drill holes were drilled from the southern bays of Level 084 with dips reaching - 85° to target the deepest extensions of the mineralized zones.

## 9.1 Investigation Concept

All mineralized structures of the Westwood Mine are generally parallel in all three mineralized corridors at N85 - 105° / 60 - 80°S which is slightly discordant to the regional stratigraphy and foliation in direction and dip ( $\pm 15^\circ$ ). At present, known mineralized zones are hosted in units #3.3.0 #4.2.1, #4.3.0, #4.4.0, #5.1.2, and #5.1.4. Generally, the holes are planned and drilled according to the localization of drilling bays with azimuths ranging from 45°- 90° from the mineralized structures and the dips usually ranging between + 45° and - 65°. Plunges of the mineralization are also considered to determine the targets. From 2010 to 2013 south to north exploration drill holes were drilled from the southern bays of Level 084 with dips reaching - 85° to target the deepest extensions of the mineralized zones. From the end of 2011 to mid-2013, north to south exploration and valuation drill holes were also drilled from Level 104 (1,040 m deep), Level 132 (1,320 m deep) and Level 140 (1,400 m deep) with dips ranging between +45° and - 45° to delineate the existing known mineralized lenses and to target unexplored areas located west, east and under the actual mineralized zones. From mid-2013, no exploration drilling has occurred on the property. From mid-2013 to present, drilling has concentrated on valuation and definition mostly in a north to south direction with dips ranging from +60° to - 40° from Level 060, Level 084, Level 104, Level 132, and in 2016 to 2019 from Level 156, Level 180. In 2015, a definition drilling program was initiated to define the economic potential of Grand Duc and was completed in 2016.

Gold distribution is variable throughout the three mineralized corridors (Zone 2 Extension, North Corridor and Westwood Corridor) and visible gold is frequently present. Furthermore, significant gold values associated with sphalerite and/or chalcopyrite are also observed. The exploration and valuation drilling programs are thus based on identification and delimitation of the sulphide-bearing structures as well as the gold-bearing veins.

There is excellent potential for gold-rich VMS-type mineralization to occur on the property. Recent scientific work has confirmed geochemical similarities between the host rocks of the main sulphide lenses at the LaRonde Penna Mine and the rocks hosting the Westwood Corridor; particularly unit #5.1.4, now recognized on the property which is the footwall of the LaRonde Penna's 20 North lens.

## 10 DRILLING

### 10.1 Previous Drilling Work

Exploration and diamond drilling work began in the 1930s and 1940s in the Westwood areas (see Section 6 for the exploration history and ownership).

An underground exploration program, which initially included 2.6 km of drift development towards the east from the Doyon Mine, was initiated by Cambior in 2004 and was continued by IAMGOLD until the third quarter of 2013. The program objectives were to explore the favourable stratigraphy at depth on both sides of the Bousquet Fault.

### 10.2 Recent and Current Drilling Programs

By the fall of 2006, as IAMGOLD acquired all mining assets from Cambior, two new mineralized corridors were intersected on the western side of the Bousquet Fault. A definition/valuation drilling program was then planned to target Zone 2 Extension and North Corridor mineralization (with a drilling pattern of 40 m x 40 m).

By the end of 2007, the underground electrical capacity, on Level 084, was increased to support more equipment. The current power installation is sufficient to feed more than ten drills.

In 2008, nine electric drills (six from underground and three from the surface) were running simultaneously most of the time on the project. The valuation-drilling program on Zone 2 Extension confirmed the results and the opening of the vein on Level 084 showed a better continuity than expected. Also, a significant intercept was obtained at 2.5 km depth. Taking into account the time required and associated costs to drill at these depths, the IAMGOLD Board of Directors approved a ramp access to the Warrenmac Zone and the exploration shaft sinking to allow drilling at depth.

In 2009, exploration and valuation drilling carried on with eleven electric drills (eight from underground and three from the surface). From 2010, drilling has exclusively been done from underground development with seven to eleven electric drills. Underground drilling was performed from levels 036, 060, 084, 104, 132, 140, 156, 180 and 192 and from Warrenmac ramp. All underground drill holes on the Westwood occurrence were performed by Orbit Garant Drilling until the end of August 2013, by Boreal Drilling from September 2013 to August 2016 and by Machine Roger International from September 2016 to present. (Table 10-1) summarizes the exploration activities and investments by IAMGOLD on the Westwood occurrence, during the exploration phase of the mine (2007 - 2012) leading to the first gold ingot poured in March 2013. Table 10-1 presents the exploration work up until the end of 2012. This was the last full year of exploration.

Table 10-1: IAMGOLD Exploration Work (2007-2013) - Westwood Mine

Year	Drifting (m)	Surface drilling (holes/ wedges)	Surface drilling (m)	Underground drilling (holes / wedges)	Underground drilling (m)
<b>Total 2007</b>	<b>Lateral 915</b>	<b>Exploration</b>	<b>1,712</b>	<b>Exploration</b>	<b>26,038</b>
<b>2008</b>	Lateral 1,815	Valuation	5,655	Valuation	22,443
	Vertical -	Exploration	17,513	Exploration	23,191
	Raise 21	Engineering	1,248	Engineering	1,396
	<b>Total 2008</b>	<b>1,836</b>		<b>24,416</b>	
<b>2009</b>	Lateral 3,680	Valuation	9,491	Valuation	34,504
	Vertical 416	Exploration	9,112	Exploration	28,400
	Shaft/Raise 1,117	Engineering	-	Engineering	3,173
	<b>Total 2009</b>	<b>5,213</b>		<b>18,603</b>	
<b>2010</b>	Lateral 5,953	Valuation	-	Valuation	44,367
	Vertical 708	Exploration	-	Exploration	29,863
	Shaft/Raise 1,228	Engineering	-	Engineering	1,187
	<b>Total 2010</b>	<b>7,889</b>			
<b>2011</b>	Lateral 8,497	Valuation	-	Valuation	45,928
	Vertical 1,143	Exploration	-	Exploration	27,763
	Shaft/Raise 526	Engineering	165	Engineering	519
	<b>Total 2011</b>	<b>10,166</b>		<b>165</b>	
<b>2012</b>	Lateral \$ 12,289.00	Valuation	-	Valuation	45,686
	Vertical 2,037	Exploration	-	Exploration	36,792
	Shaft/Raise 473	Engineering	-	Engineering	1,816
	<b>Total 2012</b>	<b>14,799</b>		<b>-</b>	
<b>2013</b>	Lateral 11,474	Valuation	-	Valuation	68,727
	Vertical 1,575	Exploration	-	Exploration	11,404
	Shaft/Raise -	Engineering	-	Engineering	272
	<b>Total 2013</b>	<b>13,049</b>		<b>-</b>	
<b>Total</b>	Lateral 44,623	Valuation	15,146	Valuation	261,655
	Vertical 5,879	Exploration	28,337	Exploration	183,451
	Shaft/Raise 3,365	Engineering	1,413	Engineering	8,363
	<b>Grand-Total 2007-2013</b>	<b>53,867</b>		<b>44,896</b>	



Table 10-2: summarizes all the drilling activities on the Westwood occurrence since the first drilling work reported in 1938. No exploration drilling has been done since September 2013, due to exploration budget reductions.

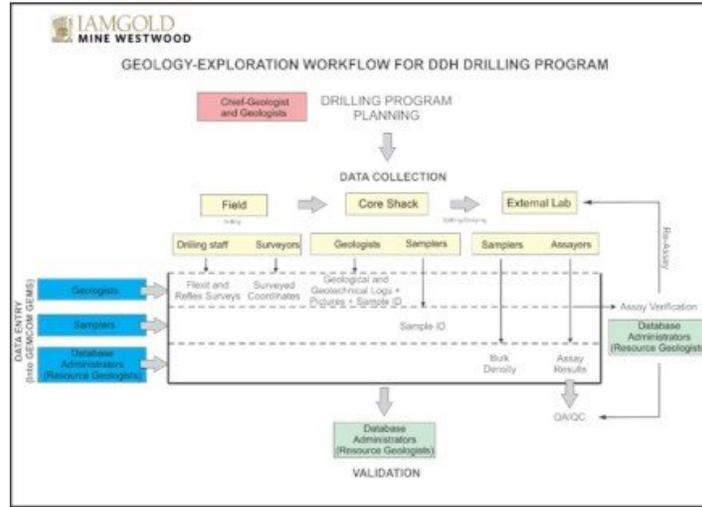
**Table 10-2: Drilling Work (1938-2019) - Westwood Occurrence**

Year	Surface Drilling (m)			Underground Drilling (m)			Total per year (m)	Companies
	Exploration	Valuation & Definition	Engineering	Exploration	Valuation & Definition	Engineering		
1938	76						76	O'Leary Malartic G.M. Ltd
1938-95	25,146						25,146	Siscoe Gold Mine (1930's and 1940's)
								Silverstack Mines Company Ltd & SOQUEM (1972-1977)
								Long Lac Mineral Exploration Ltd & SOQUEM (1977-1986)
								Long Lac Mineral Exploration Ltd & Cambior (1986 -1994)
								Cambior & Barrick Gold Corp. (1994-1995)
1995	6,430						6,430	Cambior & Barrick Gold Corp.
1996	3,283						3,283	Cambior & Barrick Gold Corp.
1999	864						864	Cambior
2001	5,661						5,661	Cambior
2002	5,855			1,989			7,844	Cambior
2003				2,707			2,707	Cambior
2004				5,240			5,240	Cambior
2004	4,233			3,064			7,297	Cambior
2005	6,303			9,727			16,030	Cambior
2006				16,972			16,972	Cambior
2007	1,712			26,038			27,750	Iamgold
2008	17,513	5,655	1,248	23,191	22,443	1,396	71,446	Iamgold
2009	9,112	9,491		28,400	34,504	3,173	84,680	Iamgold
2010				29,863	44,367	1,187	75,417	Iamgold
2011			165	27,763	45,928	519	74,375	Iamgold
2012				36,792	45,686	1,816	84,294	Iamgold
2013				11,404	68,727	272	80,403	Iamgold
2014					73,112	700	73,812	Iamgold
2015					75,356	1,917	77,273	Iamgold
2016					79,359	2,653	82,012	Iamgold
2017					111,021	2,223	113,244	Iamgold
2018					104,945	4,278	109,223	Iamgold
2019					56,711	10,233	66,944	Iamgold
<b>Sub-Total per Program (m)</b>	<b>86,188</b>	<b>15,146</b>	<b>1,413</b>	<b>223,150</b>	<b>762,159</b>	<b>30,367</b>		
<b>Total per Program (m)</b>	<b>102,747</b>			<b>1,015,676</b>				
<b>Grand Total (m)</b>	<b>1,118,423</b>							

**10.3 Methodology**

Figure 10-1: presents the workflow for diamond drilling programs. The methodology presented in the next sub-sections as well as Sections 11 and 12 refers to this workflow.

**Figure 10-1: Workflow for Diamond Drilling Programs**



**10.3.1 Planning**

In the Westwood database, each drill hole has a unique sequential identification that is linked to the year it was drilled (e.g., R16900-15 for underground hole drilled in 2015). Exploration, definition and valuation holes are not differentiated.

Based on the drilling program planned under the supervision of the Chief geologist, the Westwood geologists typically design drill holes directly onto the relevant vertical sections using Vulcan. Underground drill holes are identified by the prefix "R" while surface drill holes are identified by the prefix, "S." All planned and completed drill holes are stored in SQL Database accessible through acQuire software. Planned drill holes are identified in acQuire form "Collar" in field HOLESTATUS with value of "Planified".

Information such as drill hole azimuth, dip, length and special comments are noted in the appropriate areas in acQuire form "Collar." Most holes are planned and drilled with azimuths perpendicular to the deposit lithology, parallel to the project's associated vertical sections (350 / 020° or 160 / 200°) and the dips usually range between + 45 and - 65°.

Prior to drilling, a plan is printed and sent to the contractor's supervisors and drillers. The plan shows the hole locations, azimuth, dip and planned lengths as well as all the controls needed for drilling. A copy of the plan is kept in the Westwood Geology department files.

The grid spacing for exploration drilling is 80 x 80 m and larger while the spacing for valuation drilling is 60 x 60 m to 30 x 30 m. The spacing for definition drilling is 20 x 20 m.

### 10.3.2 Drilling

The contractor positions the diamond drill onto the collar and aligns the drill with a manufactured plastic disk with 360 marks precisely engraved. Respectively at 0° and 180°degrees, two auto-level lasers are installed. A steel cable is tensed using a turn buckle which is attached on two wall anchors previously installed by the surveyors. The anchors are generally installed perpendicularly from the drill holes and the azimuth between the anchors is given to the geologist for the planning of the additional angle necessary to reach the azimuth required. The alignment system is suspended on the wire as well as two targets on each side at about 5 feet. This step is to ensure the auto-level lasers point right on the target which means the alignment system is well aligned on the zero position and ready to be used. The driller turns the alignment system reading the degrees, marked on the disk, required by the geologist. The lasers point the front side and back side on the wall and indicated the alignment to follow.

All drill holes are surveyed in the first 21 m using the single shot function of the reflex tool, to ensure that the planned orientation and dip of the hole is respected. The hole is stopped and a new hole is collared a few centimetres away if the deviation from the planned azimuth and/or dip is too great.

Three sizes of diamond drill core, NQ, BQ and ATW, are used on the project. The NQ is the size usually used for exploration drilling and for some valuation drilling work. NQ core helps to better control the deviation, to enhance the recovery in strongly sheared or fractured rock, to pass through major faults and to increase the quantity of material assayed per sample considering a free gold environment. When the maximum depth penetration is reached for NQ-size, drillers are reduced to BQ-size. In addition, the BQ is the size usually used for valuation and for some definition drilling work, while the ATW size is used only for shallow definition drilling (less than 50 m).

Due to the complex geotechnical environment, several geotechnical drilling campaigns have been performed over the years (typically between 2,500 to 10,000 m per annum). NQ size is typically used for dedicated geotechnical hole. This type of drilling targets specific structures, lithology or contacts known to potentially generate instability. Geotechnical drilling is often performed in new production area prior development where limited geotechnical information is available. Televiewer campaign is also sporadically used as a method to better understand the structural setting and stress field.

The deviation is often difficult to control depending on the relation (direction/dip) between holes and the regional foliation. At sharp angles, holes tend to lift while at more open angles, the tendency is to deepen. In the case of deep holes, wedges (conventional and retractable) are often used to reach upper targets because it is easier to control the deviation. It is also the best way to duplicate intersections obtained from the parent holes.

Control drilling was tested in 2010 in one hole to reach a precise target at ±50 m. Tech Directional Services was the contractor chosen to perform the test. The "Devico" technique used, permitted a stronger deviation in a desired direction using sophisticated technology. The result was partially positive since good deviation was obtained but the test was stopped due to ground difficulties.

All diamond drill holes are surveyed by the Westwood surveyors for coordinates and direction and dip, at the collar. Collar coordinates are obtained in 3D from a total station Leica MS60, Leica TS15 and Leica TS16 instruments after a group of holes have been completed. Down hole surveys are performed by the drilling staff at nominal 50 m intervals with reflex tools.

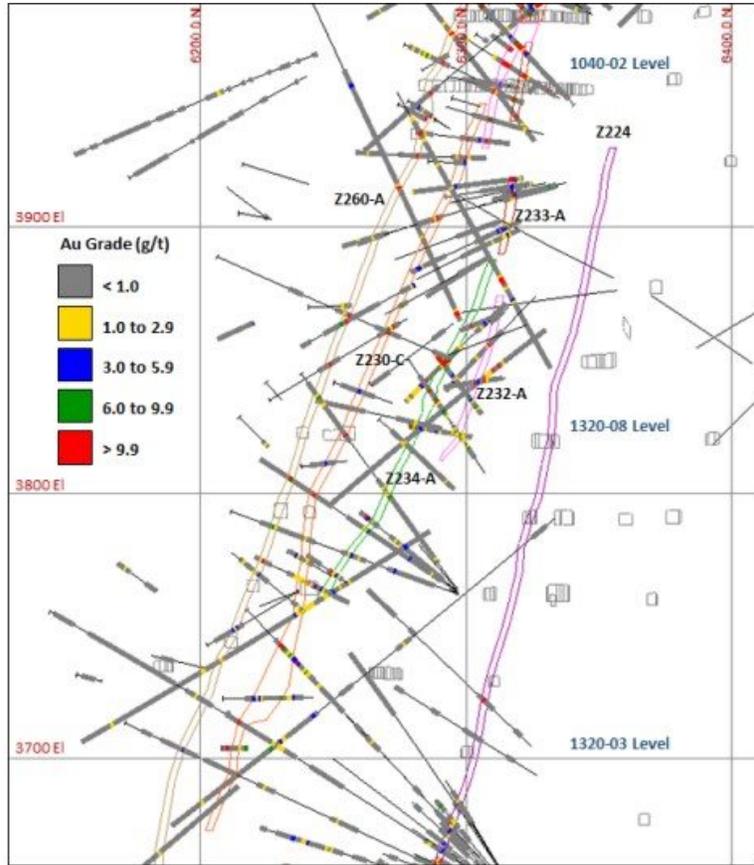
Overall, the core recovery is usually very good (>95%) but for the main fault zone and the sericite schist alteration area, recovery may locally decrease to 50%. Even when the recovery is good, the RQD is generally poor within the main fault zone area.

The core is placed by the drillers into wooden core boxes, prior to being transported to the core shack. Core boxes are then transported by piling the boxes on a flat car, which is pulled by a train or a loader to the shaft station and then sent to the surface by the shaft cage and then to the core shack.

Upon completion, drill holes are identified with plastic tags on which the driller will write their identification. The tags are fixed on plastic cones and inserted into the collar for future identification needs. Valuation and definition diamond drill holes are cemented in their entirety.

Figure 10-2 represent a typical cross-section with drill holes and mineralized zones used for the current resources estimates. This section also show the developed drifts from 1040-02 to 1320-03 levels.

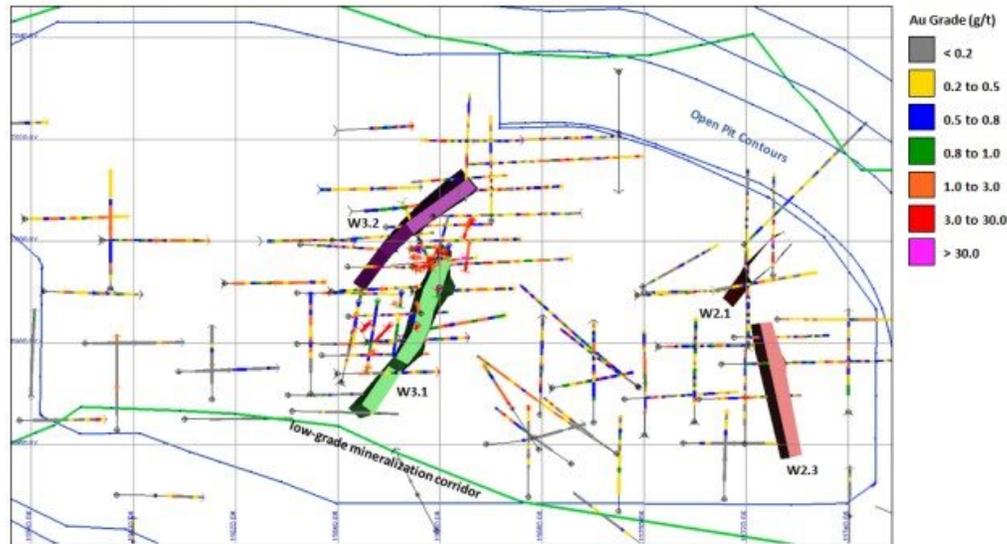
Figure 10-2: Typical Cross-Section Showing Drill Holes and Mineralized Zones used for the Current Resources Estimates. (14,600 m E)



From November 2019, RC drills have been used to manage grade control in the Grand Duc pit. The drillings are planned to have roughly a 5 x 5 m drill pattern. Each hole is 15 m long and has a 60°degrees plunge. A sample is collected for every 2.5 m of drilling. A surveyor positions all holes and the collars after drilling, and then surveys this as well. Cutting samples are collected in pan and placed in sample bags. They are then transported to the core shack for shipping at the laboratory.

Figure 10-3 represents a Grand Duc plan view with drill holes and mineralized zones used for the current resources estimates. This plan view also show the open pit planned contours and the low grade mineralization corridor.

Figure 10-3: Grand Duc Plan View showing Drill Holes and Mineralized Zones used for the Current Resources Estimates (4,980 m Elevation)



### 10.3.3 Core Logging and Sampling

At the core shack, the core is washed to remove the drilling fluids and residues. The core logging is performed by geologists to describe in detail the lithology, alteration, sulphur content, texture, core recovery, structure and veining. The geologists are also responsible for the sample selection. The sample intervals are marked on the core by the geologists and the sample tags are placed at the end of the sample interval.

The Zone 2 Extension and North Corridor mineralization consist of quartz-sulphides veins and veinlets generally less than 15 m wide. The Westwood Corridor mineralization consists of auriferous semi-massive to massive sulphide lenses ranging from a few centimetres up to 10 m wide (true width). The sample intervals are usually 1 to 1.5 m wide and sometimes 0.5 m wide to separately analyze two or more closely mineralized structures.

The logging data (geotechnical and core data as well as sample ID) is recorded in an SQL database (located on a local server) using a logging program developed by acquire. This SQL database is also accessible by the geologists using Vulcan (Maptek) with an ODBC or API connectivity.

Drill holes are systemically photographed after logging and samples tags are inserted. All pictures are stored daily on a local server.

After logging is completed, the core shack technicians (samplers) saw the exploration core for sampling and send half of the core for assaying. The whole core for definition and valuation samples are sent to the laboratory. (See Section 11.1).

#### **10.3.4 Geotechnical Logging and Testing**

As described in the subsequent sections, Westwood have a relatively complex sequences of volcanic flows, intrusions and volcanoclastic resulting in several rocktype and an overall heterogeneous rockmass. In additions, different styles of alterations coupled to several changes in the tectonics stress regimes have complicated the scheme. Ground conditions are highly variable and many factors need to be considered while assessing the stability of an infrastructure. For this reason, a state-of-the-art logging systems will have been implemented in 2018 and 2019 in order to better capture the geo-mechanical properties of the rockmass. Conventional rockmass classifications (such as RMR, Q, etc.) do not fully capture the variety of factors leading to instability.

In some horizon of the mine, the intense sericite and chlorite alteration coupled to the pervasive schistosity can substantially degrade the geo-mechanical properties of the rock. The rock matrix can be soft and the strong fabrics generated by the foliation can make the rock fairly anisotropic and friable. The rock behaves plastically and buckles easily when submitted to a stress change. For this reason, the logging technique has been adapted in order to qualify and quantify the severity of the alteration and foliation over the rockmass strength. A visual scale is used to describe the degree of alteration and foliation of the core. In addition, point load test (PLT) are performed perpendicular and along the foliation every metre to test the cohesion of the foliation and the strength of the matrix of the rock. This is also supplemented by uniaxial and triaxial compressive strength tests that are frequently performed. This provides valuable information to characterize the effect of the foliation and alteration over the strength of the rockmass, and its ability to deform plastically.

In other areas of the mine, such as lithology contacts, this softer rockmass interlaces within harder rock units (interdigitating, commonly called fingers). Those areas are characterized by a sequence of hard and softer rock layers. This competency contrast generated by those alternating units are unfavourable for stability as the induced stress generated by an excavation is not evenly distributed between those contrasting units. In terms of logging, special precautions are taken in identifying hard and brittle units and X-ray Fluorescence Spectroscopy (XRF) is routinely performed for this purpose for quality control check. The PLT helps in identifying and quantifying the strength of juxtaposed contrasting units. The heterogeneity and the difference of competency are then used to qualify the stability of the excavation.

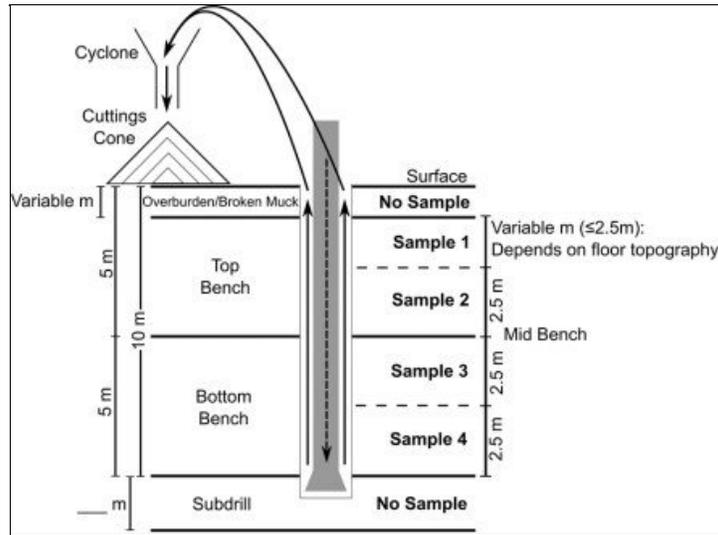
Finally, a conventional geotechnical logging approach based on the Q's system (Barton and al, 1974) is used for the more homogeneous rockmass.

#### **10.3.5 RC Sampling**

The drilling of blast holes is conducted in open pit mining in order to break and excavate the rock. Samples of the drill cuttings (powder and rock fragments), to be later assayed for gold, can be collected during this process. Blast hole sampling is the primary method that will be used at Grand Duc to better characterize the grade of the ore bodies identified by diamond drilling and precisely delineate the boundaries between ore bodies and waste in the open pit.

At Grand Duc, conventional circulation drills are used. The cuttings (powder and rock chips) produced during drilling are carried upwards by compressed air between the rod and the wall of the hole. Once they reach the top of the hole, air suction draws them into a tube, which leads to a cyclone. The material falls out of the base of the cyclone in a roughly cone-shaped pile. A portion of fine material that is too fine to settle in the cyclone continues onward through another tube and is ejected at the rear of the drill.

Figure 10-4: RC Sampling Method



The drill is lined up with the survey mark and oriented at the required azimuth and dip and each hole is drilled through the overburden or the layer of blasted material remaining from the previous bench above, if present. At Westwood, the RC sampling is done due to a pan which is placed directly under the cyclone to collect the cuttings. Before the sampling, this pan is cleaned to ensure that residual cuttings from previous samples have been removed. Each sample, which is representing a 2.5 m rock length, is forming a cone on the pan. Each sample has a unique sample tag number which is recorded in an SQL database (located on a local server) using a program developed by acQuire. This SQL database is also accessible by the geologists using Vulcan (Maptek) with an ODBC or API connectivity.

#### 10.4 Drilling Results

The 2019 drilling program was based on valuation and definition work to validate the known structures in three mineralized corridors around Level 104 and Level 156 on the east side of the Bousquet Fault, between Level 104 and Level 180 on the west side of the Bousquet Fault, up holes from Level 084 on the west side of the Bousquet Fault down holes from Level 180 for deep resource valuation drilling. A total of 56,711 m of core was drilled in 2019 on an initial budget at 68,000 m. During the second and the third quarter of 2019, the budget was revised from 68,000 to 56,000 m due to budget readjustments.

The 2020 drilling program is based on valuation and definition work from existing and future drilling access platforms to validate the known structures in three mineralized corridors and some potential resources extension around known structures. Approximately 56,000 m of valuation and definition drilling are planned in 2020 including 8,000 m of surface valuation drilling around the Doyon open pit and on the East of the Bousquet Fault for the North Corridors showings.

There is a good potential to find more resources on both sides of the Bousquet fault, especially at depth and to the west of the three mineralized corridors (Zone 2 Extension, North Corridor and Westwood Corridor). On the eastern side, new mineralization contours still require further definition and currently known zones remained open at depth.

Drilling results are validated during the ore development by channel samples and muck samples. The channel samples are taken in every face or two faces with a sample interval from 1 to 1.5 m wide. The muck samples are taken by the development miners by following and sampling geology procedure. Channel samples and muck samples confirm the drilling results.

At the Westwood Mine, all diamond drill holes are surveyed by the Westwood surveyors for coordinates, direction and dip, at the collar. Depending of the survey process related to the advance of the mining development, some holes could have inaccurate collar coordinates. In this case, survey check has to be done and could change the diamond drill holes collar coordinates after the mineralized zones modelling.

For the main fault zone, like the Bousquet Fault, and the sericite schist alteration area, the core recovery may locally decrease to 50%. The upper part of Z239-A vein is located inside the sericite schist alteration area and at least 21 veins have part of their tonnage inside the Bousquet Fault corridor. This poor core recovery could have an impact on the drilling results precision and reliability and, consequently, on the resource evaluation of these zones.

In 2019, the positive reconciliation is mainly due to the Westwood zones like the WW17-D, a massive sulfide vein. One factor that could explain this positive reconciliation is an underestimation of the diamond drill assays due to a high quantity of sulfur. For more information about the positive reconciliation, please refer to Section 14.10.1 - Reconciliation of Reserve vs Mill Feed.

## **11 SAMPLE PREPARATION, ANALYSES AND SECURITY**

Core samples are collected at drilling sites and are stored in closed wooden core boxes. They are delivered to the core shack facility by the drill contractor or by the mine personnel. The core boxes are received by mine geology technicians. The core shack facilities stand on the surface, in the vicinity of the offices.

RC sample bags are collected by technician at the drill site and are delivered to the core shack facility where they are prepared for shipment to the analytical laboratory each day. All the sample bags are identified and sample tag clipped on the bag at the drill.

The mine site is monitored by closed-circuit video cameras and has a security crew posted at all times at the entrance. The core shack is in an area restricted to the geology department personnel and entry is controlled via a digital key.

### **11.1 Core Shack**

All core logging and sampling takes place in the core shack. Prior to logging, drill core measurements (wooden block) are verified. If important offsets are observed, it is corrected with the representative of the drilling company. After the measurements are completed, marks are drawn onto the core.

While logging, the geologist selects and indicates sample intervals by marking the beginning and end of each sample interval on the core with coloured lines and arrows (see section 10.3.3). The geologist places two sample tags at the end of each sample interval for gold assay and indicates on the tag if assays for silver, copper, lead, zinc and density are requested. The third sample tag remains in the booklet for reference. Integration of Standards and Blanks is described in section 11.3.2.

Indications are also drawn on the core when it has to be sawn in half, for future reference or for future work. Otherwise, the core will be entirely sampled where requested. What remains unsampled will be discarded. The tags used for sampling consist of a unique numbered sequence of printed-paper tags. Photos are taken once every step prior to sampling is done.

Splitting and sampling is executed by experienced technicians. A table-feed circular core saw is used to cut the core in two equal parts when requested. One-half remains in the core box with its sample tag. The second half is deposit in a plastic bag with its related tag. Otherwise, the whole core is taken as the sample and is placed in a plastic bag with its tag. Every plastic bag is identified with the sample number manually written on the bag as the sample tag. The sample bag is put in a box, listed and then delivered to the laboratory along with a submittal sheet that indicates the type of analysis to be done on each sample.

### **11.2 Laboratories**

Prior to December 1, 2013, assaying of core samples was performed almost exclusively on site by Westwood personnel. The on-site laboratory was located within the IAMGOLD's Doyon Mine - Westwood Mine complex and was part of the ISO14001 certification of the Westwood Mine site. The on-site laboratory was closed at the end of November 2013. Analytical procedures at the former on-site laboratory are presented in the IAMGOLD Corporation - NI 43-101 Technical Report, dated March 15, 2014.

From December 1, 2013, to December 31, 2016, assaying of core samples was performed by the independent Accurassay Laboratories, located in Rouyn-Noranda, Quebec (40 km west of the property). This laboratory was certified for gold and base metals (Standards Council of Canada). An overview of their analytical procedures are present in the IAMGOLD Corporation - NI 43-101 Technical Report, dated January 15, 2015.

Since January 1, 2017, ALS Minerals Laboratories, located in Val-d'Or, Québec (65 km east of the property) performs assaying on Westwood core samples. ALS has ISO 9001:2008 certification and ISO/IEC 17025:2005 accreditation through the SCC (Standards Council of Canada).

From time to time, samples are sent to Laboratoire Expert Inc., a laboratory located in Rouyn-Noranda, Québec when re-assays are required as per the QA/QC program and since November 2019, samples from Grand Duc pit are shipped at the "Laboratoire Expert Inc" for grade control. Cutting samples mainly are processed, and few muck, grab, and core samples.

Upon receipt at both laboratories, samples are then validated against the submittal sheet so that laboratory technicians can verify that no sample is missing. The samples are then registered and stored before analysis.

### **11.2.1 ALS Minerals Laboratories**

Official written procedures are made available at ALS Laboratories to ensure consistency of sample preparation and assay technical. The following is an overview of their procedures and is summarized in Figure 11-1.

#### **11.2.1.1 Sample Preparation**

Samples are received in ALS Mineral Laboratories facilities in Rouyn-Noranda. They are sorted in numeric order, bar-coded and entered in the ALS Minerals Laboratories Information Management System (LIMS). They are then placed in large pans and dried in an oven. Cooled samples are submitted for gold and when indicated for base metals and density analyzes.

Upon request, a density measure is performed on some core samples prior to analysis. This data is collected on the entire sample before the grinding stage.

Samples are crushed to 70% passing through 10 mesh (2 mm). All crushers are cleaned with compressed air between each sample. Samples are then split in a Jones Divider to produce a representative 250 g cut of the original sample. The remaining material is placed into a plastic bag (reject) and sent back to the client as requested. The divider is cleaned with compressed air between each sample.

The 250 g sample is pulverized to 85% passing 200 mesh ( $75\mu\text{m}$ ). The pulverizer is cleaned with compressed air between each sample. Quality control of pulverizing efficiency is conducted on random samples. Results are recorded on a QA/QC worksheet.

The pulp is finally homogenized before preparation of the cut material. The analysis is performed on a 30 g cut. The remaining material is placed into a paper bag (pulp) and sent back to the client as requested:

- If the Au-AA23 returns high-grade value (over 10 g Au/t, which corresponds to the AA spectrometer high detection limit) then a gravimetric determination (Au-GRA21) is performed on a new 30 g cut obtained from the original pulp;
- If there is free gold, the Au-GRA21 method is automatically performed on two different cuts obtained from two distinct pulp of 30 g each. Each cut is analyzed twice, which gives four FA-Gravi assay results for the same sample.

When requested metals are analyzed with ME-ICP41 method. Thirty-seven elements, including Ag-Cu-Zn-Pb-Fe are measured and reported on the same cut ALS Minerals Laboratories.

#### 11.2.1.2 Analysis

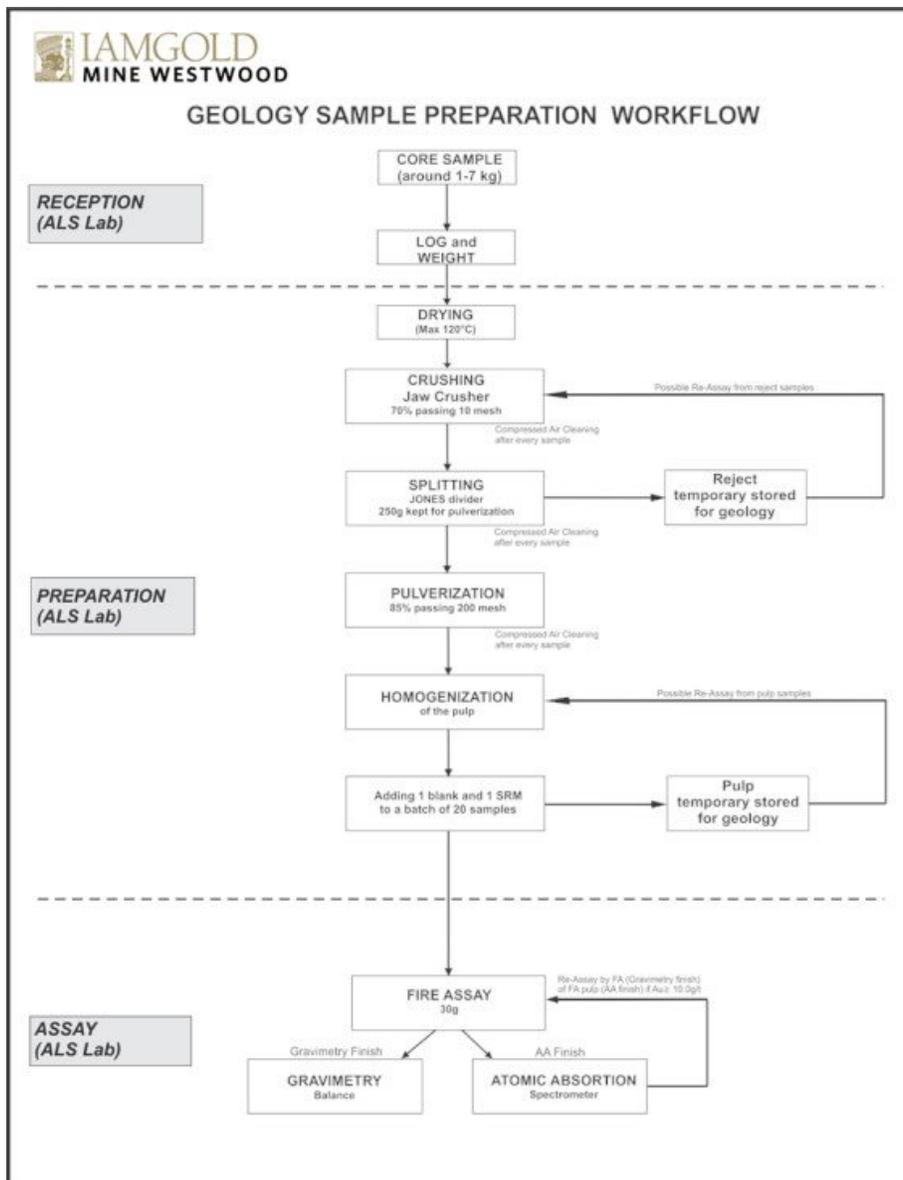
All samples analyzed are decomposed by Fire Assay. A 30 g cut is mixed with flux, lead oxide, sodium carbonate, borax, silica and 6 mg of gold-free silver. Fusion of the sample is done in a furnace. When cooled, the 25-30 g lead bead containing the gold is separated, placed in a pre-fired cupel and placed in another furnace. When the lead volatilizes, the remaining gold-silver prill is collected for atomic absorption finish or for gravimetric finish.

