



NI 43-101 Technical Report
Preliminary Economic Assessment
Boumadine polymetallic
(Au, Ag, Zn, Pb, Ge) deposit,
Kingdom of Morocco



Prepared for Maya Gold & Silver Inc.
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Certificate of Qualified Person

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To accompany the Report entitled: “NI 43-101 Technical Report, Preliminary Economic Assessment Boumadine Polymetallic (Au, Ag, Pb, Zn, Ge) Deposit, Kingdom of Morocco” dated May 24th, 2019, with an effective date of April 24th, 2018 (the “Technical Report”).

I, Claude Duplessis, Eng., do hereby certify that:

- a) I am a graduate from the University of Quebec in Chicoutimi, Quebec in 1988 with a B.Sc. in geological engineering and I have practised my profession continuously since that time;
- b) I am a registered member of the Ordre des Ingénieurs du Québec (Registration Number 45523). I am also a registered engineer in the province of Alberta, Ontario and Newfoundland & Labrador. I am a Member of the Canadian Institute of Mining, Metallurgy and Petroleum. I am a Senior Engineer and Consultant at GoldMinds Geoservices Inc.;
- c) I have worked as an engineer for a total of 31 years since my graduation. My relevant experience for the purpose of the Technical Report is: Over 25 years of consulting in the field of Mineral Resource estimation, orebody modelling, mineral processing, mine design, mineral resource auditing and geotechnical engineering, cash flow analysis, commodity market and economic analysis;
- d) I have prepared, written, participate in the technical report, I am responsible of Items: 19, 20 and 22 while co-author on Items 1, 2, 3, 15, 18, 25, 26 and 27. I have personally visited the site of Boumadine property from April 9th 2018 for one week;
- e) I am independent of the issuer as defined in section 1.5 of NI 43-101 (“The Instrument”);
- f) I have read the definition of “qualified person” set out in the National Instrument 43-101 and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfil the requirements to be an independent qualified person for the purposes of NI 43-101;
- g) I have read NI 43-101 and Form 43-101F1 and have prepared the technical report in compliance with NI 43-101 and Form 43-101F1; and have prepared the report in conformity with generally accepted Canadian mining industry practice, and as of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading;
- h) I have no personal knowledge as of the date of this certificate of any material fact or material change, which is not reflected in this report.

This 24 day of May 2019.

Original signed and sealed

(Signed) “Claude Duplessis”

Claude Duplessis Eng.
Senior Geological Engineer
GoldMinds Geoservices Inc



Certificate of Qualified Person

Merouane Rachidi, P.Geo., Ph. D. - GoldMinds Geoservices Inc. 2999 Chemin Sainte-Foy, suite 200, Québec, Qc Canada G1X 1P7

To accompany the Report entitled: “NI 43-101 Technical Report, Preliminary Economic Assessment Boumadine polymetallic (Au, Ag, Zn, Pb, Ge) deposit, Kingdom of Morocco” dated May 24th with an effective date of April 24th, 2019.

I, Merouane Rachidi P.Geo., Ph. D., do hereby certify that:

- a) I am a Geologist at GoldMinds Geoservices Inc. - 2999 Chemin Sainte-Foy, suite 200, Québec, Qc, Canada G1X 1P7.
- b) This certificate applies to the Technical Report entitled Preliminary Economic Assessment (PEA) Boumadine polymetallic (Au, Ag, Zn, Pb, Ge) deposit, Kingdom of Morocco, dated May 24th, 2019 (the “Technical Report”).
- c) I am a graduate from Laval University in Quebec City (Ph.D. in Geology, 2012). I am a member of good standing (#1792) of the l'Ordre des Géologues du Québec (Order of Geologists of Quebec) a registered member of APEGNB license # L5769, and member of APGO registered #2998. My relevant experience includes over 6 years in exploration geology, drilling supervision, 3D orebody modelling, mining and mineral resource estimation (NI 43-101).
- d) I am a “Qualified Person” for purposes of National Instrument 43-101 (the “Instrument”).
- e) I visited the property in April 2018 (from 9th April for one week), to supervise drilling, tailings/surface sampling, independent core sampling and site visit.
- f) I have prepared, participate and written the technical report. I am responsible of the following items 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, and I am co-author of Items 1, 2, 3, 23, 24, 25 and 26 of the technical report.
- g) I am independent of Maya Gold & Silver Inc. as defined by Section 1.5 of the Instrument.
- h) I have no prior involvement with the property that is the subject of the Technical Report.
- i) I have read the Instrument, and the sections of the Technical Report that I am responsible for have been prepared in compliance with the Instrument.
- j) As of the effective date of the Technical Report, April 24th, 2019, and to the best of my knowledge, information, and belief, the Technical Report, or part that I am responsible for, contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed and dated this 24th day of May 2019, Quebec.

*“Original document signed and sealed
by Merouane Rachidi P.Geo., Ph.D.”*

Merouane Rachidi. P.Geo.,
GoldMinds Geoservices Inc.



Certificate of Qualified Person

Gilbert Rousseau, Eng.

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I, Gilbert Rousseau B.Sc.A, Eng., of Ville de Saguenay, Province of Quebec, do hereby certify:

- a) I am a Senior Mining-Metallurgical Engineer with GoldMinds Geoservices Inc., with a business address at 2999 Chemin Ste-Foy suite 200, Quebec, Qc Canada G1X 1P7.
- b) This certificate applies to the Technical Report entitled, “NI 43-101 Technical Report, Preliminary Economic Assessment polymetallic (Au, Ag, Zn, Pb, Ge) deposit, Kingdom of Morocco, dated May 24th, 2019 (the “Technical Report”).
- c) I graduated from The Ecole Polytechnique of the University of Montreal (B.Sc.A, Mining Engineer in 1969). I am a member in good standing of the “l’Ordre des Ingénieurs du Québec” #20288). My relevant experience includes 50 years of experience in the mining and milling of minerals including iron, copper, lead, zinc, silver, gold, asbestos, graphite, nickel, silica, etc. I am a “Qualified Person” for the purposes of National Instrument 43-101 (the “Instrument”).
- d) I am responsible for Items 13 and 17 of the Technical Report, and I am co-author of Items 23, 25, 26 and 27 of the Technical Report.
- e) I am independent of Maya Gold & Silver, as defined by Section 1.5 of the Instrument.
- f) I have worked for Maya in previous audits, PEA and PFS for some other property that are the subject of Technical Reports. I have read the Instrument and the sections of the report that I am responsible. These sections have been prepared in compliance with the Instrument.
- g) As of the effective date of the Technical Report, April 24th, and to the best of my knowledge, information and belief, the sections of the report for which I am responsible for, contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed and dated this 24th day of May 2019 at Quebec, Quebec.

“Original document signed and sealed

by Gilbert Rousseau, Eng.”

Gilbert Rousseau, Eng.

GoldMinds Geoservices Inc.



Certificate of Qualified Person

Daniel Dufort - GoldMinds Geoservices Inc. 2999 Chemin Sainte-Foy, suite 200, Québec, Qc Canada G1X 1P7

To accompany the Report entitled: “NI 43-101 Technical Report, Preliminary Economic Assessment Boumadine Polymetallic (Au,Ag,Zn,Pb,Ge)deposit Kingdom of Morocco dated May 24th, 2019 (the “Technical Report”).

I, Daniel Dufort, Eng., do hereby certify that:

- a) I am a Mining engineer at GoldMinds Geoservices Inc. - 2999 Chemin Sainte-Foy, suite 200, Québec, Qc Canada G1X 1P7;
- b) I am a graduate of Ecole Polytechnique of Montreal. I am a member of “L’Ordre des ingénieurs du Québec” registration number 33219 and also a member of Professional Engineers of Ontario registration number 100153253. My relevant experience includes over 38 years including 6 years as a mining engineer, 11 years as an explosives technical representative, 5 years as a mine manager, 9 years as mining consultant and the remaining years as a vice-president of an explosive company;
- c) I am a “Qualified Person” for purposes of National Instrument 43-101 (the “Instrument”);
- d) I have prepared, participated and written the technical report. I am responsible of the item 16 and I am co-author of 1, 18, 21, 25, and 26;
- e) I have not visited the Boumadine Deposit property;
- f) I am independent of the issuer as defined by Section 1.5 of NI 43-101 “The Instrument”;
- g) I have no prior involvement with the property that is the subject of the Technical Report;
- h) I have read the Instrument, and the sections of the Technical Report that I am responsible for have been prepared in compliance with the Instrument;
- i) As of the effective date of the Technical Report, April 24th, 2019, and to the best of my knowledge, information, and belief, the Technical Report, or part that I am responsible for, contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

This 24th day of May 2019, Québec.

Original Signed and Sealed “Daniel Dufort”

Daniel Dufort eng,

GoldMinds Geoservices Inc



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Summary

1.1 Introduction

The Boumadine polymetallic deposit mine is owned since 2013 by Maya Gold and Silver (Maya owns 85% in joint venture with l'Office National des Hydrocarbures et des Mines (ONHYM) of the Kingdom of Morocco (15%)).

The Boumadine property is located in the Anti-Atlas mountains, Errachidia Province, Morocco. The Boumadine property consists of two Exploitation Permits covering an area of 32 km².

The mandate of GoldMinds Geoservices Inc. (GMG) given by Maya Gold and Silver Inc. is to carry a NI 43-101 technical report preliminary economic assessment of the Boumadine mine based on the historical and the recent database (diamond drilling, surface sampling and tailing sampling) planned by GMG. Drilling was done to verify the historical resources and bring the mineral resources compliant to NI 43-101.

Recent diamond drilling works have been done since January 2018 under the supervision of the Compagnie Minière Maya-Maroc sarl (CMMM). The drilling program consist of fifty-seven (57) diamond drill holes totaling 7,810.9 m (Table 11). On both tailing piles a total of 49 holes were drilled using the AMS Soil Core Sampling (totaling 187.28 m).

The effective date of this report is April 24th, 2019. The last technical data from drill hole results included in the study is March 29th, 2019. All dollar figures presented in this PEA are stated in US dollars, unless otherwise specified.

General project information is summarized in the highlights below:

- A project life of 12 years with the current resources starting in 2021 up to 2033;
- Project Internal Rate of Return of 56% pre-taxes and 53% after-taxes;
- Project pre-tax Net Present Value of US\$574.8M (discounted at 6.5%) or US\$665.9M (discounted at 5%) at variable commodity prices;
- Project after-tax Net Present Value of US\$497.6M (discounted at 6.5%) or US\$576.7M (discounted at 5%) at variable commodity prices;
- The extraction of 7.59 Mt at 1.03% Pb, 3% Zn, 1.67 g/t Au, 101.76 g/t Ag and 5.4 g/t Ge for production of 1.304M Oz of Gold Equivalent where 29.4% comes from measured & Indicated and 70.6% from Inferred mineral resources;
- Milling starting at 1500 tpd in June 2021 to increase to 2000 tpd in June 2023 up to June 2033;
- Production starts at 83,746 Ounces of Gold Eq for 2 years, increases to 105,684 ounces of Gold Eq the 3rd year and then 109,158 per year up to June 2029. It increases to 116,208 OzGEq in 2030, 119,028 OzGEq in 2031, 120,438 OzGEq in 2032 and 129,462 OzGEq in 2033, for an average yearly production of 108,675 Ounces of Gold Eq;
- Total operating cost of US\$101.72 per tonne (averaged over the expected mine's life);

- Capex and sustaining capital requirements of US\$120.35M;
- The Boumadine PEA was prepared as an exclusive underground extraction of mineralized material in fresh rock with limited tonnage extraction by open pit. The reprocessing of old tailings is not included in the economic analysis. The 240 Kt resource buffer could be processed at the start-up or as safety if for any reason development is not supplying fresh material on time. This could change with optimization of extraction sequence and configuration in future review;
- Gold Equivalent calculation for economic analysis is:

$$\text{AuEq} = ((\text{Pb}\% \times 2204\text{USD}/\text{t} \times 60\% \text{ rec}) + (\text{Zn}\% \times 2900\text{USD}/\text{t} \times 79.5\% \text{ rec}) + (\text{Au g}/\text{t} \times 1321\text{USD}/\text{Oz} / 31.103 \times 97.2\% \text{ rec}) + (\text{Ag g}/\text{t} \times 19\text{USD}/\text{Oz} / 31.103 \times 96.2\% \text{ rec}) + (\text{Ge g}/\text{t} \times 2.2\text{USD}/\text{g} \times 75\% \text{ rec})) / (1321 \text{ USD} / 31.103);$$
- The projected mine contemplates a 1500 tpd mining with processing at a flotation mill with associated POx/CIL followed by an increase to 2000 tpd mining with the upgrades of the flotation mill.

Note: The PEA is preliminary in nature, and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. Furthermore, there is no certainty that the PEA results will be realized.

1.2 Property Description and Location

The Boumadine property consists of two Exploitation Permits covering an area of 32 km². Exploitation permits entitle the holder to work the deposit and dispose of the substances, herein Pb, Zn, Ag, Au and Ge, and provide legal access to the property. As of the effective date of this Technical Report, all mineral titles are in good standing.

The Boumadine site is accessible from Ouarzazate city at approximately 295 km at the east and 75 km south west of Errachidia city. The nearest town is Tinejad, located at around 19 km north of Boumadine and easily accessible from the mine on a dirt and gravel road.

The elevation is within a range of 1,000 to 1,300 metres above sea level. The topography of the area is characterized by the succession of moderate ridge or hills mostly oriented N-S with the altitude in the range of 1,200 m.

1.3 History

The property is located in the Anti-Atlas belt and contains traces of a very old superficial exploitation for precious metals of unknown age. From 1956 – 1989, the Bureau des Recherches et des Participations Minières (BRPM), which is now called ONHYM (Office National des Hydrocarbures et des Mines), initiated a program of exploration at the Boumadine deposit.

A feasibility study was carried out by the BRPM in 1983 on a 100 t/day test pilot plant built at the Boumadine mine in view of constructing a more permanent plant with a 1,000 t/day capacity (BRPM,

1983). The BRPM published a final report in 1998, giving a summary of all surface and underground work carried by different mining companies.

1.4 Geological Setting, Mineralization, And Deposit Types

The Boumadine property is located in the Anti-Atlas belt that extends ENE–WSW, over more than 600 km, from the Atlantic margin in the west to the interior of the African plate in the east. The Anti-Atlas basement rocks are mainly Neoproterozoic and they consist of ophiolites, island arc-related gneiss and intrusive rocks, especially close the northern edge of the West African craton.

The Boumadine polymetallic deposit is located on the northwest side of the Ougnat massif. The geology of this latter is composed by a Neoproterozoic metasedimentary basement metamorphosed to the greenschist facies and intruded by quartz-diorites and garnet-bearing granites. This basement is unconformably overlain by Ediacaran volcanic formations (Ouarzazate Supergroup), which mostly consist of ignimbrites and andesites. The ignimbrites have been intruded by several rhyolitic domes and one of them is associated with polymetallic Zn–Cu–Pb–Sn–Ag–Au mineralization.

The Boumadine mineralization occurs exclusively within the rhyolitic sequence and is structurally controlled consisting on a system of subvertical veins, veinlets and tectonic breccias. The orientation of the mineralized structures is related to Ediacaran transcurrent tectonics represented by N30 to N-S strike-slip fault zones.

The Boumadine deposit is described as shallow mineralizing system similar to volcanic-hosted epithermal veins developed in subaerial resurgent caldera environments. At least five mineralized vein systems are documented at Boumadine deposit: Zone Imariren, Tizi, zone Nord, zone Centre and zone Sud.

The rich mineralization tends to occur where NNE and NNW as well as the textural features indicate that mineralization took place in open space with a relatively shallow mineralizing system. The origin of the mineralization is probably the mixing between ascending deep-seated fluid and meteoric waters that have generated precipitation of precious- and associated base-metal mineralization.

1.5 Exploration and Drilling

Maya Gold and Silver began exploration shortly after the acquisition of the Boumadine property from ONHYM. The exploration program consisted in resampling the potential auriferous zones. Sampling locations were selected based on the existing exploration data and from the geology.

Maya Gold and Silver has done some recent exploration works on the Boumadine polymetallic deposit in 2017 and 2018. The purposes of these works were to map the andesitic dykes and the iron cap. Surface sampling was also done on Imariren and Zone Nord by the geologist team of the Compagnie Minière Maya-Maroc (CMMM).

Maya Gold and Silver started, in January 2018, a drilling program at Boumadine deposit planned by GoldMinds Geoservices. The drilling program consists of fifty-seven (57) diamond drill holes totaling

7,810.9 m (Table 11). On both tailing piles, a total of 49 holes were drilled using the AMS Soil Core Sampling, totaling 187.28 m.

The main objectives of the drilling program were:

- Validation of the historical panels at CENTRE zone and SUD zone;
- Explore the vertical extensions of the mineralization at TIZI zone, CENTRE and SUD;

A total of 49 holes were drilled on the tailings using the AMS soil core sampler. A total of 34 holes were drilled on tailing TG1, totaling 71.18 m, and 15 holes were drilled on tailing TG2, totaling 116.10 m. The main objective of the drilling program was the estimation of the tailing resources.

1.6 Sample Preparation, Analyses, Security and Data Verifications

The field procedures and methodologies used to collect, handle and process analytical samples are documented in section 11. The core was logged by the geologists of CMMM. The core intervals to be sampled were identified by the geologists. For the non-mineralized sections, the sample lengths were between 1 and 1.5 m, and for the mineralized zones the sample length was 0.5 m. Technicians then prepared the core and split it in halves in order to keep a witness.

The core samples were collected and shipped from the property to two independent laboratories (Analyse Développement Minier S.A.R.L and Afrilab), both located at Marrakech in Morocco.

During the site visit, the authors (Merouane Rachidi P.Geo., and Claude Duplessis Eng.) selected 46 individual samples for independent sampling from three different holes (B-17-02, -01 and -04; Table 16) drilled in zone centre. GMG selected the mineralized intervals with massive pyrite and an interval from the ignimbrite with matrix porosity filled by sulphide cements. The independent samples were sent to AGAT laboratory in Mississauga Ontario (Canada). The same intervals (1/4 core samples) sampled by GMG were also sampled for CMMM and analyzed at laboratory Analyse Développement Minier (ADM) in Morocco for control.

The integration of blank and standard samples was established in order to verify the accuracy and precision of the laboratory results. The exploration work was conducted using documented procedures and involved extensive verifications and validation of exploration data. GoldMinds Geoservices verified the core samples analytical results and integrated the assays into the database. The diamond drillhole collars location were surveyed by CMMM surveyor using a Total Station. The collar azimuth and dip of each drill hole were also surveyed (Table 11).

1.7 Mineral Resource Estimates

The mineral resource at Boumadine polymetallic mine was prepared by GoldMinds Geoservices Inc. For the present mineral resource estimation, GMG has used the Boumadine database composed by surface diamond drillholes, percussion holes, drift samples and soil samples (using the AMS soil core

sampler). The tables below (Table 1 and Table 2) summarize the mineral resource estimate combining all the mineralized zones.

Table 1: Mineral resource statement¹ at Boumadine polymetallic mine including the tailings.

| Mineral resource estimate | Au g/t | Ag g/t | Zn% | Pb% | Ge g/t | USDEq | Au eq g/t | Tonnes ² | Au eq (oz) ² |
|---------------------------|--------|--------|------|------|--------|--------|-----------|---------------------|-------------------------|
| Total Measured | 3.89 | 142.12 | 0.54 | 0.13 | 0.00 | 251.65 | 6.02 | 337 000 | 65 000 |
| Total Indicated | 1.57 | 127.88 | 3.06 | 1.20 | 3.90 | 250.45 | 6.00 | 2 195 000 | 423 000 |
| Total Meas & Ind | 1.88 | 129.77 | 2.73 | 1.06 | 3.38 | 250.61 | 6.00 | 2 532 000 | 489 000 |
| Total Inferred | 1.56 | 89.55 | 2.73 | 1.16 | 5.08 | 222.96 | 5.31 | 6 451 000 | 1 102 000 |

Table 2: Mineral resource statement¹ at Boumadine polymetallic mine excluding the tailings.

| Mineral resource estimate | Au g/t | Ag g/t | Zn% | Pb% | Ge g/t | USDEq | Au eq g/t | Tonnes ² | Au eq (oz) ² |
|---------------------------|--------|--------|------|------|--------|--------|-----------|---------------------|-------------------------|
| Total Measured | 7.76 | 137.52 | 1.86 | 0.43 | - | 455.40 | 10.89 | 98 000 | 34 000 |
| Total Indicated | 1.57 | 127.88 | 3.06 | 1.20 | 3.90 | 250.45 | 6.00 | 2 195 000 | 423 000 |
| Total Meas & Ind | 1.84 | 128.29 | 3.01 | 1.17 | 3.74 | 259.19 | 6.21 | 2 293 000 | 458 000 |
| Total Inferred | 1.56 | 89.55 | 2.73 | 1.16 | 5.08 | 222.96 | 5.31 | 6 451 000 | 1 102 000 |

A cut-off grade of 85USDEq was applied for the underground mineral resources. The table below (Table 3) present the list of commodity prices used for the calculation of the USDEq.

$$\text{USDEq} = (\text{Au g/t} \times 41.8) + (\text{Ag g/t} \times 0.5) + (\text{Zn\%} \times 28.75) + (\text{Pb\%} \times 20.1) + (\text{Ge g/t} \times 2.2).$$

Table 3: Element prices.

| Elements | Oz price |
|----------|---------------|
| Au | 1300 USD |
| Ag | 15.5 USD |
| Elements | ton price |
| Zn | 2875 USD |
| Pb | 2010 USD |
| Ge | 2 200 000 USD |

¹ Mineral resources are not mineral reserves and have not demonstrated economic viability.

² All Figures have been rounded to reflect the relative accuracy of the estimates.

The reported mineral resources are considered by the qualified persons to have reasonable prospects for economic extraction as per CIM 2014 definitions.

After compilation and validation/verification of the database, the geological interpretation was done by sectors and by geological zones. The database used for this mineral estimate includes drill results obtained from the recent drill program and a detailed topographic surface. A total of fifty-one (51) 3D envelopes were constructed by connecting the defined mineralized prisms.

Each composite has a length of 1 m created from the beginning of each mineralized interval. The envelopes have been filled by regular blocks (1mE x 1mN x 2mZ) and only composites within the envelopes have been used to estimate the grades of the blocks.

During the site visit, GMG's geologist took independent core samples from two drillholes (interval of 39 meters core samples from holes B-17-02 and B-17-04). The density result from these intervals show an average of 3.97 t/m³. In order to calculate tonnage from the volumetric estimates of the block models and to be more conservative, a fix density of 3.65 t/m³ was used by GMG. This density reflects the typical mineralized interval composed mainly by ignimbrites and andesites.

Search ellipsoids were used for the grade estimation and follow the geological interpretation trends. Each have specific envelope. Block grades were interpolated from the composites in two passes using the inverse distance to the square methodology. For run one and two, we used a number of composites limited to twelve (12) with a minimum of two (2).

The mineral resources were classified using the search ellipsoids for each category:

- Measured mineral resources were estimated using the results from the last drilling campaign. We used a maximum of twelve (12) composites and a minimum of two (2) composites from the same drill hole.
- Indicated mineral resources were estimated using a maximum of twelve (12) composites per block and a minimum of two (2) composites from the same drill hole. And the remaining blocks within the envelopes are classified as inferred mineral resource blocks.
 - o Search ellipsoid radius measured 30m x 30m x 15m.
 - o Search ellipsoid radius indicated 40m x 40m x 15m.
 - o Remaining inferred.

In order to accurately estimate the resources, GMG removed the mined-out volumes (stopes, drifts and adits – digitized from historical plans) after the block model estimation since the mined-out volumes were included in the modeled envelopes.

1.8 Mining Methods

The Boumadine deposit assumes the processing of an average of 1500 tpd for the first two years starting on June 2021, with an envisioned expansion to 2000 tpd forecasted for the rest of the mine life, that to say until 2033.



In Boumadine, there are five (5) mining zones called: CENTRE, SUD, NORD, TIZI and IMARIREN.

The mining should start with a small open pit at IMARIREN that will produce 100,000 m.t. per year for two years. During the same period, a ramp from surface will be started for the zones CENTRE and NORD to be ready to produce 1500 m.t. per day. That to include the IMARIREN open pit's production for two years starting on year 2021. For the economic analysis in cash flow, it is assumed that all resources are mined by underground method.

All infrastructures, such as plant, offices, garage, warehouse etc., will be located at the CENTRE zone due to the fact that it is the biggest zone in tonnage of the five (5) zones forming the deposit.

Starting year 2023, the production will increase to 2000 m.t. per day up to the end of the mine life, which is scheduled for 2033 if there is no other addition to the actual total tonnage. We are assuming 330 days of mining production per year.

During the year 2026, a ramp will start for zone SUD. The same is planned for zones TIZI and IMARIREN during the year 2028.

The various zones of the deposit are located in competent rock and have steep overall dip, making it easily mined using free falling method as well as cut and fill method (same method than Zgounder). It is recommended to use the open long hole mining method as much as possible, with sub-levels for the proposed new mining sites.

The Nord zone is wide and will be in the longhole stoping category.

The five (5) zones will have a main ramp from the surface and will have a second exit for ventilation and the escape way from the actual shafts from CENTRE, SUD and TIZI and from a new raise development for IMARIREN and NORD from bottom to surface. Raise extensions will have to be completed to connect the actual shaft and the bottom of the zones SUD, CENTRE and TIZI. Raising will be done by Alimak method.

The various main ramp will have a dimension of 4.5 m by 3.5 m.

Each zone will have its own compressed air system, electricity, explosive magazines and a backup generator in case of power loss to keep the underground ventilation working.

For mining equipment, one (1) boom jumbos, a scooptrams (3t.) and a five (5) cubic meters dumpers will be the main equipment used.

During the life of the mine, the mining equipment will go from one zone to develop another zone thus saving capex on equipment due to the fact that each zone will be mined more or less the same way and not at the same time.

Since, there is no production shaft but only a main ramp for each zone, all mineralized material will be hauled via trucks up to the surface and transferred into bigger trucks to be hauled at the plant near CENTRE zone. Production shaft is not viable for now due to the shallowness of each zone.

1.9 Processing and Metallurgy

Feed rate to the mill will be 1500 tpd from June 2021 up to June 2023, that to be increased to 2000 tpd from June 2023 until depletion of the actual known resources.

Even if, for the first two years of operation, the feed rate to the mill will be of 1500 tpd, the mill building will be built as to immediately accommodate the future 2000 tpd operation.

Feed to the mill will principally come from the Boumadine open pit and underground fresh material. Milling of the old tailings will only compensate for the lack of fresh feed coming from the mining operation and will essentially take place whenever there will be a shortage of fresh feed to the mill.

Milling of the fresh material will comprise crushing, grinding, lead, zinc and sulfide flotation, pressure oxidation of the sulfide concentrate, cyanidation of the POX residue and finally, a cyanide destruction circuit directly in the mill. Milling of the old tailings will basically use the same circuit as the one used for the fresh feed material, except that the crushing, grinding and the flotation circuits will be bypassed. Recoveries are derived from Metallurgical tests done at SGS Lakefield in Canada.

It is expected that about 80% of the process water will come to the mill from the recycle of the water coming from the tailings polishing pond. The other 20% will come from a remote source, some 7.5 km from the Boumadine zone CENTRE.

1.10 Project Infrastructure

The energy will be coming from a new power line rating 10MVA. It is expected to be powerful enough for the milling operation of the 2000 tpd. The new line will have to be installed from Goulmima. The discussions with the Office National of Energy (ONE) set the total Capex to US\$3.5 million.

A new water line will have to be installed for the mill and a provision in the Capex is intended for this purpose. As well, new tailings (one for the flotation and one lined for the cyanidation CIL tails) will be prepared for the whole mine life of the PEA. A polishing pond with water containment is planned to assist in the management of recycle water. Provision for a water treatment plant near the polishing pond has been done.

No provision in the Capex exists for the expansion of the existing accommodation camp as it is scheduled that workers will be living in nearby cities and villages (referring to the staff and mining contractors).

1.11 Environment

At this time, no environmental studies have been completed. Nevertheless, the company is aware that it will have to conduct a study according to the environmental impact Law No 12-03.

1.12 Capital and Operating Costs Estimates

- Capital cost



Capex Summary

| Description | Cost - US |
|--|---------------------|
| Power Line + Power Stations | \$3 000 000 |
| Flotation + POx/CIL Mill 1,500 tpd | \$ 35 000 000 |
| Well, pumps and water line | \$ 2 500 000 |
| Fresh water reservoir | \$ 350 000 |
| Main Ramps/Drift | \$ 10 885 000 |
| New Tailings | \$ 2 500 000 |
| Site Preparation Road | \$ 1 000 000 |
| Pick-up trucks | \$ 350 000 |
| Staff Mini-buses | \$ 300 000 |
| Utility Loader and truck | \$ 350 000 |
| Security system & Camera | \$ 250,000 |
| Explosive magazines | \$800 000 |
| Expansion 2000 t/d 50% of total expansion cost | \$ 5 000 000 |
| Generators | \$ 2 100 000 |
| Fuel tanks | \$ 100 000 |
| Exploration Drilling & Studies | \$ 5 000 000 |
| Water Treatment plant | \$ 550 000 |
| UG Equipment | \$ 9 600 000 |
| Gate & balance | \$ 250 000 |
| Communication system | \$500 000 |
| Sub-Total | \$80 985 000 |
| Contingencies | \$ 8 098 500 |
| Total initial capex | \$89 083 500 |

1US\$=10 Dirhams

The breakdown of the surface, mill and underground remaining capital cost expenditures (Capex) and sustaining capital to materialize the study is summarized in the following table. It is important to note that the Boumadine project capital cost is to start with mining and processing of 1500 tpd and quick ramp-up after two years to 2000 tpd. ROM and capital expenditures are then aligned with this plan.

It is important to mention that operating costs are based on existing real cost adapted to up scaling scenarios. Moreover, the mill capital costs estimates are based on real effective costs of Maya Maroc Zgounder Mine for the 500 tpd flotation Mill which total cost reached US\$6.9 M. This mill is installed and operational.

The initial capex covers the time it takes to build the infrastructure and 4 years of operation, while other Capex associated with Explosive magazines, Garage, warehouse, ventilation, mining equipment, developments total \$21,267,000 which are spent at specific moments in the development of the mine. Plus, the \$5,000,000 remaining is dedicated for the mill upgrade and another \$5,000,000 is for the sustaining capital. The total of capex of the project being \$120,350,500.

A contingency of 10% on the initial Capex has been added even if it is a preliminary economic assessment with a more or less 30% accuracy.

- Operating cost

The operating costs, also called operating expenditures (Opex), are expressed in USD per tonne processed, and are summarized below. This next Table outlines the costs of the total project.

Operating Costs

| Items | Cost US | Cost US/t milled |
|--------------------------------------|----------------------|---------------------|
| Waste development cost | \$9,108,000 | \$1.20 |
| Mineralized Material production cost | \$210,243,000 | \$27.70 |
| Mineralized Material process cost | \$347,305,200 | \$45.76 |
| Concentrate transport & Refiner cost | 92,522,100 | 12.19 |
| Administration & Environment | \$13,282,500 | \$1.75 |
| Royalties & Management fees | \$99,589,758 | \$13.12 |
| Total | \$772,050,558 | \$101.72 |

Note: The shaft, main ramps with all major underground developments of the mines are in the Capex with sustaining capital. Provision for additional underground development is taken into account with a 15% waste development cost on mineralized material mined.