The samples submitted to the atomic absorption finish are first placed in test tubes and digested in a nitric acid ( $\text{HNO}_3$ ) solution (0.5 ml) in a microwave. Chloridric acid (HCl) (0.5 ml) is added and placed in a microwave at low intensity. The solution is cooled down and diluted to a total volume of 4 ml with demineralized water. The solution is read by atomic absorption. The minimum detection limit is 5 ppb Au. Pulp samples corresponding to samples showing high gold concentrations (higher than 10,000 ppb or 10 g/t,) are re-analyzed using the Gravimetric method.

For samples submitted to the gravimetric finish, the gold-silver prills are first tapped with a hammer and are placed in a parting cup. The cup is filled with  $\text{HNO}_3$  and heated. When all the silver has settled, the gold prills are cleaned with hot distilled water, dried, cooled and weighed. The minimum detection limit is 1.0 g Au/t and there is no maximum detection limit.

The final grade used for resource estimation comes from the gravimetric method when there are both atomic absorption and gravimetric results for a sample or from atomic absorption if it is the only method executed on a sample.

Figure 11-1: ALS Minerals Laboratories Workflow for Sample Preparation



### **11.2.2 Laboratoire Expert Inc. Laboratory**

Official written procedures are made available at the Laboratoire Expert, a laboratory to ensure consistency of sample preparation and assaying techniques. The following is an overview of their procedures.

#### **11.2.2.1 Sample Preparation**

Samples are first sorted in numeric order and then placed in large pans and dried in an oven. Samples are then submitted for gold and when indicated for base metals analyses.

The samples are first crushed in a jaw crusher to ¼ inch then crushed with a second roll crusher to 90% passing through 10 mesh. All crushers are cleaned with compressed air between each sample. Before each sample batch, crushers are also cleaned with known waste material and compressed air. The first sample of each batch is screened for percentage passing 10 mesh and results are recorded on a QA/QC worksheet. Samples are split in a Jones Divider to produce a representative 300 g cut of the original sample. The remaining material is placed into a plastic bag (reject) and stored for the client or sent back to the client as requested. The divider is cleaned with compressed air between each sample.

The 300 g sample is pulverized using a ring pulverizer to 90% passing 200 mesh (pulp). The pulverizer is cleaned with compressed air between each sample and with silica between each batch of samples. The first sample of each batch is screened for percentage passing 200 mesh and results are recorded on a QA/QC worksheet.

The pulp is then homogenized before preparation of the cut material. The analysis is performed on a 29,166 g cut.

#### **11.2.2.2 Analysis**

Samples are all analyzed using the Fire Assay method (FA). The 29,166 g cut is mixed with 130 g of flux and 1 mg of nitrate solution. Fusion of the sample occurs in a furnace after 45 minutes at 980°C. When cooled, the 25-30 g lead sample containing the gold is separated, placed in a pre-fired cupel and positioned in the furnace at 870°C. When the lead volatilizes, the remaining gold-silver prills (25-30 g) is collected for atomic absorption finish or for gravimetric finish.

The samples submitted to the atomic absorption finish are placed in test tubes and digested in a HNO<sub>3</sub> solution (0.2 ml). HCl (0.3 ml) and distilled water (4.5 ml) are added and silver chloride is formed. When all the silver has settled, the solution is read by atomic absorption. The minimum detection limit is 5 ppb and samples showing high gold concentrations (higher than 10 000 ppb) are re-analyzed with gravimetric finish.

The samples submitted to the gravimetric finish are placed in a parting cup. The cup is filled with HNO<sub>3</sub> and heated. When all the silver has settled, the gold prills is cleaned several times with hot distilled water, dried, cooled and weighed. The minimum detection limit is 0.03 g/t and there is no maximum detection limit.

**11.3 Data Verification**

Quality control procedures are done at two levels, the internal laboratory quality control procedures and the geological department quality control program in order to maintain the highest possible standard controls. All the following standards statistics were compiled using ROCKLABS Reference Material Excel template, available for download from their web site.

Here are of the main parameters used in the template:

- gross outliers (results that are >20% away from the average) are not used for statistical purposes (automatically removed, based on the Grubb's test verification);
- The process limits (minimum and maximum) are set at  $\pm 3$  standard deviations (calculated from the data);
- Comments on the statistics are based on the followings Rocklabs tables:

**Table 11-1: Relative Coefficient (Robust) Comments**

Gold Concentration (g/t)	Good	Industry Typical	Poor-Improvement Needed
0.02-0.1	< 7%	7%-9%	>9%
0.1-0.2	< 6%	6%-8%	>8%
0.2-0.5	< 5%	5%-7%	>7%
0.5-1.0	< 4%	4%-6%	>6%
>1.0	< 3%	3%-5%	>5%

**Table 11-2: Percentage of Grossly Outliers - Comments**

Under 1%	Good
1 - 5%	Typical
5 - 7%	Room for improvement
>7%	Something is seriously wrong

**11.3.1 Laboratories Internal Quality Control Procedures**

Both laboratories have their own written quality control procedures that are implemented at the respective laboratory. The following is an overview of each procedure.

**11.3.1.1 ALS Minerals Laboratories**

Each batch of 84 samples includes one blank sample and two standard reference materials for gold and three duplicates.

The remaining material is placed into a plastic bag (reject) or a paper bag (pulp) and kept by the laboratory for use in the QA/QC protocol (see section 11.3.2).

**11.3.1.2 Lab Duplicates for Gold Content**

From January to April 2019, 1,562 lab duplicates created from pulp were inserted by ALS Minerals Laboratories inside the batches (approximately one pulp duplicate every 20 samples):

- A total of 1,506 lab duplicates were analyzed for gold content with the AA finish method. They are all shown in the scatter plot in Figure 11-2. Correlation coefficients  $R^2$  is 0.9945 while the slope is 0.995x, demonstrating good correlation between assays and re-assay results.
- A total of 56 lab duplicates were analyzed for gold content with the gravimetric method. They are all shown in the scatter plot in Figure 11-2. Correlation coefficients  $R^2$  is 0.992 while the slope is 1.03x, demonstrating good correlation between assays and re-assay results.

**Figure 11-2: ALS Minerals Laboratories - Lab Duplicate for Gold Content Finish AA**

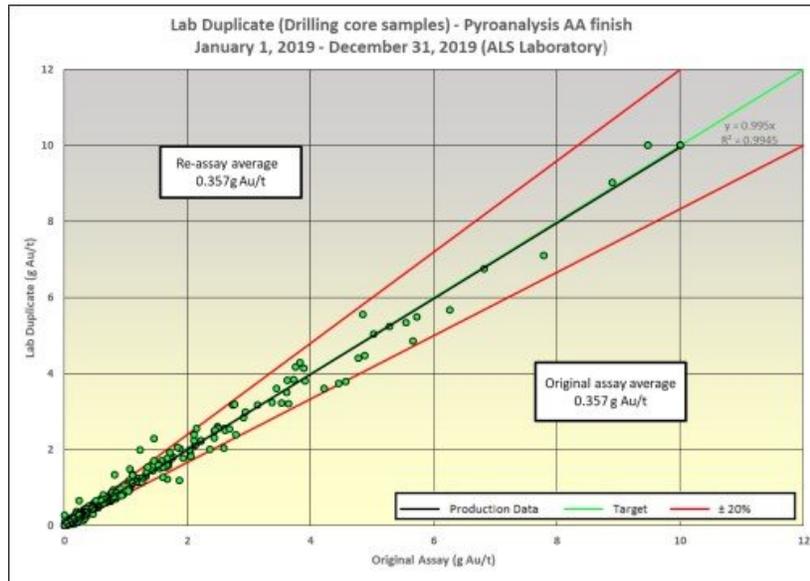
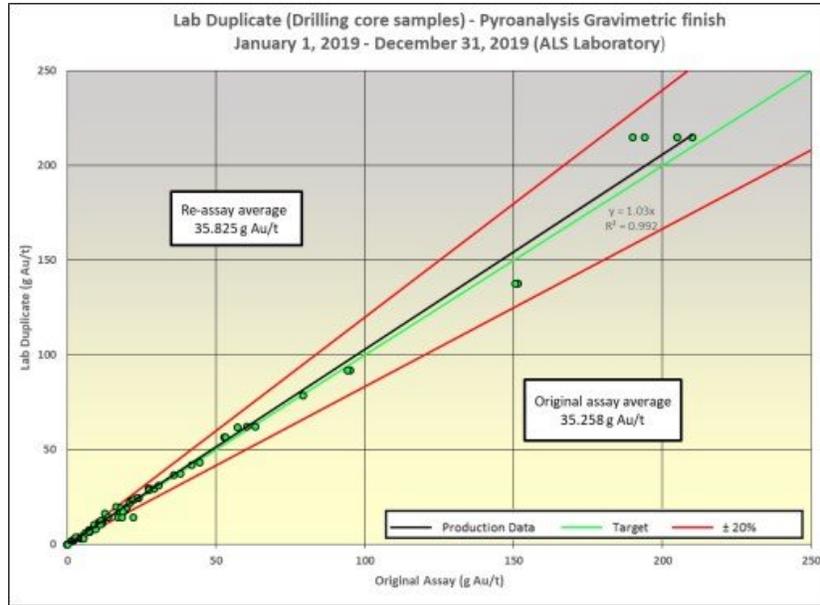


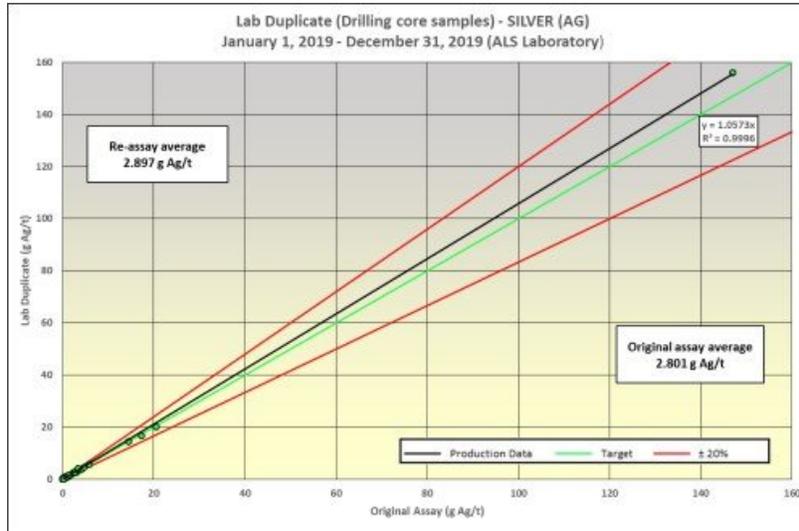
Figure 11-3: ALS Minerals Laboratories - Lab Duplicate for Gold content finish Grav.



**11.3.1.3 Lab Duplicate for Silver Content**

From January 2019 to April 2020, a total of 96 lab duplicates created from pulp were inserted by the ALS Minerals Laboratories inside the batches and were assayed for silver. The following scatter plot compare the results from the original assay and the re-assay (Figure 11-4). The average grade of the original assays for silver is similar to the average re-assay values returned from the pulp.

**Figure 11-4: ALS Minerals Laboratories - Lab Duplicate for Silver Content**



**11.3.1.4 Lab Expert**

Each batch of 28 samples includes one blank sample and two standard reference materials for gold. At every 12 samples, the lab runs a duplicate.

The melting pots are used as long as the assay results are under limits as describe hereafter. For the atomic absorption process, the melting pots that contained samples with gold contents higher than 1000 ppb are discarded. For the gravimetric process, the melting pots that contained samples with gold contents higher than 3000 ppb are also discarded.

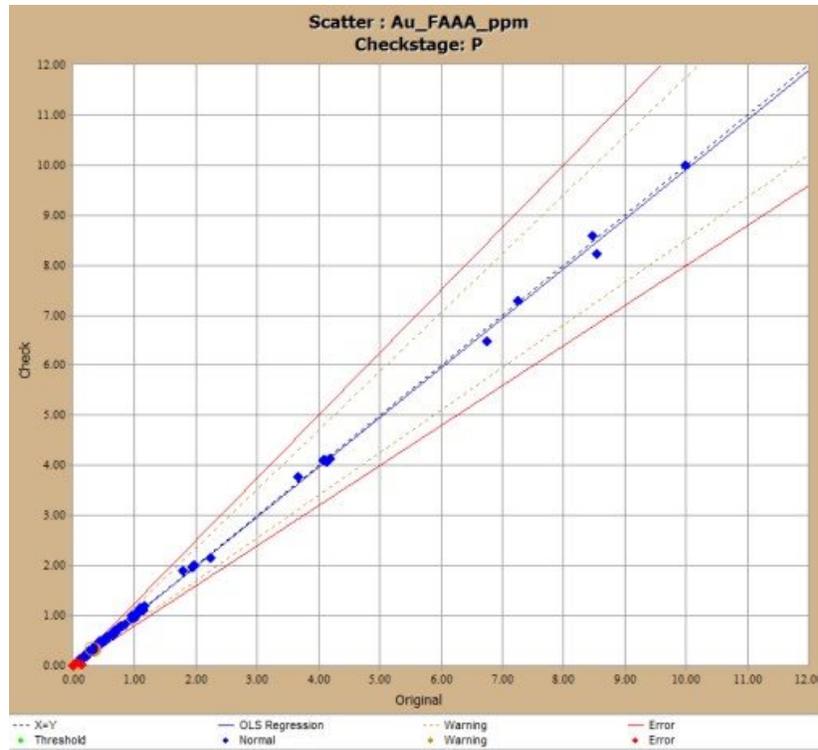
The remaining material produced during the splitting process of the sample preparation is placed into a plastic bag (reject) or in a paper bag (pulp) and sent back to the client for use in the QA/QC protocol.

**11.3.1.5 Lab Duplicate for Gold Content**

From mid-October 2019 to April 30, 2020, 288 lab duplicates created from pulp were inserted by Lab Expert laboratory inside the batches (approximately one pulp duplicate every 12 samples).

A total of 287 lab duplicates were analyzed for gold content with the AA finish method. They are all shown in the scatter plot in Figure 11-5. Correlation coefficient R2 is 0.9997, demonstrating good correlation between assays and re-assay results. Axis are in g/t Au.

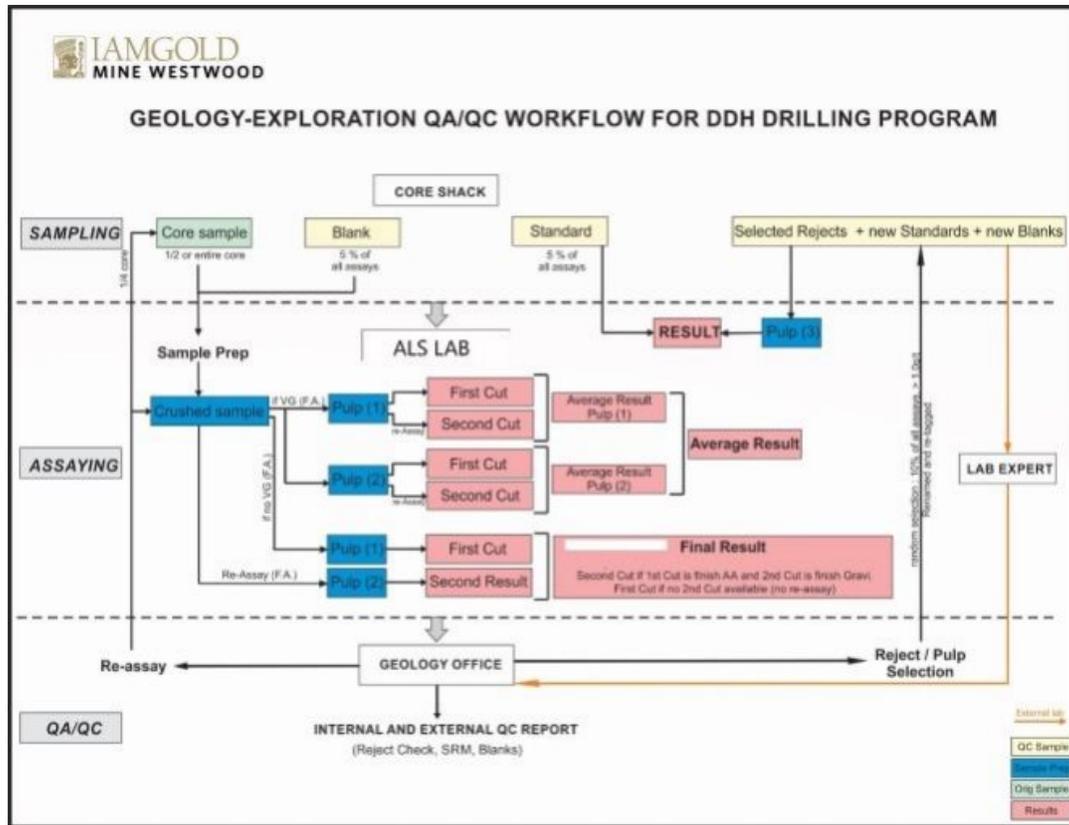
Figure 11-5: Lab Expert - Lab Duplicate for Gold Content Finish AA



**11.3.2 Geological Department Quality Control Program**

From 2001, the Doyon Mine has established an analytical quality insurance program to control and assure the analytical accuracy and precision of assays. This program was revised in December 2013 for the Westwood Mine. In November 2017, core blanks were replaced by blank composed of crushed barren quartz as shown in Figure 11-6.

Figure 11-6: Workflow for Geology - Exploration QA/QC Program



The Westwood QA/QC program includes the systematic addition of blind samples sent to the laboratories in order to validate their accuracy and precision. Those blind samples are:

- Certified Reference Material (CRM): ( $\pm 5\%$  of the samples):

CRM are used to verify the precision (standard deviation) and accuracy (difference between the average and the assigned value) of the assays. They consist of pulverized rock material in which gold content is certified by RockLabs based on result from different independent labs. A CRM is inserted in the analytical sequence at every 20 samples by the geologists in charge of the core logging. Three types of CRM are used (low-grade ( $\pm 2-3$  g/t Au), average grade (5-15 g/t Au), and high-grade ( $> 15$  g/t Au).

- Blank Samples: ( $\pm 5\%$  of the samples):

A blank is inserted in the analytical sequence at every 20 samples by the geologists in charge of the core logging. In addition, a blank can be put after each suspected ore zone. Ultimately, it is mandatory to put a blank after a sample with visible gold occurrences. Blanks are used to verify the contamination of the labs mainly during the sample preparation process. A blank sample is composed of silica that comes from a quarry (Sitec) which are known as barren material (gold value  $< 5$  ppb Au).

The Westwood QA/QC program also includes the systematic cross-validation of the primary laboratory results by a second external laboratory. This is done by submitting a whole batch of rejects or pulp duplicates to the secondary laboratory (Lab Expert) and then by submitting the same duplicates to the primary laboratory (ALS):

- Rejects and Pulps Duplicates: (5% of the ore zones samples where gold grade is over 1 g/t):

*Rejects (5%) and pulps (5%) duplicates are regularly selected. They are composed of the unused fraction of the grinded or pulverized rock sample left over from the assaying process, which has been retagged. They are used to verify the reproducibility of the assay, which is principally, but not entirely link to the homogenization of the pulverized material. They are also used to see if we have an analytical skew between the results from the two laboratories. Blank samples and CRM are also included in the renumbered sequence of both laboratories.*

### 11.3.2.1 Certified Standard Reference Material

From January 1, 2019, to April 30, 2020, Westwood Mine used 8 CRMs from Rocklabs Ltd sent to ALS Minerals Laboratories (Table 11-3).

**Table 11-3: ALS Minerals Laboratories - Standards Statistics - Geology Department**

Westwood Standard	RockLab Number	Number of Result	Proportion (%)	Outliers		Rocklab Value (g/t)	Lab Average g/t	Accuracy (%)	(%) (RSD)	Precision Comments	Use (year) From-To
				Nb	(%)						
Std19	SN75	104	5.52	3	2.9	8.67	7.95	-8.32	3.5	Industry Typical	2019
Std20	SL76	424	22.51	5	1.2	5.96	5.64	-5.41	2.9	Industry Typical	2019
Std24	SJ80	448	23.78	5	1.1	2.66	2.53	-4.64	3.2	Industry Typical	2019
Std29	SP73	170	9.02	5	2.9	18.17	17.14	-5.67	5.1	poor	2019
Std34	SQ87	127	6.74	2	1.6	30.87	29.31	-5.80	4.0	Industry Typical	2019
Std35	SK94	227	12.05	3	1.3	3.90	3.66	-6.25	4.3	Industry Typical	2019
Std36	SN91	269	14.28	7	2.6	8.68	8.25	-4.98	2.9	Good	2019
Std37	SK109	115	6.10	2	1.7	4.10	4.04	-1.60	2.6	Good	2019
Total		1 884	100.00	32	1.7	10.38	9.82	5.33	3.6		

A total of 1,884 samples were submitted and 32 samples did not meet the objective of  $\pm 3$  standard deviations (calculated from the data) and were rejected as outliers (1.7%).

Control charts for each CRM is prepared. The statistics of the Internal Reference Material sent 2017 to the ALS Minerals Laboratories show the followings:

- Most results obtained show precision that is "Industry typical" to "Good" except Std29 that shows poor accuracy in accordance with Table 11-3.
- The average accuracy on the Rocklabs reference material used is 5.33% lower than the expected reference value.

The accuracy calculation shows a bias suggesting that the ALS Minerals Laboratories underestimate the target value (conservative estimate).

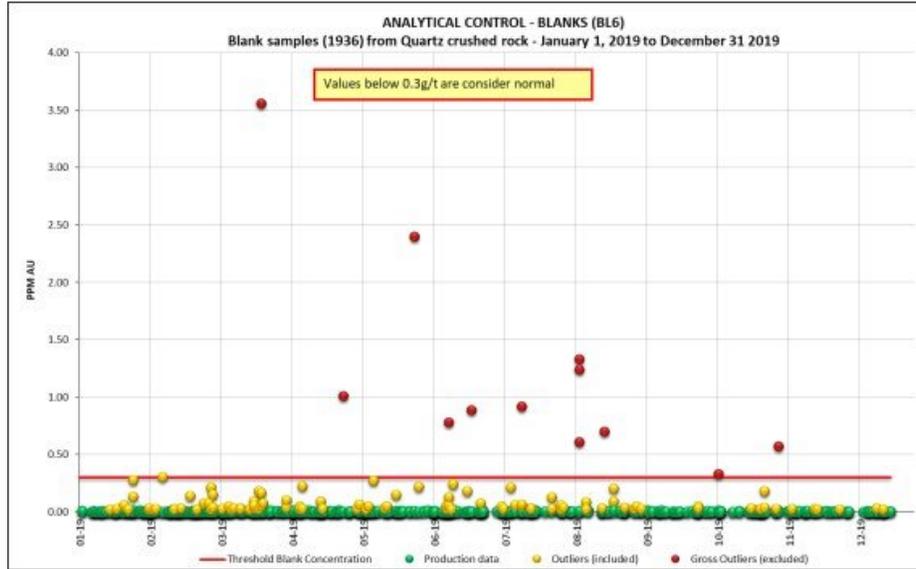
Westwood Mine plans to continue to use Rocklabs reference materials.

**11.3.2.2 Blanks**

Blanks are inserted to check for possible contamination. From January 2019 to April 2020, 1,936 "blank" samples were inserted in the sampling sequence. Samples showing visible gold are marked so that ALS Minerals Laboratories can perform an extra cleaning of their equipment after each sample. Figure 11-7 summarizes the assay results for the blank samples sent to the ALS Minerals Laboratories for this period.

Blank material sent to ALS Laboratories composed of quartz-crushed rock.

**Figure 11-7: ALS Minerals Laboratories - Blank Results - Geology Department**



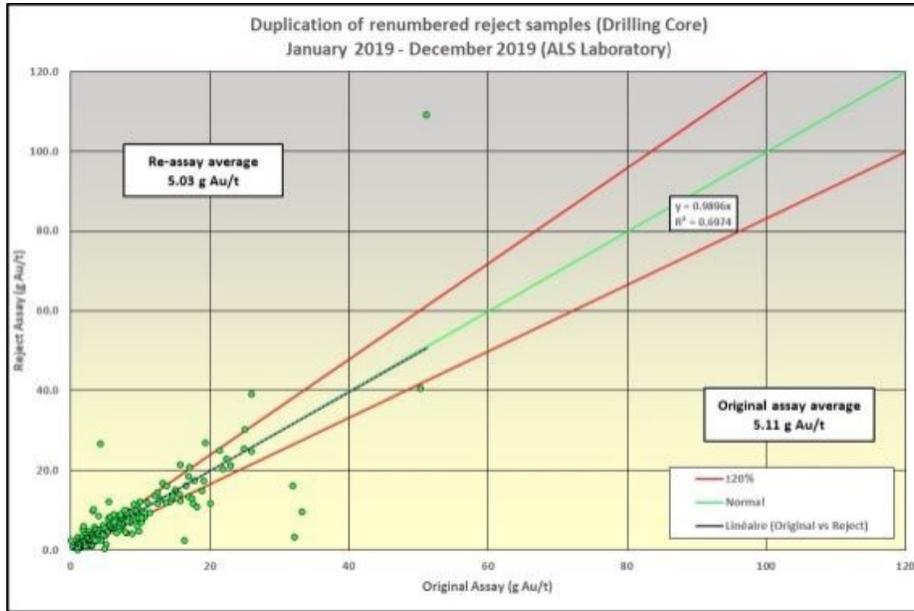
A total of 12 blank samples (gross outliers) returned assays higher than the threshold value, which represents 0,62% of all the blank samples submitted to ALS Minerals Laboratories between January 2019 and April 2020. A total of 66 blank samples (outliers) returned assays between 30 ppb and 300 ppb Au, which represents 3.41% of all the blank samples submitted to ALS for 2019.

These results demonstrate that minor contamination exists in the analysis process. However, in general the level of contamination is considered relatively low compared to the cut-off grade of the resources (> 6 g Au/t) and have little or no impact on the overall estimation of the resources.

**11.3.2.3 Renumbered Rejects**

From January 2019 to April 2020, 424 reject samples were renumbered and submitted to the ALS Minerals Laboratories. The following scatter plot (Figure 11-8) shows the correlation between the original and re-assay results. Correlation coefficients  $R^2$  is 0.6974 while the slope is 0.9896x, demonstrating that correlation between assay and re-assay results are affected by high gold values. These are considered acceptable. Those high variations are frequently associated with visible gold.

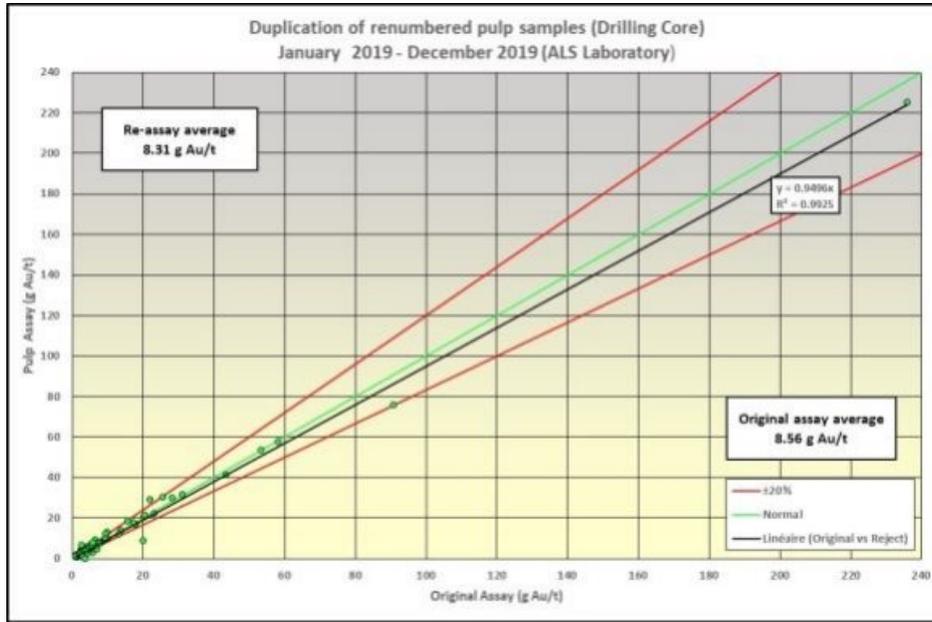
**Figure 11-8: Scatter Plot Original and Re-Assay Rejects**



**11.3.2.4 Renumbered Pulps**

From January 2019 to April 2020, 138 pulp samples were renumbered and resubmitted to the ALS Minerals Laboratories. The following scatter plot (Figure 11-9) shows the correlation between the original and re-assay results. Correlation coefficients  $R^2$  is 0.9925 while the slope is 0.9496, demonstrating good correlation between assay and re-assay results. These values are considered satisfactory.

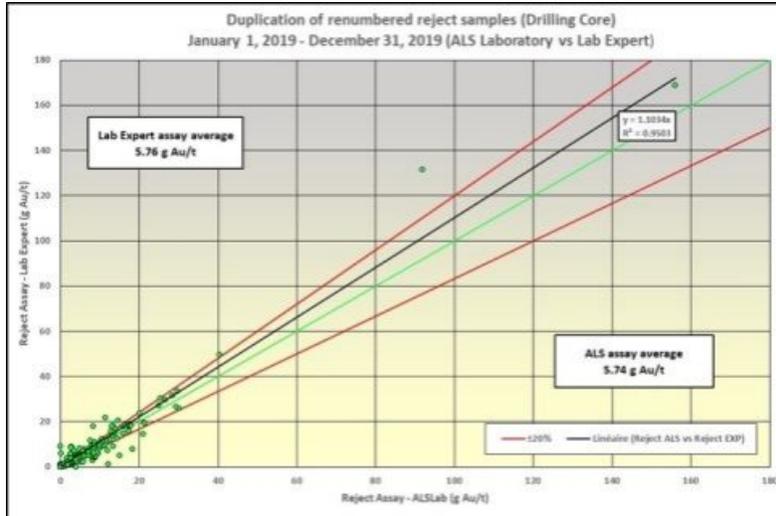
**Figure 11-9: Scatter Plot Original and Re-Assay Pulps**



**11.3.2.5 Comparison with External Laboratory**

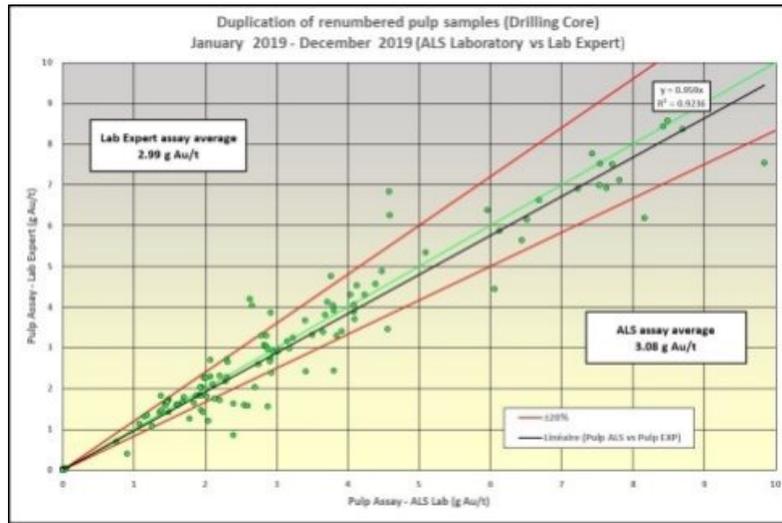
From January 2019 to April 2020, 468 samples were re-assay in an external laboratory, Lab Expert, as well as ALS Minerals Laboratories. Of that number, 348 rejects and 120 pulp were reanalyzed for gold. The scatter plot in Figure 11-10 shows the correlation between the re-assay on rejects from both labs. Correlation coefficient R2 is 0.9503 while the slope is 1.1034x, demonstrating good correlation.

**Figure 11-10: Scatter Plot of Re-Assay Rejects (Lab Expert and ALS Minerals Laboratories)**



The scatter plot in Figure 11-11 shows the correlation between the re-assay on pulp from both labs. Correlation coefficient R2 is 0.9236 while the slope is 0.959x, demonstrating good correlation.

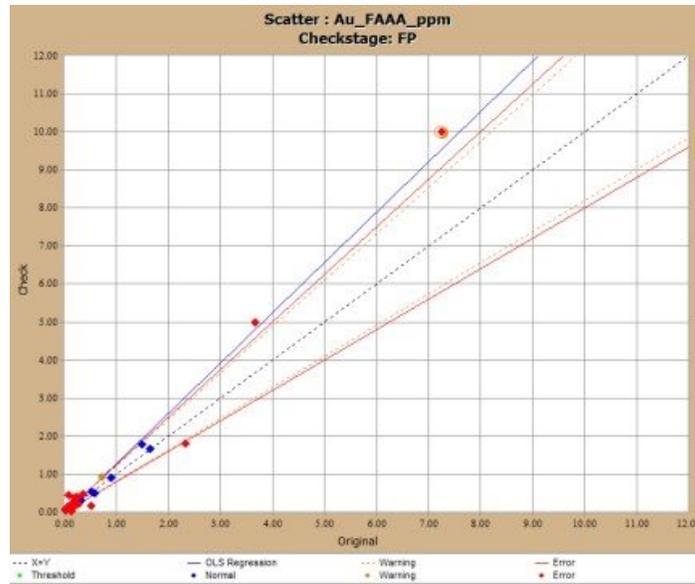
**Figure 11-11: Scatter Plot of Re-Assay Rejects (Lab Expert and ALS Minerals Laboratories)**



**11.3.2.6 Split Duplicates**

Split Duplicate were taken at Grand Duc project, during the month of November 2019 in order to verify gold grades variations. A sum of 41 field duplicate were taken on RC holes from the coarse material. Figure 11-12 shows the relationship between the original sample and the split duplicate ("Check"). Due to the nature of the mineralization 23 out of 41 fall outside acceptable limit of 20%.

Figure 11-12: Scatter Plot of Split Duplicates



### 11.3.2.7 Sample Preservation and Storage

In general, only portions of the exploration drill core are preserved. They correspond to all units intersected after unit 3 which are units hosting the main mineralized zones (units 4.2 to 4.5, up to units 5.1, 5.2 and/or sediments). The drill cores are stored in core racks on site, in a secured area. It is used for re-assays, checks, metallurgical tests or simply as "witness" samples. Note that from time to time, entire holes are saved for mechanical rock tests.

All pulp and rejects from all samples sent to the ALS Minerals Laboratories are stored at the laboratory for one month. At the end of the month, all pulp and rejects held at the lab are sent back to the Westwood Mine along with a list of samples. After selection of samples for the QA/QC program, remaining pulp and rejects are discarded.

### 11.4 Conclusion on Sample Preparation, Analysis and Security

In IAMGOLD's opinion, the QA/QC program as designed and implemented at the Westwood Mine is adequate and the assay results within the database are suitable for use in a Mineral Resource estimate.

## 12 DATA VERIFICATION

The following sections present the data verification made by the qualified person to validate the data used in the technical report. Written procedures are in place from opening of core boxes to data validation.

### 12.1 Assay Verification

The core samples are assayed at the ALS Minerals Laboratories in Val-d'Or and they constitute the basis for the resource and reserve estimation process. The laboratory personnel send by email the assay and re-assay results in text format to the Westwood geology department. The verification and validation of the assay results are performed by the geology department (database administrator/resource geologist). If an error is found during this process, a correction request is sent by email to the laboratory and the correction is applied.

Analytic results are first appended to the Laboratory database on SQL2005 server. This database includes several tables from which analyzes are distributed according to their origin and their purposes: production, drilling, etc. The Assay\_Lab table receives all gold and metals assays from drilling. From Laboratory database, scripts processing the analyzes according to their priority are executed in order to populate GEOddhWW\_ASSAY table in GD\_Westwood database on the same SQL server. Priority is put on Au\_Gravimetric finish over Au\_AtomicAbsorption if an assay is higher than 10 g t Au by Au\_AA. Otherwise the Au\_AA value is taken. In some cases, a four gravimetric assays are proceeded on samples where visible gold is observed. An average calculation is done on those four gold results on a specific sample. The gold values used to the resources calculations are from GEOddhWW\_ASSAY table in GD\_Westwood database.

A transition to SQL2018 server was carried out in 2019 and during that time SQL2005 server was updated regularly to ensure the transition. Databases are now managed through acquire software. The validation process is much the same as that previously explained. Every different analytic method for gold as its own field in SampleAssay table in acquire. This also applies to all the elements analyzed. Imported assays from certificates are classified by priorities, from which "1" is accepted after QAQC verification, "2" is pending until QAQC is done and "3" or more for rejected assays after QAQC verifications. Furthermore, every analytic method for gold has a ranking order. These ranks populate the derived field "Au\_BestEl" similarly as it was in GEOddhASSAY. The gravimetric method has priority over atomic absorption method.

The databases on the SQL server 2005 and 2018 are updated every day.

The database administrator carries out the following assay verifications:

- Weekly verification to ensure that each assay is associated with the proper drill hole and that no assay is missing;
- Systematic verification of all the assays, mineralization descriptions and vein-types used in the resource estimation.

### **12.2 Database Verification**

All drill hole data (geology, geotechnical data, survey results, samples, etc.) is initially entered by geologists in an SQL database (located on a local server) using a logging program developed by acQuire. The acQuire logging interface and Vulcan (Maptek) have many validation tools which include crosschecks for overlapping and missing intervals, for duplicate sample IDs and for distance-length validations based on the drill hole total length. Additionally, the database administrators validate every import to verify that all data has been correctly imported and that no data is missing.

The SQL server 2018 is a relational database management system in which our data is managed through the acQuire Data Model "ADM". Databases resides on a computer server under the responsibility of the Information Technology (IT) department and all users are connected by the network to any data stored in the databases. Only the database administrators (2) and IT staff are allowed to work directly on the station, which hosts the SQL server (by remote connection). A database maintenance plan ensures that a backup of each database is made on a daily basis to prevent permanent data loss. Moreover, SQL server allows the database administrator to set different permission levels for users, as a function of their profile group (geology, planning, engineering) or individually.

### **12.3 Discussion of Data Verification**

Following the different data verification methods presented above and that there are no limitations or restrictions that prevent Westwood from verifying analyzes, the data is considered suitable for Mineral Resource estimation.

### 13 MINERAL PROCESSING AND METALLURGICAL TESTING

Metallurgical testing was performed prior to commissioning the Westwood project. Testing was done on the three mineralized corridors, Zone 2, North Corridor and Westwood Corridor. The results were used to confirm the absence of obstacles to the project feasibility, to develop the process flowsheet of the plant and to estimate metallurgical operating parameters and costs.

Additional metallurgical test work has been performed since then via the geometallurgical project and more recently, some additional test work on drill core samples from the Grand Duc project. The following sections highlight the test results.

#### 13.1 Ore Sampling and Characterization

For more details on the mineralization of the different zones of the WW mine, Refer to Section 7.3 Mineralization.

##### 13.1.1 Bulk Sample Plan Results

In July 2009, an 8,366 t bulk sample mined from Z230 was processed at the Doyon Mill. (Table 13-1) shows the processing results for Zone 2 bulk sample processing. In addition, Bond Ball Mill Work Index (BWi) and Bond Abrasion index (Ai) analysis were performed on three sub-samples from the bulk sample with an average BWi of 12.6 kWh/t and Ai of 0.164 g.

**Table 13-1: Results of Bulk Sample Processing (Z230 Lens)**

from July 6 to 10 2009	Tonnes tm	Head (g/t)		Discharge liquid (g/t)		Discharge solid (g/t)		Recovery (%)	
		Au	Ag	Au	Ag	Au	Ag	Au	Ag
<b>Bulk sample</b>	8,366	5.81	3.96	0.027	0.6	0.266	1.03	<b>94.98</b>	51.2
Comments : <ul style="list-style-type: none"> <li>- Average particule size of 79.8% passing 200 mesh</li> <li>- Gravity seperation non fonctional because the set up wasn't inadequate for the Westwood ore. The % solid was too high, it required changes to the current circuit.</li> </ul>									

The Doyon Mill achieved a better recovery (+3%) than the laboratory results. This difference comes from the occurrence of gold telluride in the Doyon kinetic. The bulk sample processing in the Doyon Mill validated test parameters for gold. Cyanide and lime consumptions were about 1.4 kg/t and 4 kg/t, respectively.

**13.1.2 Head Assay Data for WW Mine and Grand Duc Project**

In 2019, a complete ICP analysis was performed on seven composites samples from different WW underground area by UQAT-URSTM. The results are shown in Table 13-2.

**Table 13-2: Head Analysis Results Westwood Mine**

ANALYTE	Élément chimique par analyse ICP-AES																			
	Ag	Al	Ba	Ca	Cr	Cu	Fe	K	Li	Mg	Mn	Na	Ni	P	S <sub>total</sub>	Sr	Ti	V	Zn	Zr
UNITS	ppm	%	ppm	%	ppm	ppm	%	%	ppm	%	ppm	%	ppm	ppm	% p/p	ppm	%	ppm	ppm	ppm
WW17D	30.39	5.39	55	0.28	19	1280	>15	2.16	11	0.52	408	0.21	27.2	261	25.2	14.3	0.11	77	>10000	103
Z253A	7.32	6.41	451	1.44	25	1620	9.28	2.20	23	1.43	981	0.52	24.6	1014	7.62	43.3	0.40	126	212	123
Z226A	18.82	5.93	366	1.98	3	124	7.71	2.15	7	0.55	320	0.48	<0.5	658	9.60	111	0.12	81	294	150
WW28A	11.75	6.64	129	0.11	14	1391	5.85	2.99	6	0.22	118	0.18	11	263	6.126	15.4	0.11	78	160	143
Z230B	7.05	7.74	140	1.65	51	840	8.40	2.64	21	1.56	1274	0.52	22	834	8.343	63.5	0.29	168	435	103
Z230C	2.20	8.05	133	1.86	21	176	8.47	2.30	26	2.29	1058	0.67	12.5	1210	8.572	57.4	0.30	157	65	105
Z260A	3.96	7.75	119	1.90	46	318	8.75	2.31	27	2.24	1464	0.64	24.8	954	8.987	70.2	0.36	272	290	51.6

ANALYTE	As	Be	Bi	Cd	Ce	Co	Cs	Ga	Hf	In	La	Lu	Mo	Nb	Pb	Rb	Sb	Sc	Se	Sn	Ta	Tb	Te	Th	Tl	U	W	Y	Yb
UNITS	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
WW17D	120	0.7	0.71	98.8452.03	24.4	2	18.1	2.71	1.56	25.1	0.29	2.34	2.2	3705	82.2	12.51	13.3	5	2.0	0.20	0.48	5.80	5.9	14.71	1.39	1.0	14.7	1.8	
Z253A	21	1.3	4.94	0.97	65.27	29.0	1	16.7	3.36	0.48	30.5	0.46	1.28	7.1	12.9	74.6	0.25	23.0	4	2.0	0.54	0.77	13.52	5.1	0.28	1.20	1.5	25.9	2.8
Z226A	1	0.6	19.30	1.19	91.03	26.7	1	10.7	3.96	0.10	44.7	0.43	17.80	1.9	43.1	63.0	0.23	17.2	10	3.0	0.16	0.81	40.11	5.6	0.24	1.42	0.8	26.3	2.8
WW28A	24	0.5	10.07	0.58	81.92	15.1	2	15.3	3.62	0.32	36.3	0.34	1.58	1.5	14	101	0.56	11.7	5	2.2	0.16	0.45	24.56	8.0	0.65	2.14	2.9	14.0	1.8
Z230B	8	0.4	5.48	1.65	61.76	36.5	1	17.1	2.73	0.47	26.6	0.36	1.01	3.6	6.6	82.5	0.15	24.3	7	2.2	0.23	0.61	11.06	3.8	0.21	1.33	2.0	22.7	2.2
Z230C	7	0.5	3.60	0.19	61.49	34.5	2	18.4	2.77	0.10	26.2	0.35	0.86	3.8	19.7	75.2	0.22	20.8	9	2.0	0.33	0.65	8.76	3.5	0.21	0.89	1.8	22.8	2.3
Z260A	4	0.2	1.93	1.00	45.67	49.0	2	17.5	1.48	0.15	18.0	0.20	0.66	2.8	18.0	68.0	0.21	27.9	5	1.9	0.24	0.47	8.32	1.9	0.20	0.59	18.3	14.5	1.4

Table 13-3 shows results obtained for the Grand Duc project. Material assayed for the Grand Duc project came from drill cores samples.

**Table 13-3: Head Analysis Results Grand Duc**

Sample ID		TM 001	TM 002	TM 003
Au	g/t	5.77	1.20	1.34
Ag	g/t	< 10	< 10	< 10
Te	g/t	4	< 4	< 4
Fe	%	4.12	3.04	2.75
S <sup>=</sup>	%	2.62	1.68	1.50
As	%	< 0.001	< 0.001	< 0.001
SiO <sub>2</sub>	%	63.3	67.7	68.8
Al <sub>2</sub> O <sub>3</sub>	%	12.6	12.8	12.5
MgO	%	0.61	0.53	0.67
CaO	%	1.67	2.18	2.59
K <sub>2</sub> O	%	3.66	3.76	2.94
TiO <sub>2</sub>	%	0.35	0.36	0.34
MnO	%	0.08	0.074	0.079
Cr <sub>2</sub> O <sub>3</sub>	%	0.006	0.0053	0.004
V <sub>2</sub> O <sub>5</sub>	%	0.0016	0.001	0.0011
P <sub>2</sub> O <sub>5</sub>	%	< 0.06	< 0.06	< 0.06

### 13.2 Metallurgical Testwork

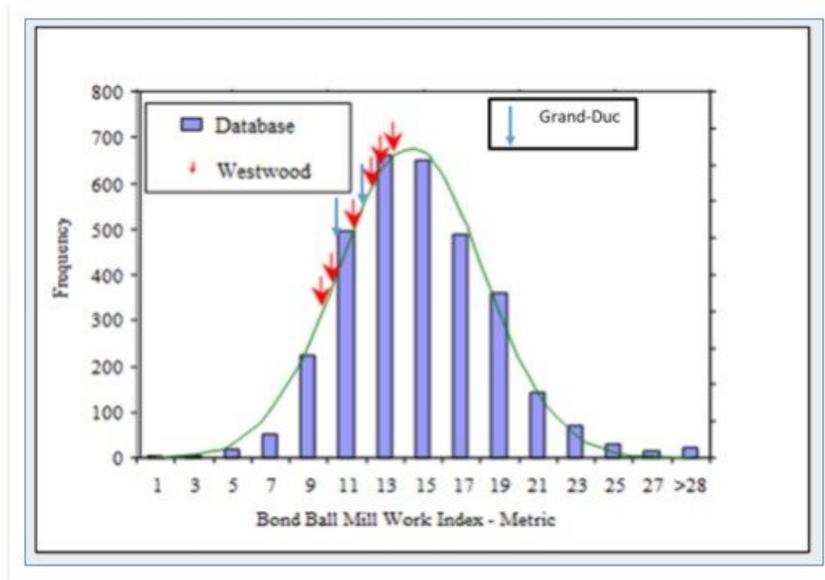
#### 13.2.1 Grindability Tests

Bond Ball mill Work Index (BWi) analysis was performed in 2019 on 18 composite samples for the Westwood underground mine. Additionally measures were also taken on samples of the Grand Duc. Results are shown in Table 13-4.

**Table 13-4: BWi Test Summary for Westwood and Grand Duc Ores**

Project	Zone	Sample	Bwi (kWh)
Westwood	North Corridor	CN26	13.9
Westwood	North Corridor	CN32	14.1
Westwood	Westwood corridor	WW17D	8.5
Westwood	Westwood corridor	WW23A	8.2
Westwood	Westwood corridor	WW25D	10.7
Westwood	Westwood corridor	WW27A	8.1
Westwood	Westwood corridor	WW28A	7.6
Westwood	Zone 2	Z215A	13.4
Westwood	Zone 2	Z225A	11.1
Westwood	Zone 2	Z226A	10.8
Westwood	Zone 2	Z230B	12.8
Westwood	Zone 2	Z230C	12.4
Westwood	Zone 2	Z239A	10.0
Westwood	Zone 2	Z243	10.5
Westwood	Zone 2	Z244A	11.4
Westwood	Zone 2	Z253A	13.9
Westwood	Zone 2	Z260A	13.3
Westwood	Zone 2	Z270D	13.6
Grand Duc		TM-001	10.0
Grand Duc		TM-002	10.2
Grand Duc		TM-003	12.1

Figure 13-1: BWi Histogram



When compared against SGS database, BWi results show that the material from Westwood and Grand Duc can be classified as soft to average in terms of its BWi index.

**13.2.2 Gravity Recovery**

In 2019, four samples of Westwood ore were sent and processed at Base Met Labs in Kamloops, BC using the protocol of Gravity Recoverable Gold (GRG) test. The results show variable % GRG, with a different recovery and grade at variable grind sizes. The test showed that the Westwood sample could be processed for GRG recovery from the grinding circuit by gravity separation.

Table 13-5: GRG Results for Four Different Zones in the Westwood Mine

Project	Zone	Sample	GRG result (%)
Westwood	Westwood corridor	WW17D	19
Westwood	Westwood corridor	WW27A	39
Westwood	Zone 2	Z270	34
Westwood	North Corridor	CN32	72

More testing will need to be conducted at higher throughput to better understand the real potential for gravity recovery on Westwood as well as Grand Duc ore.

### 13.2.3 Flotation Tests

The Westwood Corridor contains enough copper and zinc to consider flotation recovery. SGS Lakefield in Ontario conducted flotation tests on ore from the Warrenmac and WW25 lenses.

Batch Cu-Zn flotation tests were performed on Warrenmac ore using previously developed processes. It showed good concentrate grade results. Cu-Zn flotation locked cycle tests were conducted in order to give a better representation of an operation with a recirculation to the flotation. Locked cycle testing projected a copper concentrate grading 26% Cu at 86% recovery, and a zinc concentrate grading 58% Zn at 89% recovery. In the copper concentrate, gold recovery was 71% and silver recovery was 56%.

Batch flotation tests were also performed on the WW25 samples. The best-retained parameters were then used to perform a locked cycle test. The Zn circuit produced a marketable Zn concentrate grading of 55% Zn at a recovery of 91%. The Cu/Pb concentrate contained 65-70% Cu and Pb units albeit at a relatively low grade due to the iron sulphide contamination. In addition, 85% of the Au and 63% of the Ag also reported to this concentrate.

The combined zinc rougher tails from the flotation locked cycle test of the Warrenmac lens was submitted for cyanide leach testing (48 hours). Overall, 86% gold and 81% silver were recovered from the combination leaching and flotation, as summarized in Table 13-6.

**Table 13-6: Cumulative Au and Ag Recoveries - Cyanidation and Flotation**

	Flotation (LCT)			Leaching (CN2)			% rec.
	Head	Tail	% rec.	Head (calc.)	Tail	% rec.	Total
Au (g/t)	9.18	3.29	70.8	2.8	0.5	82.1	85.7
Ag (g/t)	75.09	27.5	44.6	29.2	4.5	84.6	81
Cu (%)	0.23	0.034	85.7				85.7
Zn (%)	4.08	0.216	88.5				88.5

Two leaching tests were performed on samples from a Westwood WW25 composite. The first leach test was completed using the combined zinc tailings from locked cycle test and the second on a sample ground to a P80 of approximately 74 microns, not subjected to prior flotation. The results of those two tests are summarized in Table 13-7.

**Table 13-7: Cyanidation Tests Results**

Tests	Leaching of whole ore		Leaching of Zn tailings	
	Au	Ag	Au	Ag
<b>Flotation</b>				
Head (g/t)			3.17	26.6
residue (g/t)			0.33	5.67
% in Cu conc.			84.7	62.9
% in Zn conc.			5.3	17.0
<b>Leaching</b>				
Head (g/t)	3.08	28.5	0.33	5.67
Residue (g/t)	0.24	6.8	0.15	2.1
% rec.	92.2	76.2	55.9	63.0
<b>Total rec. (%)</b>	<b>92.2</b>	<b>76.2</b>	<b>90.3</b>	<b>75.6</b>

Gold and silver recoveries from the whole ore leaching were acceptable at 92.2% and 76.2%, respectively.

Although the recoveries of Au and Ag from the combined Zn tails were lower than in the leach circuit, the overall extraction into the Cu concentrate and the pregnant solution was 90.3% and 75.5%, respectively, and therefore comparable with the entire ore test results. An additional 5.3% Au and 16.8% Ag were recovered into the Zn concentrate of the locked cycle test. However, they are usually not credited by the smelter; therefore, they are considered as a loss of recovery. The quality of the Cu concentrate was 9% Cu and 85% gold released at this stage. Unlikely to be a marketable product, it would require further upgrading.

#### 13.2.4 Leaching Tests

Leaching tests were performed at different laboratories on the three mineralized zones of the Westwood mine and most recently on the Grand Duc samples. After a few years of operation, actual performance in the mill plant turned out to be higher than average laboratory results for the Westwood material. Following sections highlight the most recent leaching test results for both Westwood and Grand Duc ores.

##### 13.2.4.1 Zone 2 Extension, North Corridor and Westwood Corridor

Samples taken in 2019 from Zone 2, North Corridor and Westwood corridor were tested at CTRI and were submitted to cyanide leaching without carbon absorption. Table 13-8 to Table 13-10 shows the results from this testing program.

Table 13-8: Leaching Test Results (Westwood Zone)

	Sample	WW17D	WW23A	WW25D	WW27A	WW28A	Z215A
Head grade	Au (g/t)	3.06	7.88	1.63	6.06	9.20	4.13
	Ag (g/t)	35.3	3.36	20.4	2.16	5.45	4.49
Au recovery (%)	Global	81.6%	90.3%	84.0%	85.8%	92.7%	93.8%
	Gravimetry	14.5%	30.7%	2.1%	30.8%	28.2%	32.8%
Ag recovery (%)	Global	71.6%	88.9%	67.8%	86.2%	87.7%	81.0%
NaCN consumption	kg/t	0.44	0.64	1.22	0.33	0.66	1.09
CaO consumption	kg/t	1.51	2.62	3.56	4.38	1.43	2.79
P80	microns	53	51	55	50	53	51

Table 13-9: Leaching Test Results (Zone 2)

	Sample	Z225A	Z226A	Z230B	Z230C	Z239A	Z243
Head grade	Au (g/t)	2.78	36.9	8.94	3.99	10.2	16.2
	Ag (g/t)	1.71	26.0	8.04	2.18	3.02	2.22
Au recovery (%)	Global	89.0%	90.4%	93.8%	95.7%	88.5%	85.4%
	Gravimetry	28.7%	17.4%	22.7%	34.2%	44.3%	32.4%
Ag recovery (%)	Global	73.5%	95.4%	87.2%	80.4%	92.4%	89.7%
NaCN consumption	kg/t	0.36	0.32	0.50	0.28	0.11	0.09
CaO consumption	kg/t	2.80	1.77	2.37	2.17	3.91	2.03
P80	microns	51	46	48	48	49	48

Table 13-10: Leaching Test Results (North Corridor)

	Sample	CN26	CN32	Z244A	Z253A	Z260A	Z270D
Head grade	Au (g/t)	6.11	3.20	3.37	8.29	5.62	2.26
	Ag (g/t)	7.63	1.72	1.58	7.62	4.43	1.09
Au recovery (%)	Global	94.1%	96.2%	86.9%	88.9%	85.6%	93.9%
	Gravimetry	17.2%	5.4%	17.7%	23.6%	23.2%	24.5%
Ag recovery (%)	Global	90.8%	60.5%	82.9%	82.6%	89.0%	65.8%
NaCN consumption	kg/t	0.28	0.17	0.12	0.81	0.48	0.33
CaO consumption	kg/t	1.94	2.23	2.06	1.26	1.75	1.98
P80	microns	49	49	47	48	56	47

Au recovery results range from 81.6% to 95.7% with an average of 89.8%. Actual plant results (including gravimetry and carbon absorption) show a better performance overall than the average performance obtained in the lab tests as shown in Table 13-11.

Table 13-11: Actual Plant Results

	2015	2016	2017	2018	2019
Au recovery (%)	94.7	94.0	94.5	94.5	93.7

### 13.2.4.2 Grand Duc Project

Three leaching tests were performed on samples from Grand Duc ore. The results of those three tests are summarized in Table 13-12.

**Table 13-12: Cyanidation Tests Results Including Kinetics**

Test No.	Sample Name	P <sub>80</sub> (µm)	Reagent Cons.		Au Extraction (%)						Gravity	Gravity+ Cyanidation	Au Test Results		
			NaCN (kg/t)	CaO (kg/t)	hours								Residue Au (g/t)	CN Calc. Au (g/t)	Direct Au (g/t)
			3	6	12	24	36	52							
CN7	Gravity Tail-Comp 1	55	0.38	1.15	27.4	58.4	68.8	72.8	85.1	89.1%	11.6%	88.6%	0.47	4.27	3.94
CN8	Gravity Tail-Comp 2	63	0.11	1.10	33.5	67.2	78.9	84.1	89.5	92.3%	6.30%	91.8%	0.11	1.38	0.91
CN9	Gravity Tail-Comp 3	64	0.11	0.98	34.8	69.7	75.3	80.8	87.6	90.2%	9.64%	89.7%	0.14	1.39	1.10

Gold recoveries from the whole ore leaching was acceptable at 90.0% in average at 52 hours of retention time. The cyanide consumption turned out to be much lower than Westwood ore due to the lower sulphide content than the Westwood ore. Grand Duc ore has been processed since October 2019. As of today, the material has been fed in the plant, blended with the Westwood ore. Therefore, it is still unclear if the actual performance while processing only Grand Duc material is better or worse than the lab results. In order to validate these lab results, Grand Duc material will need to be processed by itself for at least two weeks on a continuous basis.

### 13.2.5 Cyanide Destruction

Cyanide destruction with SO<sub>2</sub>/Air process was performed during the processing of the bulk sample (Z230 lens) at the Doyon Mill. Approximately 50% of the residue with a percentage solid of 40% was sent to the cyanide destruction plant for a short test to validate the proposed circuit for the project. Initial concentrations ranged from 190 to 235 ppm cyanide. A retention time of approximately two hours resulted in a decrease of cyanide concentrations to near 2 ppm. Due to the limited test length, it was not possible to optimize the process and maintain the result below 2 ppm.

Additional test were performed in 2019 by SGS and CTRI, and the results show that it is possible to decrease cyanide WAD under 2 ppm. A complete audit by SGS was also conducted in 2019 to identify opportunity to maintain and improve cyanide destruction performance while increasing throughput in the mill. Recommendations have yet to be implemented in the process.

### 13.2.6 Environment Characterization

To determine the acid generation potential from Westwood ore, static tests were performed using the classic determination methods; Acid Base Accounting (ABA) and Net Acid Generation (NAG) testing.

### **13.2.6.1 Zone 2 Extension**

Bulk sample (Z230 lens) processed in July 2009 was tested to determine the acid generation potential. The bulk sample (Z230 lens) obtained a final pH of 2.15, confirming that the ore is acid generating.

### **13.2.6.2 Warrenmac and WW25 Lenses**

Leach residue samples from Warrenmac and WW25 lenses were tested and indicated that the ore is acid generating with virtually no acid neutralization potential for this corridor.

### **13.3 Applicability of Test Work**

As previously described, metallurgical testing was performed on samples from three distinct mineralized corridors and on drill core samples from the Grand Duc. A great majority of the Mineral Reserves are located in these corridors, as are the inferred, indicated and measured mineral resources. In the opinion of the authors, the samples tested are representative of the different types of mineralization. However, since there is a lot of mineral variability in the Westwood underground mine, the results shown in the previous sections only show a small fraction of what can be expected from the Westwood underground mine. Metallurgical testing should be extended to the uncovered areas where it is planned to convert Mineral Resources into Mineral Reserves.

### **13.4 Deleterious Elements**

#### **13.4.1 Zinc**

Although certain areas of the deposit are amenable to Cu-Zn flotation, this option was not retained after an economic analysis. As a result, zinc will not be recovered and will have the following consequences:

- Slight decreased gold recovery, to approximately 91% for high-sulphide ore (Westwood Corridor lenses);
- Increased consumption of cyanide but the addition of lead nitrate combined with a pre-oxidation period could minimize the impact on recovery and costs maintaining at acceptable levels.

This analysis will be revised as further information about copper/zinc grades will become available.

#### **13.4.2 Graphite**

In late 2019 (November and December), graphite was found in the secondary cyclone circulating load and also with carbon when we took the monthly inventory. We confirmed the presence of graphite with a preliminary lab analysis. Daily composite samples from November and December 2019 were sent to an external lab to evaluate the extent of the presence of graphite in the plant feed. Results have not yet been received. Gold recovery during those 2 months was lower than the rest of the year for a similar feed profile. For more information on graphite, please refer to Section 7.2.1. Lithology and Stratigraphy.

### 13.5 Gold Recovery

Table 13-13 shows the actual plant performance on Au and Ag since 2015 at the Doyon mill. These results are aligned with our expectations based on the feed mix that was fed in the plant.

The focus will be on monitoring the silver recovery and the quality of its analysis. Currently, the silver recovery was estimated at 66.8% last year with a higher silver grade.

**Table 13-13: Historical Plant Performance on Au and Ag**

	2015	2016	2017	2018	2019
<b>Head grade Au (g/t)</b>	5.3	6.1	6.7	6.1	4.8
<b>Au recovery (%)</b>	94.7	94.0	94.5	94.5	93.7
<b>Head grade Ag (g/t)</b>	N/A	7.6	4.6	4.0	8.2
<b>Ag recovery (%)</b>	N/A	70.0	N/A	83.2	66.8

Current life of mine plan assumes an average gold recovery of 92.6% for Westwood underground and 89% for Grand Duc open pit.

**14 MINERAL RESOURCE ESTIMATE**

The resource estimation (including the modelling of the 3D geology), mineralized envelopes and block model resource estimation was performed using GEMS and Vulcan. In 2019, IAMGOLD-Mine Westwood changed GEMS to Maptek Vulcan software. As a result, the 2019 resource estimate was completed using both software packages. As some veins have not been changed either by drilling or by reinterpretation, the old 2018 solids of these veins created in GEMS are used for the 2019 calculation. In few rare cases, veins that were only drilled through and involved only minor changes were modified using GEMS. Veins that were drilled in 2019 and/or re-interpreted, mineralized envelopes and their associated solid were constructed in Vulcan. In 2019, one important change was made, the mineralized envelopes were interpreted vertically instead of horizontally as in GEMS. Both were used for building the mineralized envelopes and 3D solids. The final block model resource estimation was generated by Vulcan using sub-blocking. For the first time in 2019, a resource estimation was produced on the Grand Duc project with Vulcan.

**14.1 Database**

First, a validation is conducted by the resource geologists in the drill hole database tables. The information needed to perform the resource estimation is then transferred into a separate workspace that is assigned specifically for the purpose of the resource estimation. Tables in this workspace are archived by year for further reference.

A copy of the Westwood drill holes database was made on October 7, 2019. This copy was used to produce the resource and reserve estimates presented in this report. The database included 5,984 diamond drill holes (both surface and underground holes) for a total of 1,289,713 m (drilled and planned) of which 547,281 m (42.47%) were sent to the laboratory for a total of 423,832 samples from 5,474 drill holes. No muck or channel samples were used for this estimation. Channel samples are not used for the modelling of the mineralized lenses.

**14.2 Modelling of the mineralized lenses**

Prior to 2019, geology, alteration corridors and major structures, are verified before and are taken into consideration during the modelling process. The interpretation is modelled on horizontal plans using polylines (3D rings). A drill pattern of 20 x 20 m will have 10 m spacing, 40 x 40 m drill pattern will have 20 m spacing and a drill pattern of more than 40 x 40 m, will have horizontal plans created at the elevation of the diamond drill hole intersection. The polylines created on the horizontal plans are connected using tie lines to form a 3D model. Drill hole intercepts are verified that they are within the 3D model. In 2019, some lenses were interpreted vertically and in 2020, all of the lenses will be modelled vertically.

Generally, mineralized lenses are drawn from assay results higher than 3 g Au/t on a minimum true width of 2.4 m. Intercepts of less than 3 g Au/t are sometimes included in the model. Modelling mineralized envelopes down to 3 g Au/t gives more latitude to use different cut-off grades for the resource and reserve reporting using the same 3D envelopes and block model, based on the economic criteria defined by the engineering team. 3D model direction, dip and plunge are verified against other lenses in the same corridor. In summary:

- some 3D mineralized lenses are composed only of low-grade intersections (3 - 6 g Au/t);
- some 3D ore mineralized lenses are composed of both low-grade intersections (3 - 6 g Au/t) and high-grade intersections (> 6 g Au/t);
- some 3D ore mineralized lenses are composed only of high-grade intersections (> 6 g Au/t).

Therefore, the Westwood ore body is composed of several 3D mineralized lenses separate from each other by very low grade to waste material (< 3 g Au/t). The different mineralized lenses could come from the same geological structure or from different geological structures. It is also important to note that some very low-grade intersections (<3 g Au/t) were included into some ore zone envelopes for the purpose of geological continuity, but they are considered as pillars by the engineering team when the reserve material is identified.

Extension of the mineralized zones was restricted to the lowest value between the mid-distance with the nearest drill hole and a maximum of 50 m (E-W direction) and 100 m vertically from the last drill hole information. In few cases, the lenses are stretched more 100 m and 50 m if geological information shows that they are the same structure. Ore zone envelopes were built using all available drill holes between sections 13400E and 15900E, representing 2.5 km in an east-west direction. Except Grand Duc pit that covers from 11500 to 11840E.

Table 14-1 summarizes the different mineralized envelopes associated with the three corridors of mineralization.

Table 14-1: Mineralized Envelopes - April 30, 2020

Mineralized Lenses			
Corridor	Number of lenses	Number of intersects	Mineralized envelopes
Zone 2 Extension	92	6 225 (3 092 DDH)	(Z) 200A,211A,213B,214A,215A,216B,217A-B,218A, 221A,223A,224A,225A-B,226A-C-D,228A-D-E,229A-B, 230A-B-C-E,231A,232A-B,233A,234A-C,235A,236A, 237A, 239A- B,240A,242A,243A,244A, 245A,246A,247A, 248A,249A, 250A,251A,252A,253A, 255A, 256A,257A, 258A,259A-B, 260A-C-D,261A, 262A, 264A,265A, 266A-C-D-E-F,267A,269A,270B-D-E, 271A, 272A,273A,277A, 278A-B-C-D,279A,280A, 281A, 282A,284A,285A,286A,288A,289A,290A,291A
North Corridor	16	1 227 (1458 DDH)	(CN) 08A,09A,15A,23A,25A,26A,27A,28A,31A,32A 34A,36A-B,40A-B,42A
Westwood Corridor	37	2 206 (1 442 DDH)	(WW) 10A-C-D-G-H,15A-B-C,17D,18A,19A,20A-B-C, 21A,23A,24A,25A-C-D-E-F,27A-B-C-D-E,28A, 29A-C,30A,31A,32A,33A,35A,36A,38A
<b>Total</b>	<b>156</b>	<b>9 889</b> <b>(4 379 DDH)</b>	<b>Note: One DDH may cut many zones.</b>

It should be noted that out of the 5,474 drill holes in the database, for which samples were collected, 4,379 diamond drill holes intersecting mineralization were used for the current resource and reserve estimate. A drill hole typically intersects more than one ore zone and frequently more than one mineralized corridor.

Prior 2019, the different Westwood Mine units were modelled on horizontal plans using polylines (Status Line) with 40 m spacing in GEMS. The polylines created on the horizontal plans were connected using vertical polylines (Status Line) to form a surface model. In 2019, SRK Consulting (Canada) Inc. (SRK) was commissioned by IAMGOLD Corporation to build 3D lithological model of the Westwood Mine. SRK used the mine units' codes of the database to model the 3D model with the Leapfrog implicit modelling software. The lithological model was principally based on diamond drill data, with key underground geological maps supporting the interpretation and was completed as a refined model based on the lithological units defined in Yergeau (2015) and on mine units.

The Grand Duc deposit is known since the 2005 exploration campaign done by Cambior Inc. For more information about the Grand Duc deposit, please refer to Section 7.3 Mineralization and the Figure 14-1 - Regional / Local Geology / Westwood Mine Location (Plan & Composite Longitudinal Views).

The interpretation was modelled on horizontal plans using polylines (3D rings) in GEMS. The high-grade veins were modelled with 10 to 20 m spacing and the low-grade mineralization corridor was modelled with 50 m spacing. The polylines created on the horizontal plans are connected using tie lines to form a 3D model. Drill hole intercepts are verified that they are within the 3D model. In 2019, these interpretations were transferred to Vulcan for the resource estimation.

### **14.3 Grade Capping and Drill Hole Compositing**

#### **14.3.1 Statistical Analysis**

##### **14.3.1.1 Variography**

A variographic study was performed on Doyon Zone 2 mineralized materials in the 1980s (Jutras, 1988). The goal of this study was to use Kriging as an interpolation method for the resource estimate and to compare the interpolation results to the mining data. Due to the strong gold content variability (strong pure nugget effects), to the drilling pattern which is too widely spaced (more than 15 m) and to the narrow mineralized zones, the variographic study has been unable to provide the necessary pairs of data that would be required to produce reliable semi-variograms, especially for short ranges. The Kriging interpolation method has also been very difficult to apply for the same reasons.

No variographic study has been performed on Westwood Mineralized materials. However, the Westwood Zone 2 Extension mineralization is the same as the Doyon Zone 2 mineralization. For this reason, the Kriging method has not been used for the Westwood grade estimation.

##### **14.3.1.2 Sampling Length**

A total of 44,325 assays from the 4,379 diamond drill holes intersecting mineralization were used for the April 30, 2020, resource estimation; of these 19,329 were higher or equal to 1 g Au/t.

Based on the sampling length, the distribution of assays is the following:

- <1% of samples is 0.5 m long or less;
- 74% of samples are 1.0 m long (greater than 0.5 m and less than 1,5 m);
- 22% of samples are 1.5 m long or greater.

### 14.3.1.3 Statistics of Assays

Drill hole assay intervals intersecting interpreted domains were coded in the database and used to generate statistics for each of the mineralized domains. These domains include groups of similar lenses based on lithological, structural and mineral characteristics.

Table 14-2 presents the gold raw assays statistics associated with each mineralized corridor, which was used to assess the statistical characteristics of the datasets and to help in the selection of a high-grade assay cut-off.

Table 14-2: Uncapped Gold Assay Statistics (g Au/t)

Zones		Nb. of Samples	Min	Max	Mean	Median	Std. Deviation	Coeff. of variation
Corridor	Lens							
Westwood	(Vein) All Lenses *	8,109	0.01	1 763.5	5.81	1.77	34.09	5.87
North Corridor	(Diss) CN31, CN42	15,828	0.001	197.32	1.19	0.44	4.57	3.85
	(Vein) All Lenses *	776	0.01	416.2	6.44	0.59	25.69	3.99
Zone 2 Ext	Z224, Z246, Z264	1,531	0.01	342.28	3.53	0.30	14.06	3.98
	Z265, Z266-ACDEF	554	0.01	207.12	9.89	2.01	23.45	2.37
	Z260-A, Z271, Z282, Z284	2,451	0.01	2 709.90	15.63	0.72	91.09	5.8
	Z230-ABC	2,813	0.01	1203.70	10.84	1.08	52.90	4.88
	Z232, Z233, Z234-AC	1,710	0.01	1826.57	13.52	1.26	67.75	5.01
	Z226-AD, Z239, Z242, Z243, Z244, Z288	3,040	0.01	3 772.05	12.68	0.24	86.03	6.78
	Z211, Z215-A, Z223, Z225-A, Z236, Z245, Z247, Z255,	1,068	0.01	83.15	5.66	1.45	10.70	1.89
	Z253	1,342	0.01	226.52	6.59	1.07	19.57	2.97
	Z226-C, Z235 Z281, Z285	766	0.01	239.33	5.04	1.05	15.21	3.02
	All Lenses *	4,349	0.01	2880	6.37	0.56	53.04	8.33

\* The lenses listed separately for each corridor are not included in the All Lens assay statistics.