1.13 Economic Analysis

A summary of the base case parameters and assumptions are shown below:

Project Base Case Economic Parameters and Assumptions

| Items | Units | Values |
|---|--------------|------------|
| Silver price (yearly average) | US/oz | \$21.00 |
| Gold Price (yearly average) | US/oz | \$1,380.00 |
| Lead Price (yearly average) | US/t | \$2,501 |
| Zinc Price (yearly average) | US/t | \$3,125 |
| Germanium (yearly average) | US/Kg | \$2,200 |
| Processed tonnage over LoM | metric tonne | 7,590,000 |
| Silver metal production | ounces | 19,734,105 |
| Gold metal production | ounces | 327,226 |
| Lead metal production | metric tonne | 38,749 |
| Zinc metal production | metric tonne | 149,540 |
| Germanium metal production | kg | 16,150 |
| Royalty on sales (ONHYM) | % | 3.0 |
| Maya Management Fees | % | 2.75 |
| Taxes for the first 5 years on gross revenues for a new company | % | 0.5 |
| Taxes after the first 5 years on profits | % | 17.5 |

The project cash flow summary of the base case is shown in the following table:

Project Cash Flow Summary BOUMADINE

| Items | Value US |
|---------------------------------|-----------------|
| Total revenue of sales | \$1,731,996,000 |
| Total operating costs | \$772,050,000 |
| Pre-tax discounted (6.5%) NPV | \$574,821,000 |
| After-tax discounted (6.5%) NPV | \$497,650,000 |

A PEA should not be considered a prefeasibility or feasibility study, as the economic and technical viability of the Project have not been demonstrated at this time. The PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. Furthermore, there is no certainty that the conclusions or results as reported in the PEA will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

1.14 Recommendations

Recommendations presented in this section detail the work identified by the study’s QPs, in order to develop the Project to next stage of study, as defined by NI 43-101 standards.

A summary of the recommended activities and costs required to meet the next level of study is presented below.

In order to have a better understanding of the geological setting and the character of the mineralization, additional exploration works are suggested at Boumadine. GoldMinds Geoservices recommend to Maya Gold and Silver an exploration drilling program. The first phase, consist of diamond drilling from the surface in order to explore new zones that may increase the mineral resource estimates. To gain a better appreciation of the mineralization continuity, a second phase of drilling is needed. After the cleaning of the galleries, dewatering these ones and the equipment of the raises, GMG recommends a percussion drilling program at zone CENTRE, SUD and TIZI in order to improve the confidence in modeling mineralization continuity.

For the exploration budget, GMG proposes the following program:

Table 4: Estimation of the exploration budget at the Boumadine property.

| Recommended works for Phase I | All included cost (USD) |
|--|--------------------------------|
| Assaying of existing pulps for Germanium | 30,000 |
| Surface diamond drilling (phase 01, 4000 meters) | 500,000 |
| Underground diamond drill (6000 meters) at 175 USD per meter | 1,050,000 |
| Percussion drilling (6000 meters) at 70 USD per meter | 420,000 |
| Geophysics | 500,000 |
| Total | 2,500,000 USD |

GMG recommends assaying the existing pulps (priority for holes drilled at zone CENTRE) for Germanium with lower detection limit than the one previously used.



+ GoldMinds Geoservices recommends to Maya Gold and Silver to acquire a cavity monitoring system (CMS) to get an accurate 3D mapping of underground voids, shafts, stopes, drifts and adits for different zones. Mine levels (zone TIZI (Z 1125m), zone CENTRE (Z 1095m; Z 1050m and Z 998m), zone Sud (1150m and 1100m)) need to be dewatered before starting developments in these parts of the mine. At least five (5) raises have to be equipped (one in zone TIZI, two at zone CENTRE and two at zone SUD).

+ Dewatering of the Centre Zone and others to allow UG survey and scan. The latter are required to increase quality in the classification of the mineral resources. Once dewatered, install access by scales or small exploration headframe or winch.

+ GMG recommends the company to carry core density measurement or the use of a pycnometer on all mineralized intervals identified and used in the mineral resources. Also carry continuous density measurement of the mineralized core in the new drilling.

+ The drilling program should aim at increasing measured and indicated mineral resources in order to reduce risk on the project.

+ On the metallurgical side, the company should carry metallurgical testing on each zone separately as well as testing blends of the various sectors identified in the mining sequence to validate that everything is working well in the processing facility.

- + Additional Bond index test for each zone

- + Material from existing core rejects of the mineralized zone is available for the additional met testing

- + Rejects / tails of met tests should be well characterized and used in environmental testing and ARD

+ Carry a baseline environmental study as it is a brown filed, and it is important to identify and document the situation prior to mining.

+ Geotechnical study and core geomechanical tests should take place to allow optimal stope design for the mine as well as for the tailings location, water basin, buildings and power line structures pumping system infrastructures.

+ Hydrogeological study to secure water for processing and living must be done.

+ Infrastructure study on power line has to be done.

+ A social impact study and dialogue with the surrounding communities has to be done and started as soon as possible to make sure people are included throughout the project development process.

GoldMinds estimates that it will require 2.5 MUSD to complete the recommendations, some at the conceptual level and others at more advanced stages. A total of 5 MUSD is scheduled in the CAPEX of the project for the recommendations.



1.15 Conclusions and risks

- + The mining titles are in good standing and are not grafted with any environmental liabilities that the authors are aware of;
- + The verification drilling program at Boumadine property was successful;
- + The actual situation and the commodity prices of Silver, Gold, Zinc Lead and Germanium are favorable for the economic development of the Boumadine Mine. The authors are aware that the precious metal prices are highly volatile and cannot be accurately predicted;
- + The mineral resources estimates are undiluted and insitu. The mineralized zones are open in various directions with high potential to increase mineral resources near surface;
- + The tonnage and the grade of the reported inferred resources in this report are uncertain in nature. There has been insufficient exploration work to define these resources as measured or indicated and it is also uncertain whether further exploration would result in upgrading any of the inferred resource to measured or indicated category;
- + The metallurgical testing are positives and allow for recovery of 97.16% Gold and 96.17% Silver from the sulfides concentrates. More testing, both at bench and pilot plant level will definitely be necessary especially to refine the process and better circumscribe the milling cost;
- + The power supply with a power line for a mill on site has been secured;
- + Waters sources have been identified, further studies and negotiations are required;
- + The country is mining friendly and the Kingdom of Morocco is a politically stable country. Certain risks will always exist in mining development projects, but for this project the authors believe that they are of low impact;
- + No adverse protests or objections to the mine development have been observed at Boumadine site and the closest village. The population expressed their total confidence in the project expecting more jobs will be created as commented by people met during our 2018 site visit;
- + Additional studies and fieldwork will be conducted for several environmental components to collect more information in order to better understand the receiving environment. The Authors are not aware about significant factors and risks that may affect access or the ability to perform work on the property;
- + It is necessary to make a more extensive study on the location of the new mill (2000 tons per day). This location must take into consideration all processing operations and the tailings location;
- + The Preliminary Economic Assessment is positive and the requested level of capital is reasonable;
- + The technical parameters used in this study should be refined to increase robustness of the project.

The authors have taken all possible actions to insure that the mineral resource statements are accurate. The authors relies on historical and recent data and independent sampling result. GoldMinds Geoservices concludes the project should continue its development and move to the next step.



2 Introduction

Since 2013, the Boumadine property is owned by Maya Gold and Silver Inc. The Compagnie Minière Maya-Maroc sarl (CMMM) is a Joint Venture where Maya owns 85% and the Office National des Hydrocarbures et des Mines of the Kingdom of Morocco owns the other 15%. GoldMinds Geoservices Inc. (GMG) prepared the first NI 43-101 mineral resource estimation and the Preliminary Economic Assessment (PEA) of the Boumadine mine.

The Boumadine property is located in the Anti-Atlas mountains, Errachidia Province, Morocco. The Boumadine site is accessible from Ouarzazate city at approximately 295 km at the east and 75 km south west of Errachidia city. The nearest town is Tinejad, located at around 19 km north of Boumadine and is easily accessible from the mine on a dirt and gravel road.

2.1 Terms of Reference – Scope of Work

At the request of Mr. Noureddine Mokaddem, President and CEO of Maya Gold and Silver, the mandate with the initial scope of work, defined in April 2017, includes the mineral resource estimation using the historic and recent diamond drilling programs, as well as the preparation of the Preliminary Economic Assessment (PEA).

The mandate requests can be read as follows:

- 1- Elaboration of the 2017/2018 surface drilling program and definition of the drilling targets;
- 2- Assistance to the CMMM's geologists during the drilling;
- 3- Assistance for the preparation of the press releases;
- 4- Compilation and verification/validation of the recent database (drilling and sampling);
- 5- Modelling of the mineralized zones;
- 6- Preparation of mineral resource estimation and NI 43-101 compliant technical report;
- 7- Realisation of a conceptual mining plan and the development sequence to define the PEA;
- 8- Preparation of the Preliminary Economic Assessment (PEA) NI 43-101 Technical Report.

2.2 Personal inspection on the property by each Qualified Person

The following persons visited the site for various reasons, as outlined below:

- Claude Duplessis P. Eng., Senior Engineer and Mr. Merouane Rachidi P.Geo., Ph.D., from GoldMinds Geoservices Inc., visited the Boumadine property on April 9th, 2018, for one week. Both are independent Qualified Persons as defined in the NI 43-101. The purposes of these visits were to conduct verification of the recent drill cores, review sampling preparation, perform

independent sampling of the tailings and drill cores, visit the principal adit at zone Nord and the ancient installations of the mine.

2.3 Units and Currency

In this report, all prices and costs are expressed in United States Dollars (US\$) unless otherwise stated. If other currencies are used, their symbols are specified (i.e. Canadian Dollars (Can\$), Moroccan Dirhams (MAD), etc.). Quantities are given in the “International System of Units (SI) metric units, the standard Canadian and international practice, including metric tonne (tonne or t) for weight, and metre (m) or kilometre (km) for distance. Some other non-SI units used in the report have been accepted by the International Committee for Weights and Measures and their symbols and names are specified in the following table (Table 5). The projection system used is the Lambert Conformal Conic. Abbreviations used in this report are listed below. To note that 1 US\$ equals 9.2 MAD.

Table 5: List of abbreviations

| Description | Abbreviation |
|--|-------------------|
| Carbon monoxide | CO |
| Canadian dollar | Can\$ |
| Certificate of Authorization | CofA (CA) |
| Cubic metre per second | m ³ /s |
| Cubic metre per hour | m ³ /h |
| Decibel, a unit of sound intensity | dB |
| Decibel weighted by the frequency | dBA |
| Day-night intensity noise average | Ldn |
| Calorific Value | PCI |
| Cubic metre | m ³ |
| General and Administration | G & A |
| GoldMinds Geoservices Inc. | GMG |
| Gram per litre | g/L |
| Gram | g |
| Gram per tonne or parts per million (ppm; 10 ⁻⁶) | g/t |
| Gross Combined Weight | GCW |
| Hectare | ha |
| Inches | in |
| International Organization for Standardization | ISO |
| Kilogram | kg |
| Kilometre | km |
| Cubic Kilometre | Km ³ |
| Kilovolt | kV |
| Kilowatt | kW |

| Description | Abbreviation |
|---|--------------------|
| Kilowatt-hour per tonne | kWh/t |
| Megawatt | MW |
| Moroccan Dirham | MAD |
| Medium Voltage | MT (MV) |
| Mega Volt Ampere | MVA |
| Megawatt-hour per day | MWh/d |
| Millimetre | mm |
| Metre | m |
| Micro Siemens per centimetre | μ S/cm |
| Micrometre (Micron) | μ m |
| Milligram per litre | mg/L |
| Cubic Megametre | Mm ³ |
| Megatonne | Mt |
| Millions of metric tonnes per year | Mtpy |
| National Instrument 43-101(Canadian) | NI 43-101 |
| National Office of Drinking Water and Electricity | ONEEP |
| Nitrogen oxides | NO _x |
| Milligram per cubic metre | mg/Nm ³ |
| Office National des Hydrocarbures et des Mines | ONHYM |
| Parts per million, parts per billion | ppm, ppb |
| Preliminary Economic Assessment | PEA |
| Run of Mine | RoM |
| Secretary of State for the Environment | SEE |
| Short ton (0.907185 tonne) | t, st, ST, ton |
| Specific gravity | s. g. |
| Square metre | m ² |
| Sulfur dioxide | SO ₂ |
| Suspended Matters | MY |
| Tonne per day | Tpd (t/d) |
| Tonne per hour | Tph (t/h) |
| Tonne per month | Tpm |
| Tonne per year | Tpy |
| United Nations Development Program | PNUD |
| United State Dollar | US\$ |
| Volt | V |
| Water supply | AEP |
| Degree | ° |
| Celsius degree | °C |

3 Reliance on other experts

This Report was prepared by GoldMinds Geoservices Inc. (GMG) for Maya Gold and Silver Inc. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to GoldMinds Geoservices Inc. at the time of the preparation of this Report with an effective date of April 24th, the cut-off date for the PEA drill data is March 29th;
- Assumptions, conditions and qualifications as set forth in this Report;
- Database compilation was based on plans, drill logs, files, and reports provided by Maya Gold and Silver;
- The recent drilling database supplied by CMMM's technical team has been verified by GMG and independent samples were taken and analyzed at ALS Canada which applies to the mineral resources;
- Analytical laboratories of ADM and Afrilab in Morocco, and AGAT laboratory in Canada assays certificates which applies to the minerals resources.

GoldMinds Geoservices has relied on Maya Gold and Silver for guidance on applicable taxes, royalties, and other government levies or interests, applicable to revenue or income from the Boumadine project.

GoldMinds has carried diligence and verification work on the provided data information and the data supplied is considered usable for the purpose of this technical report.

This Report is intended to be used by Maya Gold and Silver Inc. as a Technical Report with Canadian Securities Regulatory Authorities pursuant to provincial securities legislation. Except for the purposes contemplated under provincial securities laws, any other use of this report by any third party is at the party's sole risk.

4 Property description and location

4.1 Location

The Boumadine polymetallic deposit (Au, Ag, Zn, Pb, Ge) is located in the Errachidia province, at around 75 km from Errachidia city (Figure 1). The nearest town is Tinejda, located at around 19 km north of Boumadine and accessible from the mine on a dirt and gravel road (Figure 3).



Figure 1: Location of Boumadine property between the city of Ouarzazate and Errachidia, Kingdom of Morocco.



Figure 2: Boumadine permit locations and access.



Figure 3: Location & access to the Boumadine polymetallic deposit from Tinejdad city (from Google Earth).

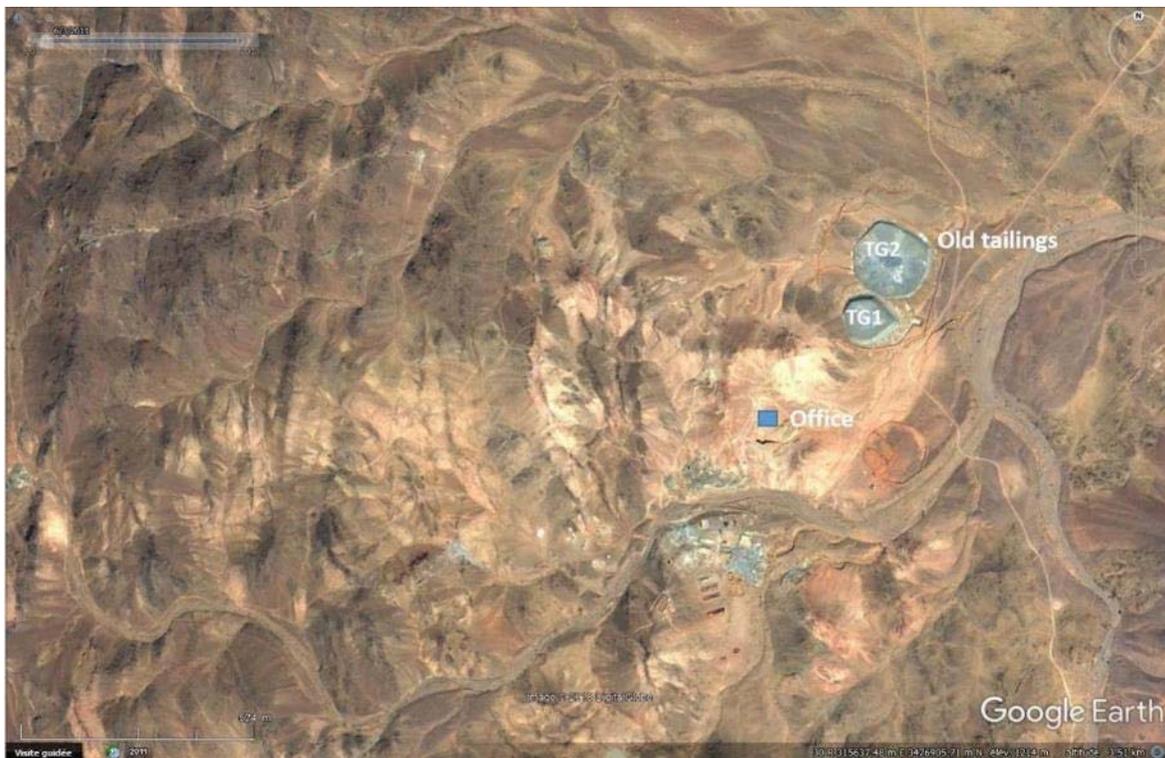


Figure 4: The Boumadine property and the location of the tailings (from Google Earth).

4.2 Property description

The Boumadine property consists of two Exploitation Permits (no. 2959 and 34565; Figure 5). Each permit is 4 km by 4 km, and the property covers an area of 32 km². The approximated coordinates of the project in the Lambert conformal conic projection are as follows: x: 317,050; y: 3,476,884.5. The elevation is within a range of 1,000 to 1,300 metres above sea level. The details regarding the current coordinate system are described hereafter.

WGS_1984_UTM_Zone_30N
WKID: 32630 Authority: EPSG

Projection: Transverse_Mercator
False_Easting: 500000.0
False_Northing: 0.0
Central_Meridian: -3.0
Scale_Factor: 0.9996
Latitude_Of_Origin: 0.0
Linear Unit: Meter (1.0)

Geographic Coordinate System: GCS_WGS_1984
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_WGS_1984
Spheroid: WGS_1984
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314245179
Inverse Flattening: 298.257223563

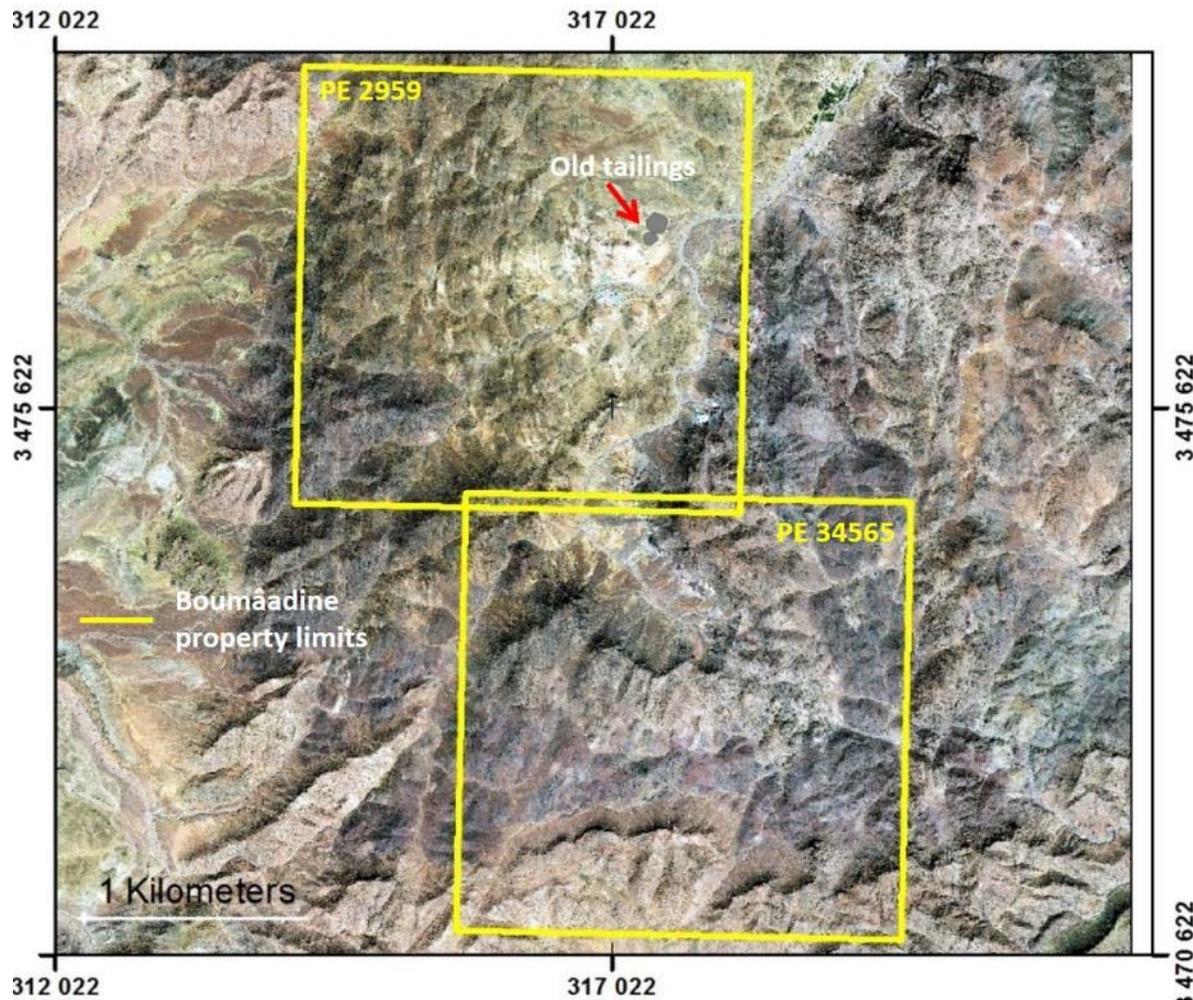


Figure 5: Location of the Boumadine permits (PE2959 and PE34565).

4.3 Mineral rights and other permits

Maya Gold and Silver Inc. and L'Office National des Hydrocarbures et des Mines (ONHYM) have signed in October 9th, 2012, a Joint Venture agreement for the acquisition of the Boumadine polymetallic deposit located in the Taroudant Province of the southern Kingdom of Morocco.

Under the terms of the Joint Venture Agreement, Maya Gold and Silver acquired 85% of the Boumadine project for total cash payments of \$3,292,800 (MAD 28,000,000), including:

- a) An initial amount of \$705,600 (MAD 6,000,000) paid in May 2013;
- b) \$705,600 (MAD 6,000,000) payable 12 months after the date of the Agreement;
- c) \$705,600 (MAD 6,000,000) payable 24 months after the date of the Agreement;
- d) A final payment of \$1,176,000 (MAD 10,000,000) payable 36 months after the Agreement date, which has been made on February 2019.

4.4 Royalties

Maya Gold and Silver and ONHYM have signed, in 2012, an agreement for the development and the exploitation of the Boumadine polymetallic deposit. Maya Gold and Silver owned 85% and offered a 15% stake in its share capital of Boumadine property to ONHYM.

A new Moroccan company has been established in 2017 and called the Compagnie Minière Maya-Maroc sarl (CMMM), with Maya Gold and Silver (85%) and ONHYM (15%) as shareholders. Hence, the mining title of the Boumadine property is transferred to the CMMM Company by ONHYM. ONHYM will perceive a 3% royalty from the sale incomes of CMMM from the first year of exploitation. Maya management royalty fees equal to 2.75 % of the society revenues that applies.

Maya Gold and Silver is committed to realize the exploration works, mineral resource estimation, mining infrastructures and metallurgical testing within the next 60 months after the acquisition. Maya agreed to inform periodically the Direction Régionale de l'Énergie et des Mines and ONHYM on the work progress.

The authors are not informed of any environmental liabilities, public hazards or any other liabilities associated with the Boumadine property. The current exploration permits allow the Issuer to do exploration and exploitation works on the Boumadine property. GoldMinds Geoservices is not aware of any significant factors and risks that may affect access, title, or the right or ability to perform work on the property.

Any dispute related to the validity of the interpretation or execution of the Agreement between ONHYM and Maya Gold and Silver shall be resolved amicably by conciliation between the two parties. It is appropriate to note that in case of the failure of this approach, the dispute shall be submitted to the arbitration process of the International Chamber of Commerce in Paris, under the rules of this chamber that apply to Moroccan laws.

5 Accessibility, climate, local resources, infrastructure and physiography

5.1 Accessibility

The Boumadine property is located in the region of Drâa-Tafilalet, in the Anti-Atlas mountains, and is accessible from Ouarzazate city at approximately 241 km and around 100 km south west of Errachidia city (Figure 6). The nearest town is Tinejad, situated at around 19 km north of the Boumadine mine. The property is accessible from Tinejad by a 19 km paved and gravel road.



Figure 6: Location of the Boumadine deposit from Ouarzazate city (from Google Maps).

5.2 Climate

The Boumadine polymetallic deposit is located between 980 metres and 1,300 metres above sea level (m.a.s.l.). This region is separated from the influence of the High Atlas Mountains to the north and therefore shares the Sahara climate.

The area is characterized by an arid climate. The summer is hot and essentially dry, and the hottest month of the year is July with a maximum temperature around 30°C. The coldest month is January with an average temperature of 9°C (Figure 7, Figure 8).

The precipitations occur mainly in the winter with an average annual rainfall of 125 mm. The driest month is July with a maximum of 2 mm of rain, and November has the highest rate of precipitation with an average of 22 mm (Figure 7, Figure 8 and Figure 9).

Seasonal and daily temperature variations are significant (Figure 7, Figure 8 and Figure 9). The 2017-2018 winter was exceptional with temperature colder than normal.

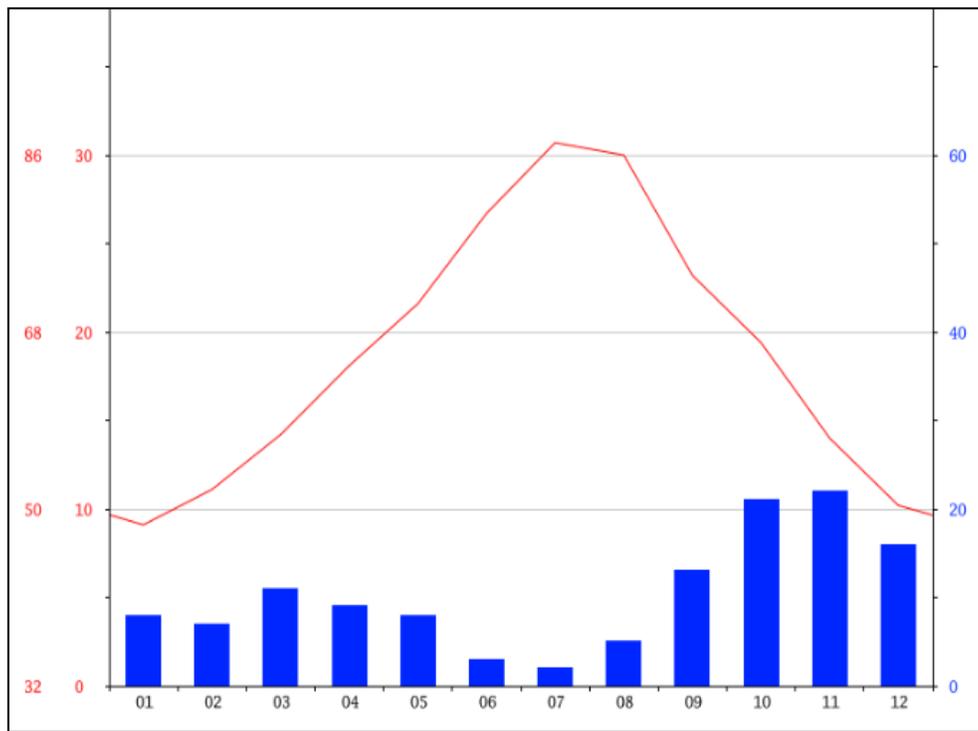


Figure 7: Monthly precipitation and temperature averages at Tinejdad city (source: climatdata.org).

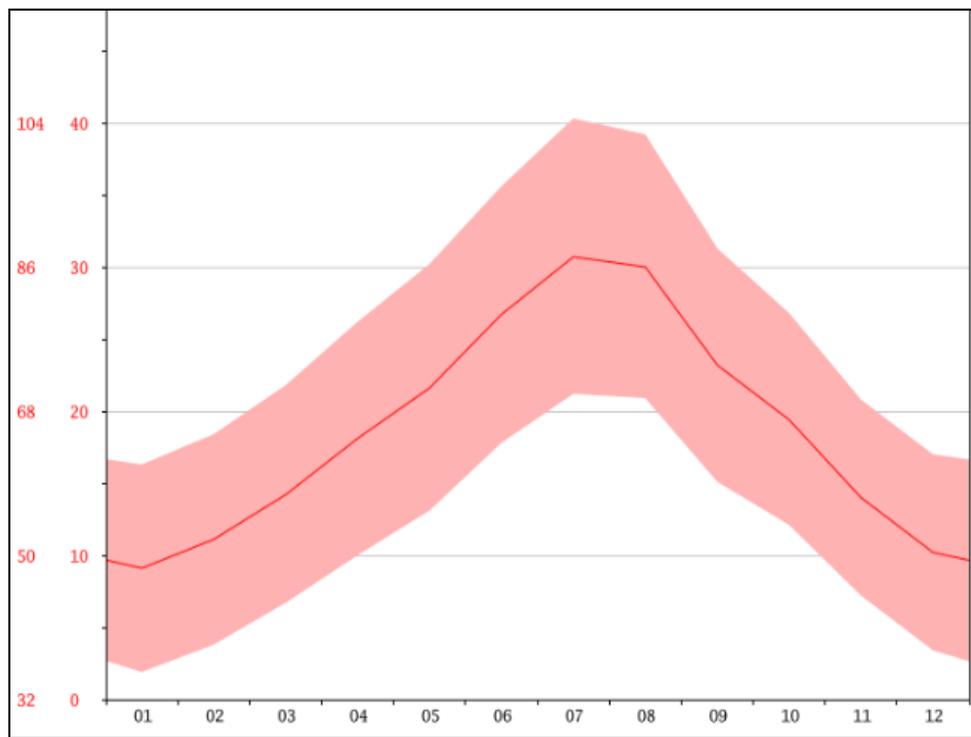


Figure 8: Monthly temperature averages at Tinejdad city (source: climatedata.org).

| | | | | | | | | | | | | |
|----------------------------------|------|------|------|------|------|------|-------|-------|------|------|------|------|
| Min. Temperature (°C) | 1.9 | 3.8 | 6.7 | 10 | 13.1 | 17.8 | 21.2 | 20.9 | 15.1 | 12.1 | 7.2 | 3.4 |
| Max. Temperature (°C) | 16.3 | 18.4 | 21.8 | 26.2 | 30.2 | 35.6 | 40.3 | 39.2 | 31.3 | 26.8 | 20.8 | 17 |
| Avg. Temperature (°F) | 48.4 | 52.0 | 57.6 | 64.6 | 70.9 | 80.1 | 87.3 | 86.0 | 73.8 | 66.9 | 57.2 | 50.4 |
| Min. Temperature (°F) | 35.4 | 38.8 | 44.1 | 50.0 | 55.6 | 64.0 | 70.2 | 69.6 | 59.2 | 53.8 | 45.0 | 38.1 |
| Max. Temperature (°F) | 61.3 | 65.1 | 71.2 | 79.2 | 86.4 | 96.1 | 104.5 | 102.6 | 88.3 | 80.2 | 69.4 | 62.6 |
| Precipitation / Rainfall (mm) | 8 | 7 | 11 | 9 | 8 | 3 | 2 | 5 | 13 | 21 | 22 | 16 |

Figure 9: Monthly precipitation & temperature averages at Tinejdad city (source: climatedata.org).

The dominant winds are northeast and southeast. The northern wind is accompanied more often with moisture, while the southeast wind, also called "chergui", tends to be dry. During the period from October to February, the winds are generally calm compared to the period from March to September, with a wind speed that can reach 100 km/h.

5.3 Local resources

The mine workers are available from the nearest city, Tinejdad. The city of Errachidia is the closest major urban center formerly called Ksar souk. The city of Errachidia has an international airport with five days access to Casablanca and it is also accessible by road from Marrakech (around 420 km).

The local population is mainly Amazigh (aboriginal population) with a semi-sedentary lifestyle. The local economy is principally supported by tourism and the region is a popular tourist destination from spring to late fall. The economy of the region is also supported by livestock, agriculture and cinematographic industries.

Basic supplies, such as food and limited accommodation, are available at Tinejdad; the larger city of Errachidia offers greater diversity. Special items must be purchased from Ouarzazate or Marrakech.

The local manpower will seize the opportunity to work for the Boumadine mine during the next years of exploitation. During the site visit, many potential workers came to the site asking when the mine activity would start and for job application. The nearest village, called Addi Baba, is located at around 5 km away from the mine site. The implication of the local manpower in the project benefit the local economy, which is almost entirely based on livestock and agriculture.

5.4 Infrastructure

The Boumadine polymetallic deposit is accessible from Ouarzazate city at approximately 295 km east and 75 km south west of Errachidia city. The Boumadine mine is easily accessible from Tinejdad (the nearest city) by a dirt and gravel road (Figure 10, Figure 13).

At the moment of the redaction of this report, there is only one diesel generator that provides electrical power used for lighting and other works on site, such as cutting cores.

The local manpower is available in the city of Tinejdad as well as the nearby villages. The majority of the people who live in these villages formerly worked for the Boumadine mine when it was the property of the BRPM.

During the first years of production, Maya will use the trapped water in the galleries of Centre and Sud zones.



Figure 10: Gravel road from Tinejdad to the Boumadine property.



Figure 11: Paved road from Tinejdad to Ouarzazate city.



Figure 12: A view looking south showing the Boumadine site offices.

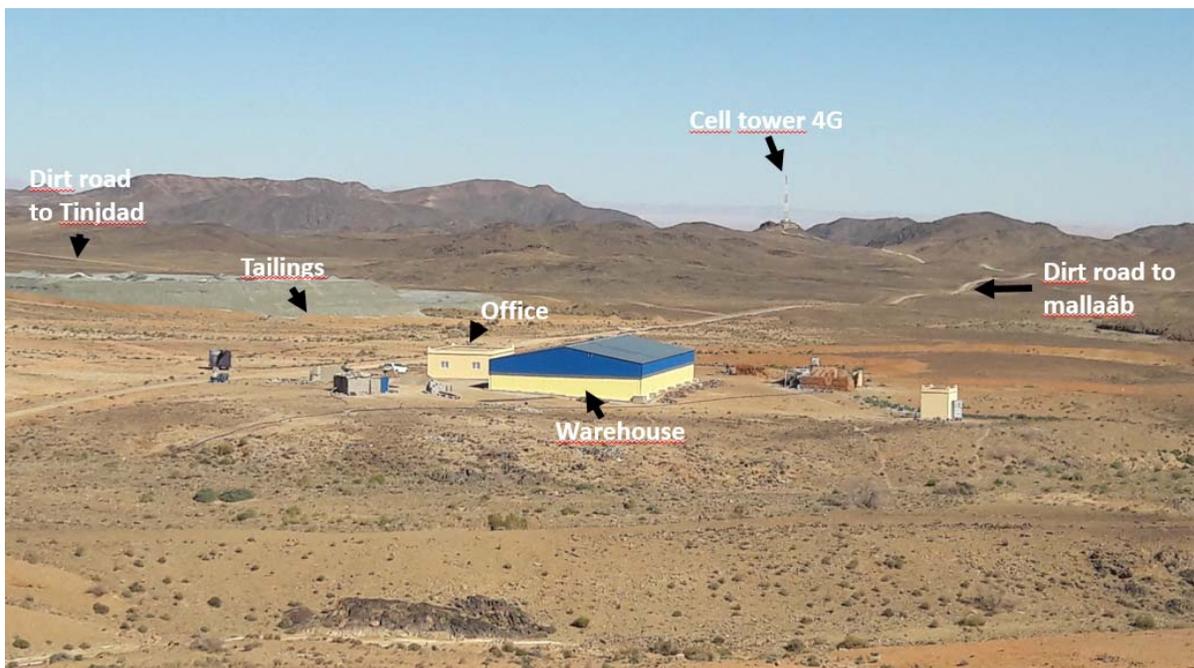


Figure 13: The existing infrastructure at Boumadine property.

For the moment there is no mining installations at the Boumadine property.

5.5 Physiography

The Atlas Montains, Rif and the Anti-Atlas constitute the main structural domains in Morocco. The High Atlas is formed essentially by Mesozoic rocks and is separated from the Anti-Atlas by the major South-Atlasic fault. The Anti-Atlas Mountains corresponds to a succession of aligned reliefs on nearly 500 km following a SW-NE direction.

The elevation of the Boumadine property range between 1,000 to 1,300 metres above sea level. The topography of the area is characterized by the succession of moderately ridges or hills mostly oriented N-S with the altitude in the range of 1,200 m.

The vegetation is limited to desert plants composed by *Acacia Raddiana* and *Tamarix amplexicaulis*. The soil is weakly developed and is formed by rock debris (Figure 14). There are also some palm trees closer to the oases and closer to some urban areas (Figure 15).

The area is known by the presence of camels and goats belonging to a group of nomads (Figure 16).



Figure 14: The vegetation at the Boumadine property at the base of the hill.



Figure 15: Palm trees at Goulmima hotel.



Figure 16: Camels belonging to a nomad on the trail to Boumadine property.



Figure 17: A group of goats next to the trail to Boumadine property.

6 History

6.1 Previous mining and exploration work

The Boumadine polymetallic deposit contains traces of a very old exploitation, of unknown age, which concerned the superficial parts of the mineralized structures for precious metals.

- 1956 - 1989

In 1956, the Bureau de Recherches et de Participations Minières (BRPM), which is now called ONHYM (Office National des Hydrocarbures et des Mines), initiated a program of exploration at the Boumadine deposit. A summary of the surface and underground exploration work accomplished by the BRMP was presented by Saint Gal de Pons (1975). The mineralization consists of galena and cerussite with accessory chalcopyrite. Enrichment occurs when the veins intersect NNE and NNW-oriented structures.

Saint Gal de Pons (1966a, b) presented a summary of mining excavations and exploration work that were mainly concentrated on the CENTRE and the NORD zones. The main goal of the exploration

and mining work was the evaluation of shallow sulfide and oxidized polymetallic mineralization through surface drilling.

A feasibility study was carried out by the BRPM in 1983 on a 100 t/day test pilot plant built at the Boumadine mine in view of constructing a more permanent plant with a 1,000 t/day capacity (BRPM, 1983). An economic feasibility study on the operation of the Boumadine mine was produced by Benkhadra and Celko (1983). The study evaluated the costs and logistics of the planning process, mine production, mining installations, method of exploitation, processing and metallurgical plant, energy and water supply as well as the management.

- 1986 - 1992

Between 1986 and 1992, SODIM, BRPM and SODECAT proceeded successively with flotation tests of the Boumadine polymetallic ore. In June 1988, the Boumadine property returned to the BRPM who continued the metallurgical testing. SODECAT re-optioned the property in 1989 and invested in the mining infrastructures.

- 1998

The BRPM publish a final report in 1998, giving a summary of all surface and underground work carried out by different mining companies. This referring to:

- Diamond drill holes totaling 32,756 m;
- Shafts totaling 638 m;
- Galleries and drifts totaling 187 m;
- Raises totaling 320 m.

6.2 Historical resources

For the Boumadine property, several historical* mineral resource estimates were prepared since 1966.

Saint Gal de Pons (1966a, b), calculated an historical* resources of 1,977,000 tonnes realized from 12 sampled panels and yielding 1.4 wt. % Pb, 4.2 wt. % Zn, 140 g/t Ag and 1.8 g/t Au*. The mineralization is related to several veinlets that surround the main polymetallic veins.

Based on the report of the ONHYM (report ONHYM 2011), the historical* resource of the Boumadine is 3,838,970 tonnes:

- Measured*: 1,043,010 t at 0,77% Pb, 3,65% Zn, 186 g/t Ag and 3,66 g/t Au;
- Indicated*: 869,960 t at 0,65% Pb, 3,12% Zn, 171 g/t Ag and 1,56 g/t Au;
- Inferred*: 1,926,000 t.

In January 1998, the BRPM published a report on the Boumadine update historical* mineral resources.

Table 6: Historical* mineral resource estimates, Boumadine property.

| Secteur | Réserves Certaines * | | | | | | Réserves très probables * | | | | | | Réserves Probables * | | | | | | R. * Possibles | Réserves * |
|-------------|----------------------|-----------|------|------|--------|--------|---------------------------|---------|------|------|--------|--------|----------------------|---------|------|------|--------|--------|----------------|-------------------|
| | Puis. (m) | TV (t) | Pb % | Zn % | Ag g/t | Au g/t | Puis. (m) | TV (t) | Pb % | Zn % | Ag g/t | Au g/t | Puis. (m) | TV (t) | Pb % | Zn % | Ag g/t | Au g/t | TV (t) | total par secteur |
| Central | 2,77 | 818 880 | 0,77 | 4,12 | 202 | 4,28 | 1,65 | 300 160 | 0,85 | 3,4 | 185 | 2,30 | -- | -- | -- | -- | -- | -- | 713 000 | 1 832 040 |
| Sud | 2,55 | 54 930 | 1,44 | 5,5 | 305 | 2,27 | -- | -- | -- | -- | -- | -- | 5,50 | 321 000 | 0,56 | 3,7 | 203 | 1,5 | 60 000 | 435 930 |
| Tizi | 1,30 | 118 200 | 1,46 | 2,69 | 169 | 0,40 | -- | -- | -- | -- | -- | -- | 2,4 | 85 800 | 0,80 | 2,42 | 145 | 0,5 | 100 000 | 304 000 |
| Nord | 1,15 | 51 000 | 0,61 | 2,05 | 181 | 2,80 | -- | -- | -- | -- | -- | -- | 1,10 | 163 000 | 0,43 | 1,83 | 84 | 0,87 | 245 000 | 459 000 |
| Imariren | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 630 000 | 630 000 |
| Pa - IX | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 73 000 | 73 000 |
| Central Sud | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 105 000 | 105 000 |
| TOTAL | 1,94 | 1 043 000 | 0,86 | 3,9 | 203 | 3,6 | 1,65 | 300 160 | 0,85 | 3,4 | 185 | 2,30 | 3,0 | 569 800 | 0,55 | 2,97 | 163 | 1,17 | 1 926 000 | 3 838 970 |

* The estimates presented above are treated as historical information and the authors have not verified or done sufficient works to classify the historical estimate as current mineral resources or mineral reserves. These historical mineral resources do not refer to any category of sections 1.2 and 1.3 of the National Instrument 43-101 such as mineral resources or mineral reserves as stated in the Regulation 43-101 respecting standards of Disclosure for Mineral Projects (V-1.1, r.15) amended in May 2016 by the Autorité des Marchés Financiers (AMF). The issuer is not treating the above historical estimates as current mineral resources or mineral reserves.

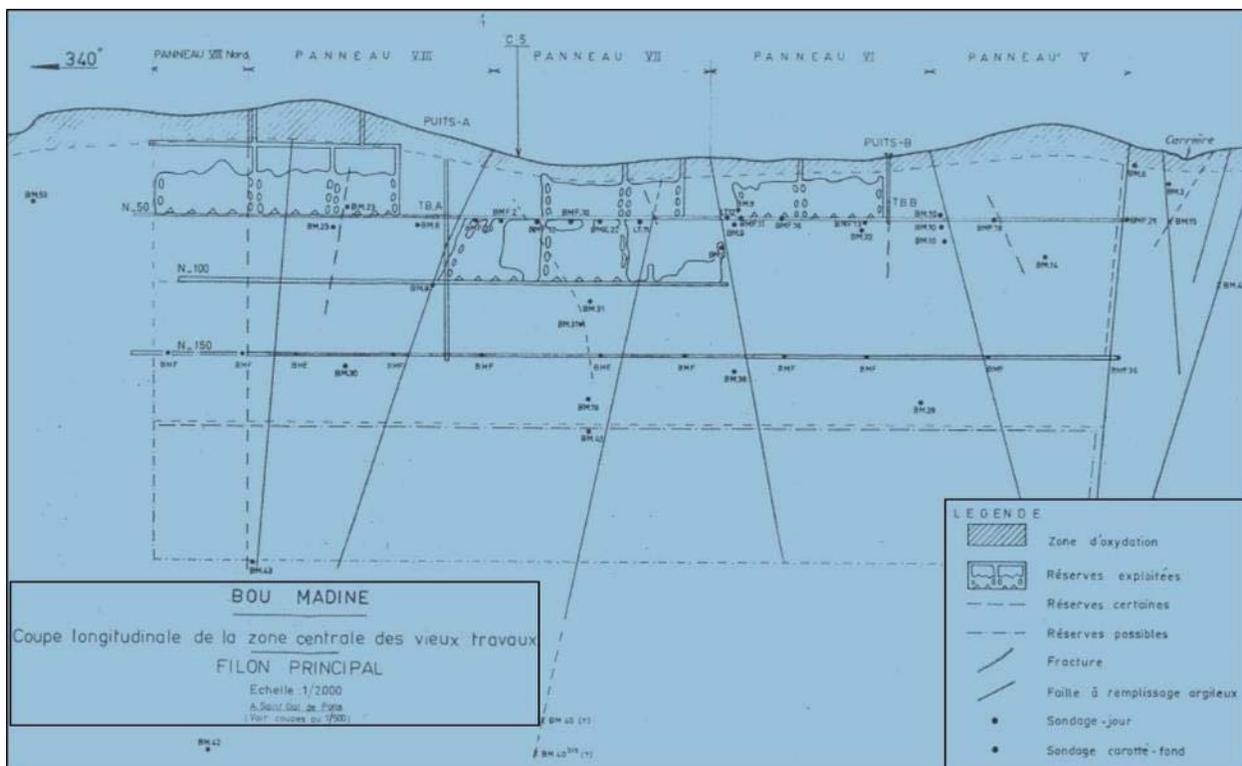


Figure 18: The distribution of the historical resources, the CENTRE zone, Boumadine.

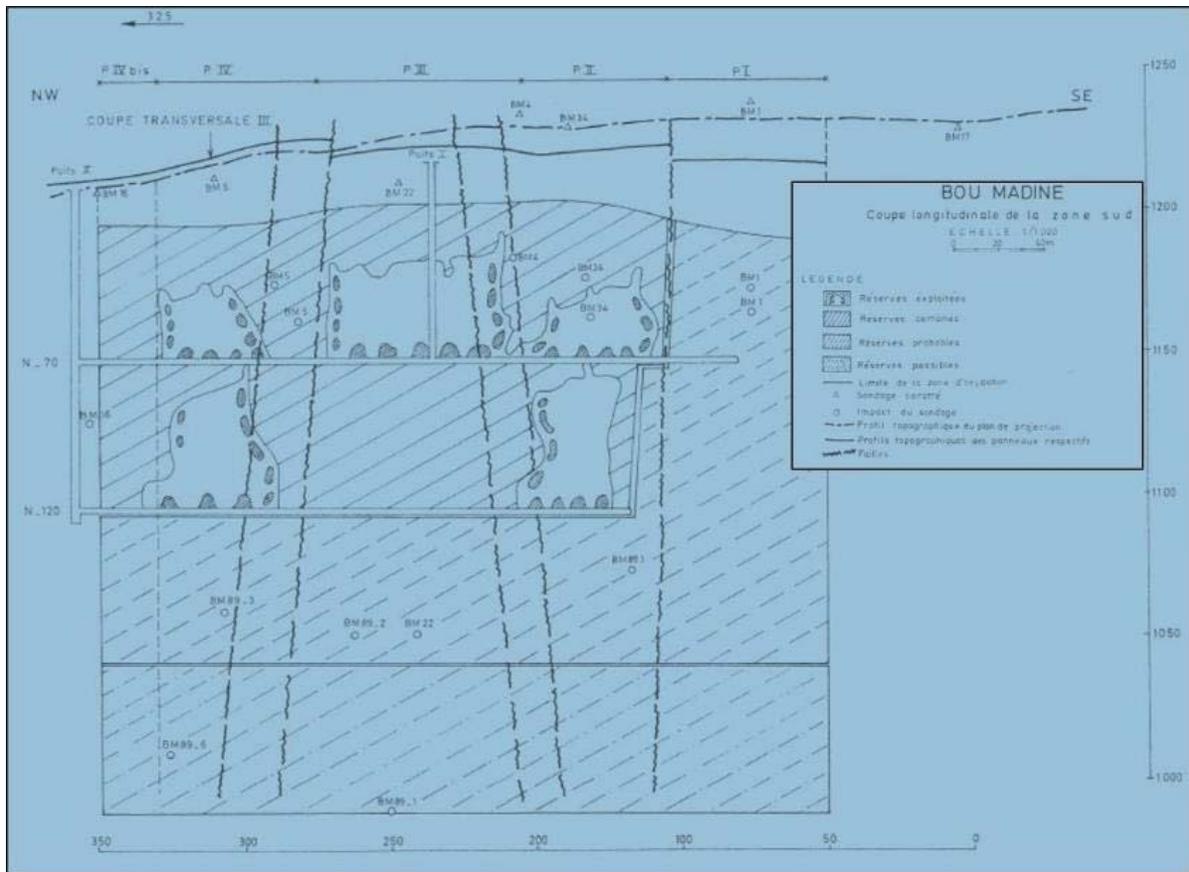


Figure 19: The distribution of the historical resources, the SUD zone, Boumadine.

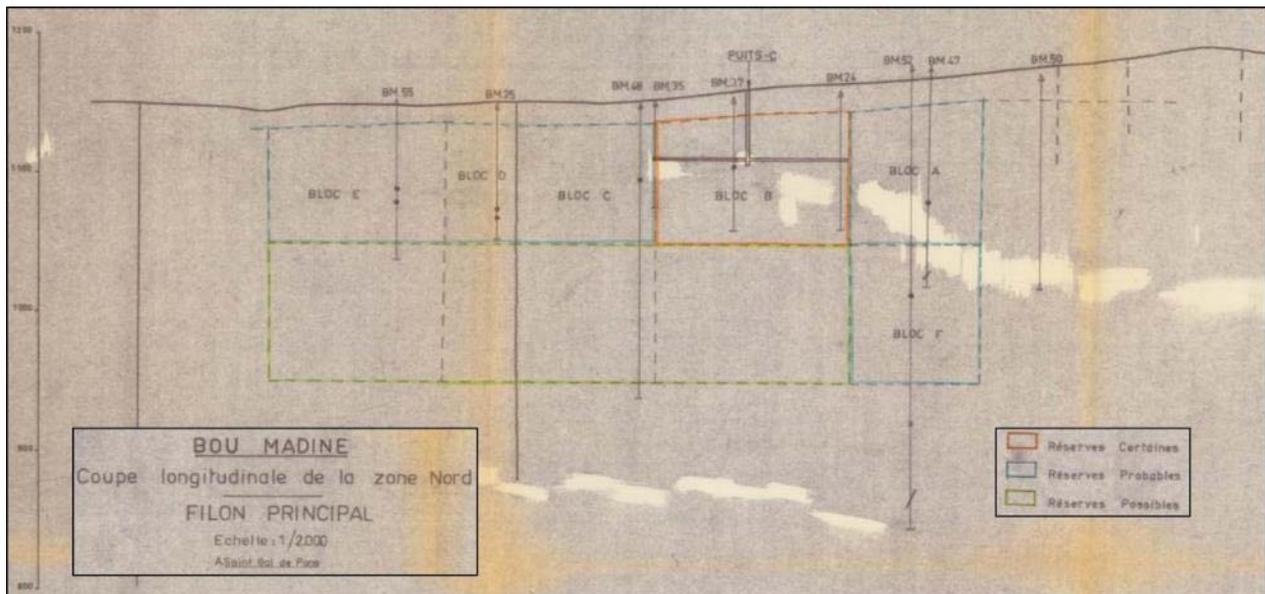


Figure 20: The distribution of the historical resources, the NORD zone, Boumadine.

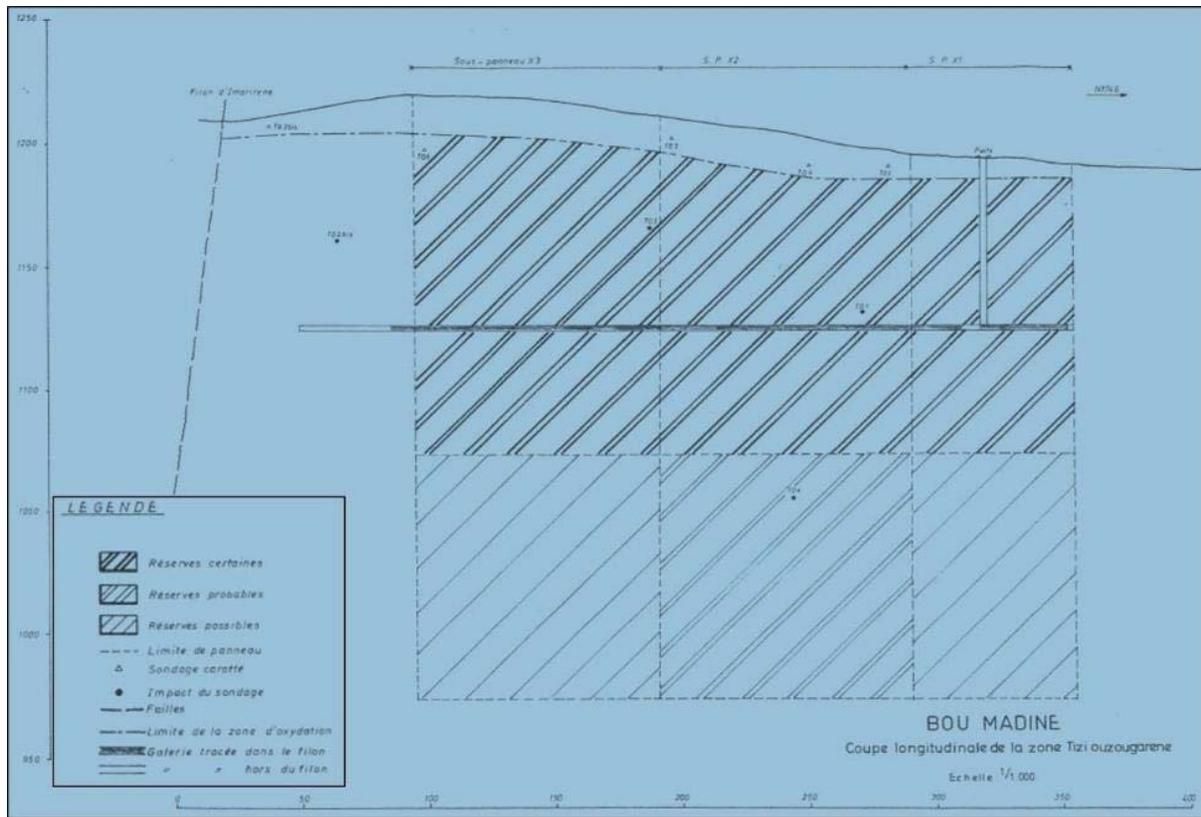


Figure 21: The distribution of the historical resources, the TIZI zone, Boumadine.

7 Geological setting

7.1 Regional geology

The Kingdom of Morocco is located in the North western part of Africa, just at the south of Spain. The Geology of Morocco is characterized by its diversity, related to the succession of four geological cycles from the Archean to the Alpine Orogeny, and including the major Pan-African and Variscan cycles. The geology of Morocco shows outcropping of Palaeozoic orogenies up to Mesozoic rifting and Cenozoic orogeny.

The Kingdom of Morocco has always been the site of mining activities. The earliest mining works were started at Zgounder (Ag), Imiter (Ag), Bleida (Cu), Iourirn (Au), Tazalaght (Cu) and have been dated from the 9th to the 15th centuries.

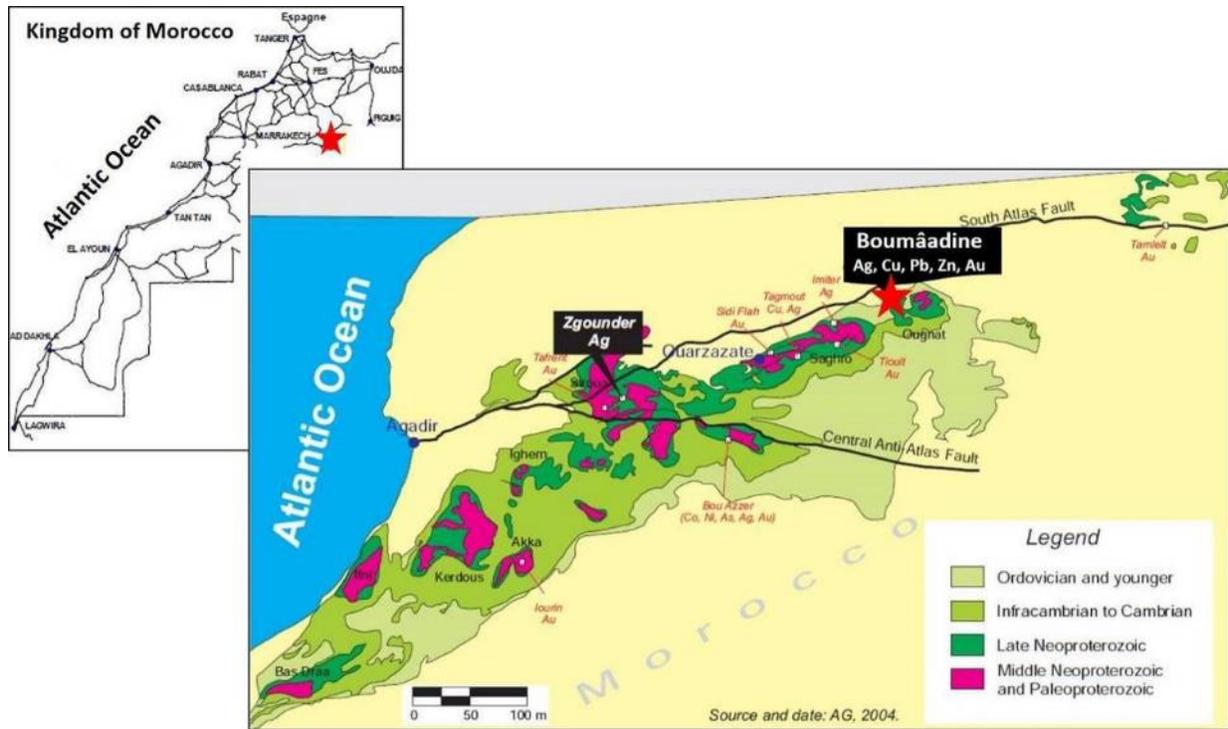


Figure 22: The regional geology of the Anti-Atlas displaying proterozoic windows.

The Anti-Atlas belt of Morocco extends ENE–WSW over more than 600 km, from the Atlantic margin in the west to the interior of the African plate in the east. It exhibits Precambrian rocks outcropping as basement inliers and surrounded by marine Ediacaran–Cambrian sequences (Soulaimani et al., 2014). The Anti-Atlas basement rocks are mainly Neoproterozoic and they consist of ophiolites, island arc-related gneiss and intrusive rocks, especially close the northern edge of the West African craton (El Hadi et al. 2010; Hefferan et al. 2014; Soulaimani et al. 2014).

The tectonic and structural evolution of the Anti-Atlas is believed to have been affected by three major orogenic events: the Eburnean orogeny, the Neoproterozoic Pan-African orogeny and the Paleozoic Variscan orogeny (Choubert 1947 and 1963). The Anti-Atlas domain seems to be affected by at least two episodes of exhumation separated by a subsidence episode. The first episode occurred in the Late Triassic and the second episode occurred during the Late Jurassic and most of the Early Cretaceous (Gouiza et al., 2016).

The Boumadine polymetallic deposit is located within the Anti-Atlas belt (Figure 22). More precisely, it is located on the northwest side of the massif of Ougnat (Figure 23).

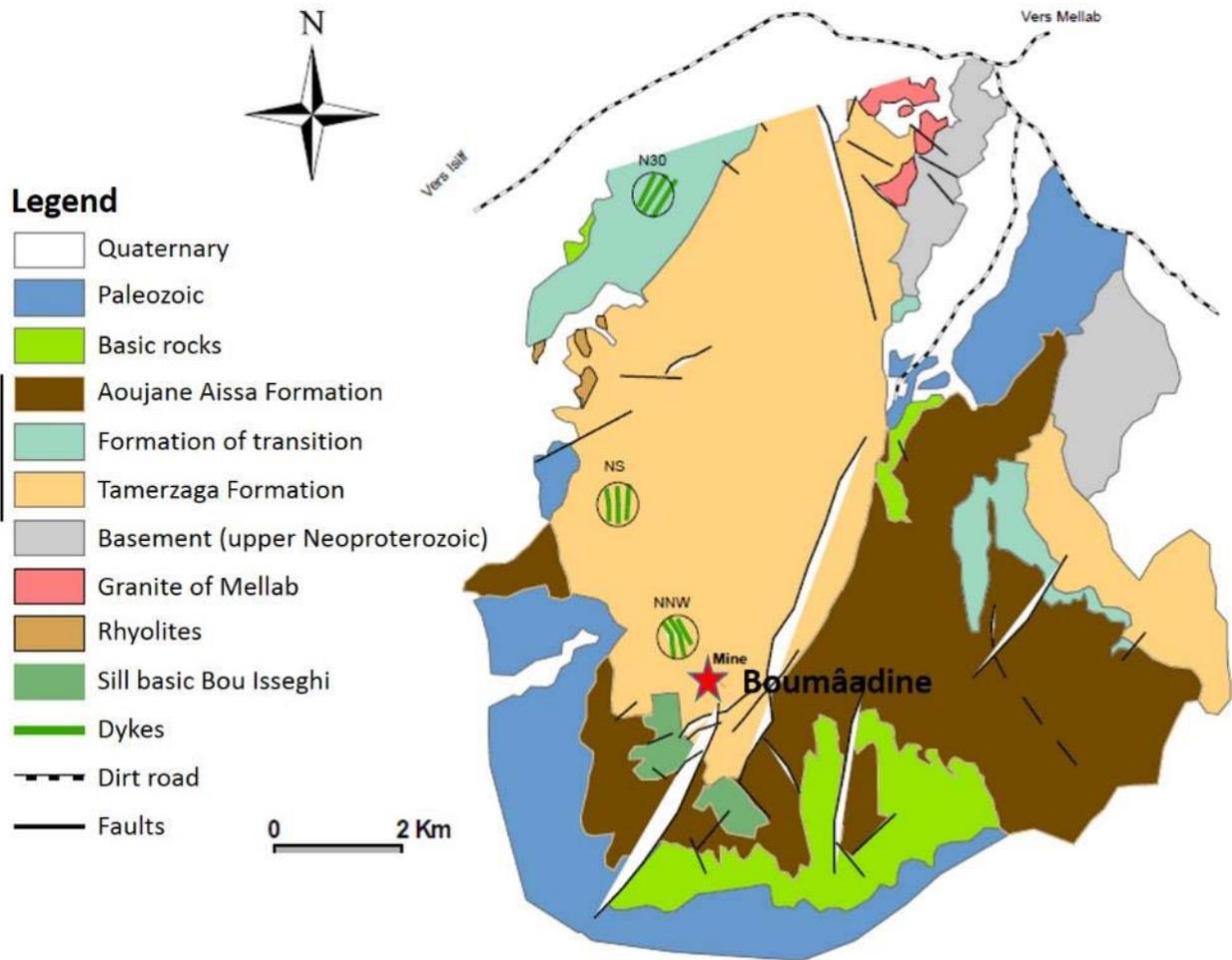


Figure 23: The geological map of the Ougnat massif, Anti-Atlas belt (taken from the ONHYM report, source Y. Paile, 1983).

The geology of the Proterozoic Ougnat inlier is composed by a Neoproterozoic metasedimentary basement metamorphosed to the greenschist facies and intruded by quartz-diorites and garnet-bearing granites. This basement is unconformably overlain by Ediacaran volcanic formations (Ouarzazate Supergroup), which mostly consist of ignimbrites and andesites. The ignimbrites have been intruded by several rhyolitic domes and several felsic dykes. One of the Ediacaran rhyolitic domes is associated with polymetallic Zn–Cu–Pb–Sn–Ag–Au mineralization (Aït Saadi, 1992).