#### 14.3.2 Grade Capping

Based on the lognormal graphs, Zone 2 Extension assays were capped to a grade X thickness value of 150 g X m/ thickness for 1.0 m lengths, which translates to 100 g Au/t for 1.5 m lengths and 300 g Au/t for 0.5 m lengths. North Corridor assays were capped to a grade X thickness value of 60 g X m/ thickness for 1.0 m lengths, which translates into 40 g Au/t for 1.5 m lengths, 60 g Au/t for 1.0 m lengths and 120 g Au/t for 0.5 m lengths. The Westwood Corridor is mineralized over the entire width of the zone, compared to the previous horizons that consist of centimetre veins. Therefore, the assay grades were capped at 40 g Au/t in the Westwood Corridor, independent of the length of the assays. See Table 14-3 for values and lenses.

The grade capping values shown in Table 14-3 was determined based on histogram and probability plot statistics, the continuity of assay distribution and Westwood Mine Geologists' experience. The grade capping values were applied to raw assay values, prior to compositing.

**Table 14-3: Grade Capping Values (g Au/t) - April 30, 2020**

Zones		Grade Capping g Au/t
Corridor	Lens	
Westwood	All Lens	40**
North Corridor	CN31, CN42	20**
	All Lens	60*
Zone 2 Ext	Z224, Z246, Z264	50*
	Z265, Z266 ACDEF,	99*
	Z260, Z271, Z282, Z284 Z232, Z233, Z234-AC	150*
	Z226-AD, Z230-ABC, Z239, Z242, Z243, Z244, Z288	250*
	Z211, Z215, Z223, Z225, Z236, Z245, Z247, Z255	70*
	Z253	80*
	All Lens	99*
Grand Duc	2GD Diss	3***
	Veins: w2_1, w2_2, w2_3, w3_1, w3_2, w3_3, w3_4, w5_1	30***

\*The mineralized structures within the Zone 2 Extension and the North Corridor are generally less than 15 centimetres thick. Only this structure is gold-bearing and the rest of the sample is waste, which brings a variable percentage of dilution depending of the length of the sample. For this reason, the grade capping value is variable depending on the sample length to compensate for dilution. The grade capping is applied on the metal factor (Metal factor = Grade\*Thickness) and then calculated for capped grade (Capped Grade = Capped Metal factor / thickness).

\*\* The Westwood Corridor and CN31 and CN42 are generally mineralized throughout the entire thickness. Therefore, the same capping value is used for all sample length.

\*\*\*Grand Duc are high grades veins in disseminated low-grade envelope

### 14.3.3 Drill Hole Compositing

Once the original assay values were capped, the assays were composited along the hole. Due to the fact that most mineralized veins represent less than 10% (5-15 cm wide) of the minimum ore lens width 2.4 m and those lenses have mostly the same width, one composite per drill hole per rock type (veins) was used for the estimation purpose (single composite estimation). With this method, even though each drill hole intersection is of different length (based on the angle between the drill hole and the ore lens), each drill hole intersection has the same weight. These final composites were used for block model grade estimation.

Table 14-4 and Table 14-5 present the statistics for the uncapped and capped gold composites. The resource and reserve estimation has been performed with the capped gold composites.

**Table 14-4: Statistics of the Uncapped Gold Composites (g Au/t)**

Zone	Nb. of Composites	Avg Length (m)	Min	Max	Mean	Median	Std. Deviation
Zone 2 Ext.	6,162	3.68	0.01	1027.76	7.84	2.00	29.41
North Corridor*	1,454	22.13	0.01	251.87	1.71	0.6	8.65
Westwood Corridor (veins)	1,928	3.82	0.01	393.70	4.64	2.48	12.01
Westwood Corridor (VMS-type)	278	4.70	0.01	251.80	7.97	2.02	24.17

**Table 14-5: Statistics of Capped Gold Composites Used for Grade Estimation (g Au/t)**

Zone	Nb. of Samples	Avg Length (m)	Min	Max	Mean	Median	Std. Deviation
Zone 2 Ext.	6,162	3.68	0.01	125.60	6.02	2.00	11.02
North Corridor*	1,454	22.13	0.01	46.88	1.32	0.6	2.99
Westwood Corridor (Vein-type)	1,928	3.82	0.01	27.41	3.81	2.48	3.98
Westwood Corridor (VMS-type)	278	4.70	0.01	21.85	3.74	2.02	4.22

#### 14.4 Specific Gravity

From the beginning of the project up to April 30, 2020, resource estimate, 17,690 density tests were performed at the former internal Doyon laboratory and ALS Laboratory, of which 2,947 were located in mineralized lenses. The density tests were performed by the immersion method. The average value for Zone 2 Extension is 3.01 t/m<sup>3</sup> (713 samples) and 2.97 t/m<sup>3</sup> for the North Corridor (82 samples). There is the tendency to take density samples in the more sulphide rich veins and the density analysis was taken from only few lenses that were not representative of the entire mineralized zones. To be conservative, a density of 2.85 t/m<sup>3</sup> is used to estimate the tonnage of the Zone 2 Extension and North Corridor lenses. This seems reasonable since mineralization is associated with the same kind of veins that was mined at the Doyon Mine where 2.85 t/m<sup>3</sup> was used as the average density, with good reconciliation results with mining and milling.

A total of 2,152 density measurements were taken from the Westwood Corridor, 1,240 samples from the vein-type mineralization and 912 samples from the sulphide rich zones. The averages of those tests are 3.04 t/m<sup>3</sup> for the vein-type and 3.54 t/m<sup>3</sup> for the sulphide lenses. As there are only a few drill holes in each lens and these holes are too widely spaced in narrow vein-type mineralization, a conservative density of 2.9 t/m<sup>3</sup> was used to estimate the tonnage of the vein-type and semi massive mineralization. For the massive type of mineralization, an average value of 3.6 t/m<sup>3</sup> was used.

**14.5 Block Modelling**

Block modelling is made using the Vulcan software packages. One block model is constructed for the entire Westwood deposit. The geologists are responsible for updating the mineralized 3D models with the new intersections at the completion of every diamond drilling campaign. Existing excavations like developments and stopes are not used for updating the modelling of the mineralized lenses but are used for the block model update. The resource geologist create a polygon layer in Vulcan for each production year and to take out the resource related to this mining from the block model.

Interpolations of grades in the block model are performed using the Inverse Distance Squared Technique (ID<sup>2</sup>) using the capped composite inside each mineralized zone (hard boundary).

The parameters of this block model are shown in Table 14-6.

**Table 14-6: Block Model Parameters**

<b>Block Model Parameters - ID<sup>2</sup> Model</b>			
<b>Parameters</b>	<b>East</b>	<b>North</b>	<b>Elevation</b>
Coordinates Origin	13600	5750	2500
Block Size	1	1	1
Number of blocks	2250	900	2500
Rotation	90	0	0

Different attributes, listed in Table 14-7, were used to calculate and to create the block model.

Table 14-7: Block Model Attributes

Block Model Attributes - Apr. 2020	
Attributes	Description
Zone	Name of vein
Density	Specific Gravity
Au_id2	ID2 Model - g Au/t uncapped
Material	Coding for material inside the Bousquet fault corridor
AU-CAP15	ID2 Model - g Au/t capped + treatment of high gold value
AU_CAP_id2	ID2 Model - g Au/t capped
CATEG	Coding for type of resources, reserves
nb_ddh	Number of drill hole used to interpolate bloc
Mined_out	Coding for mined material

#### 14.6 Grade Estimation Methodology

The Westwood grade estimation was performed using the Inverse Distance Squared Technique (ID<sup>2</sup>) using Vulcan. The grade estimates for gold were generated using the capped composites inside each mineralized zone (one composite per drill hole per mineralized zone). Only composites within a solid could be used to estimate the grade of the mineralized zone (hard boundary) to avoid smearing gold grade between mineralized lenses and waste.

The resource estimates were prepared using a sample search approach within an ellipse. The search ellipses are not determined using variograms. Anisotropic search ellipses are constructed manually for each zone and were aligned parallel to the mineralized zones along their direction, dip and plunge. Search ellipse profiles used in the grade estimate are shown in Table 14-8. For each sector, parameters are the range of radius, direction, dip and plunge of all zones in this sector.

Table 14-8: Search Ellipse Parameters

Search Ellipses Parameters					
Location	Sector	Radius (m)	Direction	Dip	Plunge
West of Bousquet Fault	Zone 2 Extension	X= 20-150 Y= 10-75 Z= 40-250	67° - 116°	48° S- 85° N	55° West to 55° East
	North Corridor		86° - 110°	67° - 87° S	74° West to 90°
	Westwood Corridor		78° - 116°	67° - 85° S	57° West to 90°
East of Bousquet Fault	Zone 2 Extension	X= 20-200 Y= 10-7 Z= 40-300	85° - 105°	66° - 85° S	48° West to 90°
	North Corridor		64° - 103°	68° S- 90°	70° West to 90° East
	Westwood Corridor		66° - 95°	67° - 85° S	67° West to 87° East

The grades were estimated by only one interpolation pass, using a minimum of one and a maximum of five composites to estimate individual blocks. Size of the ellipses are adjusted so that the majority of blocks are interpolated using a minimum of two composites.

In some zones, the distance between drill holes did not allow two composites to be used to calculate individual blocks Table 14-9 shows the lens, tonnes, grade and ounces that were calculated using only one composite. It represents only 0.07% of the total inferred tonnes and ounces, and 0.01% of the total indicated + measured tonnes and ounces.

**Table 14-9: Resources using only One Drill Hole**

Lens	Category	Block Interpolated With One Intersect		
		Tonnes (000's)	Gold (g/t)	Gold (Oz) (000's)
WW10-A	Measured	0.4	14.1	0.2
	Inferred	0.1	5.6	0.0
WW27-C	Inferred	0.3	13.8	0.1
WW32	Inferred	3.9	6.9	0.9
Total indicated+Measured		0.4	14.1	0.2
Total Inferred		4.3	7.3	

#### 14.7 Treatment of High Gold Values

As stated earlier, the average estimate of some of the lenses are based on few drill holes. In these cases, even though the values of the assay of these drill holes were already cut by a grade capping value (see section 14.3), it is possible that the estimate for a specific lens could result in higher gold values than would be expected in reality during the mining phase.

As a safety factor and based on what is known from the drilling and mining history at Doyon and Westwood Mines, all blocks categorized as inferred in the block model and exceeding 15 g Au/t were capped at 15 g Au/t when the grade of the total inferred lens exceeded 15 g Au/t .

No such capping has been done on indicated or measured material, since the level of confidence in the continuity of mineralization is high for these zones.

#### 14.8 Resource Classification

Mineral Resources are classified using the following criteria:

- Quality and reliability of drilling and sampling data;
- Distance between sample points;
- Confidence in the geological interpretation;
- Continuity of the geologic structure and the grade within this structure;

- Reasonable prospects for eventual economic extraction.

The drilling technique (diamond drill), the location of the sampling points (based on survey of collars and down hole surveys), the geological logging, the sampling method, and the quality of the assay data (including QA/QC) meet industry standards and are considered to be of good quality.

Under the CIM Definition Standards for Mineral Resources and Mineral Reserves (CIM, 2014) an *inferred resource* is defined as:

*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 is based on limited information and sampling gathered through appropriate sampling techniques from locations such as outcrops, trenches, pits, workings and drill holes.*

Also, an *indicated resource* is defined as:

*An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors (mining, processing, metallurgical, infrastructure, economic marketing, legal, environmental, social and governmental factors) in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.*

Finally, a *measured resource* is defined as:

*A Measured Mineral resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors (mining, processing, metallurgical, infrastructure, economic marketing, legal, environmental, social and governmental factors) to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade or quality continuity between points of observation.*

Resource classification is done manually by the Westwood geologists and resource managers without applying any mathematical or numerical algorithm. By default, all the mineralized lenses are classified as inferred resources until the criteria described in Table 14-10 are validated by the Geologists and the Resource Managers.

**Table 14-10: Criteria to Upgrade Inferred Material to Indicated/Measured Categories**

Criteria	Inferred material can be transfer into	
	Indicated Category	Measured Category
Sufficient geological continuity	Based on QP experience	Based on QP experience
Sufficient grade continuity	Based on QP experience	Based on QP experience
Drilling pattern	20m x 20m or closer	20m x 20m or closer
Need a mining excavation to confirm the mineralisation	No	Yes

Based on these definitions and criteria, more than half of the resources at the Westwood Mine are classified as inferred. The drilling density is not sufficient for a higher level of confidence for the continuity of most of the identified zones and for modelled structures located below Level 132-00 west of the Bousquet Fault and below Level 104-00 east of the Bousquet Fault. Around 20% of the resource are categorized as indicated and measured below these levels.

Above Level 132-00 West and Level 104-00 East, the majority of the lenses are drilled at 20 x 20 m to 30 x 30 m grid and show good continuity. Most of these lenses or part of these lenses are classified as indicated or measured resources (see section 14.9), while some of these lenses or part of these lenses are classified as reserves (see section 15).

Due to the uncertainty that may be attached to inferred Mineral Resources, it cannot be assumed that all or any part of it will be upgraded to an indicated or measured Mineral Resource with continued delineation. Confidence in the estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure.

Blocks are identified as inferred, indicated and measured resources in the Maptek-Vulcan database in a CATEG block model. Polygons are used to update the block model with the appropriate material classification.

**14.9 Resource Estimates**

**14.9.1 Calculation of Economic Cut-Off Grade**

Mineral Resources must have reasonable prospects for eventual economic extraction (CIM, 2014). A Mineral Resource is an inventory of mineralization that under realistically assumed and justifiable technical and economic conditions might become economically extractable. The following economic parameters, based on the 2019 Life-of-Mine update, were used to estimate Mineral Resources:

- Gold price: US\$1,200/oz Au;
- Exchange rate: USD1.00 = CAD1.25.

The calculated cut-off grade for the Mineral Reserve estimate is equal to 5.5 g/t Au. This cut-off grade is based on the optimization of the long-term mining plan and serves as a seed value for mine design and analysis. Resource estimates and cut-off grades are then revised as needed to meet economic targets. Incremental ore is generally not included in long-term Mineral Resource estimates but may be added, as mine designs are refined.

**14.9.2 Mineral Resource Reporting**

Table 14-11 presents the official Mineral Resource estimates at the Westwood Mine. This table also compares the December 31, 2018, Mineral Resource estimate to the December 31, 2019, Mineral Resource estimate and to the current April 30, 2020, Mineral Resource estimate. The 2019 and 2020 Mineral Resource estimates are based on a cut-off grade of 5.5 g Au/t before recovery, over a minimum true width of 2.4 m and are grouped by mineralized corridors. No mining dilution is included in these estimates. In 2018, the minimum true width of mineralized lenses changes from 2 m to 2.4 m to fit the minimum mining width. Therefore, cut-off grade was readjusted from 6 g/t to 5.5 g/t. The same cut-off grade was used in 2019 and 2020. In 2019, the Grand Duc Mineral Resource estimate was added to the Westwood Mine Mineral Resource Estimate. The Mineral Resource of Grand Duc is based on a cut-off grade of 0.44 g Au/t with a pit shell of US\$1,500.

The resources presented in Table 14-11 are inclusive of the Mineral Reserves presented in Section 15, without any engineering parameters (dilution, mining recovery, etc.) applied. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

Table 14-11: Westwood Resource Estimation (April 30, 2020)

		Dec. 31, 2018 (Minimal True Width 2.4m) Westwood (Cut-off grade of 5.5 g Au/t)			Dec. 31, 2019 (Minimal True Width 2.4m) Westwood (Cut-off grade of 5.5 g Au/t) Grand Duc (Cut-off grade of 0.44 g Au/t)			Apr. 30, 2020 (Minimal True Width 2.4m) Westwood (Cut-off grade of 5.5 g Au/t) Grand Duc (Cut-off grade (ROM) of 0.44 g Au/t)			Category	Mineralised Zone	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces
Measured	Zone 2 Extension	804,000	12.9	334,000	757,000	13.0	317,000	736,000	14.6	346,000											
	North Corridor																				
	Westwood	203,000	7.8	51,000	168,000	7.8	42,000	205,000	8.5	56,000											
	Warrenmac																				
<b>SUB-TOTAL MEASURES RESOURCES</b>		<b>1,007,000</b>	<b>11.9</b>	<b>385,000</b>	<b>925,000</b>	<b>12.1</b>	<b>359,000</b>	<b>941,000</b>	<b>13.3</b>	<b>402,000</b>											
Indicated	Zone 2 Extension	2,433,000	11.6	910,000	2,396,000	11.7	899,000	2,232,000	13.6	972,000											
	North Corridor	49,000	8.6	14,000	45,000	9.2	12,000	59,000	9.0	17,000											
	Westwood	687,000	8.0	177,000	623,000	8.1	163,000	486,000	8.5	133,000											
	Warrenmac																				
	Grand Duc				1,069,000	1.0	34,000	1,046,000	1.0	33,000											
<b>SUB-TOTAL INDICATED RESOURCES</b>		<b>3,169,000</b>	<b>10.8</b>	<b>1,101,000</b>	<b>4,133,000</b>	<b>8.3</b>	<b>1,108,000</b>	<b>3,823,000</b>	<b>9.4</b>	<b>1,155,000</b>											
<b>TOTAL INDICATED + MEASURED RESOURCES</b>		<b>4,176,000</b>	<b>11.1</b>	<b>1,486,000</b>	<b>5,058,000</b>	<b>9.0</b>	<b>1,467,000</b>	<b>4,764,000</b>	<b>10.2</b>	<b>1,557,000</b>											
Inferred	West of Bousquet Fault - Zone 2 Ext.	1,658,000	11.4	610,000	1,657,000	11.4	609,000	1,936,000	11.2	696,000											
	East of Bousquet Fault - Zone 2 Ext.	970,000	9.0	279,000	970,000	9.0	279,000	890,000	9.7	279,000											
	West of Bousquet Fault - North Corridor	96,000	11.8	37,000	96,000	11.8	37,000	143,000	8.5	39,000											
	East of Bousquet Fault - North Corridor	398,000	8.0	102,000	398,000	8.0	102,000	498,000	7.6	122,000											
	West of Bousquet Fault - Westwood	309,000	8.6	85,000	309,000	8.6	85,000	206,000	7.9	53,000											
	East of Bousquet Fault - Westwood	2,063,000	8.6	567,000	2,063,000	8.6	567,000	2,098,000	8.4	565,000											
	West of Bousquet Fault - Warrenmac																				
	Grand Duc				681,000	0.9	19,000	613,000	0.9	17,000											
<b>TOTAL INFERRED RESOURCES</b>		<b>5,494,000</b>	<b>9.5</b>	<b>1,680,000</b>	<b>6,174,000</b>	<b>8.6</b>	<b>1,698,000</b>	<b>6,384,000</b>	<b>8.6</b>	<b>1,771,000</b>											

1. CIM definitions were followed for Mineral Resources Classification;
2. All blocks categorized as inferred and exceeding 15 g Au/t were capped at 15 g Au/t when the grade of the total inferred lens exceeded 15 g Au/t;
3. A minimum width of 2.4 metres was used;
4. Measured and indicated resources are inclusive of proven and probable reserves > 5.5 g Au/t (no dilution);
5. Grand Duc cut-off grade > 0.44 g Au/t (pit shell US\$1,500);
6. See Section 14.9.1 for the economic parameters used.

For more information about the three different Westwood Mine zones (Zone 2 Extension, North Corridor and Westwood), refer to Section 7.3 - Mineralization and Figure 7-4- Geological Map - Plan View of Level 132-00.

There are no known environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that can materially affect the Mineral Resource estimates.

#### **14.9.3 Mineral Resource Evolution**

At the end of 2019, due to the delay to finalize the resource block model, the year-end 2019 resource and reserve estimates were done with the 2018 resources block model less the depletion of the material mined out done during 2019. As shown in Figure 14-1 and Figure 14-2, the depletion of the 2018 resource resulted in a global loss of 1,000 oz in Mineral Resources but includes a gain of 19,000 oz in Inferred resources and a gain of 34,000 oz in Indicated and Measured resources due to the addition of the Grand Duc resource estimate.

During 2019, an important delineation and definition diamond drill program, including underground development in the ore zones, were performed in the Westwood underground zones and Grand Duc surface area. As shown in Figure 14-1 and Figure 14-2, the 2019 drilling and modelling campaign and the 2020 resources estimate have resulted in a gain of 75,000 oz in Inferred resources and a gain of 108,000 oz in Indicated and Measured resources when compared to 2019. IAMGOLD is confident that this work will provide enough information on geological and grade continuity to be able to upgrade the classification of other parts of the resources from inferred to indicated and measured categories in 2020-2021.

Figure 14-1: Westwood Resources Evolution from 2006 to April 2020

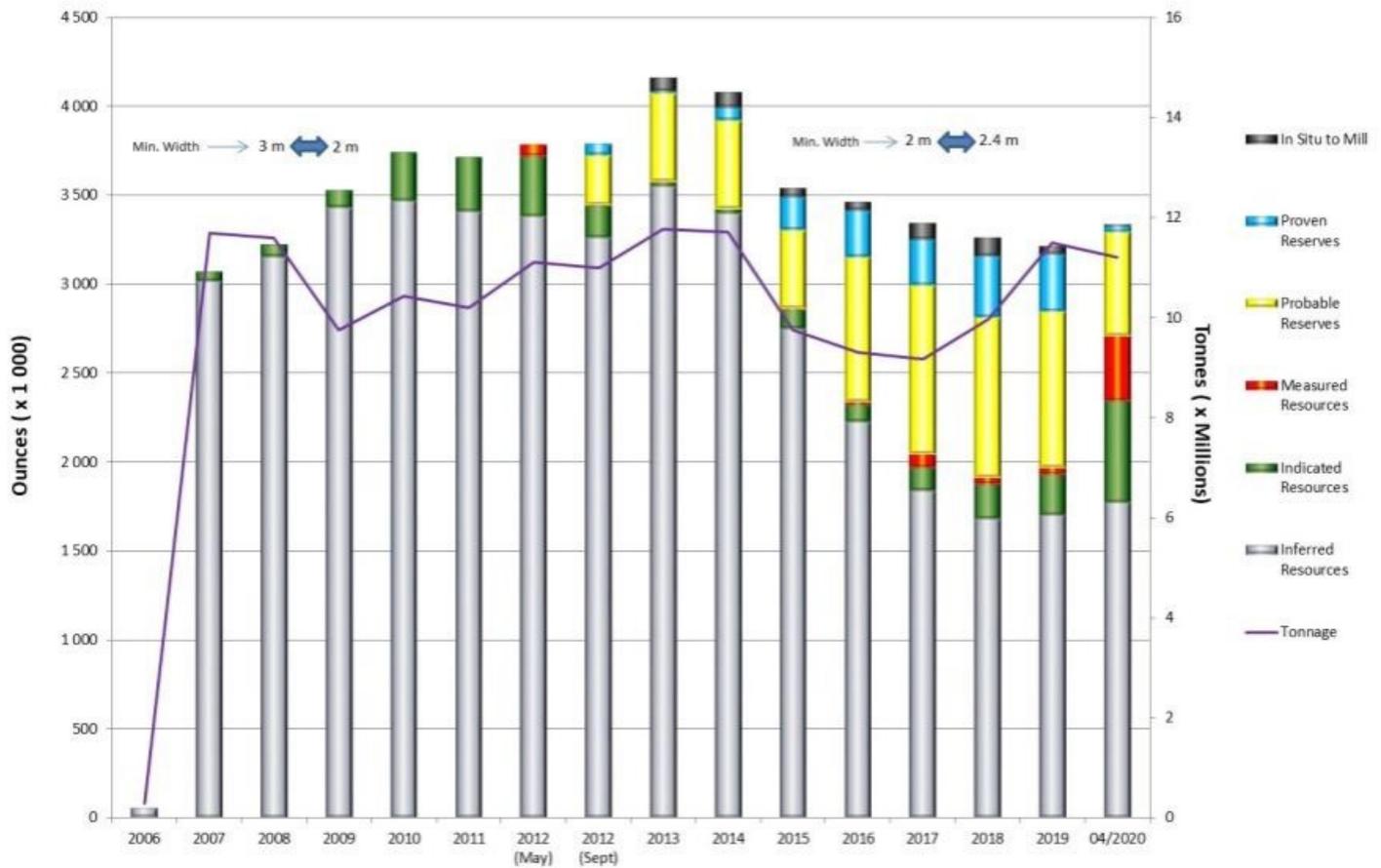
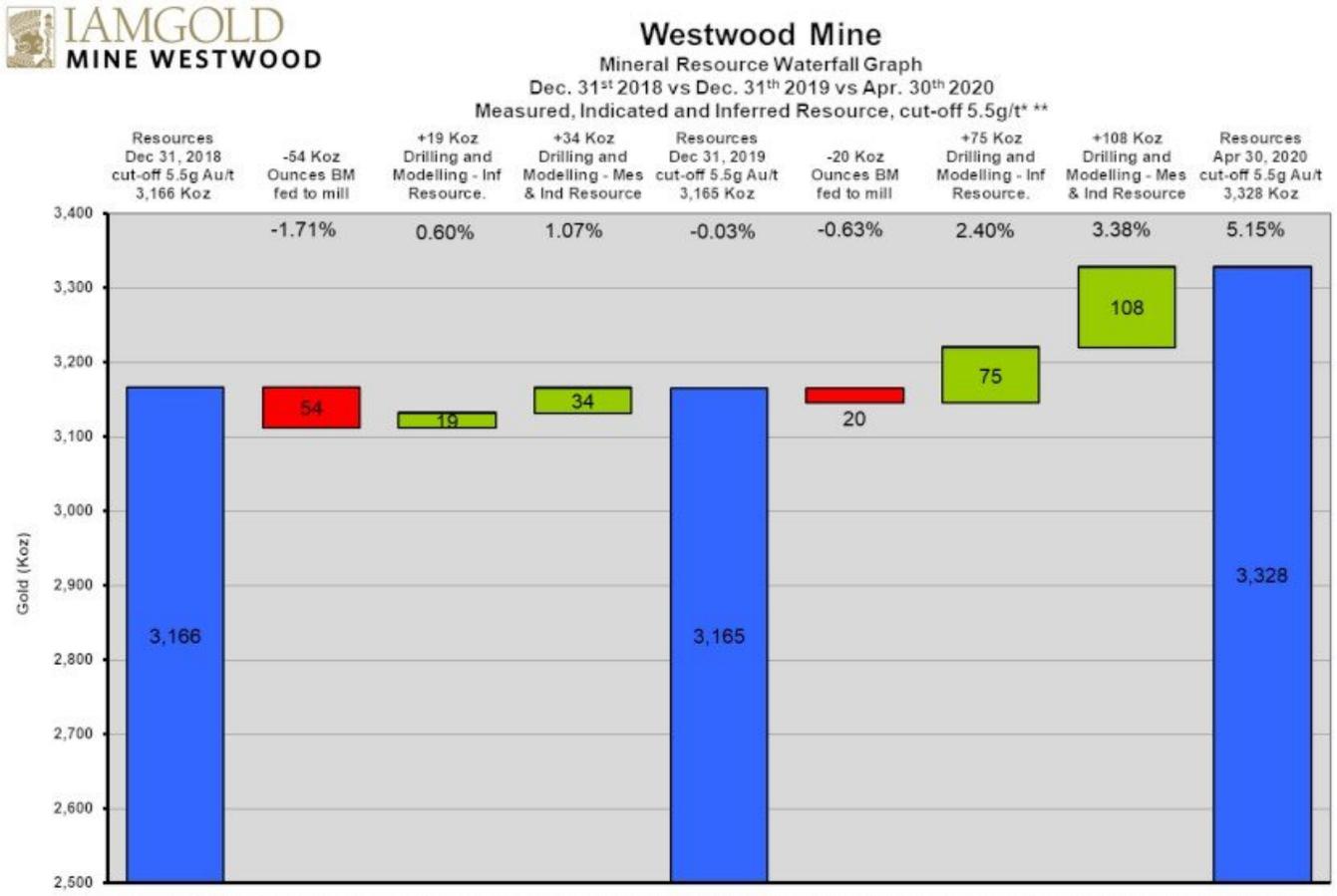


Figure 14-2: Mineral Resource Waterfall Graph - December 2018 vs December 2019 vs April 2020



Verified and approved by Donald Trudel(OGQ no.813), Responsible of Mineral Resources - Westwood Mine, Qualified Person as defined by the Canadian National Instrument 43-101

\* Probable and proven reserve ounces are included in the indicated and measured resources

\*\* Undiluted.

NOTE: Mineral Resource is based on October 7, 2019 database.

**14.9.4 Base Metals**

The Westwood Corridor and North Corridor contain massive to semi-massive sulphides lenses and polymetallic sulphide veins. These lenses and veins contain silver, copper and zinc concentrations, as well as sometimes traces of lead. Their recovery is not possible with the current milling process. Only gold and silver are currently recoverable. The Warrenmac lens was a massive sulphide lens containing base metals; it was mined out entirely between fall 2012 and spring 2014. The WW17-D lens is also massive sulphide lens containing base metals and it is being mined since 2019. Base metal recovery could be considered if grades or economic assumptions change.

**14.9.5 Resources inside the Bousquet Fault Corridor**

The Westwood Engineering team estimates that mineralization could be mined within the transition zone on either side of the Bousquet Fault. However, the mineralized material located inside this transition zone was not removed from the resource statement for the following reasons:

- Parts of mineralized zones (WW22, WW20-C and Z271 lenses) inside this corridor were mined out in 2013-2014 without any ground support problem. Since 2019, the WW17-D lens is being mined and high dilution occurred in stopes inside the Bousquet Fault Corridor;
- The Bousquet Fault has been crossed nine times so far by drifts on main levels without any ground support problem. In 2017, a major rock burst occurred on Level 132-02 when the development team tried to pass through the Bousquet Fault. From 2017, all developments through the Bousquet Fault were postponed.

Seventeen other lenses also have part of their tonnage inside the Bousquet Fault corridor (Z225-B, Z234-C, CN08-A, CN31, CN42, WW10-C, WW15-A, WW15-B, WW15-C, WW18, WW20-A, WW20-B, WW25-D, WW25-E, WW25-F, WW36, WW38). These lenses are not included in the following table since all the tonnage is under the cut-off grade of 5.5 g Au/t.

Table 14-12: shows the resources located inside the Bousquet Fault corridor using a cut-off grade of 5.5 g Au/t. They represent 6.94% of inferred resources and 2.6% of indicated + measured resources.

Table 14-12: Resources inside the Bousquet Fault Corridor

Lens	Inside Bousquet Fault Transition Zone			
	Category	Tonnes (000's)	Gold (g/t)	Gold (oz) (000's)
Z200-A	INFERRED	1	6.81	0
Z215-A	INFERRED	1	8.16	0
Z223-A	INFERRED	11	8.93	3
Z230-B	INFERRED	14	10.63	5
	INDICATED	10	14.70	5
Z246-A	INDICATED	0	5.97	0
Z253	INFERRED	36	8.36	10
Z260-D	INFERRED	0	12.60	0
Z271-A	INFERRED	1	12.09	0
	INDICATED	2	15.27	1
	MEASURED	1	18.18	1
Z273	INFERRED	0	11.92	0
CN15	INFERRED	2	9.52	1
CN40-A	INFERRED	1	5.79	0
WW10-G	INFERRED	10	13.50	5
WW15-A	INDICATED	4	6.57	1
WW15-B	INFERRED	1	5.97	0
WW17-D	INFERRED	9	5.97	2
	INDICATED	8	9.50	2
	MEASURED	4	7.24	1
WW25-D	INDICATED	9	9.78	3
WW25-E	INFERRED	36	8.88	10
WW38	INDICATED	2	6.85	0
Total indicated+Measured		40	10.98	14
Total Inferred		123	9.41	37

1. CIM definitions were followed for Mineral Resources Classification;
2. A minimum width of 2.4 metres was used;
3. Numbers may not add due to rounding;
4. (Cut-off = 5.5 g Au/t and inferred lenses capped at 15 g Au/t).

#### 14.10 Validation of Results

##### 14.10.1 Composites vs Block Grades

A common way to validate grade estimation is to compare the average grade of the samples used in the estimate with the estimated grade of the blocks interpolated. If the drilling pattern is regular (no clustering of the data) and there is no distortion in the grade distribution, the two populations should show similar mean values. Table 14-13: Composite vs Block Model (lenses not capped at 15 g Au/t) details the average gold grade of individual capped composites and the blocks interpolated for each mineralized zone with no low cut-off applied.

These results demonstrate that the block grades are lower compared to the composite grades for all mineralized bodies. This difference is probably due to a lack of data and a wider spaced drilling pattern in the border area, where the grade is lower than the centre of lenses. Since the block interpolation for the CN31 large corridor was done with different parameters than the ones used for the other zones, the composite average grade for all the zones cannot be compared to the block grade estimate (all the zones).

**Table 14-13: Composite vs Block Model (lenses not capped at 15 g Au/t)**

Average Composite Grade vs. Block Grade - (g Au/t)			
Zone	Composite average Grade (all composite)	Block Grade estimate (all blocks)	Block vs. Composite
Zone 2 Extension	6.02	5.2	-14%
North Corridor	1.32	0.95	-28%
Westwood Vein-type	3.8	3.22	-15%
Westwood VMS-type	3.74	3.3	-12%

**14.10.2 Volume of the Wireframes vs Volume of the Block Model**

As shown in Table 14-14 the reported volumes are similar between the wireframes and the block models. The differences are negligible.

**Table 14-14: Volume Comparison**

Comparison between the Wireframes Volumes and the Block Models (all grade)			
Zone	Wireframes Volume (m <sup>3</sup> )	Block Model Volume (m <sup>3</sup> )	Block Models vs. Wireframes
Zone 2 Extension	7,995,758	7,994,688	99.99%
North Corridor	25,227,449	24,958,642	98.93%
Westwood	7,890,889	7,890,865	99.99%
Total	41,114,096	40,844,195	99.34%

**14.11 Evaluation of Geological Risks**

Overall, the Westwood inferred resource estimate has a low risk with respect to data quality. However, the density of data in most of the area is not sufficient to have a good level of confidence in the tonnage and grade estimates for this type of mineralization, especially for local estimates. Locally, indicated and measured resources can be delineated near the existing underground openings. It is important to mention that more information is required to increase the confidence level and to delineate more indicated and measured resources.

At this stage of the mine, 54% of the resources are in the inferred category, and can be identified because of the assumed, but not verified, geological continuity of the zones. The quantity and grade can be estimated on the basis of geological evidence and limited sampling data due to the large drill hole spacing (Table 14-15).

**Table 14-15: Risk Matrix**

Westwood Resource Risk Factors		
Risk area	Risk Rating	Comments
Drilling technique	Low	100% Diamond drilling
Logging	Low	Geology of the area well understood.
Drill sample recovery	Low	Core recovery excellent, almost 100%
Sub-sampling technique	Low	Sample intervals appropriate. Half core used for assays except where the drilling grid is less than 80 m x 80 m where the entire core is sent to the lab.
Quality of global assay data	Low	When using number of data, average of first and second assay are about the same.
Quality of individual assay data	Low to High	Low on global and high on local scale (due to visible gold).
Location of data points	Low	Drill collar surveyed. All holes also have downhole surveys every 50 m (Reflex)
Density	Medium	Similar rock type than Doyon Mine for Zone 2 Extension and North Corridor (more density measurements required to confirm), Medium for Westwood Corridor where we have semi-massive to massive sulphide lens.
Compositing	Low	Composites weighted by zone width. Zone width generally constant between 2.4 m to 3.8 m.
Geological interpretation	Low to Medium	Good confidence in the direction and dip of the zones, which are more or less parallel to the foliation, like zones 1 and 2 in the volcanic rocks at Doyon Mine.
Geological continuity	Low to High	Risk is high for continuity and influence of individual drill holes where the drilling grid is more than 40 m x 40 m. Continuity is only assumed but not verified.
Tonnage estimation	Low to High	Dependent of the continuity of the zones and associated to the drilling grid.

Grade estimation	Low to Medium for global estimate. High for local estimate	Grade is applied only to each lens and not the whole corridor, which consists in a conservative approach. Since 2016, the average dilution is 85% with an assigned grade of 0.5 g Au/t. This value is conservative since InnovExplo recommended that the grade dilution could be between 0.5 and 1 g Au/t (InnovExplo, 2016). For zones with medium to high density of drill holes, the grade estimation seems good, but risk is high for zones with low density of drill holes.
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## **15 MINERAL RESERVE ESTIMATES**

### **15.1 Reserve Definition**

The CIM Definition Standards for Mineral Resources and Mineral Reserves (CIM, 2014), provides the following definition of Mineral Reserve:

"A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of modifying factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified."