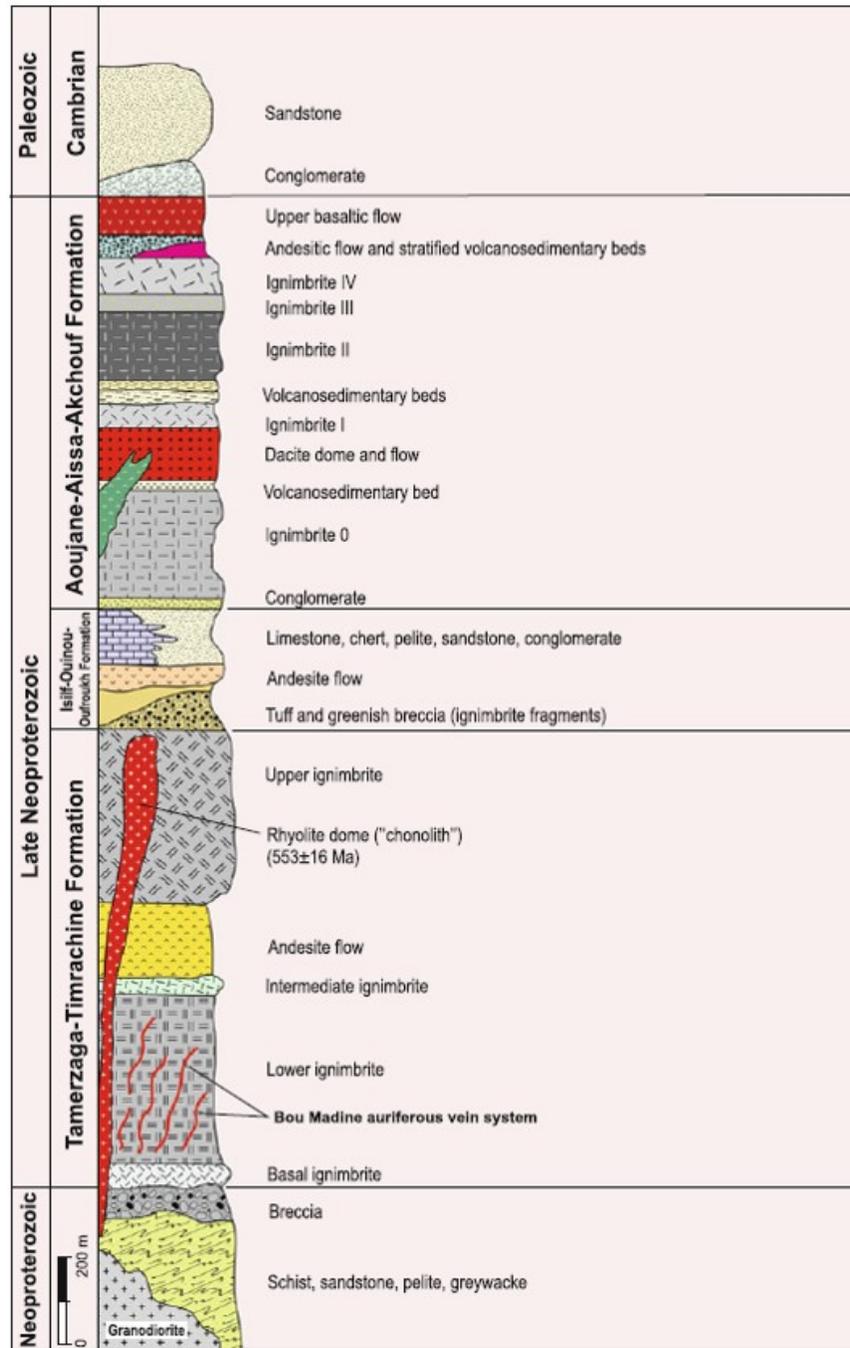


Figure 24: Synthetic stratigraphic columns of the central Ougnat (modified by Bouabdellah and Levresse, 2016, after Y. Paile, 1983).

The basement is surmounted by a volcano-sedimentary formation and limited by a Paleozoic cover. It is subdivided in three formations:

- The Tamerzaga Formation host the Boumadine mineralization. It is composed of conglomerates at the base with a variable thickness (up to 50 m) covered by ignimbrites, intercalated andesites and rhyolite dome (chonolith).

- The Formation of transition is composed of volcano-sedimentary and sedimentary rocks (tuffs, limestone, cherts, mudstone, sandstone and conglomerates);
- The Aoujane Aissa Formation is essentially composed of ignimbrite rocks with some intercalations of dacitic and basaltic lava flows.

The contact between the crystalline basement and overlying Tamerzaga Formation is characterized by a breccia member that lies unconformably on the basement. The Tamerzaga Formation is the exclusive host for the Au-Ag-Pb-Zn-Cu mineralization.

7.2 Property Geology

The Boumadine deposit is defined as an area of 3 km east-west by 4 km north-south within the Ougnat Pan-African inlier on the eastern margin of the Anti-Atlas domain. The Ougnat inlier is formed by late Precambrian (PIII) predominantly calcalkaline volcanic and intrusive rocks.



Figure 25: Shear zone oriented NNE at the SUD zone affected by dextral fault movements.

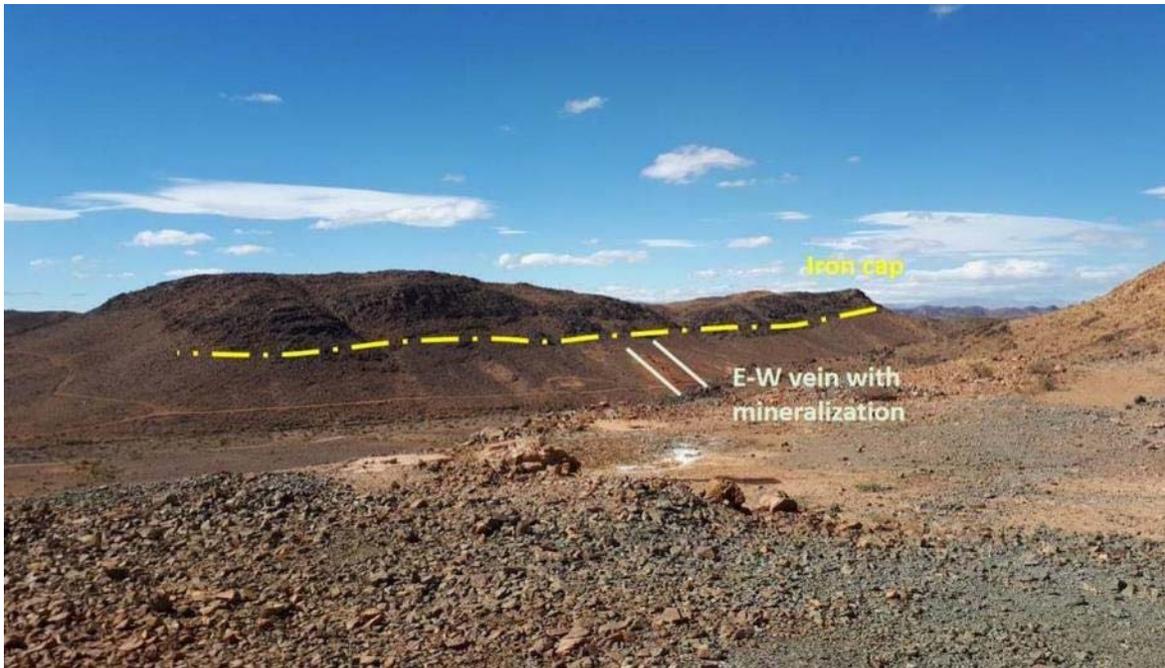


Figure 26: The oxidized mineralized rocks (hematite-goethite-rich cap) at TIZI zone affected by E-W and ENE veins with mineralization.

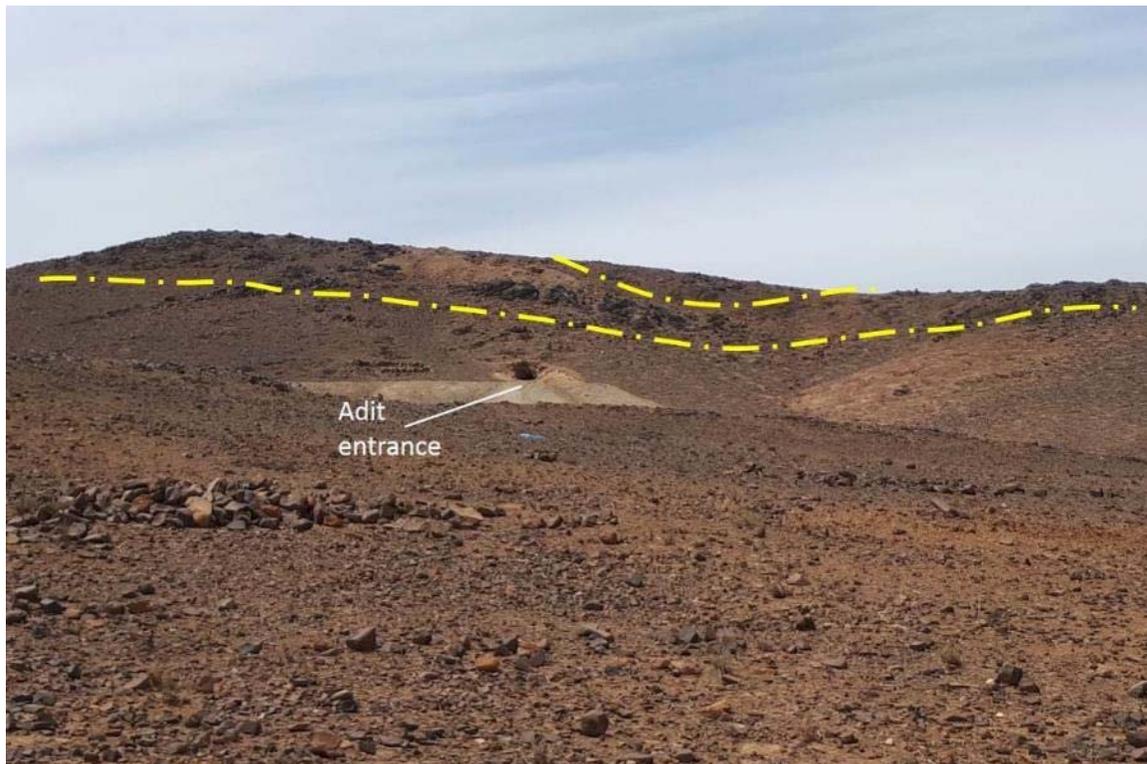


Figure 27: Moderately oxidized volcanic dyke affected by a shear zone parallel to the adit entrance.



Figure 28: Shear zone with galena, pyrite, sphalerite hosted in quartz cement, the adit at the NORD zone.

7.3 Mineralization

The Boumadine mineralization is structurally controlled and comprises a system of subvertical veins, veinlets, cemented breccias within veins and filling of tension gashes veins. Mineralized structures occur exclusively within the rhyolitic sequence of the Tamerzaga Formation.

The orientation of the mineralized structures is related to Ediacaran transcurrent tectonics represented by N30 to N-S strike-slip fault zones (Freton, 1988; Ait Saadi, 1992; Abia et al., 1999, 2003). The mineralization and associated alterations are developed at the proximity of magmatic vents. Alteration, which appears around the mineralization, develops an assemblage of major quartz and white micas with minor quantities of chlorite and calcite (Ait Saadi, 1992).

At least five mineralized vein systems are documented at Boumadine deposit. IMARIREN zone, Tizi, NORD zone, CENTRE zone and SUD zone. The rich mineralization tends to occur where NNE, NNW and the textural features indicate that mineralization took place in open space with a relatively shallow mineralizing system (Abia et al., 1999).

All of the mineralized veins display more or less similar mineral assemblages. The mineral sequence established on the crosscutting relationships show three stages of mineralization (Abia et al., 2003; Bouabdellah and Levresse, 2016).

- Stage I is characterized by the mineral assemblage dominated by massive pyrite with banded appearance, pyrrhotite, cassiterite and arsenopyrite emplaced under N160 E shortening.
- The stage II is characterized by the precipitation of sphalerite, chalcopyrite, calcite, quartz, tetrahedrite-tennantite, silver, gold and Bismuth hosted in massive quartz veins, stock work veins and hydrothermal breccias. Gold is mostly distributed in pyrite and arsenopyrite crystals, and less frequently in galena and sphalerite. Galena is mainly present as a cement of the earlier brecciated sulfides and partially dissolving the arsenopyrite, pyrite and sphalerite. Quartz crystals are filling cavities within all pre-existing sulfides and mainly associated with small euhedral arsenopyrite crystals. Structural and textural data indicate that mineralization took place during the late Neoproterozoic as a result of open-space filling.
- The stage III is resulting from the oxidation of primary sulphides and consists of minor amounts of goethite, and jarosite with traces of hematite.

These data further suggest that the Boumadine deposit represents a relatively shallow mineralizing system that was open to the surface, and is similar to volcanic-hosted epithermal veins developed in subaerial resurgent caldera environments (Abia et al., 2003).

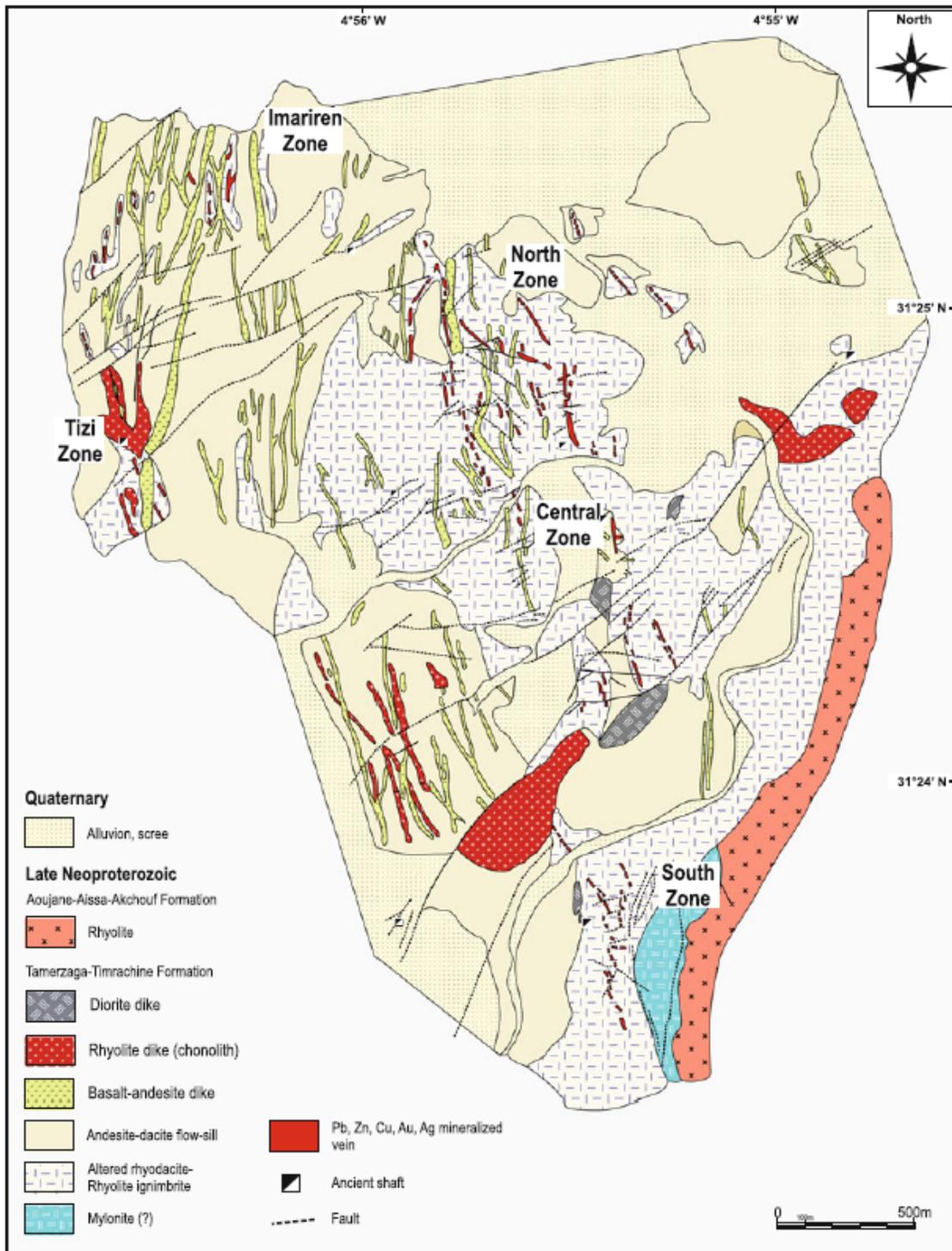


Figure 29: The location of different zones of mineralisation at Boumadine (from BRPM 1998).

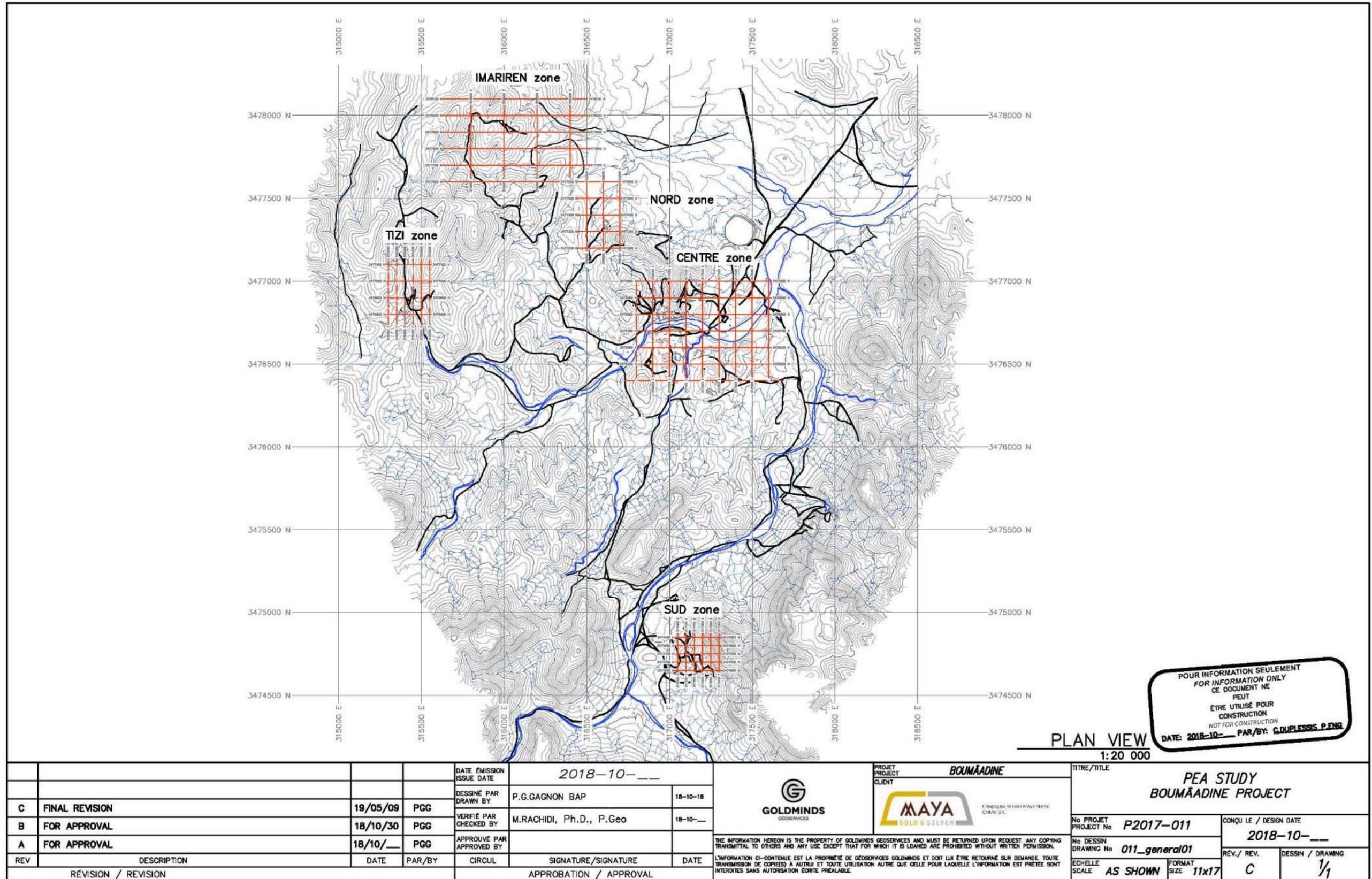


Figure 30: Different zone locations over drone survey.

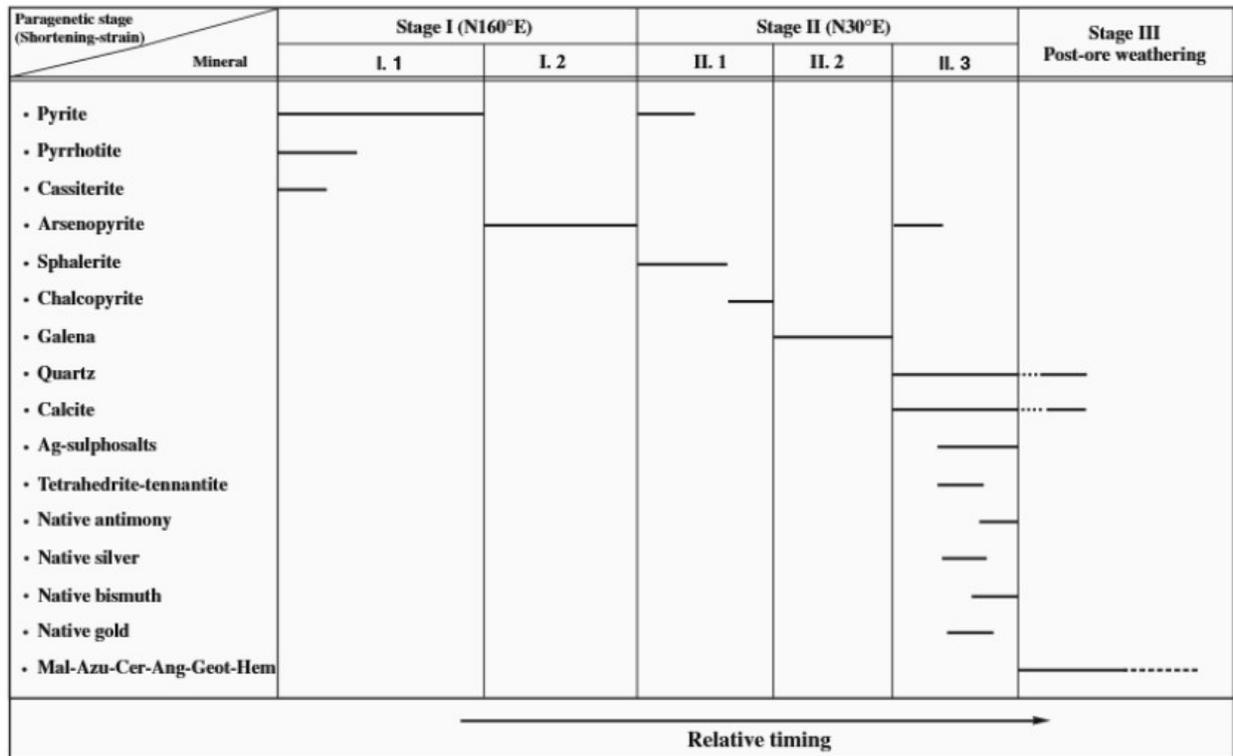


Figure 31: Summary of the paragenetic sequence of the Boumadine deposit (modified by Bouabdellah and Levrèsse, 2016, after Paile, 1983; Abia et al., 2003).

8 Deposit Types

The Boumadine deposit is described as shallow mineralizing system similar to volcanic-hosted epithermal veins developed in subaerial resurgent caldera environments (Bouabdellah and Levresse, 2016; Abia et al., 2003).

Temperature of formation of these mineralizations vary from 100 to 400°C (Ait saadi, 1992). The first sulfides precipitate at high temperature by boiling. The self-sealing and mixing of ascendant fluid with descending ground water contribute also to the physico-chemical changes and to the precipitation of silver, gold and polymetallic sulfides and sulfosalts.

Mineralization is structurally controlled, consisting of zones of vuggy quartz and veins, veinlets, and tectonic-hydrothermal breccias.

Three successive and overlapping stages of mineralization are distinguished (Ait Saadi, 1992; Abia et al., 2003; Bouabdellah and levresse, 2016). The origin of the mineralization is probably the mixing between ascending deep seated fluid and meteoric waters that have generated precipitation of precious- and associated base-metal mineralization.

9 Exploration

9.1 Historical Exploration Works

Historical exploration works completed in the area of the Property are discussed in Section 6.0.

9.2 Exploration by Maya Gold and Silver 2012-2013

Shortly after the acquisition of the Boumadine property from ONHYM, Maya Gold and silver started its exploration program by resampling the potential auriferous zones. Sampling locations were selected based on interpretation of the historical boreholes and from the geology of the existing exploration data. The tables below (Table 7, Table 8 and Table 9) show the results of the geochemical survey.

Table 7: Grab samples taken from the oxidized veins (iron cap).

| Sample | Easting | Northing | Au (g/t) | Ag (g/t) | S (wt.%) | Fe (wt.%) | Pb (wt.%) | Zn (wt.%) | Cu (wt.%) |
|--------|---------|----------|--------------|------------|----------|-----------|-----------|-----------|-----------|
| 2226 | 545225 | 90607 | 2.08 | 131 | 2.96 | 8.48 | 0.35 | 0.00 | 0.00 |
| 2233 | 545318 | 90113 | 2.93 | 29 | 2.23 | 19.20 | 2.44 | 0.09 | 0.02 |
| 2235 | 543782 | 91956 | 1.17 | 21 | 3.05 | 22.80 | 0.62 | 0.08 | 0.02 |
| 2308 | 543900 | 92096 | 13.95 | 19 | 1.10 | 22.10 | 0.46 | 0.04 | 0.01 |
| 2247 | 544735 | 91418 | 0.82 | 64 | 1.15 | 5.00 | 0.76 | 0.01 | 0.00 |
| 4512 | 543747 | 91934 | 9.76 | 86 | 0.52 | 13.90 | 0.46 | 0.29 | 0.01 |
| 4513 | 545012 | 89541 | 1.03 | 33 | 0.84 | 27.90 | 0.05 | 0.10 | 0.01 |
| 4517 | 545059 | 89480 | 1.35 | 58 | 1.00 | 5.40 | 0.63 | 0.05 | 0.01 |
| 4514 | 545141 | 89058 | 3.67 | 83 | 0.54 | 3.31 | 0.28 | 0.00 | 0.01 |

Table 8: Grab samples taken from the altered zones near from mineralized veins.

| Sample | Easting | Northing | Au (g/t) | Ag (g/t) | S (wt.%) | Fe (wt.%) | Pb (wt.%) | Zn (wt.%) | Cu (wt.%) |
|-------------|---------|----------|-------------|-----------|----------|-----------|-----------|-----------|-----------|
| 4504 (38 m) | 543510 | 90841 | 0.31 | 10 | 0.09 | 1.25 | 0.02 | 0.00 | 0.00 |
| 4506 (70 m) | 543468 | 90852 | 0.29 | 2 | 0.08 | 2.45 | 0.01 | 0.00 | 0.00 |
| 4403 (2 m) | 545058 | 91049 | 0.69 | 72 | 0.44 | 1.74 | 0.07 | 0.00 | 0.01 |
| 4404 (25 m) | 545031 | 91066 | 0.37 | 27 | 0.73 | 3.28 | 0.15 | 0.01 | 0.00 |
| 4405 (48 m) | 545007 | 91065 | 0.20 | 18 | 0.21 | 3.95 | 0.16 | 0.01 | 0.01 |
| 4406 (68 m) | 545007 | 91065 | 0.00 | 3 | 0.00 | 0.34 | 0.00 | 0.01 | 0.00 |

Table 9: Grab samples taken from ENE oriented Pb-Cu rich veins.

| Sample | Easting | Northing | Au (g/t) | Ag (g/t) | S (wt.%) | Fe (wt.%) | Pb (wt.%) | Zn (wt.%) | Cu (wt.%) |
|--------|---------|----------|-------------|-------------|----------|-----------|-----------|-----------|-----------|
| 2223 | 545857 | 90600 | 0.00 | 3 | 0.06 | 1.70 | 0.22 | 0.00 | 0.03 |
| 2224 | 544851 | 90362 | 0.01 | 58 | 0.35 | 0.84 | 9.10 | 0.01 | 0.09 |
| 2227 | 544477 | 91019 | 0.00 | 19 | 0.16 | 0.42 | 2.59 | 0.01 | 0.00 |
| 2229 | 543320 | 91292 | 0.02 | 98 | 1.75 | 2.51 | 10.70 | 0.39 | 1.02 |
| 2230 | 543590 | 91550 | 0.01 | 232 | 1.26 | 0.49 | 10.50 | 0.01 | 0.23 |
| 2231 | 544003 | 91626 | 0.01 | 37 | 1.00 | 1.48 | 7.48 | 0.00 | 0.20 |
| 2232 | 543402 | 91430 | 0.00 | 1 | 0.03 | 0.27 | 0.05 | 0.01 | 0.00 |
| 2234 | 544500 | 91968 | 0.00 | 0 | 0.03 | 1.41 | 0.03 | 0.00 | 0.00 |
| 2236 | 544309 | 91829 | 0.00 | 6 | 0.20 | 0.18 | 1.31 | 0.01 | 0.00 |
| 2237 | 544234 | 91747 | 0.00 | 22 | 0.64 | 0.35 | 4.40 | 0.00 | 0.00 |
| 2242 | 544465 | 92241 | 0.00 | 0 | 0.01 | 0.39 | 0.01 | 0.00 | 0.00 |
| 2306 | 544704 | 91173 | 0.02 | 3 | 0.04 | 1.14 | 0.00 | 0.01 | 0.00 |
| 2309 | 544367 | 90802 | 0.02 | 20 | 0.42 | 0.69 | 4.02 | 3.22 | 0.11 |
| 2310 | 544332 | 91750 | 0.00 | 15 | 0.43 | 1.03 | 2.90 | 0.00 | 0.01 |
| 4502 | 544322 | 90992 | 0.09 | 1 | 0.11 | 1.21 | 0.02 | 0.00 | 0.00 |
| 4508 | 543619 | 91540 | 0.01 | 3360 | 2.05 | 0.72 | 13.35 | 0.14 | 2.20 |
| 4510 | 543987 | 91623 | 0.00 | 4 | 0.09 | 0.09 | 0.02 | 0.00 | 0.01 |
| 4511 | 543992 | 91625 | 0.04 | 308 | 0.28 | 3.59 | 11.50 | 0.03 | 10.65 |
| 4518 | 545335 | 84570 | 0.01 | 0 | 0.21 | 1.93 | 0.00 | 0.01 | 0.02 |
| 4519 | 545341 | 84564 | 0.03 | 1 | 0.09 | 28.60 | 0.01 | 0.01 | 0.15 |

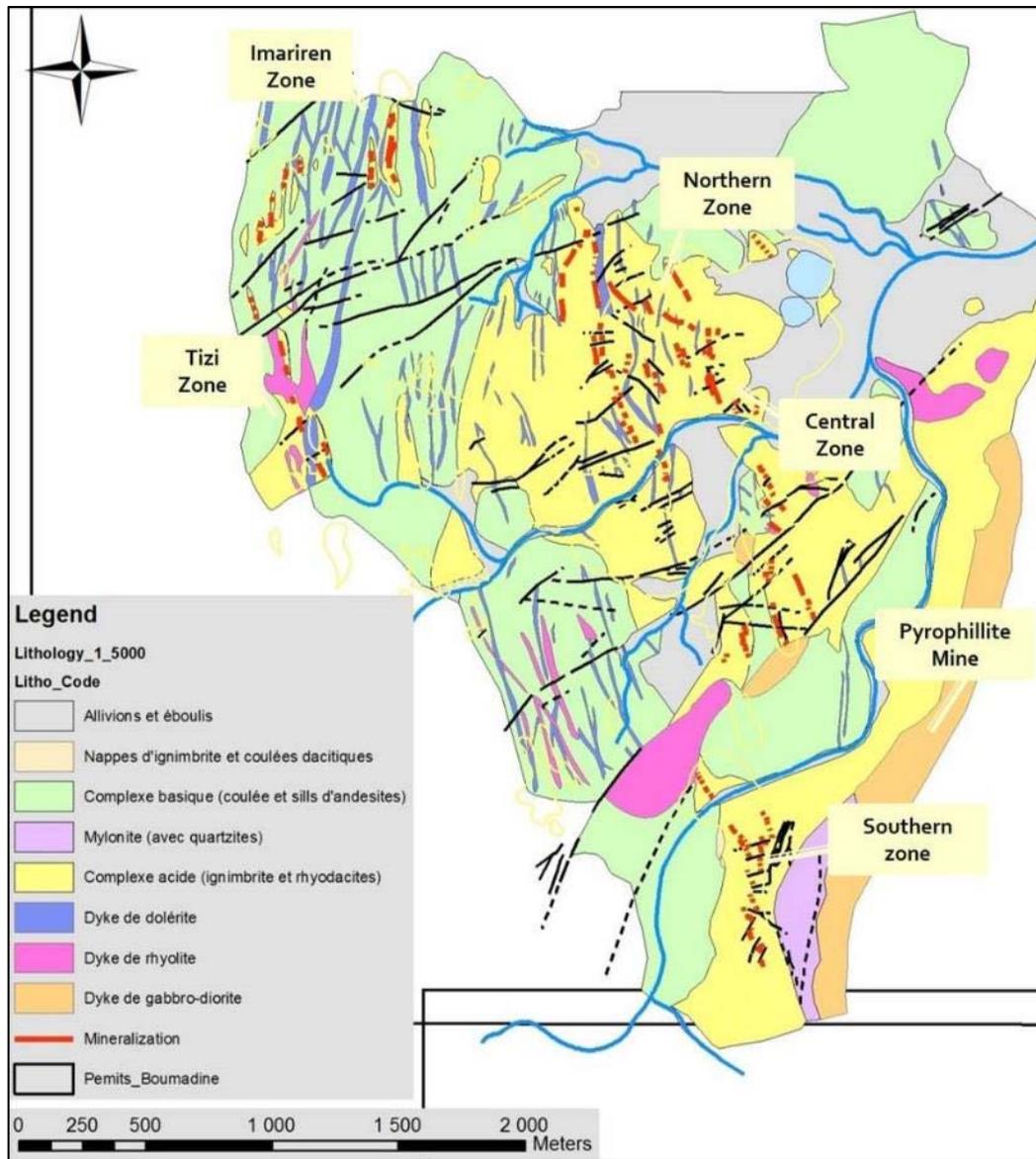


Figure 32: Geological map showing the orientation of the structures (from Bouabdellah et Levrèse 2016).