The definitions also state that:

"Mineral Reserves are those parts of Mineral Resources which, after the application of all mining factors, result in an estimated tonnage and grade which, in the opinion of the Qualified Person(s) making the estimates, is the basis of an economically viable project after taking account of all relevant modifying factors. Mineral Reserves are inclusive of diluting material that will be mined in conjunction with the Mineral Reserves and delivered to the treatment plant or equivalent facility."

The following sections summarize the mining factors used to determine the portion of the Mineral Resource that can be classified as Mineral Reserves.

### **15.2 Financial Parameters**

The current reserve estimate is based on long-term assumptions of gold price at US\$1,200 with an exchange rate of CAD/USD 1.25, parameters slightly different from those used for planning. Silver credits of CAD\$22/oz. were assumed.

### **15.3 Engineering Methods and Parameters**

Each mining block that was converted from resources to reserves has been evaluated with an economic analysis by an external consultant and has been verified by the IAMGOLD. Parameters used in the economic analysis include:

- Infrastructure required to access the mining block;
- Appropriate mining method/parameters (e.g., dilution, recovery);
- Appropriate revenue and cost factors.
- Geotechnical considerations based on previous gained experiences and current data available.

Economic analyses are generally performed on a full-cost basis, including administration/support cost, depreciation, and capital expenses. The current five-year plan served as primary reference for these analyses. Due to the nature of the Westwood deposit, mining parameters and cost analyses are highly variable. Critical elements include block dimensions, expected ground conditions, mining method selected, distance from infrastructure, dip of the ore, etc. Further details are provided in Sections 16, 17 and 21.

Mining blocks with positive economic analyses are classified as reserves. The engineering and the geology teams highlighted the economic blocks as reserves using polygons and clipping boundaries in the Deswik software. Tonnage and grades of all reserve blocks were afterwards calculated using the Deswik Interactive Scheduler module.

The cut-off grade for reporting the Mineral Reserves for the underground deposit is based on the following parameters:

- Gold price: US\$1,200/oz Au;
- Exchange rate: USD1.00 = CAD1.25;
- Milling Recovery: 92.6%;
- Mining costs: CAD\$172/t of ore;
- Milling costs: CAD\$24/t of ore;
- G&A: CAD\$22/t of ore.

Operating costs from 2019 were used for the cut-off grade calculation. For dilution and mine recovery, refer to section 15.4.

The calculated cut-off grade for Mineral Reserves for the underground deposit is 5.5 g/t Au (diluted). However, individual stopes will be evaluated based on the current gold price and exchange rate as well as the sustaining capital requirements. Stopes outside the actual Mineral Reserves could potentially be added to the mine plan if profitable.

At the end of 2019, a small open-pit deposit was put in operation to increase the capacity to supply the ore processing plant. Contactors at a fixed operating cost per ton operate this small satellite deposit. Economic parameter assumptions utilized to estimate the costs are summarized in Table 15-1.

**Table 15-1: Summary of Grand Duc Pit Optimization Parameters & COG (all amounts in CAD)**

Rock type	Unit	CIL Over Burden	Rock
Metallurgical recovery	%	0	89
<b>Total processing cost</b>	\$/t treated	0	15.56
Closure Plan (TSF and Installation)	\$/t treated	0	2.89
G&A Cost Operation	\$/t treated	0	3.20
<b>Total Ore Based Cost</b>	<b>\$/t treated</b>	<b>0</b>	<b>23.81</b>
Mining dilution	%	0	10%
<b>Break Even Mill Feed COG</b>	<b>g/t Au</b>	<b>0</b>	<b>0.56</b>

**Reference Mining Cost by Deposit**

Rock type		Over Burden	Rock
Total Mining Cost (Waste)	\$/t	3.5	7.00
Total Mining Cost (Ore)	\$/t	0	7.80

**15.4 Reserve Estimates**

Based on these definitions, a portion of the indicated resources was converted into probable reserves and a portion of the measured resources into proven reserves as of April 30, 2020. The Westwood Mine Mineral Reserves as of April 30, 2020, are presented in Table 15-4. This table also compares the December 31, 2018, reserve estimation and the December 31, 2019, reserve estimation to April 30, 2020, reserve estimation. All estimates are based on a minimum true width of 2.4 m and are grouped by mineralized corridors.

The 2018 mining dilution averaged 64% (applied on tonnage) while the 2019 mining dilution average was 88%. Dilution forecasts applied to the mineralized zones are based on historical data obtained from stopes reconciliation mined from 2016 to 2019. Data have been grouped according to the corridors (Westwood, Zone 2 and North Corridor) and their positioning in relation to the Bousquet Fault in order to be as representative as possible of ground conditions. The minimum and maximum dilution are 46% and 99% respectively. In cases where historical data were insufficient to be representative, the historical average dilution from all the zones (from 2016 to 2019) of 72% was applied. This way of applying the dilution differs from the previous method where the dilution was related to the expected stope widths.

Table 15-2 shows the dilution rates applied to the mineralized zones by corridor according to their location.

**Table 15-2: Dilution Rate Estimates**

Zone	Sector		
	West	Central	East
Zone 2	46%	61%	92%
WW	72%	77%	99%
CN	72%	72%	72%

These cut-off grades and dilution parameters were calculated using the mining method parameters presented in Section 16 and the costs presented in Section 21.

The mining recovery is based on the historical recovery following the same method as dilution. Recovery forecast is based on historical data obtained from 2016 to 2019 and grouped according to corridors and their positioning relative to the Bousquet Fault in order to be as representative as possible of ground conditions. The minimum and maximum recovery are 67% and 93% respectively. In cases where historical data were insufficient to be representative, the historical average recovery of 84% was applied.

In areas where difficult ground conditions are expected, mining recovery was adjusted to reflect the anticipated ground conditions. The adjustment varies from 15% to 45% depending of the complexity of the lens including current mining geometry, stress conditions and geological factors. Those adjustments was applied to the Central corridor and to zones adjacent to the Bousquet Fault.

**Table 15-3: Mining Recovery Rate Estimates**

Zone	West	Central	East
Zone 2	76%	59%	80%
WW	84%	89%	87%
CN	84%	84%	84%

Operational improvements to increase the recovery from the historical averages are planned but not accounted for in the report. These improvements include reducing the stope cycle time, stope drill and blast improvements to reduce overbreak and sloughing and increasing remote mucking capabilities. These operational improvements and studies are planned and could potentially increase mining recoveries while reducing dilution.

### 15.5 Reconciliation to Previous Estimation

As shown in Table 15-4, a net loss of 566,000 oz occurred in 2019, considering the "in situ" ounces produced at the mill during the same period:

- 559,000 oz were removed in 2019 from reserves due to the re-evaluation of the historical mining recovery compounded by the introduction of a geotechnical risk adjustment factor;
- 20,000 oz were added to reserves in 2019 from the Grand Duc surface operation;
- 47,000 oz of reserves were milled in 2019.

Excluding the 2019 production, 585,000 oz were removed to mineral reserves during 2019.

For more information about the three different Westwood Mine zones (Zone 2 Extension, North Corridor and Westwood), please refer to Section 7.3 - Mineralization and the Figure 7-4- Geological Map - Plan View of Level 132-00.

Table 15-4: Proven and Probable Mineral Reserves (April 30, 2020)

Category	Mineralised Zone	31 Dec. 2018 (Minimum width 2.4m)** (Gold price 1,200\$ US, Exchange rate 1.25)			31 Dec. 2019 (Minimum width 2.4m)** (Gold price 1,200\$ US, Exchange rate 1.25)****			30 Apr. 2020 (Minimum width 2.4m)* (Gold price 1,200\$ US, Exchange rate 1.25)*****		
		Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces
Proven	Proven stockpile and orepass****	0	0.0	0	0	0.0	0	0	0.0	0
	Proven Zones 2	1,062,000	8.6	294,000	992,000	8.7	279,000	105,000	7.2	24,000
	Proven Corridor Nord									
	Proven Westwood	255,000	5.1	42,000	204,000	5.1	34,000			
	Proven Grand Duc									
<b>SUB-TOTAL PROVEN RESERVES</b>		<b>1,317,000</b>	<b>7.9</b>	<b>336,000</b>	<b>1,196,000</b>	<b>8.1</b>	<b>313,000</b>	<b>105,000</b>	<b>7.2</b>	<b>24,000</b>
Probable	Probable Zones 2	3,079,000	7.9	779,000	3,026,000	7.9	769,000	1,956,000	8.9	581,000
	Probable Corridor Nord	60,000	5.9	11,000	54,000	5.8	10,000	3,000	10.4	1,000
	Probable Westwood	488,000	5.4	85,000	411,000	5.5	72,000	71,000	5.6	13,000
	Probable Grand Duc				582,000	1.1	20,000	563,000	1.1	19,000
<b>SUB-TOTAL PROBABLE RESERVES</b>		<b>3,627,000</b>	<b>7.5</b>	<b>875,000</b>	<b>4,073,000</b>	<b>6.7</b>	<b>871,000</b>	<b>2,593,000</b>	<b>7.1</b>	<b>594,000</b>
<b>TOTAL RESERVES</b>		<b>4,944,000</b>	<b>7.6</b>	<b>1,211,000</b>	<b>5,269,000</b>	<b>7.0</b>	<b>1,184,000</b>	<b>2,698,000</b>	<b>7.1</b>	<b>618,000</b>
	Westwood underground mining (-)				257,000	5.7	47,000	33,000	6.1	6,000
	Grand Duc surface mining (-)				0	0.0	0	17,000	1.6	1,000
	Add to reserves 2019 (+)				582,000	1.1	20,000			
	Remove from reserves 2020 (-)							2,521,000	6.9	559,000
	<b>(+)Increase / (-)Loss</b>						<b>-27,000</b>			<b>-566,000</b>

\* Mineral Reserves as of April 30, 2020 include a dilution between 46-99% at a grade of 0.5 g/t.

Recovery used for reserves as of April 30, 2020 varies between 59% and 89%.

Grand Duc Mineral Reserves as of April 30, 2020 include a dilution of 10% with a planned recovery of 100%, which is identical to the Mineral Reserves as of December 31, 2019.

\*\* Reserves as of December 31, 2019 include a dilution between 20-63% at a grade of 0.5 g/t, which is identical to the reserves as of December 31, 2018.

Recovery used for Mineral Reserves as of December 31, 2019 is 95%, which is identical to the Mineral Reserves as of December 31, 2018.

\*\*\* Proven and probable reserves >5.5 g/t (undiluted and 100% recovery) are included in the measured and indicated resources.

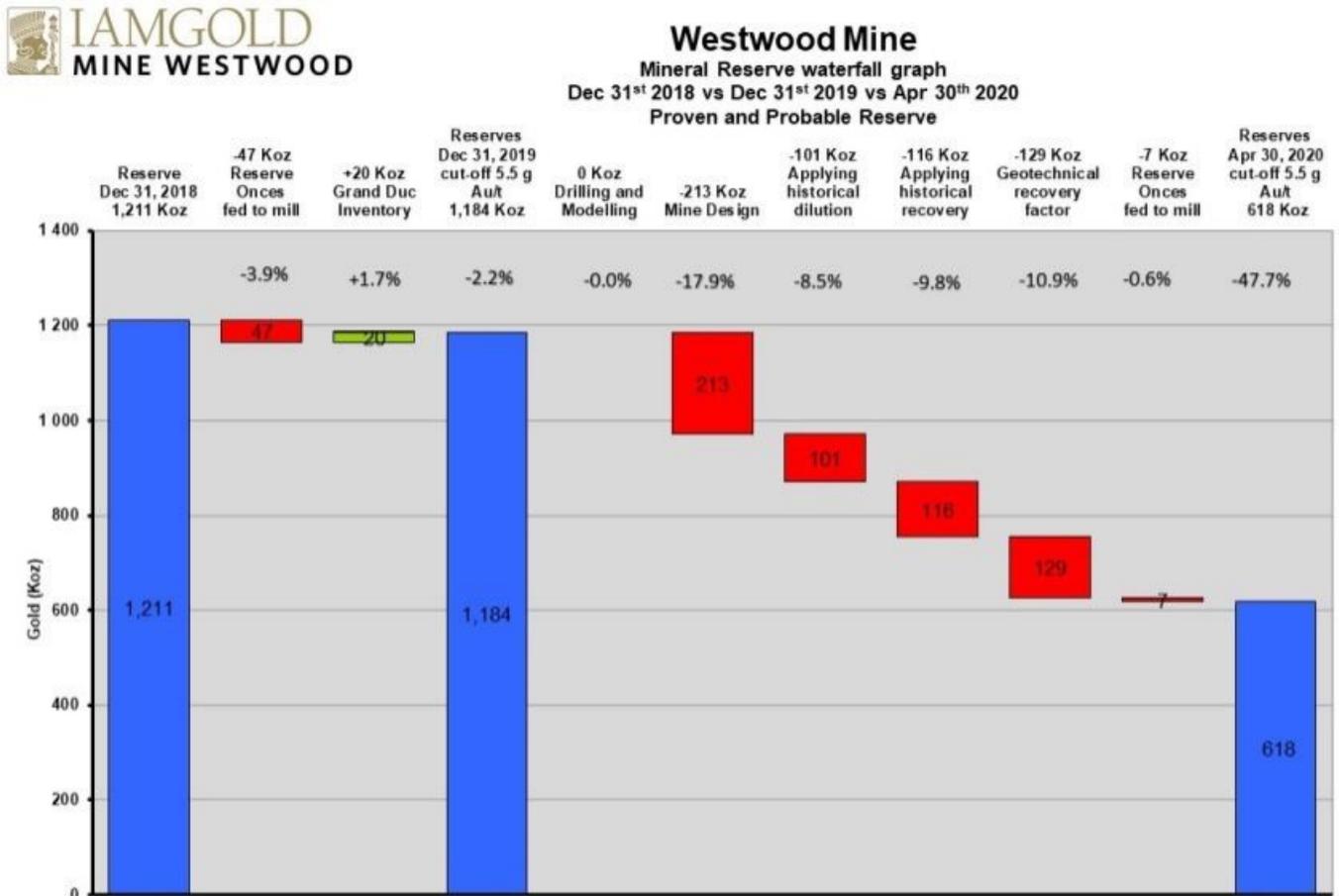
\*\*\*\* Tonnes and grades of stockpiles and orepasses are assumed to be empty.

\*\*\*\*\* An economic cut-off grade of 0.56 g Au/t at a gold price of US\$1,500 and an exchange rate of 1.25 is applied for Grand Duc Mineral Reserves.

NOTE: Mineral Resources and Reserves as of April 30, 2020 are based on October 7, 2019 databases and mining from January to April 2020.

Mineral Resources and Reserves as of December 31, 2019 are based on September 17, 2018 databases and mining of year 2019.

Figure 15-1: Mineral Reserve Waterfall



Verified and approved by Mauril Gauthier, Eng. (OIQ no. 128177), Principal Mining Engineer - Westwood Mine, Qualified Person as defined by the Canadian National Instrument 43-101

In 2019, IAMGOLD conducted a comprehensive review of the Central Corridor of the Westwood Mine. The review was initiated due to a large seismic event that caused multiple fall of grounds on December 22, 2018. It was not the first time Westwood mine was affected by a large seismic event. A timeline of the events which triggered the review are as follows:

- August 2013	Central Corridor 104 Block	Fall of grounds in multiple drifts following production blasts
- December 2014	Central Corridor 104 Block	Major seismic event
- January 2015	Central Corridor 104 Block	Major seismic event
- May 2015	Central Corridor 104 Block	Major seismic event
- December 2018	Central Corridor 132 Block	Large seismic event causing multiple fall of grounds

Based on the history of major seismic events at Westwood mine, IAMGOLD took a conservative approach and decided to reduce the recovery of some specific zones. Each zone was analyzed individually. The recovery of the zone was reduced based on the geotechnical risk. This approach negatively impacted the Mineral Reserve by 129Koz. Different projects are ongoing to minimize the uncertainty and to improve the capability of mining in adverse ground conditions. A geotechnical model has currently been built by InnovExplo. The aim of this model is to highlight the area of poor ground subject to generate instability associated to squeezing (convergence) and unravelling. Two numerical stress modelling expert, A2GC and Beck Engineering, have been hired. Those stress models will be used to reduce further down the geotechnical risk. Westwood is also working with a committee of experts to promote and develop measures, controls and procedures associated to the ground control management. Several topics, items and opportunities will be investigated such as seismicity at the face management, review of the ground control and remote equipment technologies available, quality assurance and quality control (QA/QC), emergency response plan and other risk management controls. All that work is currently done in order to maximize the mine recovery of the lenses in adverse ground conditions while protecting the underground workers.

The mine design was reviewed and specific adjustments were made in order to mine the lenses safely in adverse ground conditions. A new mining method was also considered (see section 16.2.3.1). Those changes increase the operating and sustaining costs. Some production stopes that were economical in the past are not anymore at a cut-off grade of 5.5 g/t Au. This explains the reduction of 212Koz from the December 31, 2019 Mineral Reserve. The cut-off grade for the Mineral Reserve was calculated at a gold price of US\$1,200 and at an exchange rate of 1.25. A higher gold price and/or a higher exchange rate could improve the profitability of some zones or production stopes. Stopes or zones which their grade is close to the cut-off grade will be reviewed and evaluated for profitability using a gold price and an exchange rate equivalent to the current market.

In the past, the dilution factor was determined based on the width of the vein. After an extensive review, it was determined that adjusting the dilution based on the historical data from 2016 to 2019 was more appropriated. This decision increased the average dilution. The increase in the average dilution reduced the grade below the cut-off grade for some production stopes which explains the reduction of 101Koz from the December 31, 2019 Mineral Reserve. In the same vein, IAMGOLD extended the analysis to the recovery of past production stopes. In regards to the dilution factor, it was decided that the historical mine recovery factor (from 2016 to 2019) was more appropriated. As mentioned before, the historical average reduced the mine recovery and negative impacted the Mineral Reserve by 116Koz. The reduction in the mine recovery can partially be explained by some production stopes being mined in adverse ground conditions as explained above. To reduce the dilution and improve the mine recovery, Westwood conducted an external audit on its underground drill and blast practices. A project is underway to optimize the production drilling and blasting. These efforts, if conclusive, could potentially have a positive impact on the Mineral Reserve.

#### 15.6 Reconciliation of Reserve vs Mill Feed

From 2015 to 2019, the Doyon mill has processed ore from the Westwood mine and from the Doyon low-grade stockpile. 455,680 t of low-grade ore was milled and are included inside the annual information form but not in the reconciliation. On November 2019, Grand Duc open pit ore started to be milled but was not included in the reconciliation study until January 2020.

Reconciliation of the Mineral Reserve estimate (2014-2019) versus Mill feed (100% mill recovery) shows that the mill produced 31% more gold than the Mineral Reserve estimate (Table 15-5). The mill produced 553,891 oz of gold versus 422,871 oz of reserve with a head grade of 7.3 g Au/t vs 7.1 g Au/t. The block model has underestimated the mill feed grade by 0.2 g Au/t. There were also 28% more tonnes sent to the mill compared to the block model.

**Table 15-5: Reconciliation of Reserve vs Mill Feed**

YEAR	RESERVE			MILL FEED (100% mill recovery)			DIFFERENCE
	Tonnes	Grade (g Au/t)	Ounces	Tonnes	Grade (g Au/t)	Ounces	Ounces (%)
2014	195,135	8.3	51,816	270,077	9.0	78,573	152
2015	227,801	6.9	50,424	269,276	6.6	57,335	114
2016	267,450	6.0	51,549	244,549	8.1	63,708	124
2017	418,600	7.9	106,305	498,147	8.0	128,040	120
2018	398,178	8.1	103,118	575,067	7.2	132,351	128
2019	335,723	5.5	59,659	504,348	5.8	93,884	157
<b>TOTAL</b>	<b>1,842,887</b>	<b>7.1</b>	<b>422,871</b>	<b>2,361,464</b>	<b>7.3</b>	<b>553,891</b>	<b>131</b>

The first factor that can explain the positive reconciliation is the historic evaluation of the grade capping which affected the grade of the resource estimate. From 2014, resource geologist had change the capping grade for some Z2 extensions high-grade zones. In 2016, some Z2 Extension zones had the capping grade change from 99 g Au/t to 150 g Au/t and in 2010, from 150 g Au/t to 250 g Au/t.

This positive reconciliation also can be explained by the positive reconciliation of the Westwood zones, which can be from 30% to 80%. From 2014 to 2015, only one Westwood zones has been sufficiently mined to allow for a reconciliation study. This massive sulfide zone, which is not representative of the other Westwood zones, had shown a grade approximately 10% higher than predicted by the model. From 2016 to 2018, the Westwood zones have represented 25% to 40% of the milled zone. In 2019, the Westwood zones have represented 56% of the milled zone. From 2016, the average dilution is at 85% with an assigned grade of 0.5 g Au/t compare to a planned dilution at 65% with an assigned grade of 0.5 g Au/t. In their March 22, 2016 report, InnovExplo Inc suggested that the grade dilution could be between 0.5 g Au/t and 1.0 g Au/t and proposed applying a ring solid around the mineralized zones where the grade could be interpolated and used as a dilution envelope. Other studies will begin in 2020 to validate this previous study and to be able to predict with efficiency the dilution grade thanks to dilution envelope around the Westwood zones. Finally, the last factor that could explain this positive reconciliation is an underestimation of the diamond drill assays due to a high quantity of sulfur. The geology department will start to look at the laboratory process in 2020 regarding this specific vein-types.

## 16 MINING METHODS

### 16.1 Design Criteria

#### 16.1.1 Production Requirements

The current Mineral Reserve is 2.75Mt of ore (diluted at an average of 58%) for 626,000 oz of contained gold (after 79% average mining recovery). The majority of the current reserves are located in narrow veins; a minimum geological width of 2.4 m has been used. The mining equipment selected results in a minimum mining width of 4.5 m.

Mine operations are scheduled on two 10-hour shifts per day, 7 days per week (development and production).

Infrastructure currently allows mining to a depth of 2,000 m, although mineralization continues at depth. Mining of resources below the current infrastructure plan would require comprehensive study and is not included in this report. Other constraints included in the selection of the mining plan include variable dip of the ore lenses, ventilation requirements, and uncertainty regarding location or continuity of resources.

#### 16.1.2 Underground Infrastructure Design

Underground access is by a 6.4 m diameter circular shaft with a current length of 1,958 m. Main levels (shaft access) are spaced approximately 240 m apart; the majority of underground infrastructure, including maintenance facilities, warehouses and stockrooms, and electrical stations is located on these levels. Level 840, Level 1,320, and Level 1,800 include track drifts designed for ore handling by trolley as well as crushing and loading infrastructure. Other tramming levels will be added at depth.

Figure 16-1 shows a general longitudinal section of the mine.

The Warrenmac ramp was developed from surface to access the ore zones, and is connected to the Westwood ramp network. Sub-levels used for mining are spaced approximately 25 to 30 m. A series of ore and waste passes are placed throughout the mine.

Production stopes dimensions are 12 to 15 m long by 20 to 25 m high (from floor to back). The dimensions were determined based on a stability analysis. For overhand mining, the average paste strength is around 600 kPa based on tests done on site. For underhand mining, engineering studies are planned to optimize the adequate paste backfill strength requirements.

The main ventilation raise (6 m diameter) extends from Level 600 to Level 840 with secondary raises throughout the mine. Approximately 800,000 cubic feet per minute (CFM) is currently available for mining operations. Extensions to infrastructure are planned throughout the mine life as the mining areas deepens. Four booster fans are provided to maintain the airflow.

A paste backfill system is commissioned to deliver paste from surface to the production levels. The network goes from surface down to Level 360, where it splits to feed the eastern and western production areas. The main circuit is designed with 6"-diameter pipes a maximum feed rate of 70 tph is typically used. Paste distribution is placed through gravity placement only.

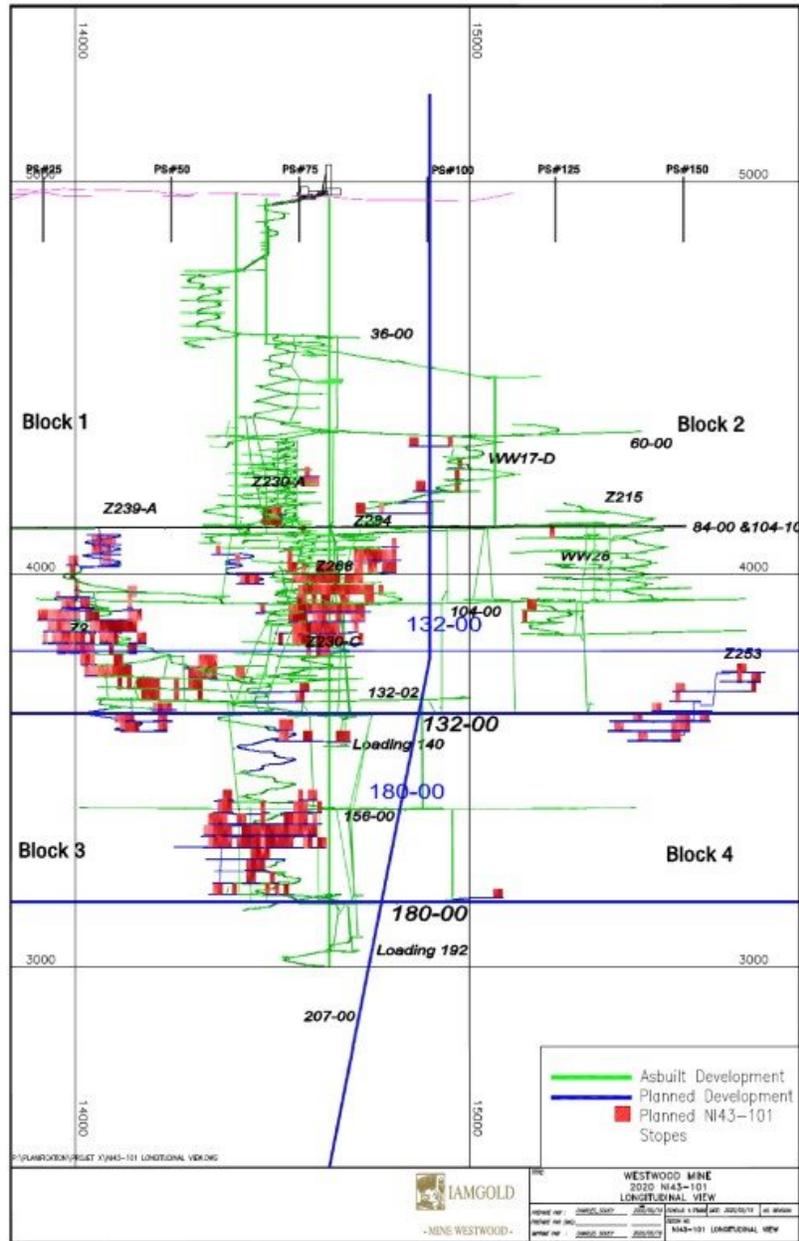
A hydrostatic plug was completed in 2014 on Level 840. This corresponds to Doyon's Level 014, which was used as exploration and development access for Westwood. The hydrostatic plug separates physically the two mines and makes the disposal of Westwood tailings possible in the Doyon pit (see Section 20). The Doyon shaft has since been decommissioned.

### 16.1.3 Other Considerations

Unless otherwise specified, 2.85 to 3.6 tm/m<sup>3</sup> is used for in-situ material specific gravity. A density of 1.8 tm/m<sup>3</sup> is used for broken material. Waste rock density is estimated to 2.8 tm/m<sup>3</sup>.

Thermal constraints may be a concern during development of the ventilation infrastructure on Level 1,800 but are expected to be acceptable during mining. An air conditioning system and heat control measures are currently being evaluated for expansion at depth.

Figure 16-1: General View of the Long Term Mining Plan



## **16.2 Underground Mining Methods**

### **16.2.1 Previous Approaches**

A number of changes have been made to the Westwood mining plan since the first preliminary assessment completed in 2007. Original plans were based entirely on long-hole mining, with a minimum mining width of three metres. Cut & Fill mining was considered in 2009, largely due to poor ground conditions observed and high dilution rates experienced. Due to the ongoing deformations in the East-West drifts, and larger exposure to seismic risk, the current mining plan has been reverted to long-hole mining. Of the total mining plan, ore development historically accounts for around 20% of tonnage while stope extraction represents 80% of the annual tonnage.

### **16.2.2 Development**

#### **16.2.2.1 Mining Method**

Development is classified as either deferred (infrastructure) development, including ramps, crosscuts and ore passes. Most of the lateral developments are mechanized, with jumbos, rockbolters, scissor lifts and 2.7 m<sup>3</sup> LHD units. Dimensions for waste drifts are generally 4.5 m high and 4.1 m wide. Drift dimensions in the ore lenses may vary locally according to the dip, width of the vein and mining method selected; planned drifts dimensions are 4.5 m high and 4.5 m wide for long hole drifts. Track drifts have been developed with wheeled long-tom crews: other than Level 840 (originally an exploration drift), dimensions are 2.9 m high and 2.8 m wide. No upcoming track drifts development work is outlined in the plan.

Arched backs are promoted for lateral development to enhance ground stability. Ground support varies significantly depending on the expected ground conditions and combination of static ground supports (rebars), yielding supports (hybrid bolts, debonded cables), long anchors (cables) and dynamic supports are used to control the wide spectrum of ground conditions experienced. In additions, mesh panels, straps and shotcrete are used either individually or conjointly as surface support. Ongoing monitoring of the ground support performance or possible deterioration are achieved by doing routinely workplace inspections. New ground support technologies are currently been trialled at the mine to optimize the performance of the ground support and to reduce exposure to potential ground hazard. Different bolting systems are currently been evaluated and mechanized bolters were acquired in 2018.

Vertical developments, such as ventilation raise and material handling passes, are typically inclusive to infrastructure development. Dimensions are typically 2.4 x 2.4 m, although the main ventilation raise can reach up to 4.3 m in diameter.

### **16.2.2.2 Operating Parameters and Requirements**

Development performances are based on current performance at the Westwood Mine. The following performances were used in the mine plan:

- Jumbo (deferred and stope prep) development: 6.0 m/day/team;
- Jumbo development through paste backfill: 0.8 m/day/team;
- Track drift and conventional development: 3.0 m/day/team;
- Alimak raises: 2.0 m/day/team;
- Conventional raises: 2.0 m/day/team;
- Cables and 2": 100 m/day/drill;
- Long Hole 4": 58 m/day/drill (planned drilling);
- V-30 (slot) raises: 10 m/day/drill.

### **16.2.3 Long hole Mining**

#### **16.2.3.1 Mining Method**

Long hole open stope (LHOS) is the primary mining method used at Westwood. Stopes are approximately 25 to 30 m high with a strike varying from 12 to 15 m in length. The mining width depends on the true width of the mineralization, lens configuration and geotechnical constraints applied for the area. Minimum mining width is set to 2.4 m. The configuration of the access to the production stope are typically either transverse or longitudinal. Short longitudinal retreat is typically promoted for reducing delays associated to rehabilitation and exposure to induced stress.

Historically, mining sequence for long hole stopes has been carried out from bottom to top, either in a pillarless or in a primary and secondary stopes configuration. As depth increases over time in the LOM, an underhand (top to bottom) sequence is promoted for better induced stress management. Some considerations have been built in the LOM to mitigate colliding mining fronts creating diminishing pillars that are detrimental for stability. In additions, underhand sequence is known to be a mining method that is used in deep and ultra-deep mines that could reduce the exposure to seismicity on the top cut where production drilling is carried out. The main implication of an underhand retreat on the mining cycle consists in having to re-excavate the upper sill in the paste in order to allow the drilling of the underlying block.

Stopes are generally being drilled down from the upper level with 100 mm diameter holes. A drill pattern of 2.0 x 2.0 m is planned. ITH drills with V-30 heads will be used to open the slot raises. Stopes will be blasted with emulsion explosives and electronic detonators. LHD units with remote capability will muck out the stope. Paste backfill will be poured in all stopes. A cure of 21 days is required before mining any adjacent stope and 28 days before excavating in paste. Most stopes will require cable bolts.

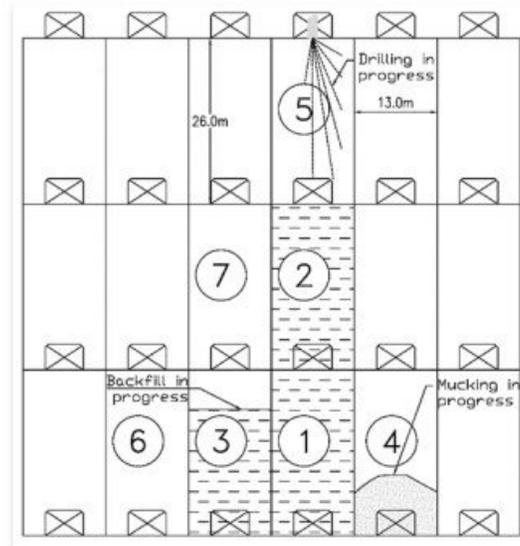
As part of the ground control management strategy, the seismicity is monitored throughout the mine. Westwood has a wide mine coverage micro seismic system implemented on site since 2013, with just under 100 sensors been installed. Regular underground inspections and audits are performed as part of the quality assurance and quality controls programs. In additions, over 10,000 m of geotechnical drilling were performed in 2019 and 2020 to refine the current geological and structural models of the mine. Table 16-1 summarizes key properties for the main units and subunits. For more information on each geology unit, refer to section 7.2.1.

**Table 16-1: Summary of Geomechanical Properties by Lithological Units and Sub-units**

Lithology-Geology Unit	Density (t/m <sup>3</sup> )	Mean UCS (MPa)	Mean GSI
1	~2.8	209	60
2		124	55
3.3		171	52
4.2		144	43
4.3		124	33
4.4		165	50
4.4.1		165	58
5.1.2		122	52
5.1.3		112	55
5.1.4		101	41
5.2.1		145	N/A
5.4		150	49
5.5		157	47

*\*UCS: uniaxial compressive strength, GSI: Geological Strength Index  
N/A: insufficient data available.*

**Figure 16-1: Long Hole Mining Method - Transverse (Ok)**



**Figure 16-2: Long Hole Mining Method - Hybrid (BLADE)**

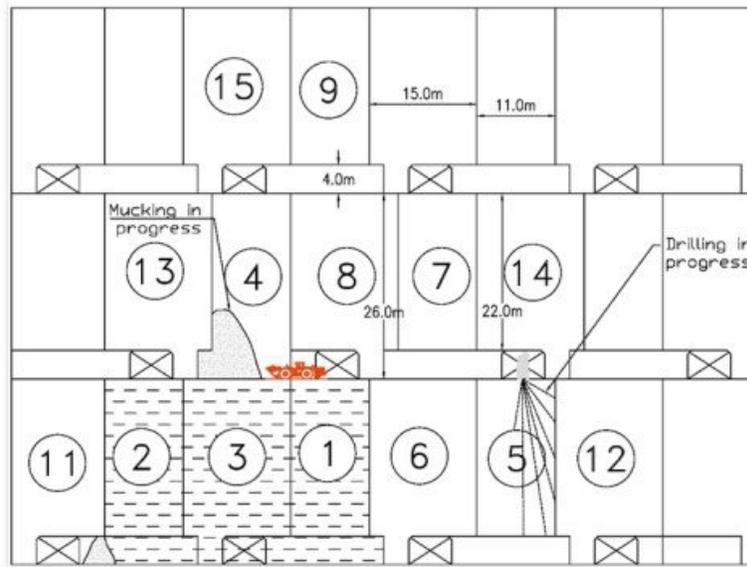
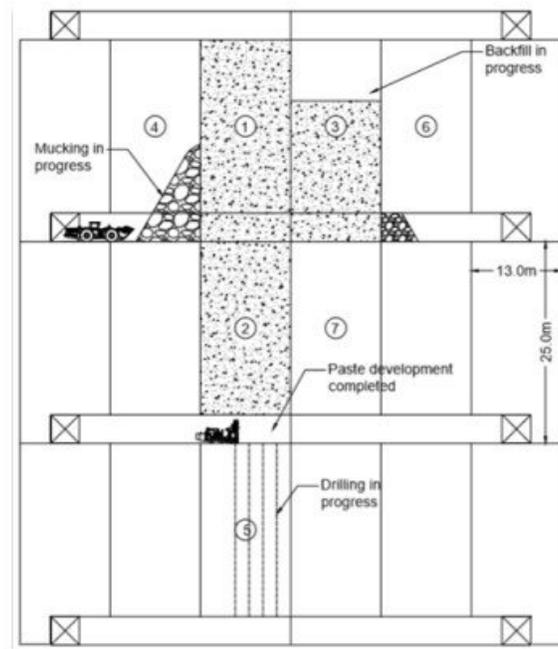


Figure 16-3: Long Hole Mining Method - Underhand Sequence



**16.2.4 Other Mining Methods**

Other mining methods (cut and fill, sub level) have been included in previous mining plan, but they are not included in the current mining plan.