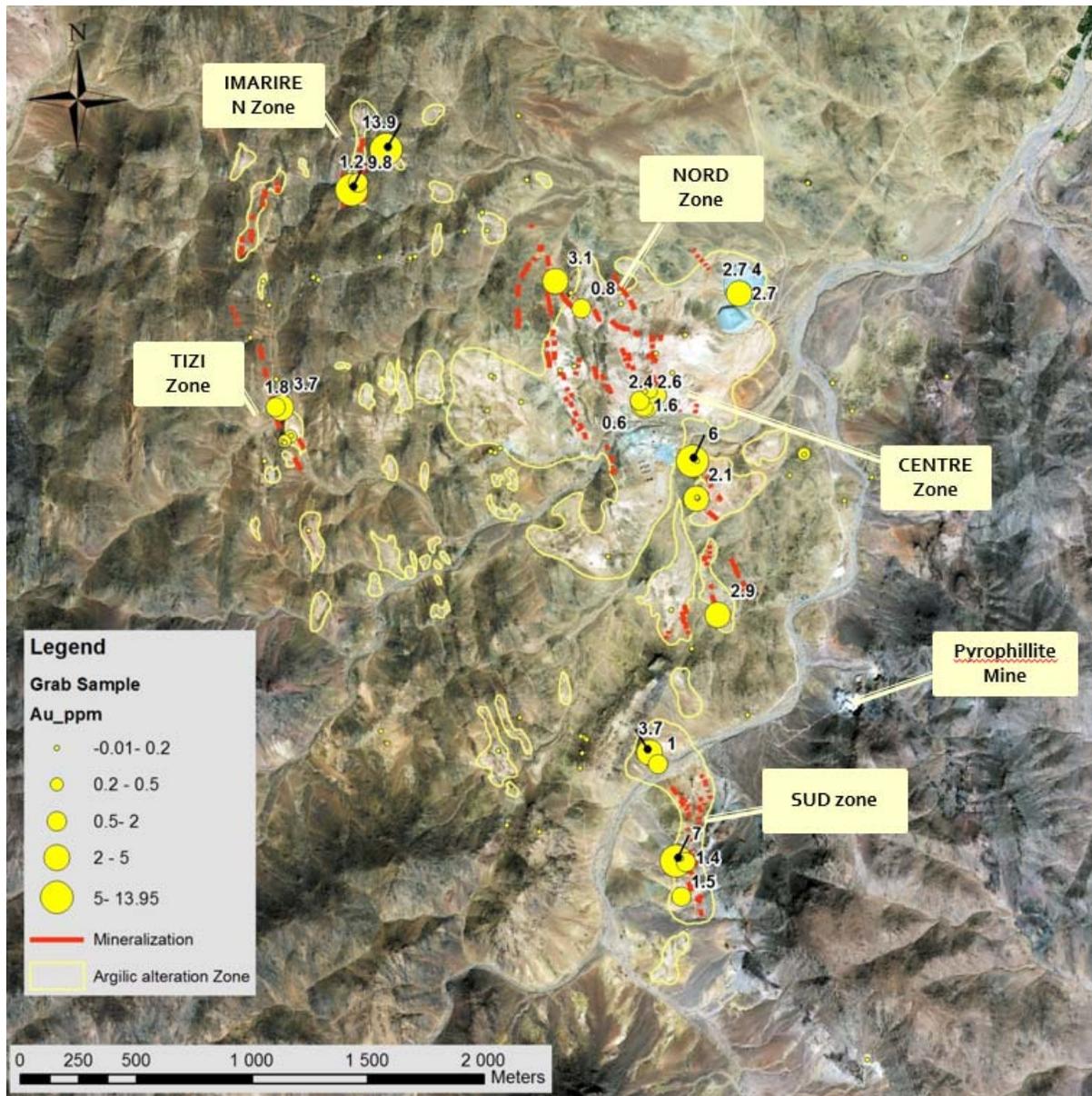


Figure 33: Grab sample locations with Au values in ppm.

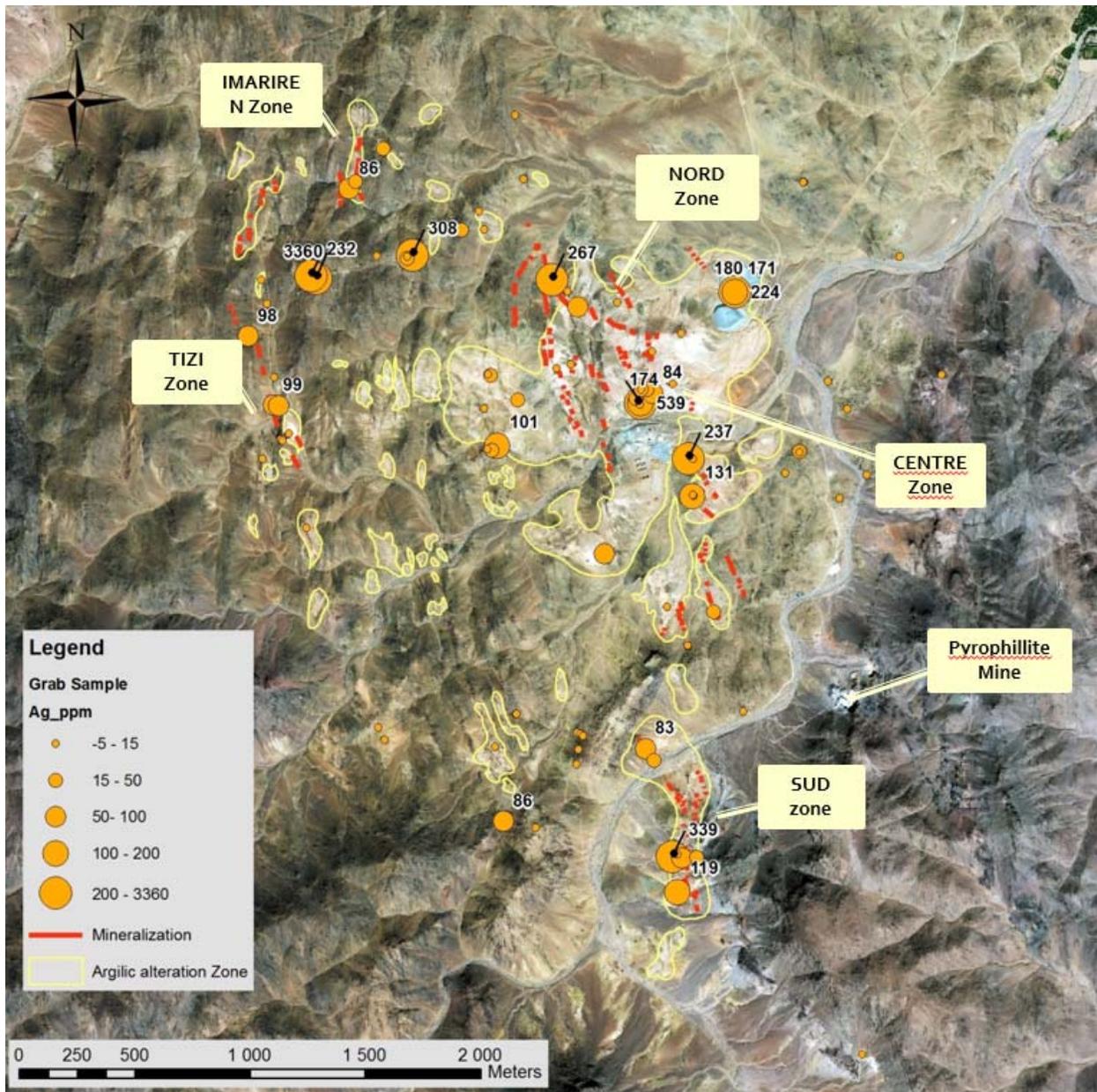


Figure 34: Grab sample locations with Ag values in ppm.

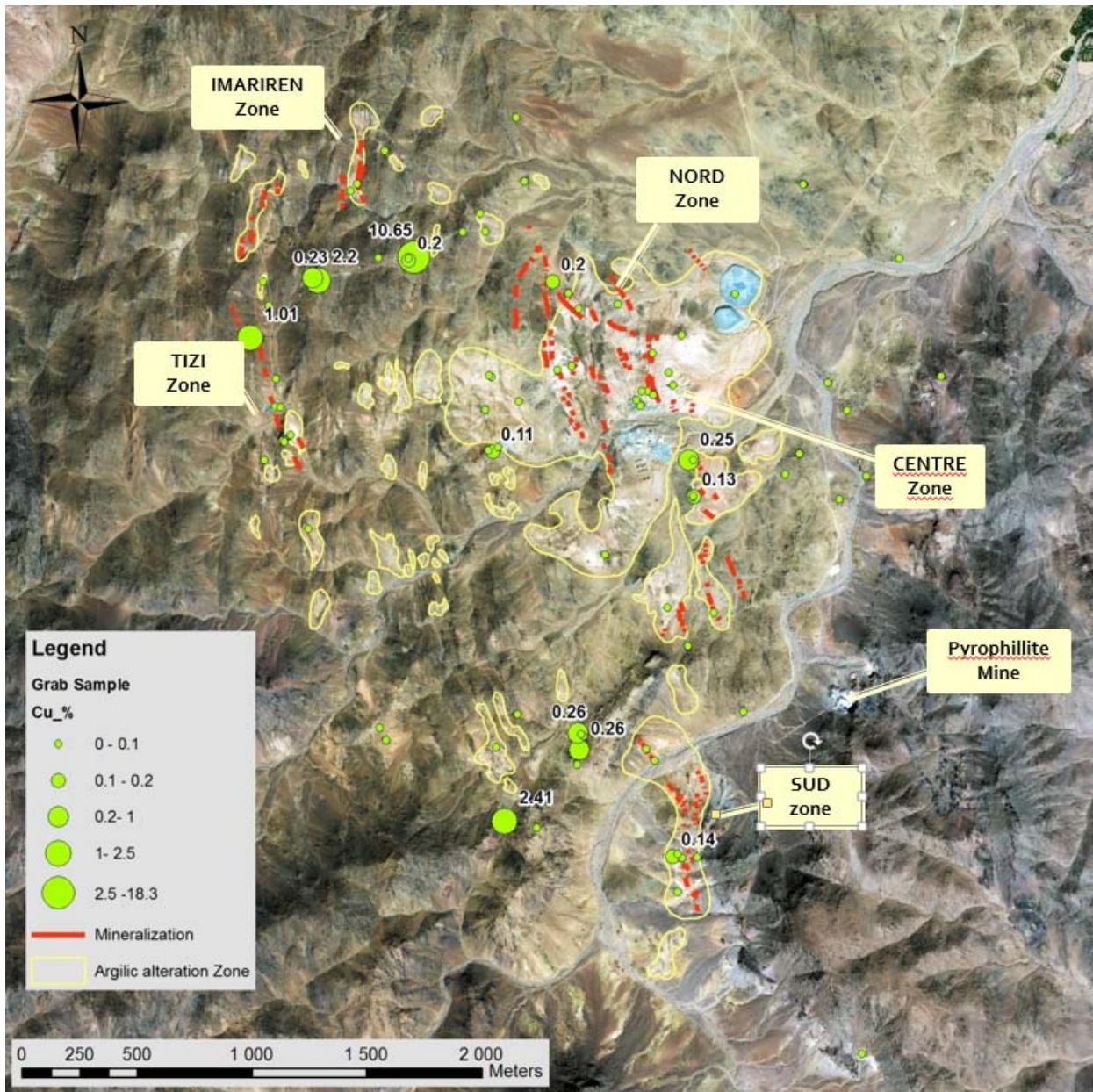


Figure 35: Grab sample locations with Cu values in ppm.

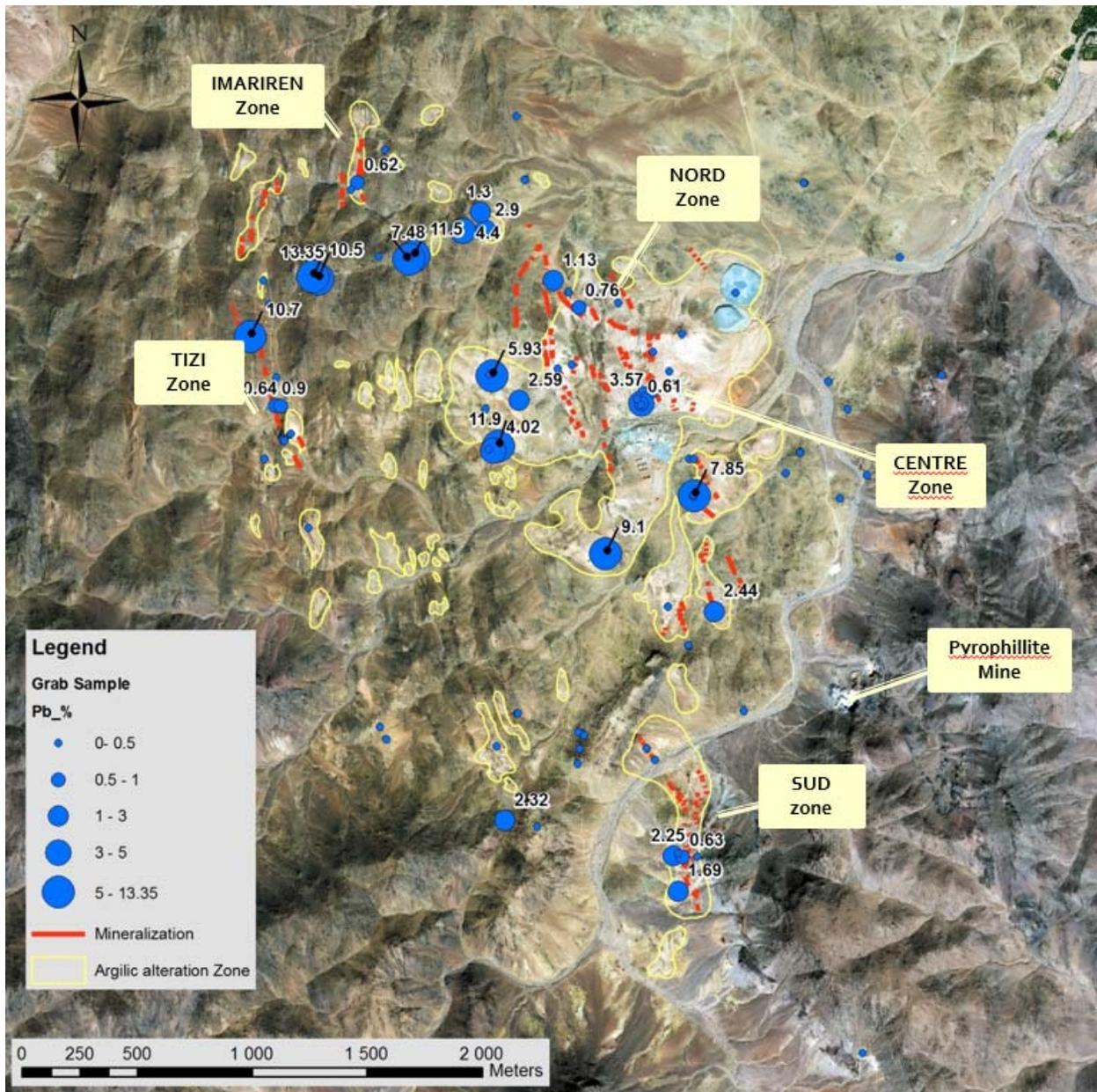


Figure 36: Grab sample locations with Pb values in percent (%).

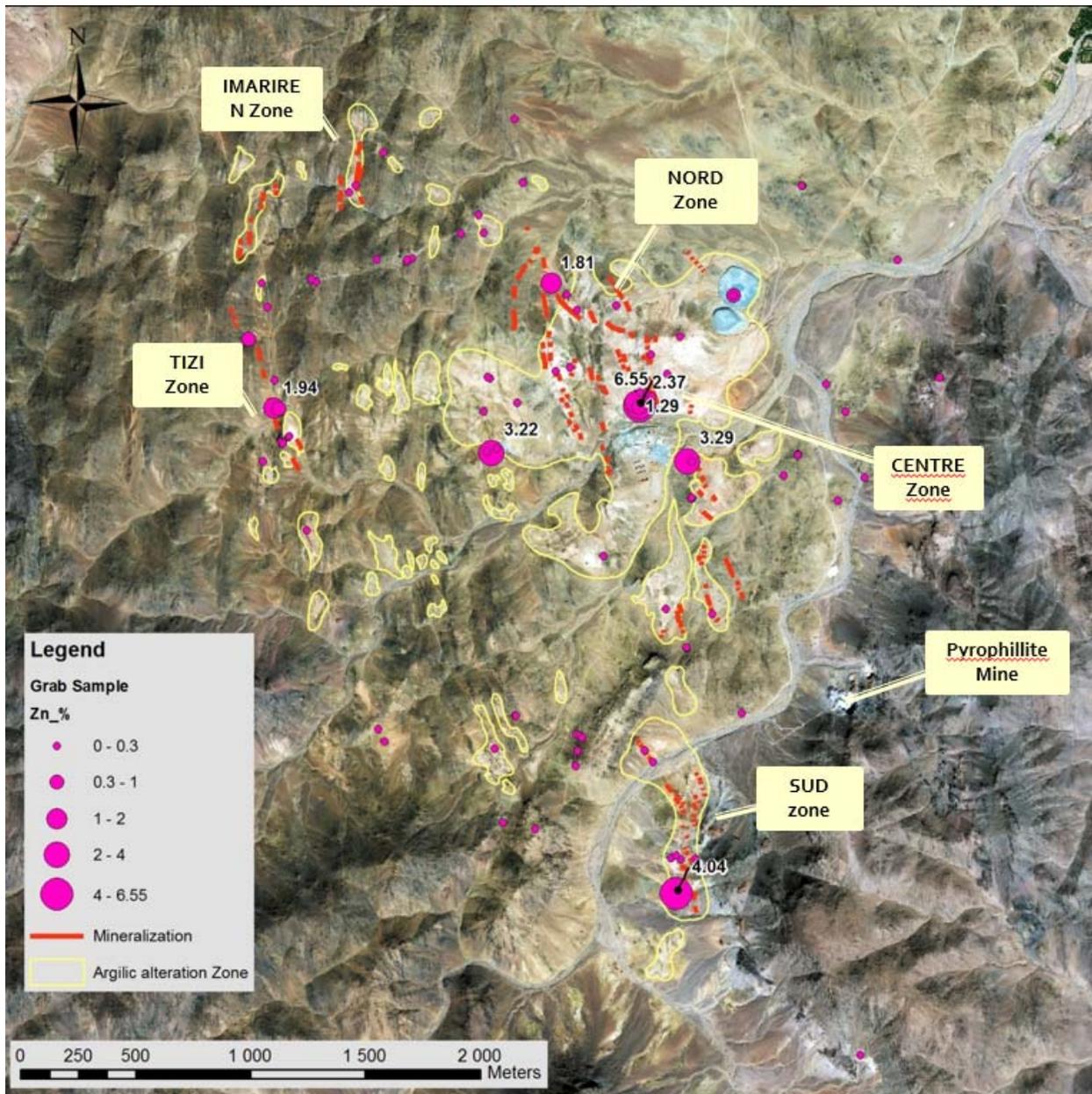


Figure 37: Grab sample locations with Zn values in percent (%).

9.3 Exploration by the Compagnie Minière Maya-Maroc (CMMM)

Maya Gold and Silver has done some recent exploration works on the Boumadine polymetallic deposit in 2017 and 2018. The purposes of these works were to map the andesitic dykes and the iron cap. Surface sampling was also done on IMARIREN and NORD zones by the geologists team of the Compagnie Minière Maya-Maroc (CMMM).

9.3.1 Surface sampling

The geologists of the CMMM started the first surface sampling program at Boumadine in April 2018. The sampling program was discussed during the QP’s site visit by GoldMinds Geoservices and covers a portion of IMARIREN and NORD zones.

The sampling program consists of channel samples, cut with a saw, cross-cutting the exposed mineralized structures oriented E-W and NE-SW filled by quartz cements, barite and traces of lead and copper. Sample lengths represent the thickness of the mineralized veins and their locations were determined using a hand GPS. The lithology of each sample was described as well as the azimuth and the width of the mineralized structures. The surface samples represent different facies already intersected by diamond drilling and are mainly composed of altered andesite, rhyolite, dykes of dolerite and breccia with quartz cements and oxidized sulphides.

Table 10: Surface sample results (highlights), Boumadine property.

| Hole Name | Au ppm | Ag ppm | Zn ppm | Pb % | Cu ppm |
|-----------|--------|--------|--------|-------|--------|
| TN19 | 48 | 216 | 200 | 0.574 | 160 |
| CS16 | 9 | 162 | 652 | 1.16 | 160 |
| IM39 | 6.82 | 124 | 44 | 0.83 | 28 |
| IM26 | 6.76 | 34 | 3264 | 0.37 | 109 |
| ZS19 | 6.6 | 234 | 242 | 1.04 | 181 |
| IM17 | 5.82 | 14 | 1063 | 0.14 | 213 |
| IM18 | 5.8 | 80 | 3236 | 0.37 | 283 |
| ZS18 | 5.72 | 144 | 749 | 0.2 | 314 |
| ZC3 | 5.54 | 177 | 1700 | 2.47 | 40 |
| TN14 | 5.02 | 66 | 100 | 1.31 | 40 |
| IM23 | 4.64 | 80 | 3280 | 1.19 | 309 |
| IM34 | 4.24 | 52 | 1087 | 5.29 | 1431 |
| IM07 | 4.02 | 12 | 153 | 0.45 | 15 |
| CS12 | 4.02 | 18 | 1174 | 1.23 | 178 |
| IM38 | 2.98 | 136 | 200 | 1.63 | 115 |
| IM27 | 2.8 | 64 | 3665 | 0.61 | 67 |
| CS11 | 2.7 | 16 | 650 | 1.13 | 126 |
| ZS12 | 2.6 | 90 | 155 | 2.57 | 46 |
| ZC5 | 2.46 | 70 | 900 | 2.85 | 46 |
| IM24 | 2.4 | 56 | 1196 | 1.49 | 489 |
| ZS17 | 2.4 | 66 | 1669 | 2.5 | 410 |
| ZS20 | 2.34 | 80 | 264 | 1.76 | 138 |
| CS13 | 2.08 | 255 | 480 | 1.46 | 91 |
| ZC6 | 1.82 | 145 | 1200 | 5.24 | 259 |
| TN5 | 1.8 | 86 | 12000 | 1.92 | 37700 |
| CS15 | 1.7 | 147 | 119 | 3.69 | 81 |
| ZS6 | 1.58 | 148 | 565 | 3.09 | 83 |
| TN26 | 1.54 | 69 | 600 | 2.21 | 50 |

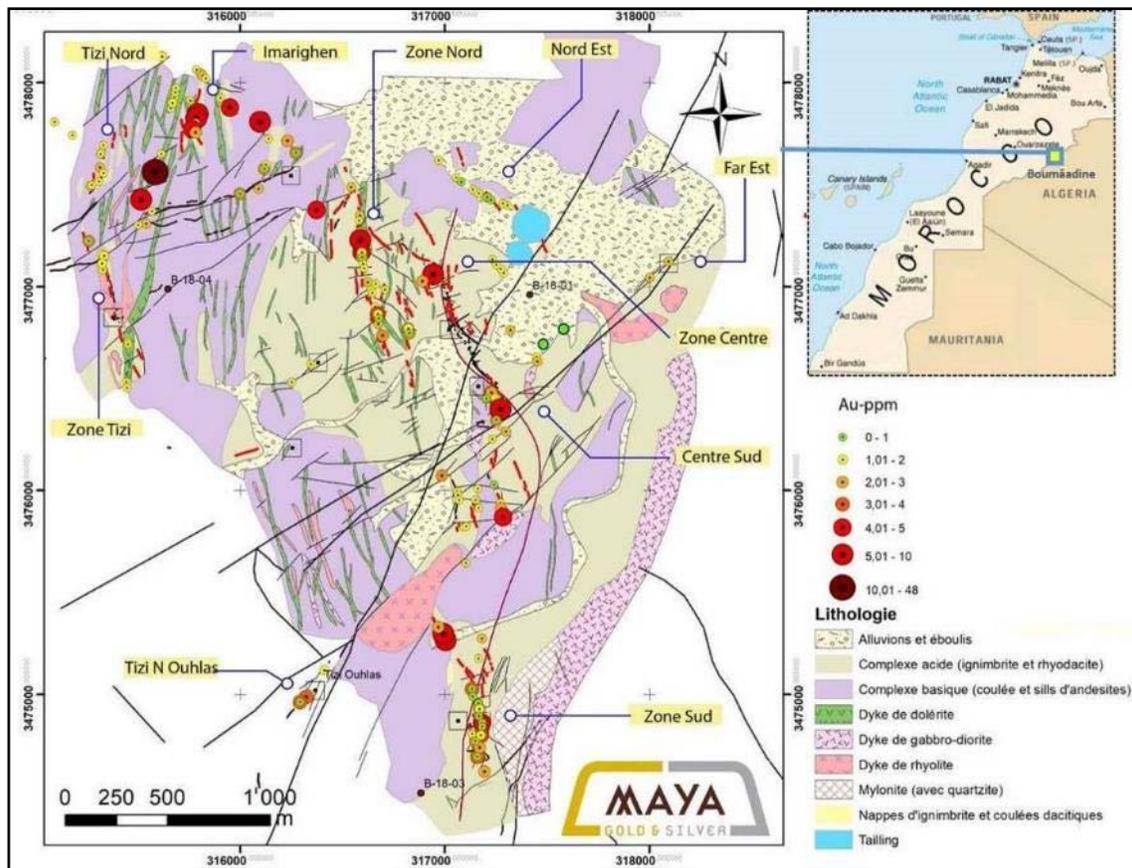


Figure 38: Surface sample locations with Au values in ppm (source CMMM).

The main objectives of this sampling program were:

- Complete previous work to cover areas with less geochemical information;
- Prospecting new areas following the mineralized structure trends;
- Identified new targets with high-grade potential for the diamond drill program in progress at Boumadine.

The samples were sent to ADM (independent laboratory) in the kingdom of Morocco. A total of one hundred sixty (160) analyses are received with thirty-six (36) samples showing Au value between 48 ppm Au and 1.1 ppm Au; twenty five (25) samples with Au value range between 1 ppm and 0.12 ppm; and one hundred (100) samples under detection limit for Au.

The table below (Table 10) shows the results of the mineralized samples (23 from 160 samples).

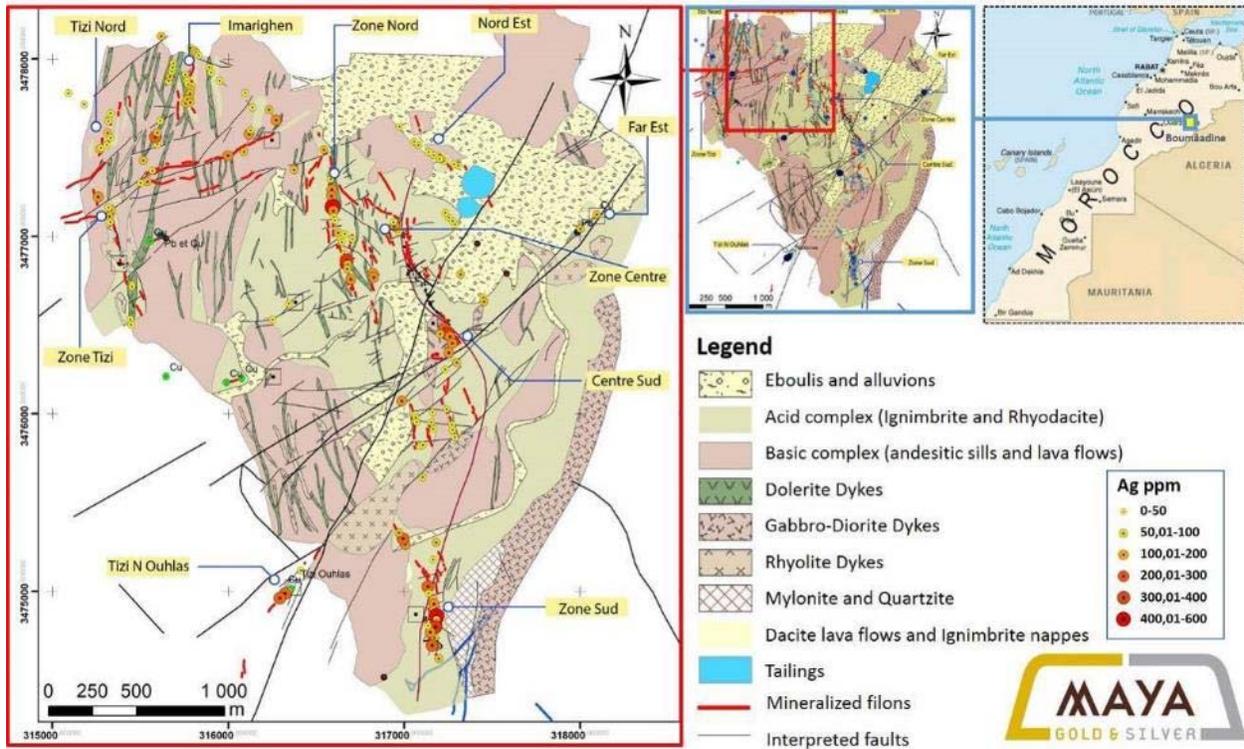


Figure 39: Surface sample locations with Ag values in ppm (source CMMM).

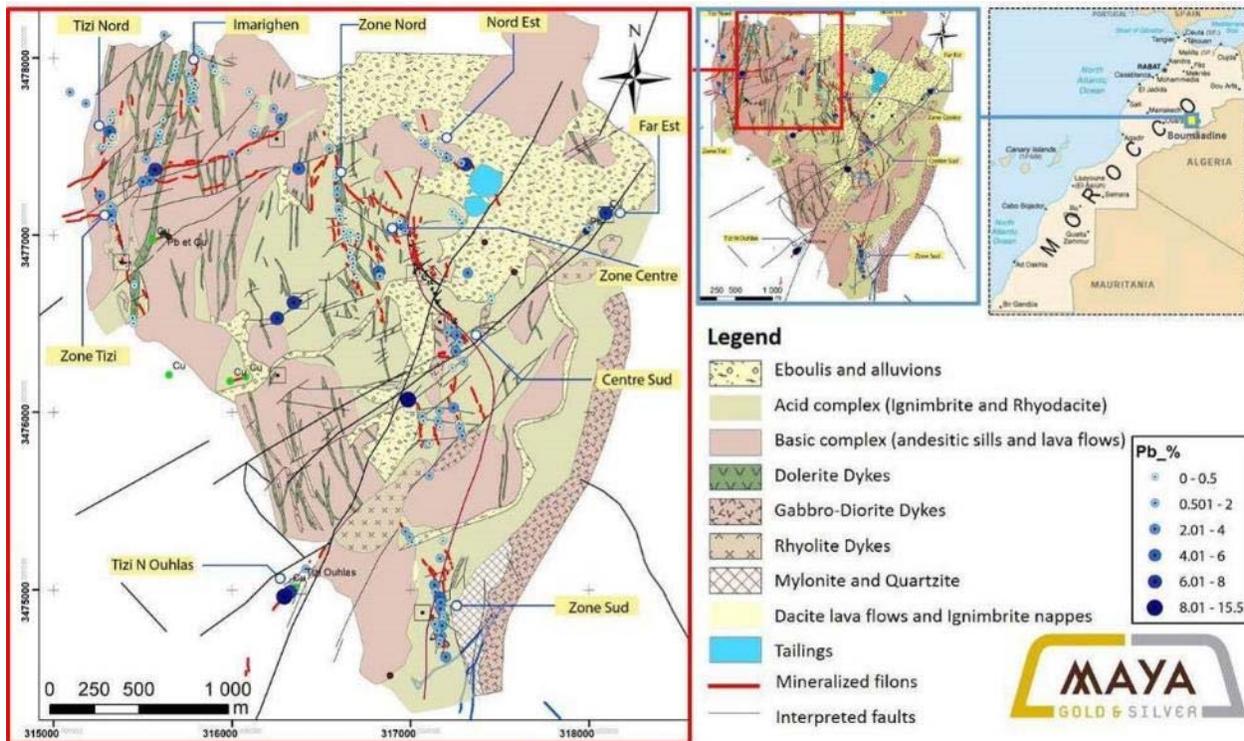


Figure 40: Surface sample locations with Pb values in percent (%) (source CMMM).

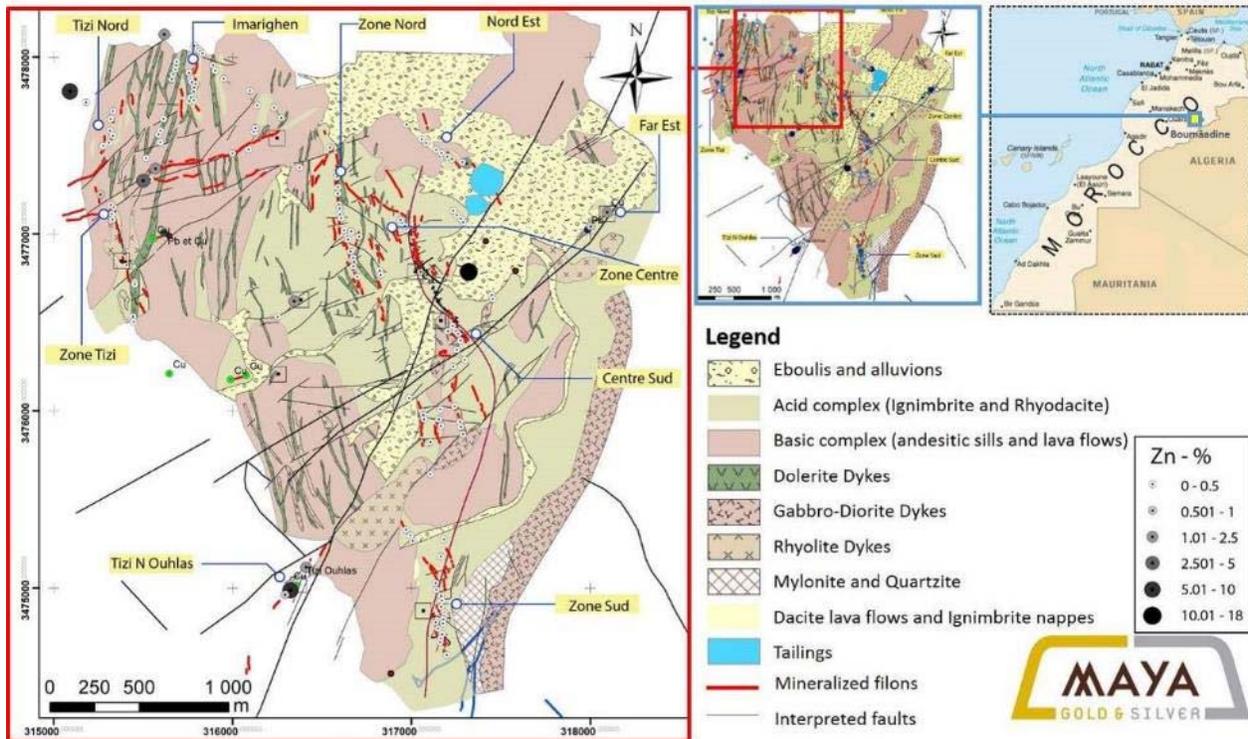


Figure 41: Surface sample locations with Zn values in percent (%) (source CMMM).

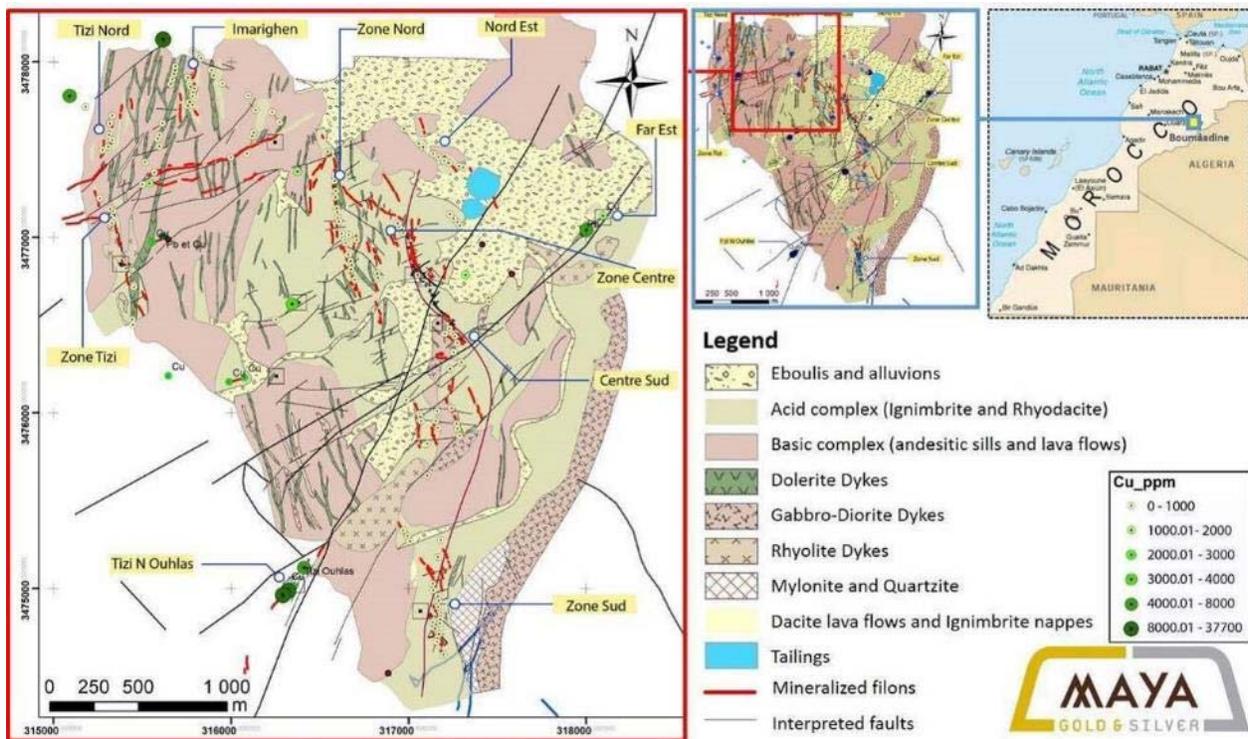


Figure 42: Surface sample locations with Cu values in ppm (source CMMM).

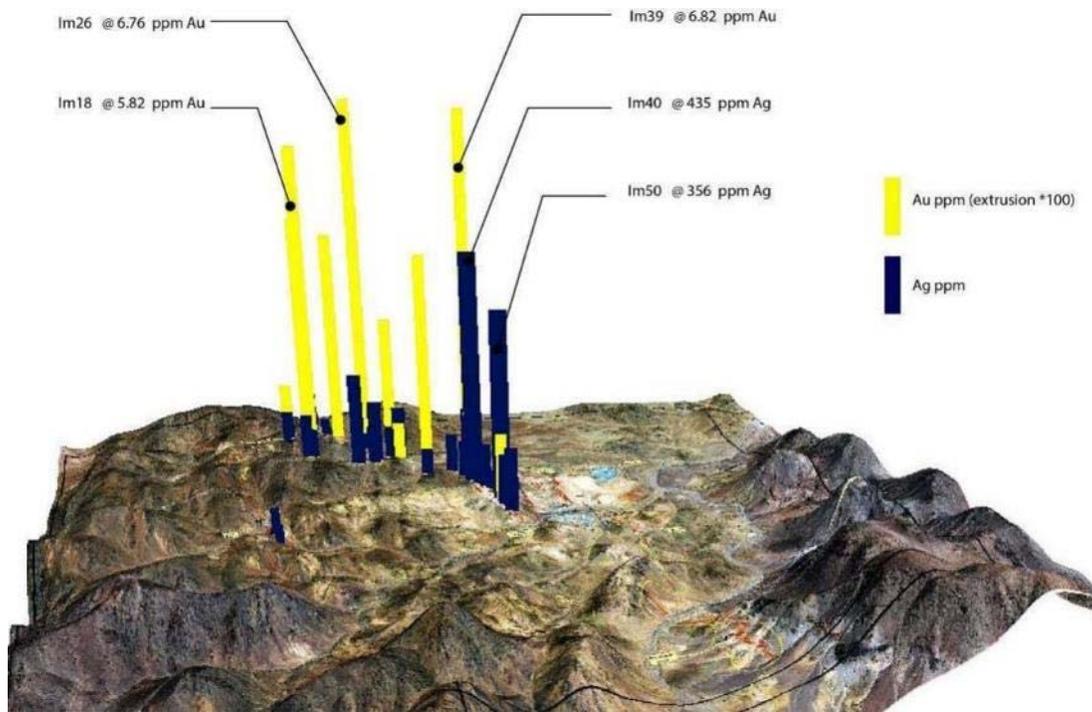


Figure 43: Surface sample locations with values of Au and Ag in ppm (source CMMM).

The geochemical survey covered the main mineralized zone at the North part of the property. In light of the positive results obtained by the survey during spring 2018, the geologists acquired a good understanding on the distribution of precious (Au and Ag; Figure 39) and base metals (Cu, Pb, Zn) in the Boumadine property. The results show an enrichment of the elements Cu, Zn and Pb to the north of the property (IMARIREN zone and NORD zone; Figure 40, Figure 41 and Figure 42), and more Ag at CENTRE zone. Related to these positive results, CMMM decided to extend the survey further to the North-West where the geologists identified new mineralized structures.

The geochemical survey appears to be a very effective method on Boumadine property and give us a better understanding of the polymetallic deposit (vertical zoning, source of metals and the geological control).

9.3.2 Surface mapping

Surface mapping was done in order to complete the mapping of the mineralized structures and also, to prepare targets for the surface sampling program (Figure 44).

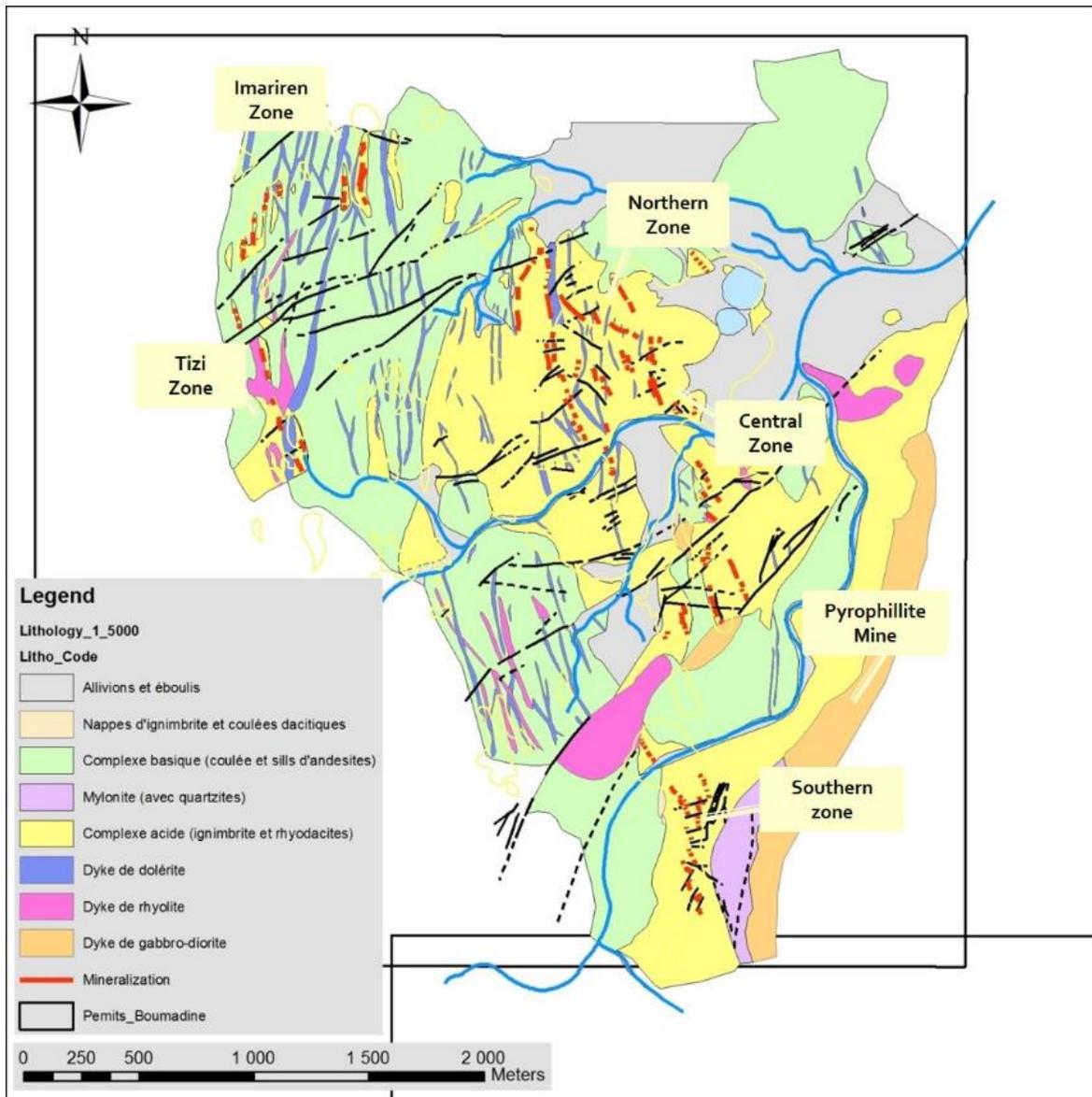


Figure 44: Lithological map with the localisation of the mineralized structures, Boumadine property (source CMMM).

10 Drilling

Maya Gold and Silver started, in January 2018, a drilling program at Boumadine deposit planned by GoldMinds Geoservices. The drilling program consist of fifty-seven (57) diamond drill holes totaling 7,810.9 m (Table 11). On both tailing piles, a total of 49 holes were drilled using the AMS Soil Core Sampling, totaling 187.28 m.

10.1 Surface diamond drilling

Seven (7) holes were drilled at CENTRE zone totaling 3,087.4 m. For SUD zone, six (6) holes were drilled totaling 1,745.6 m. A total of five (5) holes were drilled at TIZI zone, totaling 996.3 m. A total of thirty-nine (39) holes were drilled at IMARIREN zone totaling 1,981.6 m. The table below shows the details on the collar information. The distribution of the drillholes is shown in the following figures (Figure 48, Figure 49 and Figure 50).

The main objectives of the drilling program were:

- Validation of the historical panels at CENTRE zone and SUD zone;
- Exploration of the vertical extensions of the mineralization at TIZI zone, CENTRE and SUD.

The direction and inclination of the drillholes were oriented in a way to intersect the mineralized zones and avoid the openings (ancient mine drifts). The holes are mainly drilled in ignimbrite, rhyodacite and andesitic rocks with many massive pyrite zones. These rocks are affected by shear zones, veins and veinlets, and intruded by hydrothermal breccias. Most holes intersected the mineralized zones with massive sulfides: mainly pyrite, sphalerite, galena and more or less chalcopyrite. Only one drillhole (B_17_06) intersect an opening at depth 86.9 m of 2.5 m at SUD zone.

Sulphide mineralization consists in massive pyrite accompanied by pyrrhotite and more or less arsenopyrite. The mineralization can be massive and can reach 10 meters of drill core. Some holes show principal vein-type mineralization with sharp layering cross-cutted by several networks and stockworks of secondary sulfide mineralization. Quartz veins/veinlets are observed in many drillholes surrounding the principal zones with massive sulfides. We also observe the presence of voids within the Ignimbrite filled by sulphides cements, preferentially at the upper limit with the porphyry contact.

It is important to mention that the historical assaying was selective and concentrated on the massive sulfide horizons. GoldMinds recommends to Maya the assaying of the total dill cores, at least for this campaign in order to document the different mineralized zones.

Table 11: Diamond holes drilled in 2018 and 2019 at Boumadine property.

| Hole Name | Easting | Northing | Elevation | Azimuth (°) | Dip (°) | Length (m) | Hole Type | Zone |
|------------|----------|----------|-----------|-------------|---------|------------|-----------|-------------|
| B-17-01 | 317226.8 | 3476877 | 1152.147 | 245 | -45 | 315.2 | DDH | CENTRE zone |
| B-17-01bis | 317249.5 | 3476888 | 1148.197 | 245 | -55 | 323.8 | DDH | CENTRE zone |
| B-17-02 | 317283 | 3476655 | 1140.295 | 234 | -45 | 236 | DDH | CENTRE zone |
| B-17-03 | 317344.3 | 3476674 | 1140.138 | 234 | -47 | 415.4 | DDH | CENTRE zone |
| B-17-04 | 317119.4 | 3476966 | 1158.072 | 224 | -47 | 200 | DDH | CENTRE zone |
| B-18-01 | 317413 | 3476954 | 1141.026 | 235 | -55 | 686 | DDH | CENTRE zone |
| B-18-02 | 317582 | 3476787 | 1140.111 | 241 | -49 | 911 | DDH | CENTRE zone |
| B-17-05 | 317093.4 | 3474794 | 1215.361 | 91 | -50 | 175.2 | DDH | SUD zone |
| B-17-05bis | 317026 | 3474795 | 1204.124 | 85 | -46 | 268 | DDH | SUD zone |
| B-17-06 | 317107 | 3474744 | 1220.624 | 83 | -47 | 215 | DDH | SUD zone |
| B-17-06bis | 317055.1 | 3474738 | 1211.582 | 94 | -45 | 278 | DDH | SUD zone |
| B-17-06C | 317097.3 | 3474702 | 1219.849 | 84 | -46 | 201.4 | DDH | SUD zone |
| B-18-03 | 316889 | 3474515 | 1209.34 | 49 | -45 | 608 | DDH | SUD zone |
| B-18-04 | 315648 | 3476987 | 1207.931 | 264 | -55 | 466.1 | DDH | TIZI zone |
| B-17-07 | 315413.7 | 3476958 | 1205.489 | 286 | -46 | 100 | DDH | TIZI zone |
| B-17-08 | 315461.9 | 3476945 | 1202.336 | 286 | -55 | 180.2 | DDH | TIZI zone |
| B-17-09 | 315425.7 | 3476899 | 1200.361 | 225 | -45 | 110 | DDH | TIZI zone |
| B-17-10 | 315450.8 | 3476924 | 1196.599 | 225 | -54 | 140 | DDH | TIZI zone |
| B-18-11 | 315758.8 | 3477771 | 1193.734 | 128 | -45 | 45.3 | DDH | IMARIEN |
| B-18-11bis | 315758.2 | 3477771 | 1193.738 | 128 | -65 | 86 | DDH | IMARIEN |
| B-18-10bis | 315758.9 | 3477773 | 1193.656 | 90 | -75 | 62 | DDH | IMARIEN |
| B-18-10 | 315760 | 3477773 | 1193.637 | 90 | -45 | 32 | DDH | IMARIEN |
| B-18-09 | 315758.7 | 3477773 | 1193.76 | 60 | -45 | 35 | DDH | IMARIEN |
| B-18-09bis | 315758.1 | 3477773 | 1193.78 | 60 | -65 | 56 | DDH | IMARIEN |
| B-18-08 | 315775.6 | 3477820 | 1194.867 | 135 | -45 | 30.4 | DDH | IMARIEN |
| B-18-08bis | 315775 | 3477821 | 1194.916 | 135 | -65 | 56 | DDH | IMARIEN |
| B-18-07 | 315776.1 | 3477822 | 1194.903 | 90 | -45 | 30 | DDH | IMARIEN |
| B-18-07bis | 315775.2 | 3477822 | 1194.881 | 90 | -70 | 64.4 | DDH | IMARIEN |
| B-18-06 | 315776.2 | 3477825 | 1195.03 | 45 | -45 | 35 | DDH | IMARIEN |
| B-18-06bis | 315775.8 | 3477824 | 1194.995 | 45 | -65 | 56 | DDH | IMARIEN |
| B-18-05bis | 315781.7 | 3477857 | 1196.666 | 140 | -70 | 56 | DDH | IMARIEN |
| B-18-05 | 315782.1 | 3477857 | 1196.691 | 140 | -45 | 30.1 | DDH | IMARIEN |
| B-18-04bis | 315782.4 | 3477859 | 1196.742 | 90 | -75 | 56.3 | DDH | IMARIEN |
| B-18-44 | 315783.4 | 3477859 | 1196.72 | 90 | -45 | 54 | DDH | IMARIEN |
| B-18-03bis | 315782.2 | 3477860 | 1196.744 | 60 | -70 | 56.5 | DDH | IMARIEN |
| B-18-33 | 315782.9 | 3477860 | 1196.76 | 60 | -45 | 32 | DDH | IMARIEN |
| B-18-15 | 315775.4 | 3477935 | 1204.56 | 48 | -45 | 35 | DDH | IMARIEN |
| B-18-15bis | 315774.7 | 3477934 | 1204.526 | 48 | -75 | 56.5 | DDH | IMARIEN |
| B-18-16 | 315775.6 | 3477933 | 1204.499 | 90 | -45 | 38 | DDH | IMARIEN |

| Hole Name | Easting | Northing | Elevation | Azimuth (°) | Dip (°) | Length (m) | Hole Type | Zone |
|------------|----------|----------|-----------|-------------|---------|------------|-----------|----------|
| B-18-16bis | 315774.8 | 3477933 | 1204.514 | 90 | -75 | 56.5 | DDH | IMARIREN |
| B-18-17 | 315774.4 | 3477931 | 1204.468 | 145 | -45 | 46.7 | DDH | IMARIREN |
| B-18-17bis | 315773.8 | 3477931 | 1204.52 | 145 | -70 | 71 | DDH | IMARIREN |
| B-18-14bis | 315952.3 | 3477861 | 1209.172 | 90 | -65 | 80 | DDH | IMARIREN |
| B-18-13bis | 315951.6 | 3477862 | 1209.192 | 50 | -70 | 56.4 | DDH | IMARIREN |
| B-18-12bis | 315950.2 | 3477860 | 1209.181 | 5 | -70 | 65.5 | DDH | IMARIREN |
| B-18-18 | 316098.9 | 3477784 | 1178.331 | 0 | -45 | 35 | DDH | IMARIREN |
| B-18-18bis | 316098.9 | 3477783 | 1178.335 | 0 | -70 | 65.5 | DDH | IMARIREN |
| B-18-19 | 316100.5 | 3477784 | 1178.369 | 45 | -45 | 35 | DDH | IMARIREN |
| B-18-19bis | 316100.1 | 3477783 | 1178.334 | 45 | -70 | 56.5 | DDH | IMARIREN |
| B-18-20 | 316102.2 | 3477782 | 1178.346 | 90 | -45 | 47 | DDH | IMARIREN |
| B-18-20bis | 316101.2 | 3477782 | 1178.34 | 90 | -65 | 65.5 | DDH | IMARIREN |
| B-18-21 | 316230.9 | 3477692 | 1170.88 | 5 | -45 | 35 | DDH | IMARIREN |
| B-18-21bis | 316231 | 3477693 | 1170.929 | 5 | -70 | 56.5 | DDH | IMARIREN |
| B-18-22 | 316231.3 | 3477691 | 1170.922 | 65 | -45 | 35 | DDH | IMARIREN |
| B-18-22bis | 316230.4 | 3477690 | 1170.955 | 65 | -70 | 56.5 | DDH | IMARIREN |
| B-18-23 | 316230.6 | 3477690 | 1170.962 | 105 | -45 | 56 | DDH | IMARIREN |
| B-18-23bis | 316229.7 | 3477690 | 1170.994 | 105 | -70 | 59.5 | DDH | IMARIREN |



Figure 45: Drill cores verification by the GMG Engineer & geologist with the presence of CMMM’s geologists.



Figure 46: Boxes of the drill core B_17-02 showing massive pyrite and pyrrhotite, veinlets with galena and sphalerite within andesite.



Figure 47: Boxes of the drill core B_17_06bis showing massive pyrite with pyrrhotite and +/- galena within Rhyodacite.

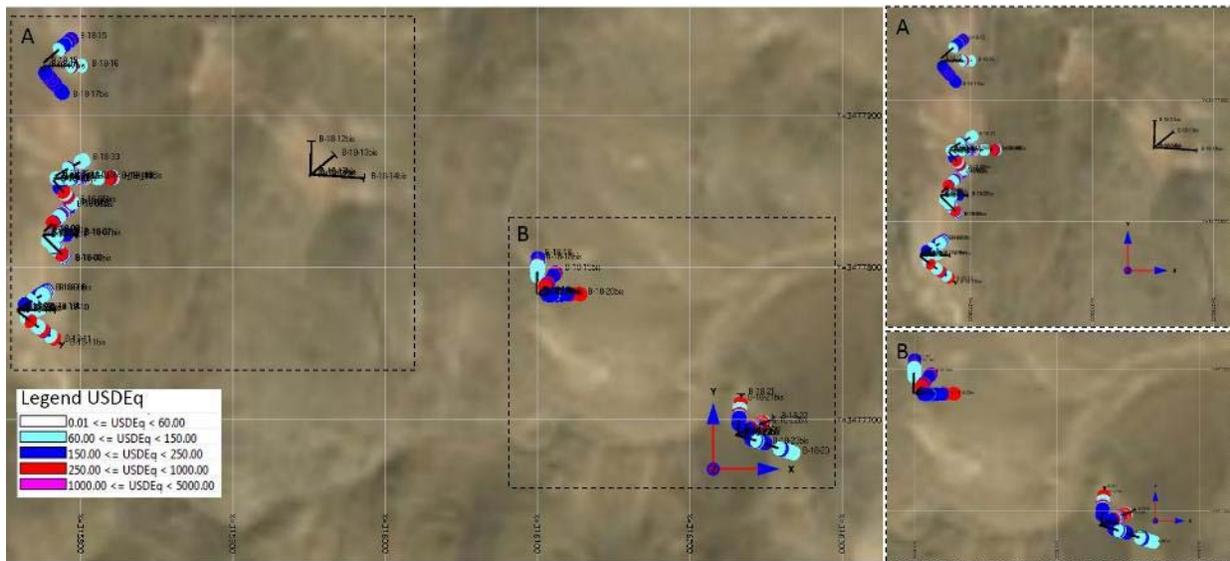


Figure 50: Plan view of holes drilled at IMARIREN zone. A) Zoom holes drilled at the western part of the IMARIREN zone; B) Zoom holes drilled at eastern part of the zone, color coded by USD equivalent.

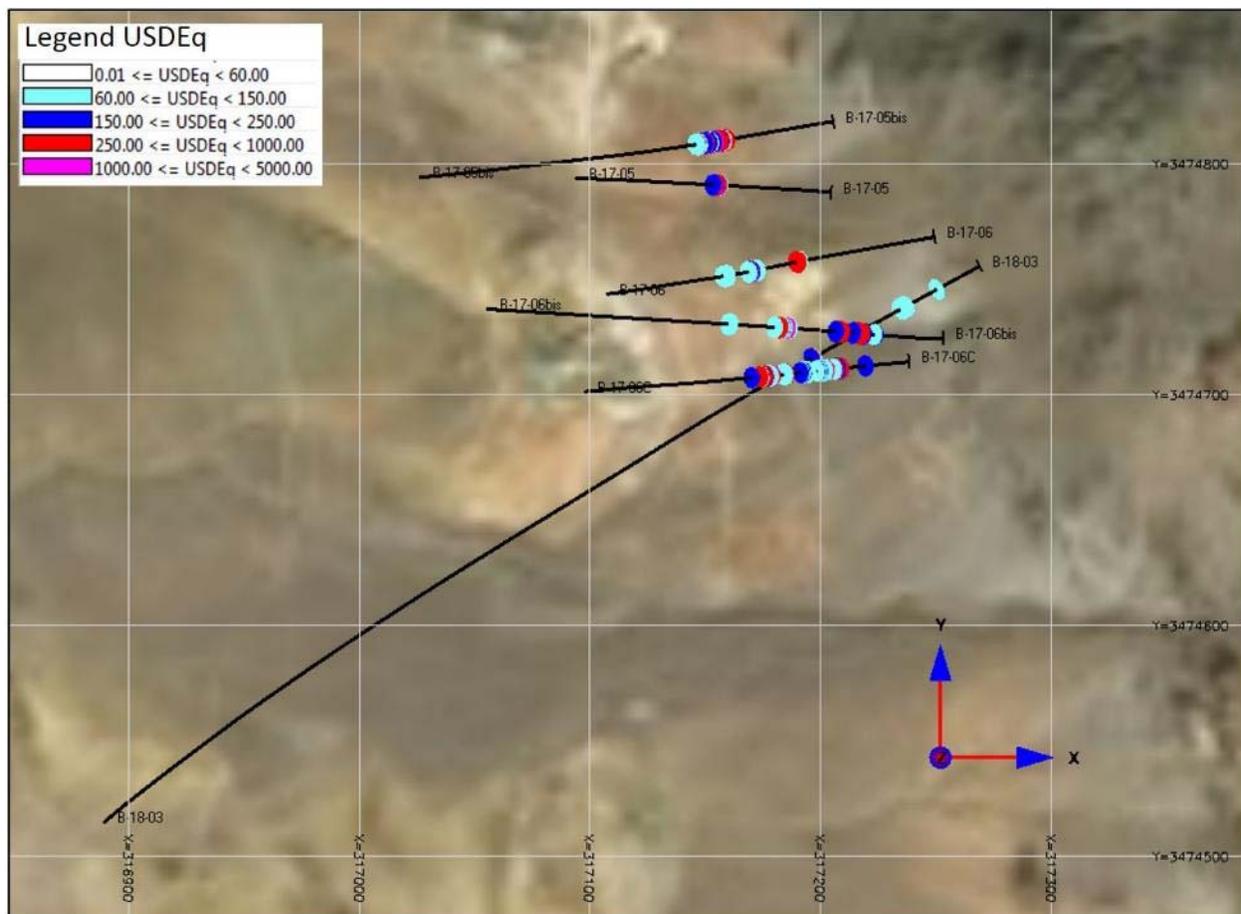


Figure 51: Plan view holes drilled at SUD zone, color coded by USD equivalent.