**16.2.5 Ore Handling**

Ore will be mucked using the LHD units to the nearest ore pass, generally located at less than 300 m. Thirteen tonnes haul trucks will be used for longer distances. Electrical trolleys with 10 t cars will be used to transport material from the various ore passes to the loading infrastructure for hoisting (capacity of 100 t per trip, up to 3,000 tpd. Two 20 t skips will be used for skipping material. Overall hoisting capacity depends on the loading pockets used (1,400 m or 1,920 m depth). On surface, 30 t trucks will transport ore the 2.5 km from the Westwood shaft to the Doyon mill.

### 16.2.6 Mining Equipment

The total underground mobile fleet currently on site is summarized in Table 16-2. The actual fleet is adequate to achieve the mine plan based on the actual Mineral Reserve. Purchases of remote equipment and upgrade of actual equipment to use them remotely are planned for the first three years starting in 2020.

**Table 16-2: Mobile Equipment Fleet**

	# of Units
Jumbo drill	10
Bolter	13
Scissor lift	24
Scoop	23
Trucks	18
Production / Cable drill	5
Development Long Tom drill	5
ManCarrier (tractor/Jeep)	51
Locomotive	23
Muck Machine / Cavo	20
Excavator	5
Grader	2
Transporter	4
Boom Truck	3
Shotcrete/concrete	5
	<b>211</b>

### 16.3 Surface Mining Methods

#### 16.3.1 Design Criteria

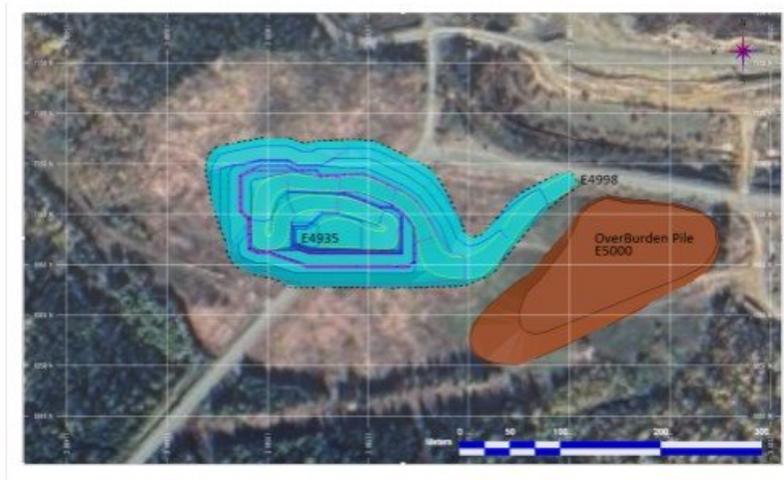
The Grand Duc pit design parameters to ensure slope stability are detailed in Table 16-3.

**Table 16-3: Grand Duc Pit Design Parameters**

Parameter	Unit	OB	Rock
Bench height	m	10	20
Berm width	m	5	10.5
Bench face angle	°	35	70-80
Inter ramp angle	°	32	45
Ramp width	m	15	15
Ramp gradient	°	8	9

Should be noted that the pit slope parameters are continuously being optimized as mining progresses.

Figure 16-4: Grand Duc Design



**16.3.2 Geotechnical Considerations**

The geotechnical analysis of the Grand Duc sector was carried out by geotechnical mining engineers from Longueuil technical department.

The Table 16-4 presents the design recommendations for the overall slope heights appropriate to the pit designs provided.

Table 16-4: Grand Duc Overall Slope Heights

Horizon	Domain	Maximum batter/bench face angle (BFA, °)	Maximum batter height / bench height (m)	Minimum berm / safety bench widths (m)	Inter-ramp angle (toe to toe, °)	Maximum Overall Slope Angle for Horizon (°)
Over-burden	All	35	10	5	35	35
Fresh Rock	All	80	10 to 20	8 to 10.5	55-50	45

**16.3.3 Surface Mining Method**

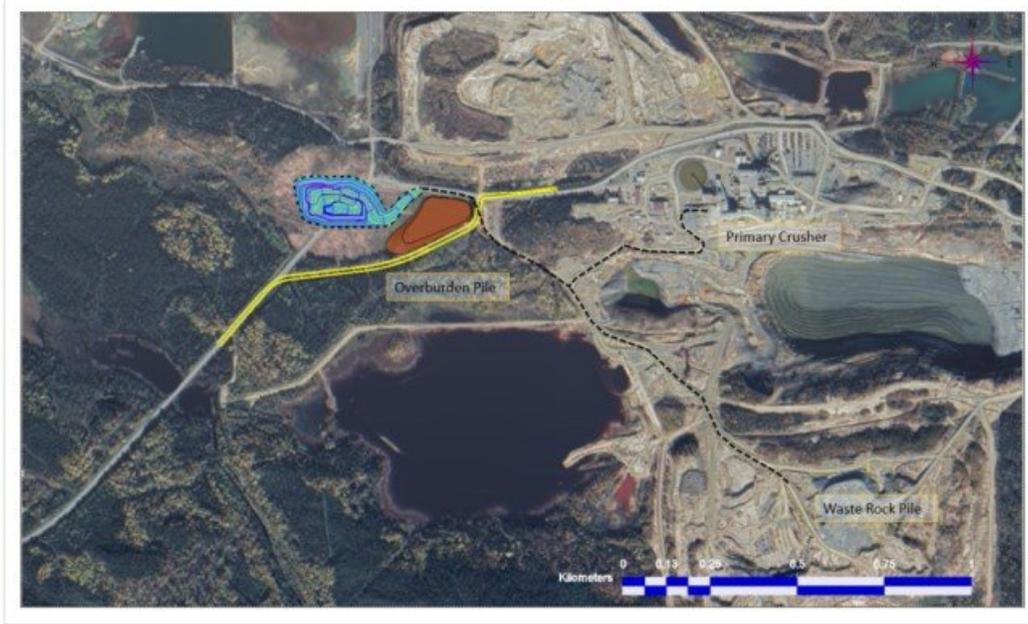
The Grand Duc open pit is mined conventionally in 10 m benches height. A contractor with its own equipment fleet performs all the work. The type of mining equipment used are production trucks (35 t) and hydraulic excavators (90 t). The ore production from Grand Duc will average 41,000 t per month. Ore is sent directly to the process plant or is stockpiled depending on the feed from the underground operations. The average stripping ratio is 1.30.

Based on the actual Mineral Reserve, the production at Grand Duc is expected to be completed by May 2021.

**16.3.4 Waste Storage Facility**

During the operation of the Grand Duc open-pit mine, two separate disposal areas were put into service. Overburden material is disposed near the pit, while rock material is deposited on a pad to the south of the old Doyon open-pit mine.

**Figure 16-5: Grand Duc Waste Disposal Location**



#### 16.4 Life of Mine Production Schedule

Recent annual production has averaged 625,000 t. Going forward, IAMGOLD targets Westwood production of 600,000 tpa from underground only with additional production coming from surface operation. Current Mineral Reserves can be mined at rates of 250,000 to 300,000 tpa, declining below 250,000 tpa over an 8-year mine life. Gaps between this production and the target are expected to be filled by increases in Mineral Reserves due to:

- 1) Results of geotechnical review, mining method adjustments, and gold price increases;
- 2) Conversion of Inferred Resources.

Different projects are ongoing to minimize the uncertainty and to improve the capability of mining in adverse ground conditions. In addition, the cut-off grade for the Mineral Reserve was calculated at a gold price of US\$1,200 and at an exchange rate of 1.25. A higher gold price and/or a higher exchange rate could improve the profitability of some zones or production stopes and increase the Mineral Reserves.

Inferred Resources total 6.5Mt, containing 1.8M/oz, and IAMGOLD has planned and budgeted for mine development and diamond drilling to increase the confidence in the estimates for these areas. Additional diamond drilling is planned in 2020 at Grand Duc to extend the mine life of the actual open pit.

Depending on the geotechnical results, drilling program results as well as the gold market, there may be potential for the mine life to be extended up to 20 years.

The total lateral development averaged over 11 km per year for the last 3 years. Paste backfill averaged 655 tpd over the last 3 years. Current Mineral Reserves would only require 33 km of lateral development and 1,150 Kt of paste backfill over an 8-year mine life. However, if the gaps between the current Mineral Reserves production profile and the target are filled, lateral development requirement will average 10.6 km per year and paste backfill requirement will average 1,000 tpd.

**17 RECOVERY METHODS**

**17.1 Design Criteria**

The design criteria for the processing facilities have been developed specifically for the Westwood Mine using a number of sources, including:

- The mine production plan;
- The existing Doyon Mill;
- The results of the metallurgical test work conducted between 2007 and 2009;
- Experience gained by IAMGOLD at other operations.

The design is based on the following criteria:

- |  |         |
|--|---------|
| • Annual production (tonnes/year)        | 850,000 |
| • Weeks of operation yearly (weeks/year) | 52      |
| • Availability of the mill (%)           | 96      |
| • Tonnage of operation (tonnes/day)      | 2,425   |

Preliminary assessments for the Westwood Mine indicated a potential for economic recovery of the zinc, as well as gold, from the higher-grade zinc ore lenses. This potential was not confirmed by subsequent drilling, and studies failed to justify the additional capital expenditure for the recovery of zinc by flotation. The current operating plan includes processing of the higher-grade zinc ore by cyanidation only, which will not give zinc credits but provide acceptable gold recovery. The mill design will be revised if additional zinc resources are identified.

The mill refurbishment completed in early 2013 includes gold cyanidation and tailings cyanide destruction circuit upgrades. Throughput optimization work enabled an increase in capacity to 1,100,000 tpy, since commissioning of the plant.

**17.2 Mill Recovery Process**

**17.2.1 General**

Ore from the Westwood Mine is processed on site. The original Doyon Mill, constructed in the 1970s, was refurbished between 2011 and 2013 in order to efficiently process the Westwood ore. The existing grinding, leaching, adsorption and stripping circuits were upgraded to replace obsolete equipment. Cyanide destruction capacity was also increased to process the generated tailings. A new paste backfill plant was also built to supply the Westwood underground operational needs.

17.2.2 Flow Sheet

The process flowsheet is based on the previous Doyon Mill, but includes all upgrades and modifications from the refurbishment as shown in Figure 17-1.

Figure 17-1: Grinding, Leaching, Adsorption and Stripping Circuit

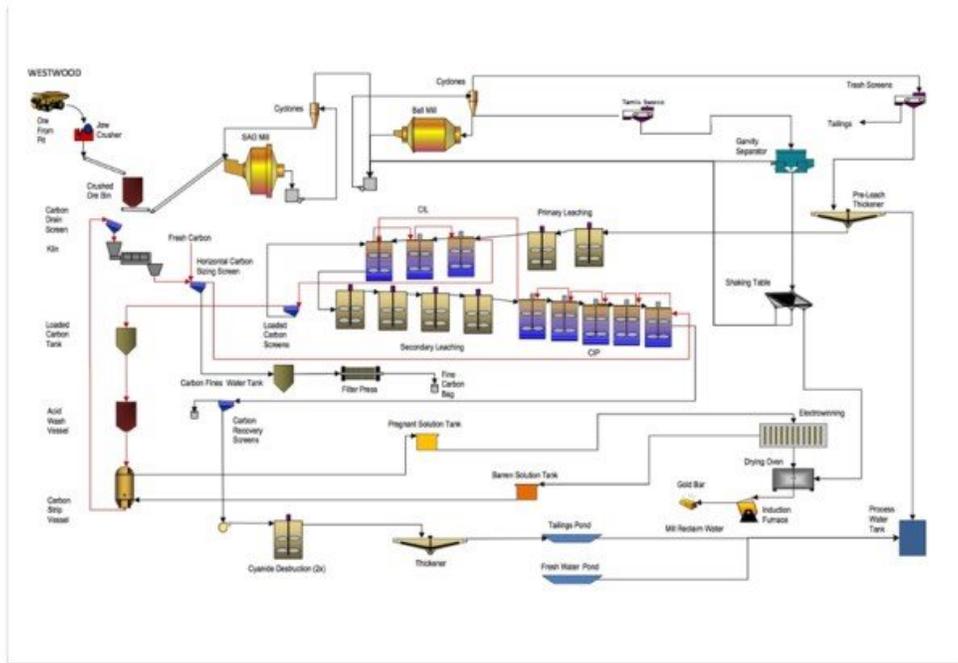


Figure 17-2: Cyanide Destruction and Paste Backfill Circuits

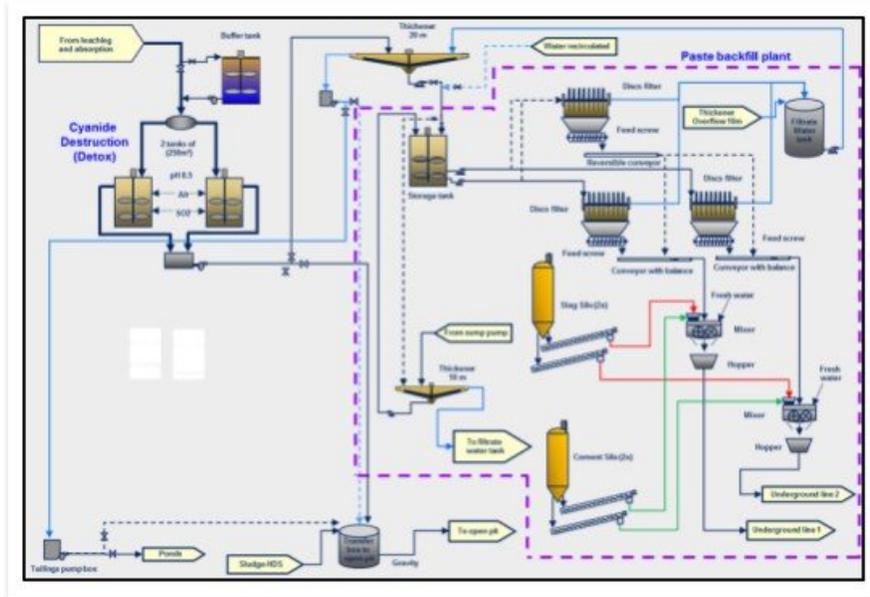
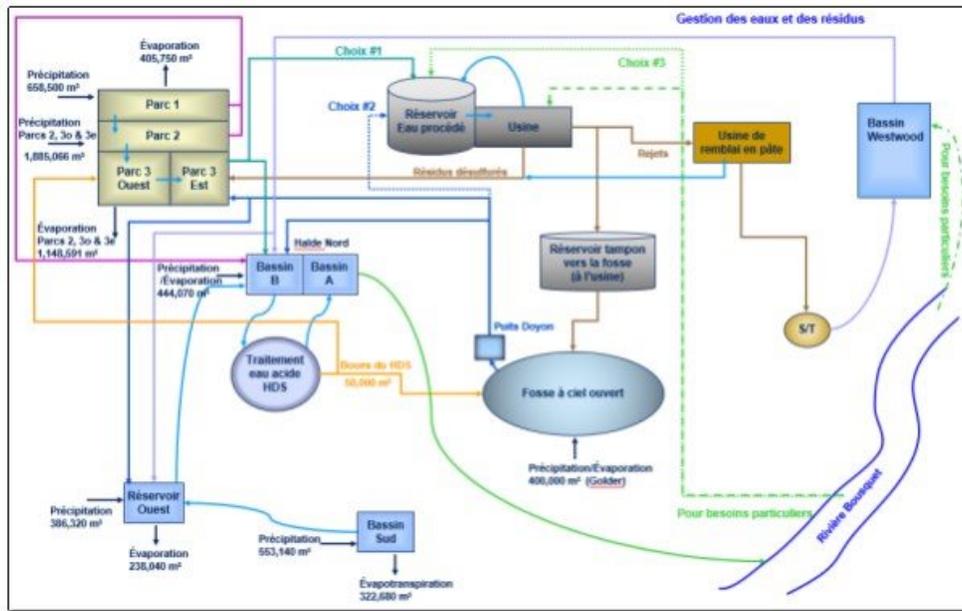


Figure 17-3: Water and Tailings Management



### **17.2.2.1 Ore Handling and Crushing**

Underground ore is hoisted to surface and hauled by truck to the processing facility located 2.5 km from the mine shaft. The ore is discharged at the crusher house. The ore is fed to a single stage jaw crusher (1.07 x 1.22 m) by a front-end loader through a grizzly feeder. The ore is conveyed to the mill ore bins using a belt conveyor system. Each bin has a capacity of 2,800 dmt.

### **17.2.2.2 Grinding and Gravity**

Grinding of the Westwood ore is done using a 2,700 HP semi-autogenous grinding (SAG) mill in closed circuit with primary hydrocyclones. The overflow of primary hydrocyclones feeds a 1,000-HP ball mill in closed circuit with its secondary hydrocyclones. A portion of the underflow (secondary hydrocyclones) feeds the gravity separation circuit composed of a sweco screen, Knelson concentrator (30") and a shaking table. The tail of the gravity circuit returns to the grinding circuit and the gravity gold concentrate goes to the refinery. The targeted grind size is 80% passing 53 microns (270 mesh).

### **17.2.2.3 Cu-Zn Flotation**

As previously mentioned, construction of a flotation circuit was not included in the Westwood operating plan. However, part of the copper flotation circuit, initially built to process the Mouska ore, still remains available. Refurbishment and modifications would be required in order to use the equipment in the flotation circuit, but the base metals concentration remains not economical since the last revision done in 2018.

### **17.2.2.4 Leaching and Adsorption**

The leaching circuit has 55 hours of retention time at the nominal processing rate of 3,106 tpd. Leach residue is sent to cyanide destruction. At the nominal processing rate, retention time for each step of the leach and adsorption process is detailed as follows: primary leach tanks (4.7 hours), carbon-in-leach (CIL) tanks (6.6 hours), secondary leach tanks (31.3 hours) and carbon-in-pulp (CIP) tanks (12.1 hours).

### **17.2.2.5 Cyanide Destruction**

The tailings are treated with SO<sub>2</sub>/Air cyanide destruction process. The leaches residues are split between to parallel detox reactors. In normal operation, a part of the process discharge residues is used to feed the paste backfill plant while the remainder is pumped to the Doyon open pit. A buffer tank (14 h of backfill plant operation capacity) is maintained at maximum level with detoxified slurry to ensure continuous feed to backfill plant in case of temporary processing plant shutdown.

#### **17.2.2.6 Paste Backfill**

Two lines of 2 km in length are installed between the mill and the paste backfill plant. One pipe is used to feed the paste backfill plant with the tailings and the other one returns the water filtrate to the mill. The design allows the pipes to be drained by gravity in case of breakage or power failure. An access road to accommodate a vehicle to facilitate the inspection and maintenance of the piping network is available.

Two paste backfill circuits were installed to provide more flexibility in the preparation and distribution of the paste into the stopes (ability to fill two stopes at the same time with different recipes).

The mixture is prepared according to the backfill engineer's specifications. The backfill plant was designed to achieve a maximum production rate of 144.6 tph. However, a conservative backfill production rate of 70 tph is used in the current production plan.

#### **17.2.2.7 Gold Recovery**

The gold desorption circuit is composed of an acid wash vessel and high-pressure Zadra stripping reactors. The stripping is done by continuously circulating a hot (low concentration) sodium cyanide and caustic soda solution through the carbon stripping columns.

The electrowinning circuit is comprised of two parallel electrowinning cells. It produces a gold sludge, which is filtered, dried and smelted into doré bars as a final product.

Carbon eluted from its gold is reactivated through a regeneration kiln before being reintroduced into the CIL/CIP tanks. Besides this process, fresh carbon can be added into the recovery process after being submitted to the carbon attrition system to remove carbon fines.

#### **17.2.2.8 Tailing Disposal**

Tailings not used for paste backfill are pumped to the Doyon open pit for disposal. As environmental criteria were met, this option was retained rather than proceeding with an expansion of the tailings ponds. Further details are included in Section 20.

### **17.2.3 Requirements**

#### **17.2.3.1 Energy**

Power for processing operations is available through the electrical network on site (see section 18) and supplied by Hydro-Quebec. Power consumption for the mill (including operation of the paste backfill plant) represents approximately 8% of the total milling cost. The current contract and installation provide sufficient electricity for the mill operations.

### 17.2.3.2 Water Management

Process water for the mill can be drawn from the Bousquet River when necessary; most water comes from the tailings management facility and/or the Doyon reclamation water management system with an objective to minimize water pumping from the river. An average of 4.0 to 4.5 MCUM of water is treated annually in the high-density sludge (HDS) plant before being released into the environment.

### 17.2.3.3 Process Materials

Process materials represent nearly 42% of the overall processing cost. Some of the most significant consumables include cyanide, quick lime, slag (paste backfill production) and grinding media. Forecasted annual consumption is shown in Table 17-1. No significant availability concerns are forecasted for these reagents.

**Table 17-1: Annual Reagent Consumption**

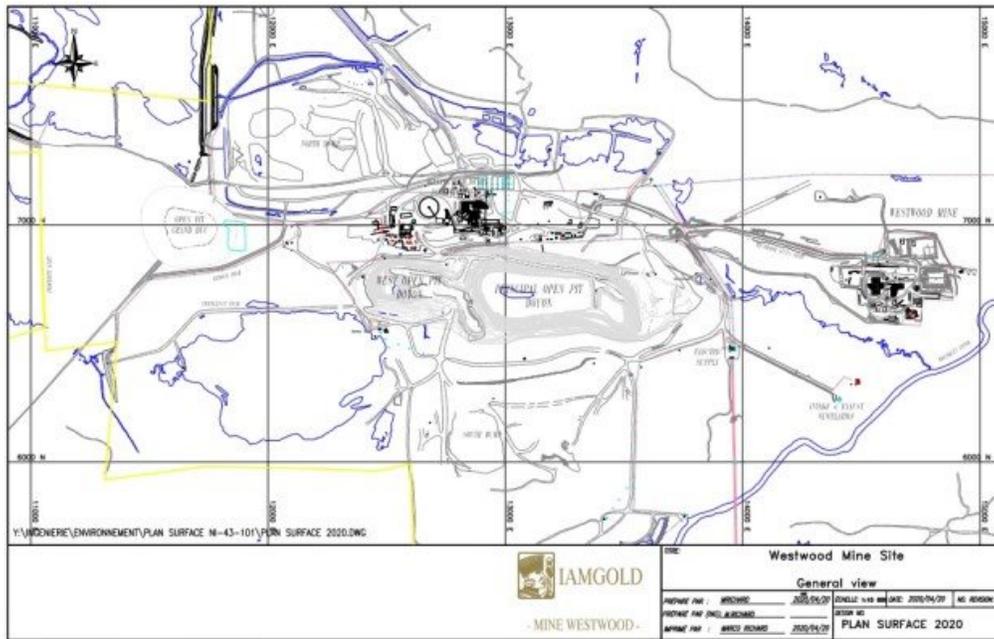
Reagent	Annual Consumption (kg)
Grinding media	1,805,000
Quick lime (Environment)	3,168,000
Quick lime (Mill)	2,472,000
Cyanide	945,000
Oxygen	1,483,000
Caustic soda	178,000
SO <sup>2</sup>	1,118,000
Slag/cement (Paste backfill)	8,273,000

**18 PROJECT INFRASTRUCTURE**

**18.1 General**

The Westwood Mine was developed using Doyon infrastructure and accesses. Due to the close proximity of the mines, a portion of the Doyon infrastructure will be used and maintained for the life of the Westwood Mine, while other portions will be restored according to the Doyon closure plan. Infrastructure will thus be concentrated around either the Westwood shaft or the former Doyon Mill, refurbished for Westwood processing. Access to regional infrastructure (roads, power, etc.) will remain through the Doyon site. The surface plan is shown in Figure 18-1. Figure 18-1: Surface Plan - General.

**Figure 18-1: Surface Plan - General**



**18.1.1 Mine Access Road**

From the existing Doyon main gate, a 2 km access road has been built to provide access to the mine site. This road has been built with gravel and appropriate fill materiel and is approximately 10 m wide. Guards and beams have been and will continue to be put in place to provide a high level of security as haul trucks will circulate in this zone as well as light vehicles. Signalling will be a priority to provide clear indication of parking and road particularities. Culverts are installed and ditching has been done to provide adequate drainage.

### **18.1.2 Municipal Work**

Domestic water is supplied from a 100 m water well. The treatment is limited to pH adjustment and chlorination before water distribution to the mine buildings. For drinking purposes, bottle of water is made available.

The fire protection system includes fire pumps, water distribution network, fire hydrants and hose cabinets. Reclaimed underground process water located in the surface polishing pond will serve as the fire-water reservoir.

A sewage disposal system including septic tanks and seepage field are designed for the new mining facilities. Further modifications to the system will be required if a new administration building is constructed.

### **18.1.3 Electric Supply**

Hydro-Quebec power lines provide 120 kV to the Doyon division mining property. The 120 kV is stepped down by two transformers to 25 kV. Each transformer has a nominal capacity of 20 MVA. Current electrical requirements are approximately 24,000 kW, of which 17,000 kW are allocated to underground operations, 6,000 kW for milling, and the remainder for surface operations. The Westwood mining infrastructure is fed by a 1 km long 25 kV electrical line from the Doyon 120 kV main substation.

The current Hydro-Quebec contract allows for a maximum power consumption of 30,000 kW.

### **18.1.4 Natural Gas**

Énergir supplies natural gas used for heating the fresh air supply in winter. The main gas line was extend approximately two kilometres to the Westwood Shaft area. From the middle of it, a gas line has been add approximately one kilometre to the intake ventilation.

### **18.1.5 Mine Service Building**

Mine and administrative services are currently located on the Doyon site. The main building (including annexes) houses the following departments:

- General Management;
- Health and Safety;
- Human Resources and Training;
- Technical Services (Engineering and Geology);

- Environment;
- Mine Operations and Supervisors;
- Mechanical and Electrical Maintenance Managers;
- Dry facilities;
- Mine Rescue;
- IT offices.

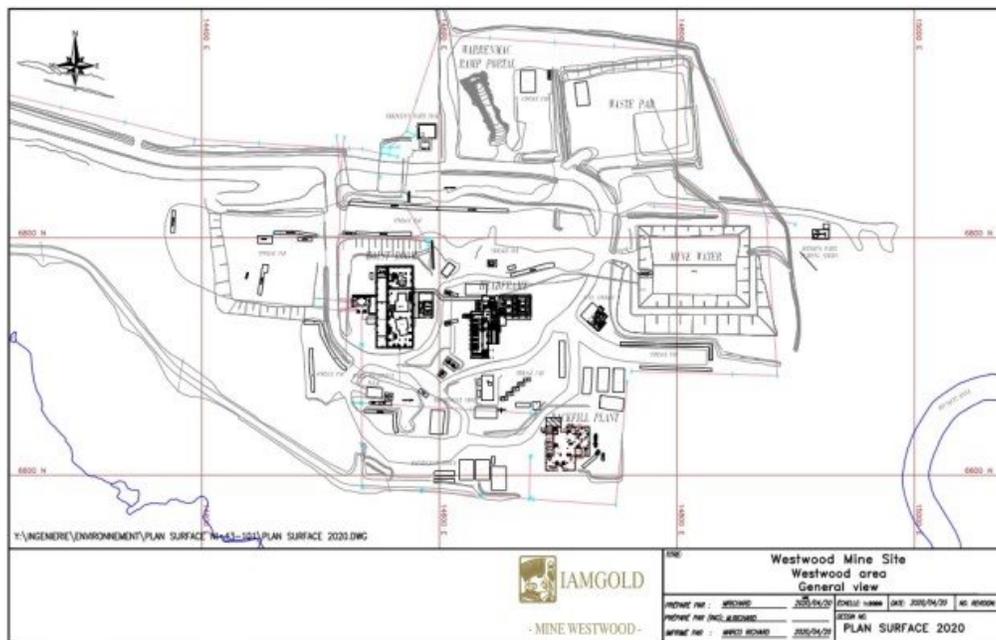
The accounting office is currently located in the administrative building at the entrance to the Doyon site. The main surface warehouse is located near the maintenance shop.

### **18.2 Mine Infrastructure (Westwood Shaft Area)**

Surface mine infrastructure is concentrated around the Westwood shaft. As illustrated in Figure 18-2, this area includes:

- The Warrenmac ramp portal;
- Hoist room and headframe;
- Backfill plant;
- Compressor room;
- Ventilation shaft and primary fans;
- Maintenance shop;
- Fuel Bay;
- Maintenance office;
- Material pads.

Figure 18-2: Surface Plan - Westwood Shaft Site



### 18.2.1 Warrenmac Ramp Portal

The Warrenmac ramp allows access to the upper ore zones between surface and Level 132-00; the ramp portal is located near the Westwood Shaft. Mobile equipment can also be mobilized by ramp instead of being dismantled for transportation by shaft.

### 18.2.2 Hoist Building

The hoist building comprises four main areas: auxiliary hoist, production and service hoists, electrical room and emergency generators. Both auxiliary and services/production hoists sections have bridged cranes (15 and 55 t, respectively) to allow maintenance.

The auxiliary hoist is a Ø 4.57 m by 2.34 m wide single drum refurbished hoist with a payload of 1,100 kg. It serves primarily to transport personnel and as an emergency exit.

The production hoist is a 6.4 x 2.4 m double-drum hoist with a payload of 20,000 kg supplied by Davy Markham with a DC electrical drive provided by ABB. It is used to hoist ore with two 20 t skips.

The service hoist is a 5.8 x 2.4 m double-drum hoist with a capacity of 10,000 kg provided by Davy Markham with DC electrical drive provided by ABB. It is used to transport workers and material underground. During shaft sinking it was fitted with a cage-skip configuration to permit skipping waste as well as transport of personnel.

A 25 kV secondary substation is located near the hoist room. A 1,500 kW diesel generator is located in the hoist room in case of electrical failure. The generator has the capacity to operate the auxiliary hoist, provide emergency lighting, pumping and other essential services.

### **18.2.3 Headframe Building**

The 85 m tall headframe provides the structure for the production, service and auxiliary hoists. Sheaves are installed for all hoists. Bridge crane and trolley hoists permit maintenance and movement of material. The ore-bin and loading building as well as the compressor building are annexed to the headframe. The proximity of the compressor building could eventually permit recovery of the heat generated in the mine ventilation system during cool periods of the year.

### **18.2.4 Ore Handling**

The skip unloading station includes scroll plates installed in the headframe as well as chutes that direct the contents of the skips to the ore or to the waste bin. The ore bin has a capacity of 2,000 t, while the waste bin has a capacity of 450 t. A chute is installed beneath each bin to load trucks for transport of material to the mill.

### **18.2.5 Compressors**

Compressed air for underground operations is provided by seven high-efficiency screw compressors, each with a capacity of 57 m<sup>3</sup>/min at 760 KPA (2,000 CFM at 110 PSI) for a total capacity of 400 m<sup>3</sup>/min (14,000 CFM). This set-up includes pressure tanks. Power is drawn from the electrical substation joined to the hoisting room.

### **18.2.6 Ventilation System**

The permanent ventilation system provides fresh air by the production shaft and an intake raise connected to the surface for 23,000 m<sup>3</sup>/min (800,000CFM). The exhaust air exits through a raise network leading to the surface and the main ramp portal. A 36M BTU heating system is installed in the headframe sending air down the shaft in addition to the 50M BTU installed on the intake vent shaft.

### **18.2.7 Fuel Storage**

A fuel storage area was installed near the headframe installation. Two fuel tanks provide a capacity of 45,000 litres of diesel fuel and 9,000 litres of gasoline fuel. The tank of diesel fuel is connected to the underground fuel distribution network and are available for fuelling mobile equipment on surface. Containment measures are installed according to environmental regulations.

**18.2.8 Environmental Infrastructures**

Development of the project required construction of a waste rock storage facility and a mine water pond, as described in Section 20.

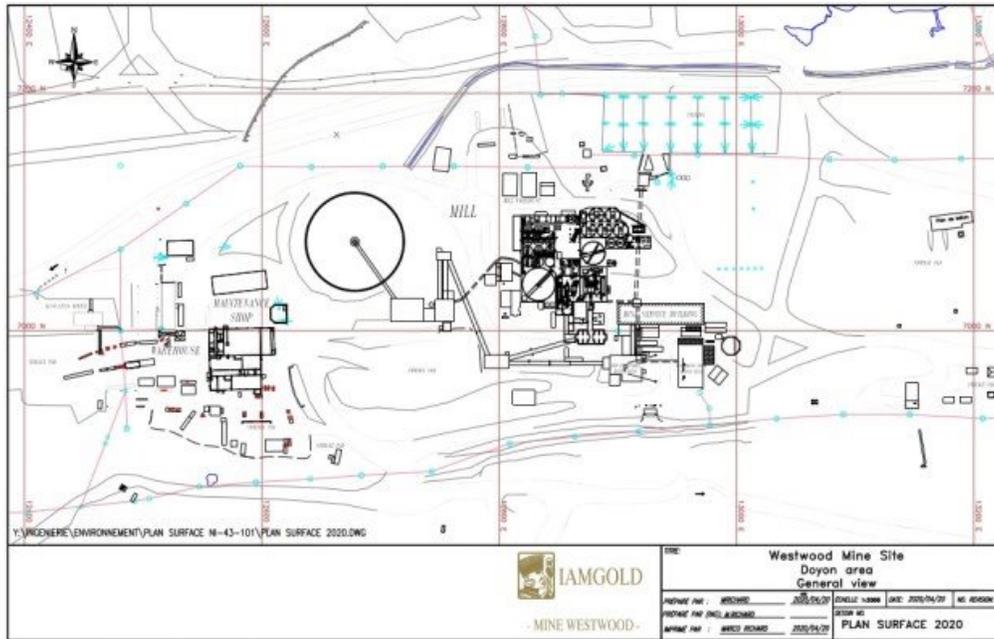
**18.2.9 Backfill Plant**

The backfill plant is next to the Westwood shaft. Two backfill lines and one backfill line spare is connected to the underground backfill network.

**18.2.10 Storage pads**

Outside storage space is dedicated for inventory and material awaiting transit from surface to the level where it will be required.

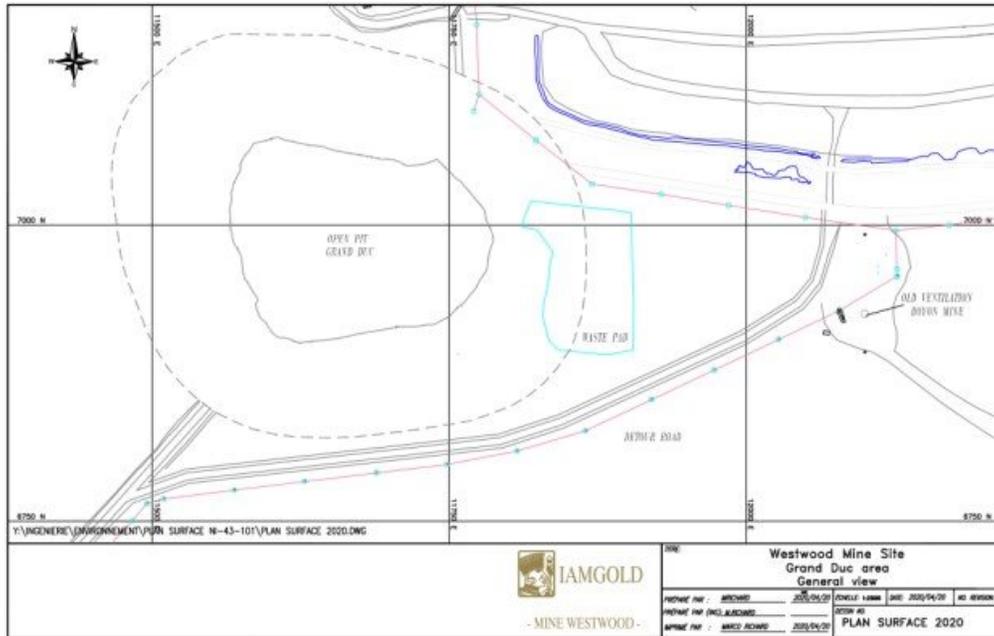
**Figure 18-3: Surface Plan - Doyon Site**



**18.2.11 Mill**

Following the preliminary economic assessment in 2008, it was decided to maintain the mill in place on the Doyon Site rather than transfer it closer to the Westwood Shaft. A significant overhaul of the infrastructure was performed in 2012-2013, in particular to the control and automation systems. Other obsolete equipment was replaced and existing infrastructure repaired and refurbished. Mill infrastructure is described in Section 17.

Figure 18-4: Surface Plan - Grand Duc Site



**18.2.12 Environmental Infrastructure**

Environmental infrastructure on the Doyon site includes tailings and water management facilities. Refer to section 20.

**19 MARKET STUDIES AND CONTRACTS**

The company does not have a hedging program. Gold production from the Westwood Mine is shipped from the mine site to the Metalor refinery in Massachusetts (USA) and sold at spot price. The refining contract and sales schedules are managed by IAMGOLD's corporate and include production from other operations.