A total of 1784 core samples (totaling 1522.5 m not including blank and standards) were submitted to the independent laboratory ‘Analyse Development Minier S.A.R.L.’ (ADM) based in Marrakech (Morocco) for preparation and assaying. The last batch of samples were sent to another laboratory, AfriLab, based in Marrakech. The authors (Mr. Rachidi and Mr. Duplessis) visited AfriLab laboratory recently, on 23th April, 2019.

The placement of the drilling holes was selected to verify that the historical resource panel was still in place and that the grade was in line with the historical disclosure. All the scheduled holes intersected the sulfide mineralization which is today still in place.

In addition, the results from the diamond drilling program show a spatial relationship between the mineralization and structural interpretation of the high grade intercepts from all the historical database dipping a roughly subvertical and NNW trending. A deep polymetallic mineralization was intersected by holes:

- B_17_01bis at around 228 m from the surface;
- B_17_03 at around 174 m from the surface;
- B_17_06bis at around 160 m from the surface;
- B_17_05bis at around 150 m from the surface;
- B_17_02 at around 140 m from the surface;
- B_17_04 at around 136 m from the surface;
- B_17_06C at around 142 m from the surface;
- B_18-03 at around 370 m from the surface;
- B_18-02 at around 350 m from the surface;
- B_18-01 at around 400 m from the surface;
- B_18-04 at around 390 m from the surface.

The following Figures (Figure 48 to Figure 51) present additional information on intersections of interest. The map present drillhole locations and the position of the intersections of interest (Table 12).

Table 12: Highlights of the mineralized zones intersected by diamond drillholes at Boumadine.

| Hole Name | From | To | Sample Number | Length (m) | Au g/t | Ag g/t | Zn% | Pb% | Ge g/t | USDEq |
|------------|-------|-------|---------------|------------|--------|--------|-------|------|--------|---------|
| B-17-01 | 57 | 58 | 10819 | 1 | 1.82 | 64.00 | 6.93 | 2.93 | 0.00 | 366.21 |
| B-17-01 | 225 | 226 | 10864 | 1 | 4.72 | 148.00 | 1.78 | 0.33 | 0.00 | 329.10 |
| B-17-01bis | 157 | 157.5 | 10976 | 0.5 | 3.66 | 68.00 | 3.67 | 1.38 | 0.00 | 320.24 |
| B-17-01bis | 157.5 | 158 | 10977 | 0.5 | 7.00 | 22.00 | 1.10 | 0.40 | 0.00 | 343.27 |
| B-17-01bis | 255.5 | 256 | 17519 | 0.5 | 3.35 | 298.00 | 0.56 | 0.25 | 29.00 | 373.96 |
| B-17-01bis | 256 | 256.5 | 17520 | 0.5 | 5.79 | 364.00 | 1.05 | 0.16 | 33.00 | 530.03 |
| B-17-01bis | 256.5 | 257 | 17521 | 0.5 | 4.77 | 367.00 | 1.68 | 0.56 | 27.00 | 501.84 |
| B-17-02 | 149.5 | 150 | 10739 | 0.5 | 0.05 | 11.00 | 0.63 | 0.34 | 125.00 | 307.54 |
| B-17-02 | 173.1 | 174.1 | 10517 | 1 | 5.56 | 157.00 | 7.04 | 1.11 | 0.00 | 535.62 |
| B-17-02 | 174.1 | 175.1 | 10518 | 1 | 4.39 | 155.00 | 7.30 | 0.40 | 0.00 | 478.92 |
| B-17-02 | 175.1 | 176.1 | 10519 | 1 | 5.02 | 193.00 | 2.66 | 0.86 | 0.00 | 400.10 |
| B-17-02 | 176.1 | 177.1 | 10520 | 1 | 9.54 | 159.00 | 15.39 | 0.95 | 0.00 | 939.83 |
| B-17-02 | 177.1 | 178.1 | 10521 | 1 | 8.99 | 160.00 | 11.56 | 1.38 | 80.00 | 991.87 |
| B-17-02 | 178.1 | 179.1 | 10522 | 1 | 2.90 | 66.00 | 12.75 | 0.38 | 65.00 | 671.42 |
| B-17-03 | 65 | 65.5 | 17596 | 0.5 | 0.05 | 20.00 | 10.06 | 0.55 | 0.00 | 312.37 |
| B-17-04 | 156 | 157 | 10540 | 1 | 4.32 | 127.00 | 1.84 | 0.17 | 0.00 | 300.39 |
| B-17-04 | 157 | 158 | 10541 | 1 | 5.55 | 288.00 | 1.98 | 0.30 | 0.00 | 438.95 |
| B-17-04 | 158 | 159 | 10542 | 1 | 6.82 | 189.00 | 5.11 | 1.96 | 0.00 | 565.88 |
| B-17-04 | 159 | 160 | 10543 | 1 | 6.32 | 224.00 | 5.17 | 1.79 | 0.00 | 560.79 |
| B-17-04 | 164 | 165 | 10549 | 1 | 7.79 | 206.00 | 5.17 | 0.74 | 0.00 | 592.13 |
| B-17-04 | 172 | 173 | 10558 | 1 | 4.85 | 75.00 | 4.34 | 0.20 | 0.00 | 369.03 |
| B-17-04 | 176 | 177 | 10562 | 1 | 8.71 | 180.00 | 0.18 | 0.18 | 0.00 | 462.87 |
| B-17-04 | 177 | 178 | 10563 | 1 | 81.00 | 338.00 | 0.24 | 0.21 | 0.00 | 3565.92 |
| B-17-04 | 178 | 179 | 10564 | 1 | 74.00 | 290.00 | 0.35 | 0.13 | 0.00 | 3250.88 |
| B-17-04 | 179 | 180 | 10565 | 1 | 7.60 | 302.00 | 0.27 | 0.11 | 0.00 | 478.65 |
| B-17-05 | 94.5 | 95 | 17702 | 0.5 | 6.08 | 204.00 | 7.20 | 0.29 | 0.00 | 568.97 |
| B-17-05 | 95 | 95.5 | 17703 | 0.5 | 4.08 | 617.00 | 10.90 | 0.23 | 0.00 | 797.04 |
| B-17-05 | 95.5 | 96 | 17704 | 0.5 | 5.22 | 392.00 | 8.93 | 0.17 | 0.00 | 674.35 |
| B-17-05 | 96.5 | 97 | 17706 | 0.5 | 4.36 | 199.00 | 4.26 | 0.23 | 0.00 | 408.85 |
| B-17-05 | 97 | 97.5 | 17707 | 0.5 | 6.22 | 714.00 | 13.44 | 0.16 | 0.00 | 1006.61 |
| B-17-05 | 97.5 | 98 | 17708 | 0.5 | 4.02 | 468.00 | 6.97 | 0.20 | 0.00 | 606.44 |
| B-17-05 | 98 | 98.5 | 17710 | 0.5 | 1.14 | 218.00 | 16.45 | 9.17 | 0.00 | 813.91 |
| B-17-05bis | 177.1 | 177.6 | 18305 | 0.5 | 1.00 | 50.00 | 8.77 | 1.66 | 0.00 | 352.30 |
| B-17-05bis | 182 | 183 | 18310 | 1 | 3.55 | 321.00 | 0.63 | 0.15 | 29.95 | 396.08 |
| B-17-05bis | 188 | 189 | 18318 | 1 | 4.50 | 728.00 | 24.84 | 0.56 | 0.00 | 1277.51 |
| B-17-05bis | 189 | 189.5 | 18319 | 0.5 | 1.56 | 146.00 | 8.38 | 0.30 | 0.00 | 385.16 |
| B-17-05bis | 189.5 | 190 | 18320 | 0.5 | 2.23 | 70.00 | 6.34 | 0.23 | 0.00 | 315.11 |
| B-17-05bis | 194.5 | 195.5 | 18329 | 1 | 3.70 | 94.00 | 10.91 | 0.20 | 0.00 | 519.34 |
| B-17-05bis | 195.5 | 196.5 | 18330 | 1 | 1.88 | 183.00 | 8.00 | 3.71 | 0.00 | 474.66 |
| B-17-06 | 92.5 | 93 | 17838 | 0.5 | 0.96 | 187.00 | 10.59 | 0.34 | 0.00 | 444.92 |

| Hole Name | From | To | Sample Number | Length (m) | Au g/t | Ag g/t | Zn% | Pb% | Ge g/t | USDEq |
|------------|-------|-------|---------------|------------|--------|---------|-------|-------|--------|---------|
| B-17-06 | 123.5 | 124.5 | 17879 | 1 | 0.00 | 245.00 | 7.49 | 5.35 | 0.00 | 445.37 |
| B-17-06bis | 177.5 | 178 | 18010 | 0.5 | 1.85 | 155.00 | 5.34 | 0.87 | 0.00 | 325.84 |
| B-17-06bis | 181 | 181.5 | 18018 | 0.5 | 2.10 | 870.00 | 26.66 | 7.86 | 0.00 | 1447.24 |
| B-17-06bis | 181.5 | 182 | 18019 | 0.5 | 7.63 | 1585.00 | 21.84 | 6.25 | 0.00 | 1864.96 |
| B-17-06bis | 182 | 182.5 | 18020 | 0.5 | 2.49 | 3259.00 | 14.16 | 6.10 | 0.00 | 2263.29 |
| B-17-06bis | 182.5 | 183 | 18021 | 0.5 | 0.51 | 514.00 | 4.58 | 13.10 | 0.00 | 673.30 |
| B-17-06bis | 213 | 213.5 | 18059 | 0.5 | 3.06 | 400.00 | 5.40 | 6.88 | 0.00 | 621.45 |
| B-17-06bis | 213.5 | 214 | 18060 | 0.5 | 2.97 | 382.00 | 1.82 | 3.69 | 0.00 | 441.64 |
| B-17-06bis | 214 | 214.5 | 18061 | 0.5 | 1.82 | 169.00 | 21.54 | 3.82 | 0.00 | 856.63 |
| B-17-06bis | 215.5 | 216 | 18063 | 0.5 | 0.12 | 184.00 | 6.18 | 5.98 | 0.00 | 394.89 |
| B-17-06bis | 223 | 224 | 18073 | 1 | 1.02 | 170.00 | 7.75 | 4.06 | 0.00 | 432.05 |
| B-17-06bis | 224 | 225 | 18074 | 1 | 1.13 | 243.00 | 4.74 | 2.34 | 0.00 | 352.04 |
| B-17-06bis | 225 | 226 | 18075 | 1 | 1.37 | 326.00 | 13.46 | 1.97 | 0.00 | 646.84 |
| B-17-06bis | 226 | 227 | 18076 | 1 | 1.56 | 156.00 | 4.86 | 1.12 | 0.00 | 305.45 |
| B-17-06bis | 227 | 228 | 18078 | 1 | 1.24 | 236.00 | 4.47 | 0.64 | 0.00 | 311.21 |
| B-17-06bis | 228 | 228.5 | 18079 | 0.5 | 0.73 | 245.00 | 7.49 | 5.35 | 0.00 | 475.89 |
| B-17-06C | 108.5 | 109 | 18125 | 0.5 | 3.71 | 117.00 | 14.60 | 2.55 | 0.00 | 684.58 |
| B-17-06C | 110.5 | 111 | 18130 | 0.5 | 3.51 | 166.00 | 9.38 | 3.65 | 0.00 | 572.76 |
| B-17-06C | 112 | 112.5 | 18133 | 0.5 | 0.14 | 79.00 | 8.36 | 1.04 | 0.00 | 306.61 |
| B-17-06C | 115.5 | 116 | 18141 | 0.5 | 0.54 | 2080.00 | 15.41 | 0.30 | 0.00 | 1511.64 |
| B-17-06C | 124.5 | 125 | 18153 | 0.5 | 0.16 | 302.00 | 5.31 | 7.76 | 0.00 | 466.33 |
| B-17-06C | 149 | 149.5 | 18190 | 0.5 | 0.84 | 433.00 | 31.70 | 11.70 | 0.00 | 1398.16 |
| B-17-06C | 149.5 | 150 | 18191 | 0.5 | 0.62 | 120.00 | 7.72 | 2.55 | 0.00 | 359.12 |
| B-17-06C | 155 | 155.5 | 18200 | 0.5 | 1.69 | 170.00 | 17.64 | 1.85 | 0.00 | 699.98 |
| B-17-06C | 157 | 157.5 | 18205 | 0.5 | 0.94 | 238.00 | 8.96 | 4.06 | 0.00 | 497.50 |
| B-17-06C | 157.5 | 158 | 18206 | 0.5 | 0.86 | 189.00 | 9.35 | 1.67 | 0.00 | 432.83 |
| B-17-06C | 158 | 158.5 | 18207 | 0.5 | 1.12 | 269.00 | 9.26 | 2.35 | 0.00 | 494.78 |
| B-17-06C | 158.5 | 159 | 18208 | 0.5 | 0.36 | 204.00 | 13.10 | 2.35 | 0.00 | 540.91 |
| B-17-07 | 58.5 | 59 | 18362 | 0.5 | 14.32 | 834.00 | 6.62 | 4.15 | 0.00 | 1289.32 |
| B-17-07 | 59 | 60 | 18363 | 1 | 1.54 | 318.00 | 8.07 | 5.77 | 0.00 | 571.36 |
| B-17-07 | 60 | 61 | 18364 | 1 | 1.76 | 496.00 | 12.16 | 10.32 | 0.00 | 878.60 |
| B-17-07 | 61 | 62 | 18365 | 1 | 2.26 | 227.00 | 3.48 | 2.82 | 0.00 | 364.70 |
| B-17-10 | 91 | 92 | 18427 | 1 | 15.09 | 88.00 | 0.56 | 0.61 | 0.00 | 703.12 |
| B-18-01 | 224.2 | 224.7 | 18456 | 0.5 | 2.00 | 48.00 | 5.44 | 2.10 | 0.00 | 306.21 |
| B-18-01 | 502 | 502.6 | 18468 | 0.6 | 0.86 | 23.00 | 13.00 | 2.12 | 0.00 | 463.81 |
| B-18-03 | 503.8 | 504.3 | 18628 | 0.5 | 1.29 | 58.00 | 4.88 | 3.89 | 0.00 | 301.41 |
| B-18-04 | 284.2 | 284.7 | 18688 | 0.5 | 0.62 | 123.00 | 1.98 | 1.40 | 74.00 | 335.28 |
| B-18-05 | 13.5 | 14.5 | 18976 | 1 | 14.32 | 61.00 | 0.07 | 1.71 | 0.00 | 665.46 |
| B-18-05 | 17 | 18 | 18981 | 1 | 8.48 | 71.00 | 0.09 | 0.21 | 0.00 | 396.77 |
| B-18-05 | 18 | 18.5 | 18982 | 0.5 | 12.04 | 76.00 | 0.25 | 0.20 | 0.00 | 552.48 |
| B-18-05bis | 26.5 | 27 | 19021 | 0.5 | 6.09 | 49.00 | 0.74 | 0.16 | 0.00 | 303.55 |



| Hole Name | From | To | Sample Number | Length (m) | Au g/t | Ag g/t | Zn% | Pb% | Ge g/t | USDEq |
|------------|------|------|---------------|------------|--------|---------|-------|------|--------|---------|
| B-18-05bis | 27 | 28 | 19022 | 1 | 6.39 | 52.00 | 0.27 | 0.15 | 0.00 | 303.88 |
| B-18-05bis | 28 | 29 | 19023 | 1 | 8.27 | 144.00 | 1.26 | 0.71 | 22.00 | 516.58 |
| B-18-05bis | 29 | 30 | 19024 | 1 | 5.87 | 337.00 | 4.71 | 0.89 | 26.00 | 624.37 |
| B-18-05bis | 30 | 31 | 19025 | 1 | 4.07 | 94.00 | 8.01 | 0.47 | 38.00 | 540.46 |
| B-18-05bis | 31 | 32 | 19026 | 1 | 5.49 | 62.00 | 2.49 | 0.29 | 0.00 | 337.90 |
| B-18-05bis | 32 | 33 | 19027 | 1 | 4.45 | 96.00 | 7.00 | 0.39 | 23.00 | 493.70 |
| B-18-05bis | 33 | 34 | 19028 | 1 | 3.61 | 82.00 | 6.75 | 0.21 | 0.00 | 390.18 |
| B-18-05bis | 36 | 37 | 19033 | 1 | 2.26 | 190.00 | 10.87 | 0.77 | 0.00 | 517.46 |
| B-18-05bis | 41 | 41.5 | 19043 | 0.5 | 2.90 | 46.00 | 6.11 | 0.16 | 0.00 | 323.10 |
| B-18-06 | 9.5 | 10.5 | 18910 | 1 | 10.05 | 159.00 | 0.11 | 0.34 | 0.00 | 509.59 |
| B-18-06 | 10.5 | 11.5 | 18911 | 1 | 11.70 | 122.00 | 0.09 | 0.22 | 0.00 | 557.07 |
| B-18-06bis | 37 | 37.5 | 19088 | 0.5 | 0.62 | 68.00 | 9.75 | 0.84 | 60.00 | 489.11 |
| B-18-06bis | 38.5 | 39 | 19091 | 0.5 | 3.04 | 44.00 | 2.99 | 0.25 | 32.00 | 310.46 |
| B-18-06bis | 39 | 39.5 | 19092 | 0.5 | 4.50 | 54.00 | 1.32 | 0.18 | 25.00 | 311.67 |
| B-18-06bis | 39.5 | 40.5 | 19093 | 1 | 16.44 | 381.00 | 2.73 | 0.34 | 0.00 | 963.01 |
| B-18-06bis | 42 | 43 | 19097 | 1 | 5.18 | 150.00 | 2.81 | 0.23 | 0.00 | 376.93 |
| B-18-06bis | 43 | 43.5 | 19098 | 0.5 | 8.06 | 1666.00 | 6.50 | 0.74 | 0.00 | 1371.66 |
| B-18-06bis | 43.5 | 44 | 19099 | 0.5 | 8.80 | 5400.00 | 1.57 | 1.20 | 0.00 | 3137.10 |
| B-18-07bis | 33.4 | 34.4 | 18821 | 1 | 5.06 | 232.00 | 0.32 | 0.13 | 0.00 | 339.32 |
| B-18-07bis | 34.4 | 35.4 | 18822 | 1 | 6.89 | 109.00 | 1.39 | 0.07 | 0.00 | 383.87 |
| B-18-08 | 23.1 | 24.1 | 18730 | 1 | 6.40 | 69.00 | 0.49 | 0.16 | 0.00 | 319.32 |
| B-18-08bis | 36.7 | 37.7 | 18762 | 1 | 6.34 | 39.00 | 0.06 | 0.08 | 44.00 | 384.65 |
| B-18-08bis | 47.2 | 48.2 | 18775 | 1 | 2.60 | 60.00 | 6.96 | 0.56 | 0.00 | 350.04 |
| B-18-09bis | 37.4 | 38.4 | 19663 | 1 | 0.86 | 227.33 | 7.03 | 1.61 | 77.78 | 555.13 |
| B-18-09bis | 46.4 | 46.9 | 19674 | 0.5 | 0.30 | 44.00 | 4.77 | 4.43 | 79.23 | 435.11 |
| B-18-11 | 13.6 | 14.6 | 18882 | 1 | 10.72 | 55.00 | 0.09 | 0.70 | 0.00 | 492.25 |
| B-18-11 | 25 | 26 | 18890 | 1 | 0.05 | 5.00 | 0.03 | 0.03 | 292.00 | 648.21 |
| B-18-11 | 28 | 29 | 18893 | 1 | 0.05 | 5.00 | 0.27 | 0.08 | 237.00 | 535.36 |
| B-18-11 | 29 | 29.5 | 18894 | 0.5 | 1.94 | 16.00 | 2.19 | 0.76 | 113.00 | 415.93 |
| B-18-11bis | 38.3 | 38.8 | 18944 | 0.5 | 9.44 | 250.00 | 6.26 | 3.71 | 0.00 | 774.14 |
| B-18-15 | 31 | 31.5 | 19652 | 0.5 | 0.08 | 48.00 | 1.03 | 6.07 | 64.20 | 320.04 |
| B-18-16 | 26.7 | 27.2 | 19120 | 0.5 | 2.90 | 62.00 | 3.96 | 2.00 | 20.00 | 350.27 |
| B-18-16 | 27.2 | 27.7 | 19121 | 0.5 | 4.00 | 103.00 | 12.30 | 2.08 | 0.00 | 614.13 |
| B-18-18bis | 48.5 | 49 | 19160 | 0.5 | 1.10 | 24.00 | 12.91 | 1.03 | 0.00 | 449.85 |
| B-18-18bis | 58.5 | 59.5 | 19176 | 1 | 1.58 | 51.00 | 6.65 | 0.87 | 0.00 | 300.22 |
| B-18-18bis | 63 | 63.5 | 19184 | 0.5 | 1.06 | 50.00 | 9.67 | 0.67 | 0.00 | 360.79 |
| B-18-19bis | 23.2 | 24.2 | 10588 | 1 | 0.05 | 49.61 | 0.39 | 0.22 | 119.12 | 304.63 |
| B-18-19bis | 45.5 | 46.5 | 10597 | 1 | 0.03 | 17.03 | 1.64 | 0.27 | 127.64 | 343.02 |
| B-18-19bis | 47.5 | 48 | 10599 | 0.5 | 0.50 | 8.52 | 4.92 | 0.43 | 96.34 | 387.32 |
| B-18-20bis | 63.5 | 64.5 | 10578 | 1 | 0.03 | 59.61 | 0.65 | 0.34 | 111.82 | 302.49 |
| B-18-21 | 16.3 | 16.8 | 19374 | 0.5 | 0.26 | 27.00 | 17.82 | 0.96 | 56.00 | 679.19 |



| Hole Name | From | To | Sample Number | Length (m) | Au g/t | Ag g/t | Zn% | Pb% | Ge g/t | USDEq |
|------------|------|------|---------------|------------|--------|--------|-------|-------|--------|---------|
| B-18-21 | 16.8 | 17.3 | 19375 | 0.5 | 0.38 | 24.00 | 19.16 | 0.83 | 34.00 | 670.22 |
| B-18-21 | 17.3 | 17.8 | 19376 | 0.5 | 1.60 | 31.00 | 10.74 | 0.44 | 65.00 | 543.00 |
| B-18-21 | 17.8 | 18.3 | 19377 | 0.5 | 1.42 | 30.00 | 5.38 | 0.37 | 93.00 | 441.07 |
| B-18-21bis | 38.3 | 38.8 | 19708 | 0.5 | 0.03 | 8.00 | 5.32 | 0.32 | 68.37 | 314.93 |
| B-18-21bis | 46.5 | 47 | 19715 | 0.5 | 0.03 | 88.00 | 1.16 | 14.27 | 36.56 | 445.79 |
| B-18-22 | 14 | 14.5 | 19501 | 0.5 | 1.46 | 23.00 | 8.20 | 0.69 | 28.00 | 383.75 |
| B-18-22 | 14.5 | 15 | 19502 | 0.5 | 0.74 | 23.00 | 8.91 | 0.20 | 0.00 | 302.61 |
| B-18-22bis | 22 | 22.5 | 19542 | 0.5 | 2.34 | 78.00 | 9.44 | 2.76 | 27.00 | 523.09 |
| B-18-22bis | 31 | 32 | 19555 | 1 | 0.05 | 5.00 | 0.20 | 0.05 | 224.00 | 504.15 |
| B-18-22bis | 34.5 | 35.5 | 19559 | 1 | 0.05 | 5.00 | 0.09 | 0.03 | 224.00 | 500.48 |
| B-18-22bis | 40.5 | 41.5 | 19566 | 1 | 0.05 | 5.00 | 0.21 | 0.03 | 144.00 | 327.93 |
| B-18-22bis | 42.5 | 43.5 | 19568 | 1 | 0.27 | 16.00 | 0.53 | 0.62 | 183.00 | 449.59 |
| B-18-22bis | 43.5 | 44.5 | 19569 | 1 | 0.05 | 5.00 | 0.90 | 0.14 | 124.00 | 306.08 |
| B-18-22bis | 44.5 | 45.5 | 19570 | 1 | 0.05 | 17.00 | 0.07 | 0.11 | 282.00 | 635.21 |
| B-18-22bis | 45.5 | 46.5 | 19571 | 1 | 0.15 | 12.00 | 1.64 | 0.48 | 109.00 | 308.87 |
| B-18-22bis | 48.5 | 49.5 | 19575 | 1 | 0.05 | 5.00 | 2.38 | 0.24 | 117.00 | 335.24 |
| B-18-22bis | 49.5 | 50.5 | 19576 | 1 | 0.05 | 5.00 | 1.00 | 0.23 | 153.00 | 374.56 |
| B-18-22bis | 52.5 | 53.5 | 19579 | 1 | 0.05 | 5.00 | 0.07 | 0.03 | 396.00 | 878.31 |
| B-18-22bis | 53.5 | 54.5 | 19580 | 1 | 0.05 | 5.00 | 0.16 | 0.03 | 184.00 | 414.49 |
| B-18-44 | 16.5 | 17 | 19287 | 0.5 | 0.62 | 11.00 | 0.03 | 0.03 | 264.00 | 613.44 |
| B-18-44 | 20 | 21.5 | 19292 | 1.5 | 0.10 | 5.00 | 0.03 | 0.03 | 497.00 | 1101.30 |
| B-18-44 | 28.5 | 29.5 | 19301 | 1 | 0.84 | 5.00 | 0.03 | 0.03 | 122.00 | 307.23 |
| B-18-44 | 49 | 49.5 | 19325 | 0.5 | 1.74 | 62.00 | 4.32 | 1.25 | 21.00 | 299.26 |
| B-18-44 | 51.5 | 52.5 | 19330 | 1 | 0.92 | 47.00 | 1.60 | 0.34 | 89.00 | 310.59 |

10.2 Drilling on tailings

A total of 49 holes were drilled on the tailings using the AMS soil core sampler. A total of 34 holes were drilled on tailing TG1 totaling 71.18 m, and 15 holes were drilled on tailing TG2 totaling 116.10 m. The main objective of the drilling program was the estimation of the tailing resources.

The distribution of the drillholes is shown in Figure 52 and the table below present the highlights of the mineralized zones intersected at Boumadine tailings (Table 13).

Table 13: Highlights of the mineralized zones intersected at Boumadine tailings.

| Hole Name | From | To | Sample Number | Length (m) | Au g/t | Ag g/t | USDEq |
|-----------|------|------|---------------|------------|--------|--------|--------|
| TG1-18-02 | 1 | 1.83 | 19804 | 0.83 | 2.92 | 0 | 122.06 |
| TG1-18-03 | 1 | 1.34 | 19806 | 0.34 | 4.03 | 134 | 276.89 |
| TG1-18-06 | 0 | 1 | 19809 | 1 | 4.6 | 0 | 192.28 |
| TG1-18-06 | 1 | 1.45 | 19810 | 0.45 | 2.76 | 0 | 115.37 |

| | | | | | | | |
|-----------|-----|------|-------|------|------|------|--------|
| TG1-18-07 | 0 | 1 | 19811 | 1 | 2.68 | 0 | 112.02 |
| TG1-18-11 | 2 | 2.6 | 19819 | 0.6 | 2.16 | 141 | 253.63 |
| TG1-18-12 | 0 | 1.1 | 19820 | 1.1 | 3.02 | 0 | 126.24 |
| TG1-18-12 | 1.1 | 2.2 | 19821 | 1.1 | 2.74 | 0 | 114.53 |
| TG1-18-13 | 0 | 1 | 19822 | 1 | 2.64 | 0 | 110.35 |
| TG1-18-13 | 1 | 2 | 19823 | 1 | 2.6 | 0 | 108.68 |
| TG1-18-13 | 2 | 3 | 19824 | 1 | 3.32 | 0 | 138.78 |
| TG1-18-13 | 3 | 3.6 | 19825 | 0.6 | 3.12 | 0 | 130.42 |
| TG1-18-14 | 1 | 2 | 19827 | 1 | 3.24 | 0 | 135.43 |
| TG1-18-14 | 2 | 2.7 | 19828 | 0.7 | 3.18 | 0 | 132.92 |
| TG1-18-15 | 0 | 1 | 19829 | 1 | 3.26 | 0 | 136.27 |
| TG1-18-15 | 1 | 1.7 | 19830 | 0.7 | 3.54 | 0 | 147.97 |
| TG1-18-16 | 0 | 1 | 19831 | 1 | 3.26 | 0 | 136.27 |
| TG1-18-16 | 1 | 1.7 | 19832 | 0.7 | 3.7 | 0 | 154.66 |
| TG1-18-17 | 0 | 1 | 19833 | 1 | 2.58 | 0 | 107.84 |
| TG1-18-17 | 1 | 2 | 19834 | 1 | 4.04 | 0 | 168.87 |
| TG1-18-17 | 2 | 2.27 | 19835 | 0.27 | 3.6 | 161 | 268.26 |
| TG1-18-18 | 0 | 1 | 19836 | 1 | 3.4 | 0 | 142.12 |
| TG1-18-18 | 1 | 1.3 | 19837 | 0.3 | 2.98 | 0 | 124.56 |
| TG1-18-19 | 0 | 1 | 19838 | 1 | 2.8 | 0 | 117.04 |
| TG1-18-19 | 1 | 1.6 | 19839 | 0.6 | 3.08 | 0 | 128.74 |
| TG1-18-20 | 2 | 2.3 | 19842 | 0.3 | 2.66 | 0 | 111.19 |
| TG1-18-21 | 0 | 1 | 19843 | 1 | 2.51 | 0 | 104.92 |
| TG1-18-23 | 4 | 4.5 | 19855 | 0.5 | 2.04 | 154 | 162.51 |
| TG1-18-28 | 0 | 1 | 19866 | 1 | 2.7 | 0 | 112.86 |
| TG1-18-28 | 1 | 1.3 | 19867 | 0.3 | 2.64 | 0 | 110.35 |
| TG1-18-29 | 0 | 1 | 19868 | 1 | 2.55 | 0 | 106.59 |
| TG2-18-03 | 6 | 7 | 19894 | 1 | 2.67 | 0 | 111.61 |
| TG2-18-04 | 6 | 7 | 19903 | 1 | 2.54 | 0 | 106.17 |
| TG2-18-04 | 7 | 7.4 | 19904 | 0.4 | 3.04 | 0 | 127.07 |
| TG2-18-05 | 4 | 5 | 19909 | 1 | 2.5 | 0 | 104.50 |
| TG2-18-05 | 5 | 6 | 19910 | 1 | 2.63 | 0 | 109.93 |
| TG2-18-05 | 6 | 7 | 19911 | 1 | 2.87 | 0 | 119.97 |
| TG2-18-05 | 7 | 8 | 19912 | 1 | 2.72 | 0 | 113.70 |
| TG2-18-05 | 8 | 8.96 | 19913 | 0.96 | 1.89 | 14.2 | 187.25 |
| TG2-18-08 | 1 | 2 | 19940 | 1 | 2.52 | 0 | 105.34 |
| TG2-18-08 | 6 | 7 | 19945 | 1 | 2.6 | 0 | 108.68 |
| TG2-18-09 | 3 | 4 | 19950 | 1 | 2.55 | 0 | 106.59 |
| TG2-18-09 | 4 | 5 | 19951 | 1 | 2.63 | 0 | 109.93 |
| TG2-18-10 | 2 | 3 | 19957 | 1 | 2.59 | 0 | 108.26 |
| TG2-18-10 | 3 | 4 | 19959 | 1 | 2.54 | 0 | 106.17 |
| TG2-18-10 | 4 | 5 | 19960 | 1 | 2.62 | 0 | 109.52 |

| | | | | | | | |
|-----------|------|------|-------|------|------|-----|--------|
| TG2-18-12 | 0 | 1 | 19970 | 1 | 2.51 | 0 | 104.92 |
| TG2-18-12 | 2 | 3 | 19972 | 1 | 2.57 | 0 | 107.43 |
| TG2-18-12 | 4 | 5 | 19974 | 1 | 2.51 | 0 | 104.92 |
| TG2-18-12 | 6 | 7 | 19976 | 1 | 2.68 | 0 | 112.02 |
| TG2-18-12 | 7 | 7.56 | 19977 | 0.56 | 2.62 | 0 | 109.52 |
| TG2-18-13 | 2 | 3 | 19981 | 1 | 2.51 | 0 | 104.92 |
| TG2-18-13 | 3 | 4 | 19982 | 1 | 2.66 | 0 | 111.19 |
| TG2-18-13 | 4 | 5 | 19983 | 1 | 2.54 | 0 | 106.17 |
| TG2-18-13 | 5 | 6 | 19984 | 1 | 2.67 | 0 | 111.61 |
| TG2-18-13 | 6 | 7 | 19985 | 1 | 2.62 | 0 | 109.52 |
| TG2-18-14 | 1 | 2 | 19989 | 1 | 2.13 | 112 | 173.15 |
| TG2-18-14 | 8 | 9.3 | 19996 | 1.3 | 2.3 | 162 | 243.89 |
| TG2-18-15 | 2 | 3 | 19757 | 1 | 2.82 | 0 | 117.88 |
| TG2-18-15 | 3 | 4 | 19751 | 1 | 2.94 | 0 | 122.89 |
| TG2-18-15 | 4 | 5 | 19752 | 1 | 2.72 | 0 | 113.70 |
| TG2-18-15 | 5 | 6 | 19753 | 1 | 3.54 | 0 | 147.97 |
| TG2-18-15 | 6 | 6.76 | 19754 | 0.76 | 2.92 | 0 | 122.06 |
| TG2-18-15 | 6.76 | 7.19 | 19761 | 0.43 | 2.64 | 0 | 110.35 |

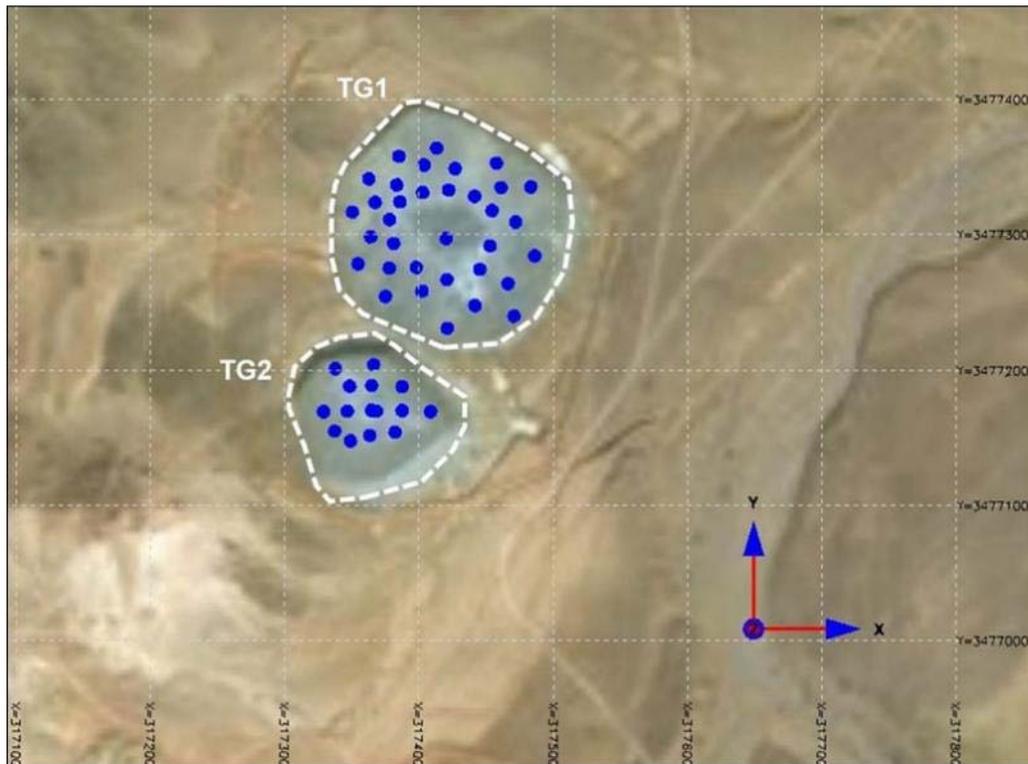


Figure 52: Drillhole locations on the tailings at Boumadine.