Westwood mine has been in operation for several years and has several contracts in place to support operations. These contracts cover a large range of activities such as underground work, diamond drilling, laboratory testing services, maintenance and equipment repairs, security as well as bulk commodities and consumables. The terms of the contracts are within the mining industry norms.

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

### 20.1 Environmental Studies

The Westwood Mine environmental management systems are integrated with the Doyon Mine site infrastructure that is now closed. A number of ongoing monitoring program and previous environmental studies have identified environmental impacts and allowed IAMGOLD to determine the most effective methods of mitigating effects and restoring the sites following the completion of mining activities.

Major environmental studies include:

- Westwood and Doyon Mine Reclamation Plans (2016 Update). This study included a full review from first principles and an assessment of closure alternatives for both the Westwood Mine and the closed Doyon Mine. At the end of the study, separate mine reclamation plans were submitted to the province of Quebec for review and approval. These plans were supplemented by a number of additional technical studies, which includes hydrogeological, geochemical, closure trade-off studies, dam stability and liquefaction assessment, and water quality modelling. The updated closure plans for Westwood and Doyon mines were approved in February 2018;
- Hydrogeological Study, spring 2009. The study verified the permeability of the rock on the Doyon site at various levels to examine the possibility of using the pit for the management of Westwood tailings material in accordance with *Directive 019* of the MDDELCC. The conclusions of this study demonstrate that the Doyon pit could be used for the management of the tailings from Westwood. This option is included in this report;
- Evaluation of Acid-Rock Drainage (ARD) Potential. The ARD potential of the material has been investigated through geochemical testing and associated assessment of the waste and ore that will be generated by the mining activities at Westwood. The results of the testing indicate that some mine waste will likely be acid generating. The potential for acid generation is verified frequently to properly sort and manage the waste such that non-acid generating is available for construction needs;
- Environmental Effects Monitoring (EEM). EEM studies are designed to detect and measure changes in aquatic ecosystems (i.e., receiving environments). The metal mining EEM program is an iterative system of monitoring and interpretation phases that is used to assess the effectiveness of environmental management measures, by evaluating the effects of effluents on fish, fish habitat and the use of fisheries resources by humans. The cycle 6 report (3 yr/cycle) recommend that a standard biological monitoring study will be conducted in cycle 7 of the EEM studies at the Doyon mine to confirm previous results. The study areas for fish and benthos may be preserved. Similarly, the analysis of correspondences should be maintained in addition to the other analyzes recommended by Environment and Climate change Canada. This analysis makes it possible to validate and better interpret the results obtained with univariate descriptors as well as identifying taxa sensitive or tolerant to effluent.

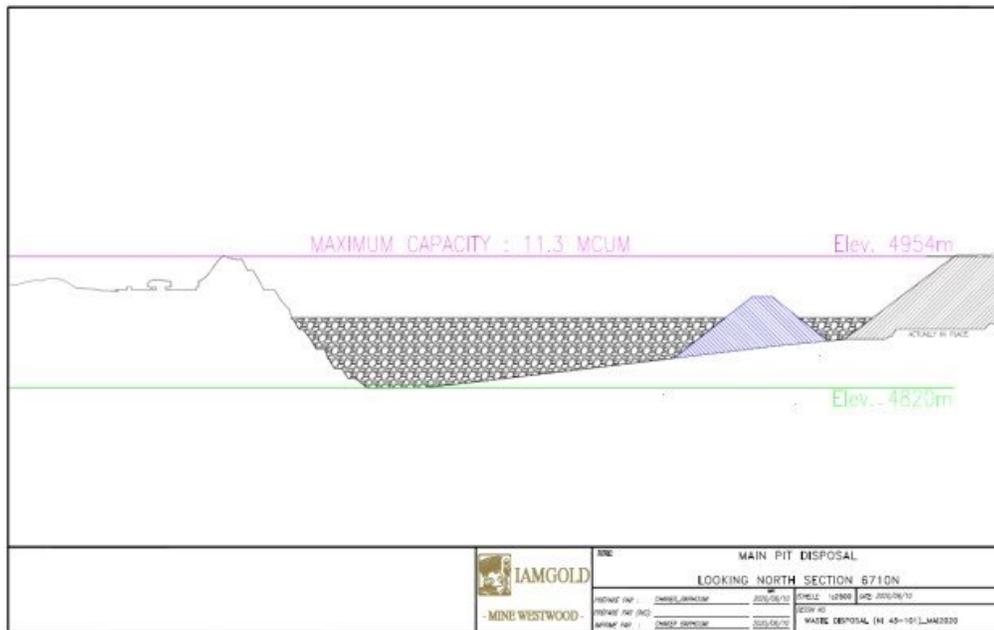
**20.2 Waste and Tailings Disposal**

Water and tailings management are important components of the design of the Westwood Mine, described in the following sections.

**20.2.1 Tailings Disposal**

As the existing Doyon tailings facilities are nearing capacity, disposal of the Westwood tailings requires additional facilities. As mentioned, the most appropriate method is to use the Doyon open pit for disposal. The total capacity of the pit is estimated at 11.3 MCUM of tailings and water at the targeted elevation of 4,954 m (water + tailings). Figure 20-1 shows a cross-section of the pit illustrating its use for tailings disposal. On April 30, 2020, the available capacity left in the Doyon open pit was 62%. Based on the current Mineral Reserve and mine plan, the total tailings storage capacity is exceeding the required capacity. At the end of the mine life, the available capacity left in the Doyon open pit will vary between 40% and 50%.

**Figure 20-1: Doyon Pit Schematic View**



### **20.2.2 Westwood Waste Rock Storage Facility**

The waste rock storage facility was constructed according to his certificate of authorization based on the guidelines of *Directive 019* established by the MDDELCC. The capacity of the storage facility is 45,000 m<sup>3</sup>. A high-density polyethylene (HDPE) liner was placed at the bottom of the storage facility to limit infiltration of water into the ground, and thus, minimize the potential for contamination of groundwater in the area. Groundwater wells and surface water collection ditches were installed around the storage facility to monitor surface and groundwater quality.

Until 2019, waste rock was disposed on the Doyon South waste rock storage facility or in the former Doyon open pit. In 2020, all the waste rock is disposed on the Doyon South waste rock storage facility. The study is ongoing to determine if waste rock disposal will start again in the former Doyon open pit.

### **20.2.3 Mine Water Pond**

The Westwood Mine water pond was also built in compliance with his certificate of authorization based on *Directive 019* of the MDDELCC. The capacity of the water pond is 7,200 m<sup>3</sup>. Wells were installed around the pond to monitor the groundwater quality.

### **20.2.4 Effluent Management System**

The final effluent is discharged from the Westwood Mine following active treatment in a High Density Sludge plant that was initially designed and operated by the Doyon Mine. All water collected at the mine site is pumped to the water management system for treatment, as required, followed by discharge to the Bousquet River. The final effluent discharged is regulated by a depollution attestation (incorporating all Doyon and Westwood mines certificates of authorization) under the Environment Quality Act (EQA) managed by the provincial government and also by the federal *Fisheries Act, Section 36, Metal and Diamond Mining Effluent Regulations* managed by Environment Canada and Climate Change (which includes conducting environmental effects monitoring studies and toxicity testing). The combined effluent (i.e., Doyon Mine runoff, Westwood Mine operations and Grand Duc open pit dewatering) is monitored to ensure that all applicable environmental criteria are consistently met prior to discharge to the river.

### **20.2.5 Acid Rock Drainage (ARD)**

Collection ditches are in place around the site to collect surface runoff and seepage from current and past operations infrastructure. Water collected in the ditches is pumped to the mine water pond and then excess water is sent to the High Density Sludge Treatment Plant and passive treatment ponds prior to final discharge.

### 20.2.6 Environmental Management during Operations

The following environmental management measurements have been implemented for the project:

- The Westwood Mine implements the Mining Association of Canada Towards Sustainability Mining Program. This process is audited internally on an annual basis and every three years by an external auditor;
- The IAMGOLD Health and Safety Management System is in place;
- An emergency plan and response team are in place;
- Westwood ore rejects are under test to determine if they could be used to facilitate the closure of the Doyon tailings ponds (desulphurization);
- All material disposal areas, buildings and other infrastructure will be rehabilitated in a manner that will blend in with the surrounding landscape;
- Should any contamination (hydrocarbon or other) be identified, samples will be taken and the contaminated material will be eliminated in the appropriate manner.

Topsoil from the construction areas will be stockpiled and used for rehabilitation of disturbed areas at closure.

### 20.3 Project Permitting

The permitting process is simplified because the Westwood Mine is operated as an addition to the Doyon division mining property, and as such, it maintains existing environmental compliance programs. The Westwood Mine work actively to review the regulations updates and to be 100% compliant with applicable City, Provincial and Federal regulations.

Several certificates of authorizations are necessary and must be obtained from the MDDELCC in accordance with Article 22 of the Law on the quality of the environment, as well as authorizations for ore extraction, ore processing, tailings management, etc. In September 2008, the project received authorization to proceed with the mining of a bulk sample from the MERN. In July 2008, the project obtained the authorization from the MDDELCC for the construction and utilization of an exploration shaft, a ventilation raise, a mine water pond and a waste rock storage facility. Additional certificates of authorization were received in 2012 to allow deposition of tailings in the Doyon pit and for the potable water system.

A key permit was issued in March 2013 by the MDDELCC (provincial environment ministry), a depollution attestation. This permit, which is renewable every five years, identifies the environmental conditions that must be met by Westwood Mine operations when carrying out its activities. The depollution attestation incorporates previous Westwood and Doyon mine Certificates of Authorization ( $\geq 36$ ) and prescribed the environmental requirements regarding effluent discharge, noise, waste management, etc., related to the operation of Westwood Mine operations. A modification of the depollution attestation was issued in January 2015. The renewal request was submitted to the MELCC in October 2017 as required by the legislation and the last version will still be valid until the approval of the depollution attestation renewal version as define in the legislation.

In 2019, the Grand Duc open pit operation began in accordance with its 2006 Certificate of Authorization and its 2016 closure plan.

Table 20-1: List of existing Permits

Applicant Name	Location	Number	Type of Document	Object	Remarks	Date of Receipt	Issue Date	Legal References
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-20	Certificat d'autorisation	Mise en opération de l'usine de concentration et de métallisation de minerai d'or à la mine Doyon;	Émis à Exploration Long Lac Itée, modifié le 29 janvier 1990, cédé le 17 janvier 1996 à Société en coparticipation Société aurifère Barrick – Cambior inc., cédé le 20 février 1998 à Cambior inc., modifié le 10 février 2003, modifié le 27 février 2007		23 décembre 1982	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-21	Certificat d'autorisation	Évacuation et le traitement des eaux usées.	Émis à Les Mines Doyon		19 septembre 1984	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-22	Certificat d'autorisation	Opération d'une usine HDS ainsi que la disposition des boues de chauffage;	Émis à la Société en coparticipation Minerals Lac Itée – Cambior inc., cédé le 17 janvier 1996 à Société en coparticipation Société Aurifère Barrick – Cambior inc., cédé le 20 février 1998 à Cambior inc.		22 février 1985	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-24	Certificat d'autorisation	Parc à résidus de la mine Doyon;	Émis à la Société en coparticipation Minerals Lac Itée – Cambior inc., cédé le 20 décembre 1995 à Société en coparticipation Société Aurifère Barrick – Cambior inc., cédé le 20 février 1998 à Cambior inc., modifié le 7 juillet 1999.		4 mai 1992	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-29	Certificat d'autorisation	Silver Stack	Émis à Long Lac Mineral Exploration Ltd, mine Doyon		15 février 1980	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-30	Certificat d'autorisation	Installation du système de concessage-tamizage (...);	Émis à Long Lac Mineral Exploration Ltd		9 mai 1980	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-31	Certificat d'autorisation	Construction d'une usine de concentration et de métallisation de minerai d'or et de ses installations connexes à la mine Doyon;	Émis à SOQUEM		27 mai 1980	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-35	Certificat d'autorisation	Exploitation d'un banc d'emprunt de sable et de gravier (banc 32DE#137);	Émis à Société en coparticipation Minerai Lac Itée – Cambior inc., cédé à Société en coparticipation Société Aurifère Barrick – Cambior inc. le 20 décembre 1995, cédé à Cambior inc. le 20 février 1998		27 mai 1994	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-38	Certificat d'autorisation	Exploitation du banc d'emprunt n°27;	Émis à Société en coparticipation Barrick Gold corporation – Cambior inc., cédé à Cambior inc. le 20 février 1998		7 juin 1995	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-39	Certificat d'autorisation	Décapage de l'indice minéralisé Mooshla-B;	Émis à Minerals Lac Itée		4 juin 1990	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-40	Certificat d'autorisation	Exploitation d'une sablière;	Émis à Barrick Gold Corporation – Cambior inc., cédé à Cambior inc. le 20 février 1998		18 juin 1996	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-41	Certificat d'autorisation	Exploitation d'une sablière;	Émis à Barrick Gold Corporation – Cambior inc., cédé à Cambior inc. le 20 février 1998		18 juin 1996	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-42	Certificat d'autorisation	Construction et l'exploitation d'une usine de pâte de ciment;	Émis à Société Aurifère Barrick – Cambior inc., cédé le 20 février 1998 à Cambior inc.		22 janvier 1997	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-43	Certificat d'autorisation	Construction et l'opération d'une usine de destruction des cyanures (procédé SO2/air Inco) et d'une usine de remblai en pâte;	Émis à Cambior inc.		5 mai 1998	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-44	Certificat d'autorisation	Exploitation d'un banc de moraine dans le canton La Peuse;	Émis à Cambior inc.		7 juillet 1999	Q-2, 22

Table 20-2: List of existing Permits (continued)

Applicant Name	Location	Number	Type of Document	Objet	Remarks	Date of Receipt	Issue Date	Legal References
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-45	Certificat d'autorisation	Aménagement d'un fossé à l'est du parc à résidus miniers n°1;	Émis à Cambior inc.		7 juillet 1999	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-47	Certificat d'autorisation	Exploitation du minerai localisé entre les deux fosses. Projet B-30 Fosse, Mine Doyon;	Émis à Cambior inc.		11 mai 2000	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-48	Certificat d'autorisation	Échantillonnage en vrac de l'indice basse teneur;	Émis à Cambior inc.		6 octobre 2000	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-49	Certificat d'autorisation	Dérivation d'un cours d'eau au pied de la digue n°4 du parc à résidus n°3;	Émis à Cambior inc.		7 janvier 2002	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-50	Certificat d'autorisation	Restauration de la halde à stériles nord;	Émis à Cambior inc.		9 février 2005	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-10029-51	Autorisation	Installation d'un collecteur de poussières par voie humide;	Émis à Cambior inc.		3 septembre 2003	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-52	Autorisation	Aménagement d'un système de traitement des eaux usées à Preissac;	Émis à Cambior inc.		14 août 2003	Q-2, 32
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-53	Certificat d'autorisation	Programme de creusage de tranchées de plus de 1 000 m <sup>3</sup> ;	Émis à Cambior inc.		15 septembre 2005	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-54	Certificat d'autorisation	Exploitation du banc d'emprunt 20 pour le rehaussement des digues;	Émis à Cambior inc.		27 juin 2006	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-56	Certificat d'autorisation	Exploitation d'une sablière, banc d'emprunt 41;	Émis à Cambior inc.		25 août 2006	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-57	Certificat d'autorisation	Exploitation d'une sablière, banc d'emprunt 25A;	Émis à Cambior inc.		25 août 2006	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-58	Certificat d'autorisation	Exploitation d'une sablière, banc d'emprunt 32;	Émis à Cambior inc.		25 août 2006	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-59	Certificat d'autorisation	Exploitation d'une sablière, banc d'emprunt 33;	Émis à Cambior inc.		25 août 2006	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-60	Certificat d'autorisation	Exploitation d'une sablière, banc d'emprunt 34;	Émis à Cambior inc.		25 août 2006	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-61	Certificat d'autorisation	Exploitation d'une sablière, banc d'emprunt 37;	Émis à Cambior inc.		25 août 2006	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-63	Certificat d'autorisation	Mise en valeur du projet Westwood;	Émis à Gestion IAMGOLD – Québec inc.		4 juillet 2008	Q-2, 22
Iamgold Corporation	Preissac (Québec)	7610-08-01-70029-64	Autorisation	Traitement d'eaux usées minières – Mise en valeur du projet Westwood;	Émis à gestion IAMGOLD – Québec inc.		4 juillet 2008	Q-2, 32
Gestion Iamgold-Québec inc.	Preissac (Québec)	400629702 (7610-08-01-70029-65)	Certificat d'autorisation	Exploitation d'une usine de béton de ciment	Voir le document 401097636, 400628533, 401795030, 400809591	2009-06-12	12 août 2009	Q-2, 22, Q-2, r.1.001
Gestion Iamgold-Québec inc.	Preissac (Québec)	400648444 (7610-08-01-70029-66)	Certificat d'autorisation	Usinage à forfait		2009-08-06	8 octobre 2009	Q-2, 22, Q-2, D-018, Q-2, r.1.001
Gestion Iamgold-Québec inc.	12875, route de Mont-Brun Rouyn-Noranda (Québec)	400648359	Certificat d'autorisation	Exploitation d'une usine de remblai en pâte	Voir le document 401097636, 400628533, 401795030, 400809591, 400809326	2009-07-17	14 octobre 2009	Q-2, 22, Q-2, r.1.001
Gestion Iamgold-Québec inc.	Preissac (Québec)	400756174	Certificat d'autorisation	Restauration de l'effluent final	Voir le document 401097636, 400628533, 401795030, 400809591, 400809326, 400809834	2010-06-25	29 septembre 2010	Q-2, 22
Gestion Iamgold-Québec inc.	Preissac (Québec)	400764426	Certificat d'autorisation	Restauration de la fosse Indice Basse Teneur (IBT)	Voir le document 401097636, 400628533, 401795030, 400809591, 400809326, 400809834, 400809828	2010-06-25	1 novembre 2010	Q-2, 22
Gestion Iamgold-Québec inc.	Preissac (Québec)	400784806	Certificat d'autorisation	Extraction de minerai - Projet Westwood	Voir le document 401097636, 400628533, 401795030, 400809591, 400809326, 400809834, 400809828, 400809592	2010-06-11	3 février 2011	Q-2, 22
Gestion Iamgold-Québec inc.	Preissac (Québec)	400816773	Certificat d'autorisation	Modernisation de l'usine de traitement		2011-02-16	31 mai 2011	Q-2, 22
Gestion Iamgold-Québec inc.	Preissac (Québec)	400836642	Autorisation (Q-2)	Traitement des eaux usées - projet Westwood		2011-03-28	15 septembre 2011	Q-2, 32
Iamgold Corporation	Preissac (Québec)	400809701	Modification de certificat d'autorisation	Construction et opération d'une usine de pâte de ciment	Modifie le document 081139803	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	12875, route de Mont-Brun Rouyn-Noranda (Québec)	400809326	Modification de certificat d'autorisation	Projet de remblai en pâte - Mine Mouska	Modifie le document 400648359	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809577	Modification d'autorisation	Traitement des eaux usées minières - Mise en valeur du projet Westwood	Modifie le document 400804372	2011-03-25	18 mai 2011	Q-2, 122.3
Iamgold Corporation	Preissac (Québec)	400809802	Modification d'autorisation	Installation d'un collecteur de poussières par voie humide	Modifie le document 400104577	2011-03-25	18 mai 2011	Q-2, 122.3

Table 20-3: List of existing Permits (continued)

Applicant Name	Location	Number	Type of Document	Objet	Remarks	Date of Receipt	Issue Date	Legal References
Iamgold Corporation	Preissac (Québec)	400809601	Modification de certificat d'autorisation	Exploitation de la mine et de l'opération de l'usine de traitement de minerai d'or de la Mine Doyon et des installations connexes	Modifie le document 400809500, 400383086	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809644	Modification de certificat d'autorisation	L'opération d'une usine HDG ainsi que la disposition des boues de chauffage	Modifie le document 081023047	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809653	Modification de certificat d'autorisation	Parc à résidus, Mine Doyon	Modifie le document 080004851, 081040703	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809673	Modification de certificat d'autorisation	Exploitation d'un banc d'emprunt de sable et de gravier (banc 32DE#137)	Modifie le document 081091720	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809679	Modification de certificat d'autorisation	Exploitation du banc d'emprunt no 27	Modifie le document 081115801	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809692	Modification de certificat d'autorisation	Exploitation d'une sablière	Modifie le document 081124289	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809698	Modification de certificat d'autorisation	Exploitation d'une sablière	Modifie le document 081124290	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	12875, route de Mont-Brun Rouyn-Noranda (Québec)	400809302	Modification de certificat d'autorisation	Certificat d'autorisation pour l'exploitation du projet Mouska	Modifie le document 080005724, 081040721, 081139809, 081139958	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809780	Modification de certificat d'autorisation	Construction et opération d'une usine de destruction des cyanures (procédé 502/air) et d'une usine de remblai en pâte	Modifie le document 081154202	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809788	Modification de certificat d'autorisation	Exploitation d'un banc de marais dans le canton La Pause	Modifie le document 080004853	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809795	Modification de certificat d'autorisation	Restauration de la halde de stériles nord	Modifie le document 400194589	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809806	Modification de certificat d'autorisation	Aménagement d'un système de traitement des eaux usées Preissac	Modifie le document 400101934, 400117540	2011-03-25	18 mai 2011	Q-2, 122.3
Iamgold Corporation	Preissac (Québec)	400809891	Modification de certificat d'autorisation	Exploitation d'une usine de béton de ciment	Modifie le document 400629702	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809892	Modification de certificat d'autorisation	Extraction de minerai-Projet Westwood	Modifie le document 400784806	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809828	Modification de certificat d'autorisation	Projet de restauration de la fosse Indice Basse Teneur (IBT)	Modifie le document 400784426	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400809834	Modification de certificat d'autorisation	Travaux relatifs à la restauration de l'effluent final, mine Doyon	Modifie le document 400756174	2011-03-25	18 mai 2011	Q-2, 122.2
Iamgold Corporation	12875, route de Mont-Brun Rouyn-Noranda (Québec)	400809319	Modification de certificat d'autorisation	Cambior, Mine Mouska: installation d'un système de traitement des eaux usées domestiques	Modifie le document 400048595	2011-03-25	18 mai 2011	Q-2, 122.5
Iamgold Corporation	Preissac (Québec)	400814736	Certificat d'autorisation	Implantation de deux halles à minerai		2011-03-31	13 juin 2011	Q-2, 22
Iamgold Corporation	Preissac (Québec)	400809626	Certificat d'autorisation	Utilisation de la fosse Doyon comme parc à résidus		2011-05-31	7 mars 2012	Q-2, 22
Iamgold Corporation	Preissac (Québec)	400896271	Autorisation (Q-2)	Construction d'un système de traitement des eaux usées d'origine domestique	Voir le document 401097636, 400628533, 401795030, 400809591, 400809526, 400809834, 400809828, 400809592, 400966766, 400966745, 400966754, 401207576, 401129687, 400922855	2011-11-09	26 mars 2012	Q-2, 32
Iamgold Corporation	Preissac (Québec)	400922855	Modification d'autorisation	Construction d'un système de traitement des eaux usées d'origine domestique	Modifie le document 400896271	2012-04-20	23 mai 2012	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	400933561	Certificat d'autorisation	Construction d'une usine de remblai en pâte		2012-02-21	18 juin 2012	Q-2, 22
Iamgold Corporation	Preissac (Québec)	400946929	Autorisation (Q-2)	Captage d'eau souterraine - Projet Westwood, Iamgold	Valide du 2014-08-14 au 2029-08-14	2012-04-05	2 août 2012	Q-2, r. 6, 31
Iamgold Corporation	Preissac (Québec)	400969852	Autorisation (Q-2)	Distribution de l'eau potable - Projet Westwood		2012-09-06	10 mai 2013	Q-2, 32
Iamgold Corporation	Preissac (Québec)	401106335	Certificat d'autorisation	Rehaussement des parcs à résidus		2013-06-21	20 février 2014	Q-2, 22
Iamgold Corporation	Preissac (Québec)	401209888	Certificat d'autorisation	Traitement de minerai à forfait de la propriété Grenade		2014-09-29	17 décembre 2014	Q-2, 22
Iamgold Corporation	Preissac (Québec)	401323021	Certificat d'autorisation	Traitement à forfait de minerai		2016-01-08	1 février 2016	Q-2, 22

Table 20-4: List of existing Permits (continued)

Applicant Name	Location	Number	Type of Document	Object	Remarks	Date of Receipt	Issue Date	Legal References
Iamgold Corporation	Preissac (Québec)	401012594	Attestation d'assainissement	Attestation d'assainissement	Voir le document 401187056	2002-11-15	2013-03-19	Q-2, 31.18
Iamgold Corporation	Preissac (Québec)	401187056	Modification d'attestation d'assainissement	Exploitation minière		2014-07-17	2015-01-12	Q-2, 31.26
Iamgold Corporation	12875, route de Mont-Brun Rouyn-Noranda (Québec)	401370133	Plan de réhabilitation	Approbation d'un plan de réhabilitation (Mouska)		2016-05-15	2016-07-21	Q-2, 31.51
Iamgold Corporation	Preissac (Québec)	3025912	Permis de déboisement	Déboisement à l'est de la fosse Doyon	valide jusqu'au 31 mars 2021		2020-04-01	Règlement sur l'aménagement durable de la forêt.
Iamgold Corporation	Preissac (Québec)	1016198	Permis	Permis d'utilisation des équipements pétroliers à risque élevé	valide jusqu'au 31 décembre 2021		2020-04-07	Règle du bâtiment
Iamgold Corporation	Preissac (Québec)	14515-1-21.1	Permis portant sur les substances nucléaires et les appareils à rayonnement	Permis pour sources nucléaires (densimètres)	valide jusqu'au 30 avril 2021		2020-05-26	Article 26 de la loi sur la sûreté et la réglementation nucléaire

Table 20-5: Permit applications currently under review

Applicant name	Location	Number	Object	Remarks	Date of Receipt	Legal References
Iamgold Corporation	Preissac (Québec)	200302992	Changement de nom		2011-03-25	Q-2, 122.2
Iamgold Corporation	Preissac (Québec)	200687108	Restauration du parc à résidus #1		2019-04-05	Q-2, 22 al. 2
Iamgold Corporation	Preissac (Québec)	200636344	Renouvellement d'attestation d'assainissement pour l'exploitation minière		2017-10-12	Q-2, 31.28, Q-2, 22 al. 1 (1)

#### 20.4 **Social and Community Impact**

There are no significant issues are expected regarding the social acceptability of the Westwood Mine and Grand Duc open pit. The project's infrastructures are located on or near the past Doyon Mine site, which was in operation since 1980. Community and social impacts are likely positive or unchanged. No new property was required during development of the Westwood Mine and Grand Duc open pit as the location of surface infrastructures was held by IAMGOLD. The Westwood Mine and Grand Duc open pit are located in an area with a long mining history, where citizens are well informed about the advantages and impacts of mining. There are benefits for the 29-year operation of the Doyon Mine, including payments of municipal and school taxes, mineral rights to the provincial government, purchases and contracts with local businesses, as well as approximately 700 local jobs will continue through the projected 10-year mine life of the Westwood Mine.

IAMGOLD - Abitibi holds an annual site visit and meeting with all of its local stakeholders, including representatives from the Rouyn-Noranda and Preissac municipalities, government ministries and elected officials (federal and provincial), environmental groups, and community organizations. This event allows stakeholders to voice concerns about the impact of the proposed mining plan.

IAMGOLD states that its core purpose is to enrich the lives of its stakeholders. To this end, IAMGOLD - Abitibi and the Westwood Mine invest thousands of dollars every year in local partnerships (duration between one and five years) and make significant contributions to charitable organizations. As well, a number of employees also contribute to professional, community and cultural committees and organizations. The company's contribution to the community has been rewarded by the Rouyn-Noranda Chamber of Commerce (Business of the Year 2012, Sustainable Development 2013, Social Engagement 2014, Social Engagement 2014 and Social Engagement 2015, Work-Family Balance (2016), Innovative Human Resources Management (2017), Contribution to Abitibi-Témiscamingue Economic Development).

#### 20.5 **Mine Closure Plan**

The *Mining Act*, and the regulations under it, includes provisions that require mining companies to rehabilitate the areas affected by their activities. The provisions cover extraction activities, exploration activities that require earthworks, and mine tailings sites. By law, companies are required to file a site rehabilitation plan and provide financial guarantees.

Companies carrying out mining activities under the *Mining Act* must submit a rehabilitation plan to the MERN. Following consultation with the MDDELCC, the MERN may approve the plan and its implementation schedule. The MERN may, if necessary, request additional research or studies before approving the plan.

The closure plan must be submitted to the department before work can begin. The closure plan must be revised every five years, but in certain cases, the MERN may require more frequent revisions. As an example: a change in the nature of mining activities, the use of a new technology, or if the operator requests to make a change to the plan can all result in the plan being updated more frequently. The revised plan must be submitted to the MERN for approval.

A company that expects to use or that is already using an area must provide the MERN with a financial guarantee once its rehabilitation plan has been approved.

On July 23, 2013, the Quebec government approved amendments to the Regulation on mineral substances other than petroleum, natural gas and brine ("*Règlement modifiant le Règlement sur les substances minérales autres que le pétrole, le gaz naturel et la saumure*"). These amendments set new regulations regarding the financial guarantee required for the restoration of mining sites:

- **Increased financial guarantees.** Under the previous Regulation, the financial guarantee that had to be provided to secure the mine restoration plan was set at 70% of the anticipated costs for the restoration of accumulation areas only. The amendments increase the guarantee requirement to 100% of the anticipated rehabilitation cost of the entire mine site.
- **Basis for calculating the guarantee amount.** The amount of the guarantee will be based on the anticipated closure costs of the entire mine site and not only accumulation areas.
- The amendments propose that the financial guarantee is to be paid in three annual payments. The first payment would represent 50% of the total amount of the guarantee and is to be provided within 90 days of the approval of the restoration plan by the MERN. The two subsequent payments would represent 25% of the total amount of the guarantee, and are to be provided on the first and second anniversary of the approval of the plan.

When the restoration work has been completed under the approved plan, and the site no longer presents a risk of acid rock drainage and is secure, the Ministry will issue a certificate to indicate that the company is released from its obligations. The same release is granted if a third party agrees to assume the restoration obligations.

The Doyon Mine rehabilitation plan submitted to the MERN was revised in March 2010 and an updated closure plan estimate was submitted in January 2012. The closure plan for Doyon was approved in March 2012. In accordance with the 2013 regulatory update, a total of \$123.6M financial guarantees have been submitted to the MERN for August 2015 associated to the Doyon mine in January 2015, the Westwood Mine closure plan update was submitted to the MERN and was approved in December 2015. A total of \$3.59M financial guarantees have been submitted to the MERN for December 2017 associated to the Westwood mine. In February 2016, the Grand Duc open pit closure plan (\$0.08M) has been submitted and approved in July by the MERN. As requested by the ministry, the Grand Duc closure plan will be included in the next Doyon mine closure plan update.

In September 2016, an updated Westwood and Doyon closure plan was submitted to the MERN. The 2016 mine closure study and filed reports considered the integration of the Westwood operations with the closed Doyon Mine infrastructure based on current and future use. As an outcome of this approach, some mine components originally operated and attributed to the Doyon mine were transferred into the Westwood Plan.

In February 2018, the closure plans for Westwood (\$69.14M) and Doyon (\$97.14M) mines were approved by the ministry with a combined cost estimate of \$166.28M. The financial guarantees were adjusted accordingly to the regulatory payment schedule (100% since Feb. 2020). These amounts were redistributed to each of these sites based on their use for operational purposes. In addition, these amounts include a contingency of 15% and indirect costs. The next closure plans update is required by October 14, 2021.

The most recent total closure costs for the Westwood Mine is \$69M, with the current Asset Retirement Obligation estimated to be \$19,012,368. In addition, the total estimate closure costs for the Doyon Site is \$97M, with the current Asset Retirement Obligation estimated to be \$162M.

Activities included in the Doyon and Westwood Mines closure plans include:

- Underground closure;
- Closing and securing surface accesses;
- Demolition and rehabilitation of plant sites & infrastructure;
- Closure of the tailings area;
- Rehabilitation of waste storage facility;
- Rehabilitation of mine water pond;
- ARD management and rehabilitation of areas contaminated with acid-generating rock;
- Doyon Pit;
- General revegetation;
- Environmental compliance and monitoring.

## 21 CAPITAL AND OPERATING COSTS

In chapter 21, all amounts are expressed in CAD unless otherwise noted.

### 21.1 Capital Expenditures

Capital expenditures for the Westwood Mine include sustaining capital required for the extraction of the Mineral Reserves only. The sustaining capital includes the capital required to develop and sustain the mine through production. Capital expenditures relating to new projects, improvements or expansions will be treated on a case-by-case basis and are excluded from this report.

A summary of capital expenditures is shown in Table 21-1.

**Table 21-1: Summary of Capital Expenditures**

Expenditures (Sustaining)		Average Per Year		Total
Diamond Drilling	Exploration	\$	-	\$ -
	Valuation	\$	2,000,000	\$ 15,900,000
	Total	\$	2,000,000	\$ 15,900,000
Surface	Infrastructure	\$	-	\$ -
Underground	Shaft	\$	-	\$ -
	Deferred Development	\$	13,500,000	\$ 106,300,000
	Infrastructure	\$	5,000,000	\$ 38,700,000
	Total	\$	18,500,000	\$ 145,000,000
Mobile Equipment Underground		\$	5,000,000	\$ 40,800,000
<b>Total</b>		<b>\$</b>	<b>25,500,000</b>	<b>\$ 201,700,000</b>

#### 21.1.1 Exploration / Valuation / Definition Drilling

The exploration campaign to date has focused on identifying Mineral Resources to a depth of 2,400 m, the maximum depth that can be mined with the infrastructure currently planned. In the recent years, most of the drilling has targeted resources above 1,800 m in depth. In the next years, diamond drilling will be important to convert inferred resources and to test several underground potential targets as many as surface potential targets. For 2020, 56,000 m were budgeted for underground diamond drilling and an additional 8,000 m were budgeted for surface diamond drilling.

#### 21.1.2 Surface Construction

No surface construction expense is required.

### 21.1.3 Underground Infrastructure

Underground infrastructure costs include lateral (e.g., ramps, cross-cuts, and drift) and vertical (e.g., ore passes, waste passes, and ventilation raises) development. Excavation and construction of underground infrastructure such as loading stations, garages, electrical substations and stockrooms are also included. Costs of fixed equipment such as electrical distribution and ventilation are also included.

### 21.2 Underground Operating Costs

Operating costs for the Westwood Mine are based on the current Mineral Reserve. Consumables costs, labour agreement and contract with suppliers are based on the latest Life of Mine plan (LOM of December 2019). Operating costs are higher than operating costs from 2019 since the annual production based on the current Mineral Reserve is lower than the production of 2019. The operating costs are presented in Table 21-2.

**Table 21-2: Operating Cost Summary**

		Unit Cost (Can\$/t)
Mining	Definition Drilling	3.23
	Stope Preparation	66.70
	Extraction	88.37
	Services	65.90
	<b>Total Mining</b>	<b>224.20</b>
Milling	Mill Operations	21.28
	Environment	4.81
	<b>Total Milling</b>	<b>26.09</b>
Administration	G & A	39.68
	Other	3.27
	<b>Total Admin.</b>	<b>42.95</b>
<b>Total Operating Cost</b>		<b>293.23</b>

Labour is the most significant component of the operating costs, representing close to 50% of the total. Labour rates are determined according to the current labour agreement, IAMGOLD standards, and the regional labour market. An allowance of 53% of base salary has been included for fringe benefits.

#### 21.2.1 Mining

Mining costs at Westwood Mine are the most significant component of the operating costs, and include all underground mining activities as well as the direct services required to support the operation:

- Definition drilling includes the drilling and assays required for the definition phases of the reserves. A spacing of 20 x 20 m is generally used for definition drilling;

- Stope preparation includes all the work required to develop reserves, including horizontal and vertical development related to stopes, as described in Section 16;
- Extraction includes all the operations required to extract the ore from the stopes, including production drilling, V30 development, blasting, mucking, re-handling, hauling, hoisting and backfilling;
- Service costs include underground and maintenance departments. Mine services include supervision, shaft services, and supply maintenance. Mechanical maintenance costs include costs related to maintaining the fleet of mobile equipment and the mine infrastructure. Electrical costs include maintenance costs as well as electrical power consumption for underground operations.

### 21.2.2 Milling

Mill activities include costs related to mill operations, trucking of ore from the Westwood shaft to the mill, and environmental costs related to operations.

#### 21.2.2.1 Environment

Westwood direct environmental costs include departmental operations, waste management, testing, and compliance costs. Doyon closure costs are not included in the Westwood operating costs. Tailings and water management costs are included in the milling costs.

### 21.3 Surface Operating Costs

Refer to Table 15-1.

### 21.4 Other Costs

#### 21.4.1 Taxation, Mining duties and Royalties

Mining duties are paid in Quebec based on the appropriate statutory rates under the Quebec Mining Tax Act. On the basis of a 2019 Life of Mine study, taxes are estimated at an average rate of 3.4%. Property taxes are part of general administrative costs in that study. This practice is consistent with the methodology currently used at the Westwood Mine.

In 2008, IAMGOLD acquired the royalty on the Doyon / Westwood property from Barrick Gold Corporation for US\$13M. This acquisition permits production from Westwood to be free of any royalty obligations.

**21.4.2 Administration**

Administration costs include General Management, Health and Safety, Human Resources (including Training), Administration (accounting), Supplying, Continuous improvement and IT. Costs include labour, departmental operating costs and general costs such as insurance, communications and association costs.

**21.5 Manpower**

The current manpower at Westwood mine is summarized in Table 21-3 and it is not expected to change drastically.

**Table 21-3: Westwood Mine Manpower**

Department	IAMGOLD	Contractor	Total
Mine	283	15	298
Mill	47	11	58
Electric	43	0	43
Maintenance	120	28	148
Mine Technical Services	54	20	74
Open Pit	0	40	40
Environment	3	0	3
Projects	3	0	3
Administration (HR, Health & Safety, Procurement, Finance)	44	11	55
<b>Total</b>	<b>597</b>	<b>125</b>	<b>722</b>

**22 ECONOMIC ANALYSIS**

This section is not required as the property is currently in production and there is no material expansion of current production.

### 23 ADJACENT PROPERTIES

The stratigraphy of the Cadillac area can be summarized in as follows (from north to south):

- 1) The Hébécourt Formation: mafic volcanic rocks, host of the Mic Mac Mine and part of the Mouska Mine;
- 2) The Mooshla syn-volcanic intrusive host of the Mooshla Mine and the Grand Duc project;
- 3) The prolific Blake River Group: intermediate to felsic volcanic to volcanoclastic rocks, host of world-class gold and base metal deposits;
- 4) The Cadillac sedimentary group, site of low-grade small tonnage showings.

This package of favourable stratigraphy, which extends over 16 km east-west, along the Cadillac Fault Zone, is held by two owners: IAMGOLD holds 100% interest of the western part of the camp including the Mooshla syn-volcanic intrusive, the Mouska Mine, the Doyon Mine and the Westwood Mine, and Agnico-Eagle holds the eastern part of this package containing the Ellison, Bousquet 1, Bousquet 2, LaRonde Penna, Dumagami and Lapa mines.

The historical gold content of this 16 km long zone totals more than 26M/oz (production, resources and reserves). There is no open ground in the surrounding area and there is no other way to increase property area except through agreements between the two companies.

**24 OTHER RELEVANT DATA AND INFORMATION**

No other data and information is required to make this technical report understandable and not misleading.

**25 INTERPRETATION AND CONCLUSION**

**25.1 General Statements**

In 2019, IAMGOLD conducted a comprehensive review of the Central Corridor of the Westwood Mine. The review was initiated due to a large seismic event that caused multiple fall of grounds on December 22, 2018. It was not the first time Westwood mine was affected by a large seismic event. A timeline of the events which triggered the review are as follows:

- August 2013	Central Corridor 104 Block	Fall of grounds in multiple drifts following production blasts
- December 2014	Central Corridor 104 Block	Major seismic event
- January 2015	Central Corridor 104 Block	Major seismic event
- May 2015	Central Corridor 104 Block	Major seismic event
- December 2018	Central Corridor 132 Block	Large seismic event causing multiple fall of grounds

A risk analysis was completed for the mining of the Central Corridor and the results of the review established a geotechnical risk adjustment, which reduced the mining recovery of the zones. The mine design was also reviewed and specific adjustments (as changing the mining method for specific zones) were made in order to mine the lenses safely in adverse ground conditions, but those changes increased the operating and sustaining costs.

However, Westwood Mine presents a great opportunity for the continuing development of an economic mine within a well-established mining camp with good infrastructure, a skilled and experienced pool of manpower, and a low political risk environment that supports mining.

It is the opinion of the authors, that sufficient work has been done to date to support the resource and reserve estimation presented in this report. The results to date are sufficiently attractive to continue drilling expenditures to expand and better define the resource and reserve base and further investigate the potential.

In the opinion of the authors, the data available to prepare this technical report is both credible and verifiable in the field. It is also the opinion of the authors that no material information relative to the Westwood Mine has been neglected or omitted from the database. Sufficient information is available to prepare this report and any statements in this report related to deficiency of information are directed at information, which in the opinion of the authors has not yet been gathered or is recommended to be collected as the mine moves forward. The authors' statements and conclusions in this report are based upon the information from underground mapping and sampling and the exploration database used for the April 30, 2020, resource and reserve estimate. Drilling work is ongoing at the Westwood Mine and it is anticipated that new data and drilling results may change some interpretations, conclusions, and recommendations.

This report includes technical information, which requires subsequent calculations to derive sub-totals, totals, and weighted averages. Such calculations inherently involve a degree of rounding and consequently can introduce a margin of error. Where these rounding errors occur, IAMGOLD does not consider them to be material.

### 25.2 **Project Risks**

- **Geomechanics:** The majority of the currently identified ore lenses are located in ground classified as moderate to poor. Ground conditions limit the dimension of the stopes and increase forecasted dilution. Seismic risk is of concern in certain areas. Poor ground could also decrease productivity. A ground-control program is in place to appropriately manage this risk;
- **Continuity of Gold Mineralization:** The deposit at depth and at the East of the Bousquet Fault still holds risk as insufficient drilling have been completed to date to provide a high level of confidence on the continuity of the gold mineralization. The deposit's narrow feature suggests that the veins pinch and swell. The deposit consists of several mineralized lenses stacked from north to south over 100 m. However, the mining work done from 2013 to 2019 show a good continuity of the gold mineralization along the mined veins over 100 to 200 m from east to west. A lack of continuity would affect negatively the current selected mining method. A close drilling pattern combined with underground excavation should confirm the mineralization used to delineate indicated and measured resources and to appropriately manage this risk.

### 25.3 **Opportunity**

Significant additional drilling and underground development will be required to further delineate the mineralization, expand the resource base and adequately constrain the resource models in the lower and east sections of the mine. With additional valuation and definition drilling in Westwood, North and Zone 2 corridors during the next year, upgrading of inferred resources to the indicated and measured resource categories and eventually to reserves is likely to happen. The ultimate size of mineralized bodies at the Westwood Mine is yet to be defined. Mineralization is still open at depth and there is a very good potential to expand the resource base with additional drilling programs, on both sides of the Bousquet Fault Zone and close to surface.

Recent scientific work (Mercier-Langevin et al. 2009) have confirmed geochemical similarities between the host rocks of the main sulphide lenses at the LaRonde Penna mine and the rocks hosting the Westwood Mineralized corridor at Westwood. Consequently, there is excellent potential for gold-rich VMS-type mineralization to occur on the Doyon division mining property.

The current resource estimate made on widely spaced holes excludes areas of low-grade intercepts even if the structures were recognized in the hole. The underground drifting and sampling along Zone 2 Extension and Westwood Corridor zones that were mined out in 2013-2019 showed important grades variability within the structures. In filing with additional drill holes may reclassify areas that have been excluded so far. It is well known that numerous stopes at the Doyon and Mouska mines have been mined with success even if the number of economic drilling intersections were as low as 40%.

Different geotechnical projects are ongoing to minimize the uncertainty and to improve the capability of mining in adverse ground conditions. If successful, it will allow Westwood mine to maximize the mine recovery of the lenses in adverse ground conditions while protecting the underground workers.

The cut-off grade for the Mineral Reserve was calculated at a gold price of US\$1,200 and at an USD/CAD exchange rate of 1.25. A higher gold price and/or a higher exchange rate could improve the profitability of some zones or production stopes. Stopes or zones which their grade is close to the cut-off grade needs to be reviewed and evaluated for profitability using a gold price and an exchange rate equivalent to the current market.

A reduction in the dilution and an improvement in the mine recovery by improving and optimizing the drill and blast practices at Westwood mine could potentially have a positive impact on the Mineral Reserve.

## 26 RECOMMENDATIONS

The Westwood Mine presents a great opportunity for the continuing development of an economic mine within a well-established mining camp with good infrastructure, a skilled and experienced pool of manpower, and a low political risk environment that supports mining.

Geotechnical projects currently ongoing must continue to minimize the uncertainty and to improve the capability of mining in adverse ground conditions. Further numerical modeling and analysis must continue to improve the recovery in the future while maintaining a safe environment for the underground workers. Further geomechanical characterization is required to validate mining assumptions, particularly at depths below 1,500 m and in the area surrounding the Bousquet Fault. Design guidelines should be continuously revised to account for local variability in rock mass characteristics.

The majority of the currently identified ore lenses are located in ground classified as moderate to poor. Ground conditions limit the dimension of the stopes and increase forecasted dilution. Poor ground conditions could also decrease productivity. Continue to monitor the ground conditions with the ground-control program in place to manage this risk appropriately.

Significant investment in diamond drilling will be necessary to increase Westwood ratio of indicated and measured resources versus inferred resources and to increase the definition of some probable and even proven reserves as well as discovering the full potential of Westwood Mine. Drilling and underground development is required to further delineate the mineralization and adequately constrain the resource models in the lower and east sections of the mine. Additional drilling in the Westwood, North Corridor and Zone 2 corridors during the next years is planned in order to upgrade inferred resources to the indicated and measured categories. Mineralization is still open at depth and there is still a good potential to expand the resource with additional drill programs on both sides of the Bousquet Fault and closer to surface. It is planned to invest in infrastructure development and in capitalized diamond drilling during the next five years. Drilling on surface should not be excluded to better define potential targets and to unlock to full potential at Grand Duc.

Ongoing economic evaluation and mining method analysis is required to optimize the mine production and to ensure efficient recovery of the reserves since the cut-off grade for the Mineral Reserve was calculated at a gold price of US\$1,200 and at an USD/CAD exchange rate of 1.25. A higher gold price and/or a higher exchange rate could improve the profitability of some zones or production stopes. Stopes or zones which their grade is close to the cut-off grade needs to be reviewed and evaluated for profitability using a gold price and an exchange rate equivalent to the current market.

The engineering studies must continue to reduce the dilution and improve the mine recovery by improving and optimizing the drill and blast practices at Westwood mine since, if conclusive, could potentially have a positive impact on the Mineral Reserve.

Initiation of continual improvement work on Block Model parameters will be carried out and analyzed in 2020. Studies will include variography analysis to improve the orientation of search ellipses and verification of capping grades for each lens. Closely following the reconciliation of the block model estimate to mill production, will ensure that the changes made for 2019 reflect the actual production. Changes to the block model parameters in 2020 will occur if there is a plus or minus 10% difference between reserves to mill reconciliation.

Density measurements will be taken on a regular basis for the deeper drill holes and the uncovered areas to determine if there is a difference with historical density used in the resource estimation on upper levels.

Metallurgical testing should be extended to areas where it is planned to convert Mineral Resources into Mineral Reserves. A sampling program, including total sulphur and total carbon analyzes, has been developed by the Westwood team and testing will start in 2020.

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- IAMGOLD Corporation: [www.iamgold.com](http://www.iamgold.com)
- ROCKLABS: <http://www.rocklabs.com/>

**28 DATE AND SIGNATURE PAGE**

This report titled *NI-43-101 Technical Report, Mineral Resource and Reserve Estimate as of April 30, 2020 Westwood Mine, Quebec, Canada* dated July 15, 2020 was prepared under the authority of Mr. Mauril Gauthier, Ing. Principal Engineer and Mrs. Cécile Charles, Geo. Chief Geologist. All authors are IAMGOLD Corporation employees and act as Qualified Persons as defined by the Canadian National Instrument 43-101:

Dated in Preissac, Québec  
July 15, 2020

**(Signed & Sealed) “Cécile Charles”**

Cécile Charles, Geo. (OGQ no. 1206)  
Chief Geologist  
Westwood Mine

Dated in Preissac, Québec  
July 15, 2020

**(Signed & Sealed) “Donald Trudel”**

Donald Trudel, B.Sc. Geo. (OGQ no. 813)  
Principal Geologist  
Westwood Mine

Dated in Preissac, Québec  
July 15, 2020

**(Signed & Sealed) “Mauril Gauthier”**

Mauril Gauthier, Eng. (OIQ no. 128177)  
Principal Mining Engineer  
Westwood Mine

Dated in Longueuil, Québec  
July 15, 2020

**(Signed & Sealed) “Philippe Chabot”**

Philippe Chabot, Eng. (OIQ no. 139359)  
Director Mine

Dated in Longueuil, Québec  
July 15, 2020

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**(Signed & Sealed) “Patrick Ferland”**  
Patrick Ferland, Eng. (OIQ no. 138239)  
Geotechnical Specialist  
Iamgold Corporation

Dated in Longueuil, Québec  
July 15, 2020

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**(Signed & Sealed) “Martine Deshaies”**  
Martine Deshaies, Eng. (OIQ no. 109592)  
Corporate Metallurgist  
Iamgold Corporation

Dated in Preissac, Québec  
July 15, 2020

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**(Signed & Sealed) “Steve Pelletier”**  
Steve Pelletier, Eng. (OIQ no. 118317)  
Environment Superintendent  
Westwood Mine

Dated in Preissac, Québec  
July 15, 2020

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**(Signed & Sealed) “Nathalie Landry”**  
Nathalie Landry, Geo. (OGQ no. 796)  
Geologist  
Westwood Mine

**29 CERTIFICATE OF QUALIFIED PERSON****Certificate of Qualified Person («QP»)****Cécile Charles**

1. I, Cécile Charles, Chief Geologist at Westwood Mine for IAMGOLD Corporation, Chemin Arthur-Doyon, Preissac, Québec, J0Y 2E0, hereby certify that:
2. I graduated from Université d'Orléans in Orléans, France where I hold an international Graduate Diploma of Science degree (2006) in Geology.
3. I am a registered member of Quebec Order of Geologists (Ordre des Géologues du Québec, # 1206).
4. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 ("NI 43-101") and certify that as a result of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirement to be a "Qualified Person" for the purpose of NI 43-101.
5. I have practised my profession as a geologist continuously for the last fourteen years in the mining sector as a Mine Geologist, Production Geologist, Principal Mine Geologist and Chief Mine Geologist. I worked exclusively from June 2019 to today as the Chief Geologist for Westwood Mine, which is owned by IAMGOLD Corporation. I have supervised production, diamond drilling and prepared budgets for the geology department.
6. I supervised the geology department which includes verifying geological interpretation, planning, production, reconciliation, diamond drilling, resource estimation and preparation of budgets.
7. I am responsible for the sections 1 to 10, 23 to 27 of the Technical Report titled: "*NI 43-101 Technical Report, Mineral Resource and Reserve Estimate as of April 30, 2020, Westwood Mine, Québec, Canada.*"
8. I am a full-time employee of IAMGOLD Corporation and I receive from my employer company shares since 2011.
9. I have read the National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
10. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated, in Preissac, on this 15<sup>th</sup> day of July 2020.

**(Signed & Sealed) "Cécile Charles"**

Cécile Charles, Geo. (OGQ # 1206)

**Certificate of Qualified Person («QP»)****Donald Trudel**

1. I, Donald Trudel, Senior Geologist at Westwood Mine for IAMGOLD Corporation, Chemin Arthur-Doyon, Preissac, Québec, J0Y 2E0, hereby certify that:
2. I graduated from Université Laval in Quebec, Quebec, Canada where I hold Bachelor of Science degree (1989) in geology.
3. I am a registered member of Quebec Order of Geologists (Ordre des Géologues du Québec, # 813).
4. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 ("NI 43-101") and certify that as a result of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirement to be a "Qualified Person" for the purpose of NI 43-101.
5. I have practised my profession as a geologist continuously for the last thirty years in the exploration and mining sector as Exploration geologist, Production Geologist, Consulting Geologist, Principal Mine Geologist, Chief Mine Geologist, Country Exploration Manager in Africa (Guinea and Niger) and Resource Geologist (Burkina Faso). I worked mainly in underground gold mine (6 operations in Canada) and open pit (4 operations in Africa) and advanced gold project and production launch, from July 2017 to today as working as Principal Geologist for Westwood Mine, which is owned by IAMGOLD Corporation. I have supervised resources, diamond drilling surface and Grand Duc open pit.
6. I supervised the resource department which includes annual resources estimation, I supervise all steps from validation data until the block modelling process, I am responsible for diamond drill surface campaign and geological exploitation of Grand Duc pit.
7. I am responsible for the sections 7, 8, 9, some parts of 10 and 11, 12 and 14 of the Technical Report titled: "*NI 43-101 Technical Report, Mineral Resource and Reserve Estimate as of April 30, 2020, Westwood Mine, Québec, Canada.*"
8. I am a full-time employee of IAMGOLD Corporation and I receive from my employer company shares since 2017.
9. I have read the National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
10. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated, in Preissac, on this 15<sup>th</sup> day of July 2020.

**(Signed & Sealed) "Donald Trudel"**

Donald Trudel, Geo. (OGQ # 813)

**Certificate of Qualified Person («QP»)****Mauril Gauthier, Eng**

1. I, Mauril Gauthier, as an author of this report entitled "NI 43-101 Technical Report, Mineral Resource and Reserve Estimate as of April 30, 2020, Westwood Mine, Quebec, Canada", do hereby certify that:
2. I am a graduate of École Polytechnique de Montréal in 2001 and I hold a Bachelor's degree in Mining Engineering. I have worked as a mining engineer for a total of eighteen years since my graduation.
3. I am a registered member of the Quebec Order of Engineers (Ordre des Ingénieurs du Québec, #128177 OIQ).
4. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 ("NI 43-101") and certify that as a result of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirement to be a "Qualified Person" for the purpose of NI 43-101.
5. I have worked as Principal Mining Engineer at the Westwood Mine since 2019. Previously held positions are Project Engineer (Niobec Mine), Chief Engineer (Bachelor Mine), Production Engineer (Sleeping Giant Mine), and Junior Mining Engineer (Joe Mann Mine). I have a good understanding of the mine's cost structures and operational context.
6. I am not independent of IAMGOLD Corporation as set out in Section 1.5 of National Instrument 43-101 -as per NI 43-101 s.8.1(2)(f).
7. I am a full-time employee of IAMGOLD Corporation and hold shares in the Corporation and I did receive from my employer shares in 2019 and 2020.
8. I am responsible for Sections 14.9.1, 15, 16, 18, 19, 21 and 22 of the Technical Report titled: "NI 43-101 Technical Report, Mineral Resource and Reserve Estimate as of April 30, 2020, Westwood Mine, Québec, Canada".
9. I have read the National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
10. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading;

Dated, in Preissac, on this 15<sup>th</sup> day of July 2020.

**(Signed & Sealed) "Mauril Gauthier"**

Mauril Gauthier, Ing. (OIQ # 128177)

**Certificate of Qualified Person («QP»)****Philippe Chabot**

1. I, Philippe Chabot, am currently employed as a Senior Mining Manager, for IAMGOLD Corporation, 1111, rue Saint-Charles Ouest, Tour Est, Suite 750, Longueuil, Québec, J4K 5G4, hereby certify that:
2. I am a graduate of Laval University, Quebec (B. Eng. Mining) in 2004.
3. I am registered as a member of the Quebec Order of Engineers (OIQ #139359).
4. I have worked in the mining industry continuously since my graduation from university.
5. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 ("NI 43-101) and certify that as a result 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.
6. I am responsible for the Section 15, for the Grand Duc calculation reserve of the present report,
7. I have been working for IAMGOLD from 2015 to 2020. As Chief engineer and Superintendent of IAMGOLD Essakane SA. Since 2018, I am a full-time employee at Longueuil office in the Technical Services group. I own shares of IAMGOLD Corporation.
8. I am not independent of IAMGOLD Corporation as set out in Section 1.5 of National Instrument 43-101 -as per NI 43-101 s.8.1(2)(f) and I did receive from my employer participation incentive securities ("options") and company shares in 2016.
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
10. As of the date of this certificate, to the best of my knowledge, information and belief, the Sections 15 and 16 of the Technical Report for which I am responsible contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated, in Longueuil, on this 15<sup>th</sup> day of July 2020.

**(Signed & Sealed) "Philippe Chabot"**

Philippe Chabot, ing. (OIQ #139359)

**Certificate of Qualified Person («QP»)****Patrick Ferland**

1. I, Patrick Ferland, work for IAMGOLD Corporation, Chemin Arthur-Doyon, Preissac, Québec, J0Y 2E0, hereby certify that: I graduated from Laval University in Quebec where I hold a Bachelor of mining engineering degree (2005).
2. I am a registered member of Quebec Order of Engineers (Ordre des Ingénieurs du Québec (OIQ), # 138239).
3. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 ("NI 43-101") and certify that as a result of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirement to be a "Qualified Person" for the purpose of NI 43-101.
4. I have practised my profession as a mining engineer continuously for the last fifteen years in mine and geotechnical engineering. During those fifteen years, I worked and been involved in several challenging and diverse geotechnical environment projects and mines such as Agnico Eagle's LaRonde mine, Glencore's Brunswick mine, Aurelia Metal's Peak Gold Mine, Nevada Gold Mines, Cameco's Cigar Lake and Nyrstar's Myra Falls. I worked from May 2018 to today as a geotechnical specialist for IAMGOLD Corporation.
5. I lead the geotechnical studies and I directly supervised the integration of the geotechnical aspects to the Life Of Mine (LOM) plan.
6. I am responsible for the sections 16.1.2 and 16.1.3 of the Technical Report titled: "*NI 43-101 Technical Report, Mineral Resource and Reserve Estimate as of April 30, 2020, Westwood Mine, Quebec, Canada*".
7. I am a full-time employee of IAMGOLD Corporation. I do not hold share from IAMGOLD Corporation.
8. I have read the National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
9. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated, in Longueuil, on this 15<sup>th</sup> day of July 2020.

**(Signed & Sealed) "Patrick Ferland"**

Patrick Ferland, P. Eng. (OIQ # 138239)

**Certificate of Qualified Person («QP»)****Martine Deshaies, Eng**

1. I, Martine Deshaies, am currently employed as Corporate Metallurgist, Metallurgy Department at IAMGOLD Corporation, 1111, rue Saint-Charles Ouest, Tour Est, Suite 750, Longueuil, Québec, J4K 5G4, hereby certify that:
2. I am a graduate of Laval University, Quebec in 1992 and I hold a Bachelor degree in Mining Engineering (Baccalauréat en génie des Mines et de la Minéralogie).
3. I am registered as a Metallurgical Engineer in the Province of Quebec (OIQ #109592).
4. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 ("NI 43-101") and certify that as a result of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirement to be a "Qualified Person" for the purpose of NI 43-101.
5. I have practised my profession of Metallurgical engineer in mineral processing continuously for the last twenty-eight years in the fields of gold, base metals and industrial minerals processing. I started working for IAMGOLD (previously Cambior) in 1996. I have held various positions in different operations of the company. Since March 10, 2008, I work as Corporate Metallurgist for the Metallurgy department at Longueuil. A part of my job is to supervise (follow) the metallurgical development of Westwood mine.
6. I have been involved in the Westwood project since 2008. I have visited the Westwood Mine on a regular basis over the past 12 years and I have a good understanding of the mine's cost structures and operational context.
7. I am responsible for Sections 13 and 17 of the Technical Report titled: "NI 43-101 Technical Report, Mineral Resource and Reserve Estimate as of April 30, 2020, Westwood Mine, Québec, Canada."
8. I am a full-time employee of IAMGOLD Corporation and hold shares in the Corporation.
9. I have read the National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
10. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated, in Longueuil, on this 15<sup>th</sup> day of July 2020.

**(Signed & Sealed) "Martine Deshaies"**

Martine Deshaies, Eng (OIQ # 109592)

**Certificate of Qualified Person («QP»)****Steve Pelletier, Ing., P. Eng**

1. I, Steve Pelletier, am currently employed as Environment Superintendent in the Environment department, at Westwood Mine for IAMGOLD Corporation, Chemin Arthur-Doyon, Preissac, Quebec, J0Y 2E0, hereby certify that:
2. I am a graduate of Sherbrooke University, Quebec in 1996 and I hold a Bachelor degree in Chemical Engineering.
3. I am registered as an Engineer in the Province of Quebec (OIQ #118317).
4. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 ("NI 43-101") and certify that as a result of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirement to be a "Qualified Person" for the purpose of NI 43-101.
5. I have practised my profession of Chemical engineer in mineral processing continuously for the last twenty-three years in the fields of base metals and gold industrial minerals processing. I have held various positions in different operations and with different mining companies. I started working for IAMGOLD in 2020 as an Environment superintendent.
6. I have been involved in the Westwood project since 2020. I have visited the Westwood Mine on a regular basis over the past 4 months and I have a good understanding of the environmental infrastructures and the permitting.
7. I am responsible for Sections 4.8 to 4.10, 5 and 20 of the Technical Report titled: "NI 43-101 Technical Report, Mineral Resource and Reserve Estimate as of April 30, 2020, Westwood Mine, Québec, Canada."
8. I am a full-time employee of IAMGOLD Corporation.
9. I have read the National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
10. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated in Preissac, on this 15<sup>th</sup> day of July 2020.

**(Signed & Sealed) "Steve Pelletier"**

Steve Pelletier, Ing., P. Eng (OIQ # 118317)

**Certificate of Qualified Person («QP»)****Nathalie Landry**

1. I, Nathalie Landry, Geologist at Westwood Mine for IAMGOLD Corporation, Chemin Arthur-Doyon, Preissac, Quebec, J0Y 2E0, hereby certify that:
2. I graduated from University of Quebec in Montreal where I hold a Bachelor of Science degree (1996) in Geology.
3. I am a registered member of Quebec Order of Geologists (Ordre des Géologues du Québec, # 796).
4. I have read the definition of "Qualified Person" set out in the National Instrument 43-101 ("NI 43-101") and certify that as a result of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirement to be a "Qualified Person" for the purpose of NI 43-101.
5. I have practised my profession as a geologist continuously for the last 24 years in exploration geology, hydrogeology and mine geology. For the last 13 years, I have been working on advance gold exploration projects in the Rouyn-Noranda region as a Project Geologist. I worked exclusively from January 2019 to today as Geologist for Westwood Mine, which is owned by IAMGOLD Corporation as a database administrator.
6. I jointly supervised database transition to acQuire and implementation of Vulcan which includes verifying and adapting data capture procedures and controls, integrating diamond drilling planning and management to both environment, managing importation and validation data and software management and support.
7. I am responsible for the section 11 of the Technical Report titled: "*NI 43-101 Technical Report, Mineral Resource and Reserve Estimate as of April 30, 2020, Westwood Mine, Québec, Canada.*"
8. I am a full-time employee of IAMGOLD Corporation.
9. I have read the National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
10. As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all the scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated, in Preissac, on this 15<sup>th</sup> day of July 2020.

**(Signed & Sealed) "Nathalie Landry"**

Nathalie Landry, Geo. (OGQ # 796)

## 30 APPENDIX - MINERAL CLAIMS AND MINING LEASES

Table 30-1 Mineral Claims and Mining Leases

Title / Claim Number	NTS Sheet	Township	Row	Column	Status	Date Registration	Date Expiration	Surface Area (Ha)
BM 695	SNRC 32D02,D07	Bousquet		0	Active	1980-07-03	2020-07-02	312.51
BM 800	SNRC 32D07	Bousquet		0	Active	1991-08-07	2021-08-06	133.65
BM 843	SNRC 32D07	Bousquet		0	Active	1998-04-06	2028-04-05	99.76
BM 1002	SNRC 32D01,D02,D07,D08	Bousquet		6906	Active	2012-04-23	2032-04-22	196.23
BM 1046	SNRC 32D07	Bousquet		4151	Active	2017-01-19	2037-01-18	11.89
CDC 2412474	SNRC 32D02	Bousquet	30	58	Active	2014-10-28	2022-07-04	57.35
CDC 2412475	SNRC 32D07	Bousquet	1	58	Active	2014-10-28	2022-07-04	15.75
CDC 2412476	SNRC 32D02	Bousquet	30	60	Active	2014-10-28	2022-07-04	32.33
CDC 2412477	SNRC 32D02	Bousquet	29	58	Active	2014-10-28	2022-07-04	1.16
CDC 2412478	SNRC 32D02	Bousquet	29	60	Active	2014-10-28	2022-07-04	0.64
CDC 2412479	SNRC 32D07	Bousquet	1	59	Active	2014-10-28	2022-07-04	0.85
CDC 2412480	SNRC 32D07	Bousquet	1	57	Active	2014-10-28	2022-07-04	8.91
CDC 2412481	SNRC 32D01	Bousquet	30	1	Active	2014-10-28	2022-07-04	19.24
CDC 2412482	SNRC 32D01	Bousquet	30	2	Active	2014-10-28	2022-07-04	2.60
CDC 2412483	SNRC 32D02	Bousquet	29	59	Active	2014-10-28	2022-07-04	1.02
CDC 2412484	SNRC 32D02	Bousquet	29	57	Active	2014-10-28	2022-07-04	0.66
CDC 2412485	SNRC 32D02	Bousquet	30	56	Active	2014-10-28	2022-07-04	1.80
CDC 2412486	SNRC 32D02	Bousquet	30	59	Active	2014-10-28	2022-07-04	39.40
CDC 2412487	SNRC 32D02	Bousquet	30	57	Active	2014-10-28	2022-07-04	32.22
CDC 2412874	SNRC 32D07	Bousquet	2	52	Active	2014-11-12	2022-12-19	57.33
CDC 2412875	SNRC 32D07	Bousquet	3	58	Active	2014-11-12	2022-12-19	57.32
CDC 2412876	SNRC 32D07	Bousquet	3	59	Active	2014-11-12	2022-12-19	57.32
CDC 2412877	SNRC 32D07	Bousquet	3	60	Active	2014-11-12	2022-12-19	57.33
CDC 2412878	SNRC 32D07	Bousquet	4	56	Active	2014-11-12	2022-12-19	57.31
CDC 2412879	SNRC 32D07	Bousquet	4	58	Active	2014-11-12	2022-12-19	57.32
CDC 2412880	SNRC 32D07	Bousquet	4	60	Active	2014-11-12	2022-12-19	57.32
CDC 2412881	SNRC 32D07	Bousquet	4	57	Active	2014-11-12	2022-12-19	57.32
CDC 2412882	SNRC 32D07	Bousquet	4	55	Active	2014-11-12	2022-12-19	57.31
CDC 2412883	SNRC 32D07	Bousquet	3	56	Active	2014-11-12	2022-12-19	57.32
CDC 2412884	SNRC 32D07	Bousquet	3	57	Active	2014-11-12	2022-12-19	57.32
CDC 2412885	SNRC 32D07	Bousquet	2	59	Active	2014-11-12	2022-12-19	57.33
CDC 2412886	SNRC 32D07	Bousquet	4	59	Active	2014-11-12	2022-12-19	57.32
CDC 2412887	SNRC 32D08	Bousquet	4	1	Active	2014-11-12	2022-12-19	15.21
CDC 2412888	SNRC 32D07	Bousquet	2	60	Active	2014-11-12	2022-12-19	55.11
CDC 2412889	SNRC 32D07	Bousquet	5	58	Active	2014-11-12	2022-12-19	53.98
CDC 2412890	SNRC 32D07	Bousquet	5	57	Active	2014-11-12	2022-12-19	57.31
CDC 2412891	SNRC 32D07	Bousquet	5	59	Active	2014-11-12	2022-12-19	29.24
CDC 2412892	SNRC 32D07	Bousquet	4	51	Active	2014-11-12	2022-12-19	7.83

CDC	2412893	SNRC 32D07	Bousquet	5	60	Active	2014-11-12	2022-12-19	45.13
CDC	2412894	SNRC 32D08	Bousquet	3	1	Active	2014-11-12	2022-12-19	37.60
CDC	2412895	SNRC 32D07	Bousquet	2	53	Active	2014-11-12	2022-12-19	55.95
CDC	2412896	SNRC 32D07	Bousquet	4	54	Active	2014-11-12	2022-12-19	57.31
CDC	2412897	SNRC 32D07	Bousquet	4	52	Active	2014-11-12	2022-12-19	1.58
CDC	2412898	SNRC 32D07	Bousquet	1	60	Active	2014-11-12	2022-12-19	1.90
CDC	2412899	SNRC 32D01	Bousquet	30	2	Active	2014-11-12	2022-12-19	1.15
CDC	2412900	SNRC 32D08	Bousquet	2	1	Active	2014-11-12	2022-12-19	44.44
CDC	2412902	SNRC 32D07	Bousquet	3	55	Active	2014-11-12	2022-12-19	49.97
CDC	2412904	SNRC 32D07	Bousquet	2	57	Active	2014-11-12	2022-12-19	18.84
CDC	2412905	SNRC 32D02	Bousquet	30	52	Active	2014-11-12	2022-12-19	4.84
CDC	2412907	SNRC 32D07	Bousquet	1	59	Active	2014-11-12	2022-12-19	4.90
CDC	2412908	SNRC 32D07	Bousquet	2	51	Active	2014-11-12	2022-12-19	49.26
CDC	2412909	SNRC 32D07	Bousquet	2	58	Active	2014-11-12	2022-12-19	29.51
CDC	2412910	SNRC 32D07	Bousquet	5	54	Active	2014-11-12	2022-12-19	57.30
CDC	2412911	SNRC 32D07	Bousquet	1	60	Active	2014-11-12	2022-12-19	0.85
CDC	2412912	SNRC 32D07	Bousquet	3	53	Active	2014-11-12	2022-12-19	12.47
CDC	2412913	SNRC 32D07	Bousquet	5	56	Active	2014-11-12	2022-12-19	57.31
CDC	2412914	SNRC 32D08	Bousquet	1	2	Active	2014-11-12	2022-12-19	26.51
CDC	2412915	SNRC 32D07	Bousquet	5	53	Active	2014-11-12	2022-12-19	52.78
CDC	2412916	SNRC 32D07	Bousquet	3	50	Active	2014-11-12	2022-12-19	15.14
CDC	2412917	SNRC 32D07	Bousquet	2	55	Active	2014-11-12	2021-12-12	52.57
CDC	2412918	SNRC 32D08	Bousquet	1	1	Active	2014-11-12	2022-12-19	17.95
CDC	2412919	SNRC 32D07	Bousquet	4	53	Active	2014-11-12	2022-12-19	31.17
CDC	2412920	SNRC 32D07	Bousquet	1	52	Active	2014-11-12	2022-12-19	49.68
CDC	2412921	SNRC 32D08	Bousquet	3	2	Active	2014-11-12	2022-12-19	17.66
CDC	2412922	SNRC 32D07	Bousquet	3	54	Active	2014-11-12	2022-12-19	13.17
CDC	2412923	SNRC 32D07	Bousquet	1	53	Active	2014-11-12	2022-12-19	52.01
CDC	2412924	SNRC 32D07	Bousquet	3	53	Active	2014-11-12	2022-12-19	3.10
CDC	2412925	SNRC 32D07	Bousquet	3	52	Active	2014-11-12	2022-12-19	35.86
CDC	2412926	SNRC 32D07	Bousquet	4	50	Active	2014-11-12	2022-12-19	5.97
CDC	2412927	SNRC 32D07	Bousquet	1	58	Active	2014-11-12	2022-12-19	1.04
CDC	2412928	SNRC 32D07	Bousquet	5	52	Active	2014-11-12	2022-12-19	19.03
CDC	2412929	SNRC 32D07	Bousquet	2	54	Active	2014-11-12	2022-12-19	35.29
CDC	2412930	SNRC 32D07	Bousquet	5	55	Active	2014-11-12	2022-12-19	57.31
CDC	2412931	SNRC 32D02	Bousquet	30	53	Active	2014-11-12	2022-12-19	7.16
CDC	2412932	SNRC 32D07	Bousquet	1	55	Active	2014-11-12	2021-12-12	14.35
CDC	2412933	SNRC 32D07	Bousquet	3	51	Active	2014-11-12	2022-12-19	52.97
CDC	2412934	SNRC 32D07	Bousquet	1	51	Active	2014-11-12	2022-12-19	27.86
CDC	2412935	SNRC 32D07	Bousquet	1	54	Active	2014-11-12	2022-12-19	32.63
CDC	2412936	SNRC 32D07	Bousquet	2	56	Active	2014-11-12	2021-12-12	25.89
CDC	2412937	SNRC 32D08	Bousquet	2	2	Active	2014-11-12	2022-12-19	8.59
<b>80 Mining Titles</b>									<b>3117.813</b>
BM is for "Bail Minier" (or Mining Lease)									
CDC is for "Cellule Désignée sur Carte" (or map designated cell)									