Figure 53: JCB used for tailings sampling.



Figure 54: First tailing samples using soil core sampler at Boumadine property.



Figure 55: The tailing core samples placed in the plastic box.

11 Sample preparation, analysis and security

The core boxes were identified with the hole names. The core lengths were marked and then the boxes were transported to the core logging and splitting facilities at the Boumadine property.

The core was logged by the geologists of Compagnie Minière Maya-Maroc sarl (CMMM). The core intervals to be sampled were identified by the geologists. For the non-mineralized sections, the sample lengths were between 1 and 1.5 m, and for the mineralized zones, the sample lengths were of 0.5 m. Technicians then prepared the core and split it in halves to keep a witness.



Figure 56: Mr. Duplessis with CMMM’s junior geologist discussing the composition of the mineralized interval.



Figure 57: The split core facility at the Boumadine property.



Figure 58: The core was split using an electric saw and one half of the core sample was placed into a plastic bag by the geologist.

The half core sample for the laboratory was entirely crushed to have d80 passing 2 mm and afterward, riffled and split to have 100 grams which was then pulverized to have a pulp d80 of 75 microns.

The drill core samples were analyzed at the independent laboratory Analyse Développement Minier S.A.R.L. (ADM).

11.1 Sample preparation at the laboratory

The samples were analyzed by the independent laboratory Analyse Développement Minier S.A.R.L in Morocco. The core samples are crushed to have d80 passing 2mm and afterward, riffle split to have 100 grams which is pulverized to have a pulp d80 of 75 microns Multi acid digestion and Atomic Absorption reading. Fire assay is used for gold grade determination.

Moreover, the independent samples taken by the authors while proceeding to the site visit were also analyzed by the independent laboratory AGAT in Canada. The core samples are dried, weighted and are crushed to have d80 passing 2mm and afterward, riffle split to have 250 grams which is pulverized to have a pulp d80 of 75 microns. The pulp is taken in Sodium Peroxide Fusion ICP-OES/ICP-MS Finish for the metals and the gold is done by Fire assay with ICP and gravity finish for 10g/t. Specific Gravity by pycnometer is done on every sample at AGAT laboratory. The assay results were then sent in a file format supported in Microsoft Excel to the geological department for integration. The standards and blanks are in line with expected results and allow public disclosure of the results.

The geologists of Maya inserted blanks (sand for construction) and standards (STD1, STD2, STD3, STD4, and STD5; Table 14; Figure 60, Figure 61, Figure 62 and Figure 63) at random intervals in every batch of approximately 40 samples. The STD1 were prepared by Ore research and exploration Pty Ltd. The STD2 corresponds to a custom standard prepared by GMG using one well mixed sample from the tailings (TG2).

The laboratories, Analyse Développement Minier (ADM, Morocco) and AGAT (Canada) are commercial laboratories and are independent of Maya Gold and Silver. GoldMinds Geoservices is not able to determine whether ADM laboratory is accredited to ISO 9000 or ISO 17025. Meanwhile, AGAT laboratory in Canada is accredited to ISO 17025 by the Standards Council of Canada (SCC). The last batch of samples from Boumadine property were analysed at Afrilab also based in Marrakech, Morocco.

Specific gravity was measured by pycnometry for the independent samples (53 measurements) taken by the authors at AGAT Laboratory. Maya Gold and silver conducted also some specific gravity measurements at ADM.



Figure 59: Mr. Duplessis preparing a custom standard taken from the old tailings (TG2).

Table 14: The standards used for the 2018/2019 drilling program, Boumadine.

| Standard | Certificate |
|--------------------|------------------|
| Standard 1 (STD 1) | Oreas 134a |
| Standard 2 (STD 2) | TG2 (tailings 2) |
| Standard 3 (STD 3) | Oreas 131a |
| Standard 4 (STD 4) | Oreas 132a |
| Standard 5 (STD 5) | Oreas 133a |

| SUMMARY STATISTICS Oreas 134a | | | | |
|--|---------------------------|---------------|-------------------|-------------|
| Constituent | Recommended Values | | | |
| | Fusion | 4 Acid | Aqua Regia | Leco |
| Silver, Ag (ppm) | 197 | 201 | 194 | - |
| Aluminium oxide, Al ₂ O ₃ (wt.%) | 2.60 | 2.53 | 0.774 | - |
| Arsenic, As (ppm) | 218 | 228 | 226 | - |
| Barium, Ba (ppm) | 1369 | 531 | <500 | - |
| Calcium oxide, CaO (wt.%) | 6.38 | 6.04 | 6.09 | - |
| Cadmium, Cd (ppm) | 546 | 536 | 547 | - |
| Cobalt, Co (ppm) | 100 | 105 | 101 | - |
| Copper, Cu (ppm) | 1278 | 1291 | 1279 | - |
| Iron, Fe (wt.%) | 12.32 | 12.04 | 11.89 | - |
| Magnesium oxide, MgO (wt.%) | 3.55 | 3.49 | 3.42 | - |
| Lead, Pb (wt.%) | 12.95 | 12.79 | 12.64 | - |
| Sulphur, S (wt.%) | 19.4 | 19.27 | 18.5 | 19.11 |
| Antimony, Sb (ppm) | 118 | 115 | 101 | - |
| Silica dioxide, SiO ₂ (wt.%) | 14.81 | - | - | - |
| Zinc, Zn (wt.%) | 17.49 | 17.27 | 17.00 | - |

Figure 60: Certificate of analysis for Oreas 134a Zn-Pb-Ag reference material.

| SUMMARY STATISTICS Oreas 131a | | | | |
|--|---------------------------|---------------|-------------------|-------------|
| Constituent | Recommended Values | | | |
| | Fusion | 4 Acid | Aqua Regia | Leco |
| Silver, Ag (ppm) | 30.2 | 30.9 | 29.5 | - |
| Aluminium oxide, Al ₂ O ₃ (wt.%) | 8.79 | 8.75 | 1.85 | - |
| Arsenic, As (ppm) | 91 | 82 | 82 | - |
| Barium, Ba (ppm) | 851 | 728 | 111 | - |
| Calcium oxide, CaO (wt.%) | 7.81 | 7.57 | 7.36 | - |
| Cadmium, Cd (ppm) | 80 | 81 | 81 | - |
| Cobalt, Co (ppm) | 25 | 23 | 21.9 | - |
| Copper, Cu (ppm) | 324 | 322 | 329 | - |
| Iron, Fe (wt.%) | 5.90 | 5.88 | 5.64 | - |
| Magnesium oxide, MgO (wt.%) | 5.39 | 5.17 | 4.91 | - |
| Lead, Pb (wt.%) | 1.74 | 1.72 | 1.71 | - |
| Sulphur, S (wt.%) | 4.82 | 4.80 | 4.73 | 4.66 |
| Antimony, Sb (ppm) | 49 | 47 | 41 | - |
| Silica dioxide, SiO ₂ (wt.%) | 44.6 | - | - | - |
| Zinc, Zn (wt.%) | 2.84 | 2.83 | 2.79 | - |

Figure 61: Certificate of analysis for Oreas 131a Zn-Pb-Ag reference material.

SUMMARY STATISTICS Oreas 132a

| Constituent | Recommended Values | | | |
|--|--------------------|--------|------------|------|
| | Fusion | 4 Acid | Aqua Regia | Leco |
| Silver, Ag (ppm) | 58 | 57.0 | 55.6 | - |
| Aluminium oxide, Al ₂ O ₃ (wt.%) | 7.62 | 7.82 | 1.84 | - |
| Arsenic, As (ppm) | 144 | 146 | 143 | - |
| Barium, Ba (ppm) | 882 | 528 | 120 | - |
| Calcium oxide, CaO (wt.%) | 7.33 | 6.89 | 6.93 | - |
| Cadmium, Cd (ppm) | 167 | 155 | 155 | - |
| Cobalt, Co (ppm) | 42 | 42.6 | 40.6 | - |
| Copper, Cu (ppm) | 458 | 461 | 478 | - |
| Iron, Fe (wt.%) | 7.79 | 7.73 | 7.36 | - |
| Magnesium oxide, MgO (wt.%) | 4.83 | 4.76 | 4.54 | - |
| Lead, Pb (wt.%) | 3.66 | 3.64 | 3.60 | - |
| Sulphur, S (wt.%) | 8.08 | 7.93 | 7.99 | 7.86 |
| Antimony, Sb (ppm) | 52 | 49.0 | 40.6 | - |
| Silica dioxide, SiO ₂ (wt.%) | 38.4 | - | - | - |
| Zinc, Zn (wt.%) | 4.96 | 4.98 | 4.86 | - |

Figure 62: Certificate of analysis for Oreas 132a Zn-Pb-Ag reference material.

SUMMARY STATISTICS Oreas 133a

| Constituent | Recommended Values | | | |
|--|--------------------|--------|------------|-------|
| | Fusion | 4 Acid | Aqua Regia | Leco |
| Silver, Ag (ppm) | 96 | 100 | 97 | - |
| Aluminium oxide, Al ₂ O ₃ (wt.%) | 6.80 | 7.11 | 1.39 | - |
| Arsenic, As (ppm) | 132 | 139 | 140 | - |
| Barium, Ba (ppm) | 785 | 494 | 59 | - |
| Calcium oxide, CaO (wt.%) | 5.67 | 5.50 | 5.39 | - |
| Cadmium, Cd (ppm) | 298 | 296 | 297 | - |
| Cobalt, Co (ppm) | 24 | 24 | 23 | - |
| Copper, Cu (ppm) | 302 | 323 | 324 | - |
| Iron, Fe (wt.%) | 7.92 | 8.10 | 7.92 | - |
| Magnesium oxide, MgO (wt.%) | 3.85 | 3.80 | 3.56 | - |
| Lead, Pb (wt.%) | 4.84 | 4.90 | 4.86 | - |
| Sulphur, S (wt.%) | 10.8 | 11.1 | 10.7 | 10.95 |
| Antimony, Sb (ppm) | 175 | 171 | 147 | - |
| Silica dioxide, SiO ₂ (wt.%) | 34.36 | - | - | - |
| Zinc, Zn (wt.%) | 10.67 | 10.87 | 10.60 | - |

Figure 63: Certificate of analysis for Oreas 133a Zn-Pb-Ag reference material.

11.2 Quality Assurance/Quality Control (QA/QC) program

The integration of blank and standard samples was established in order to verify the accuracy and precision of the laboratory results. GoldMinds Geoservices relied on the drilling program and independent samples taken by the authors as external quality control steps to complete the QC program.

The results from the combination of blanks, standards, duplicates and the internal QA/QC met the quality criteria, indicating that Maya Gold and Silver can rely on these values for the sample program.

GMG did not visit the AGAT laboratory in Mississauga Ontario but it has a reliable industry reputation and work was completed in a professional manner. GMG also did not visit the independent laboratory Analyse Development Minier S.A.R.L in Morocco. Even if all blanks and standard are in line, we can observe a difference in the grade of the $\frac{1}{4}$ core of GoldMinds/AGAT and the $\frac{1}{2}$ core of Maya/ADM.

The last batch of samples from Boumadine property were analysed at Afrilab also based in Marrakech and the authors (Mr. Rachidi and Mr. Duplessis) visited the lab on 23th April, 2019.

11.3 Security

For the exploration drilling program, core samples were collected and shipped from the property to the ADM laboratory. The core sampling, sample preparation, sample handling and transport followed a protocol established by GMG that included a strict chain of custody from sampling to the laboratory.

During the site visit, the QP's of GMG inspected drilling sites and witnessed the core boxes as they were transferred between the drilling sites and the core shack. During the site visit, GMG found no evidence of active tampering or inadvertent contamination of samples collected on the property.

From the Boumadine site, the core samples were sent to the independent laboratory Analyse Development Minier S.A.R.L. in sealed containers. The authors believe that the core samples preparation, security, and analytical procedures were adequate and well suited for the purpose of the 2018 drilling program.

In the opinion of the authors, the sampling preparation, security, and analytical procedures used by Maya Gold and Silver are consistent with generally accepted industry best practices and are therefore adequate to support mineral resource estimation.

12 Data verification

12.1 The independent analytical program

The exploration work was conducted using documented procedures and involved extensive verifications and validation of exploration data. GoldMinds Geoservices verified the core samples analytical results and integrated the assays into the database. The diamond drillhole collar locations were surveyed by CMMM's surveyor using a Total Station. The collar azimuth and dip of each drill hole were also surveyed (Table 11).

12.2 The database

For this mineral resource estimation, GMG based itself on the Boumadine drillhole database after compilation. The Boumadine database is made of diamond drillholes (surface and underground), percussion holes, long holes, drift samples, surface samples and topographic surface.

Diamond drill holes (total of 23,261.91 m)

- CENTRE zone: seventy-six (76) collars totalling 13,947.59 m.
- NORD zone: nine (9) collars totaling 616.97 m.
- SUD zone: twenty (20) collars totaling 3,435.79 m.
- IMARIREN zone: forty-seven (47) collars totaling 2,888.86 m.
- TIZI zone: fourteen (14) collars totaling 2,372.7 m.

Long holes (total of 699.28 m)

- CENTRE zone: twenty-one (21) long holes totaling 466.78 m.
- SUD zone: twenty-three (23) long holes totaling 168.45 m.
- TIZI zone: six (6) long holes totaling 64.05 m.

Drift samples (total of 516.35 m)

- CENTRE zone: sixty (60) drift samples totaling 268.6 m.
- SUD zone: twenty-six (26) drift samples totaling 96.05 m.
- TIZI zone: sixty-three (63) drift samples totaling 151.70 m.

Alignment (total of 478 m)

The alignments correspond to samples taken along the drift. We were able to compile the data along level -50 of the zone centre with a total of 478 m.

The surface topographic of the Boumadine deposit was made using a drone. The topographic surface covers an area of 12.8 km.

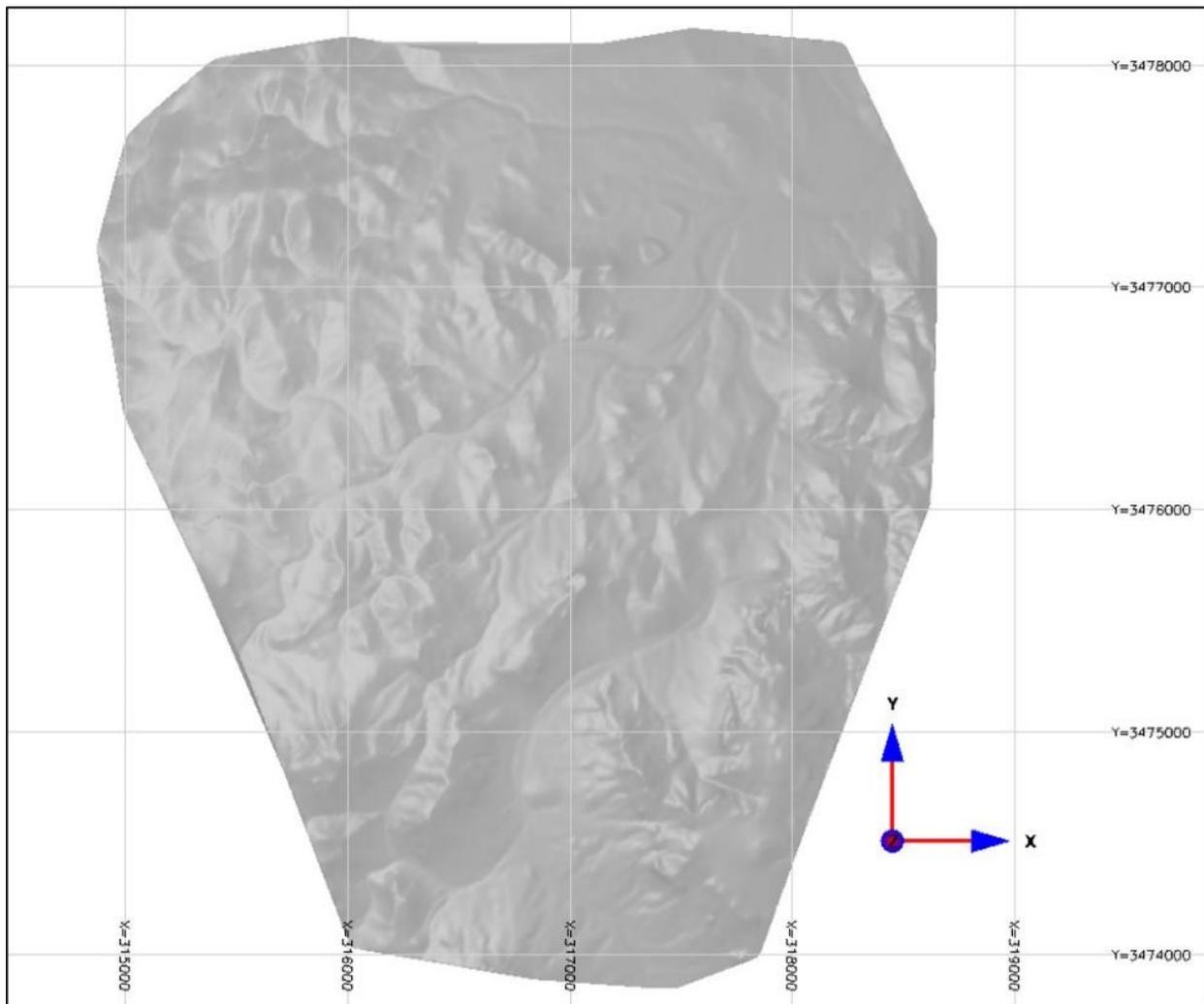


Figure 64: Topographic surface of the Boumadine deposit.

Several galleries and adits were digitized from the plans of Boumadine mine (Table 15; Figure 70, Figure 71, Figure 72, Figure 73 and Figure 74). A total of 4,605.42 m of adits and drifts were digitized with a total of 2,873.56 m for zone Center, a total of 1,049.88 m for zone South and 681.98 m for zone Tizi.

For zone CENTRE three levels were digitized: Level -50 (Z 1,098 m, totaling 1,287.58 m), level -100 (Z 1,048 m, totaling de 523.58 m) and level -150 (Z 998 m, totaling 1,062.40 m). In Zone SUD two galleries were digitized on two levels: level -70 (Z 1,157 m, total of 582.05 m) and level -120 (Z 1,094 m, total of 467.83 m). For zone TIZI a gallery has been digitized and corresponds to level -70 (Z 1,125 m) with a total 681.98 metres (Table 15).

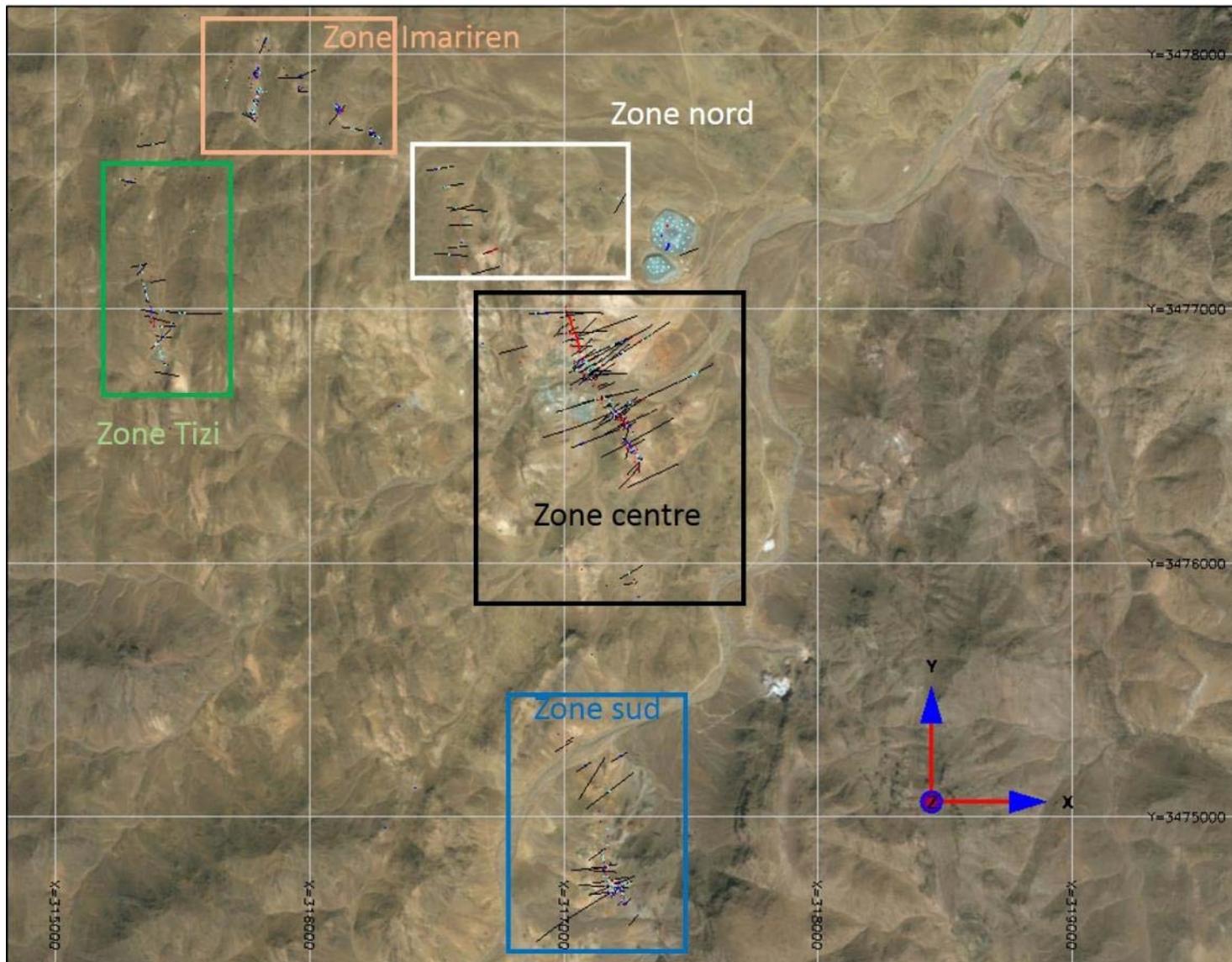


Figure 65: Location of the whole database at Boumadine property.

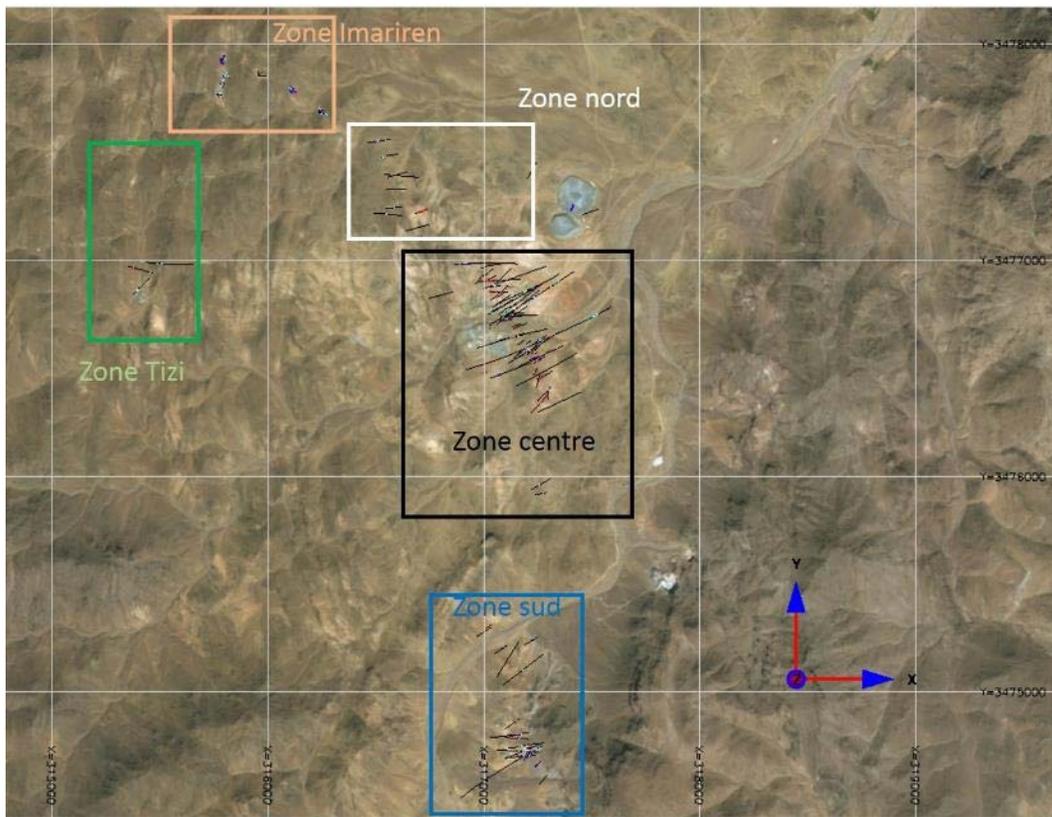


Figure 66: Location of the surface diamond drillholes.



Figure 67: Location of the long holes.

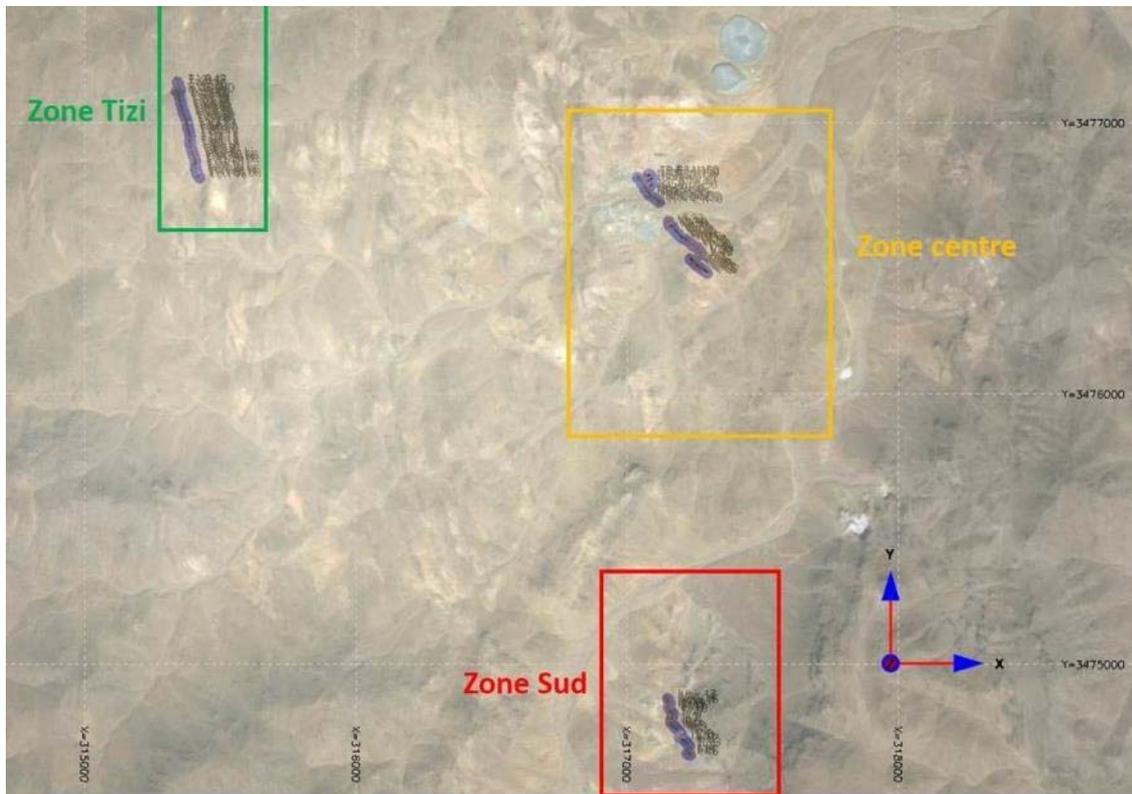


Figure 68: Location of channel sampling.

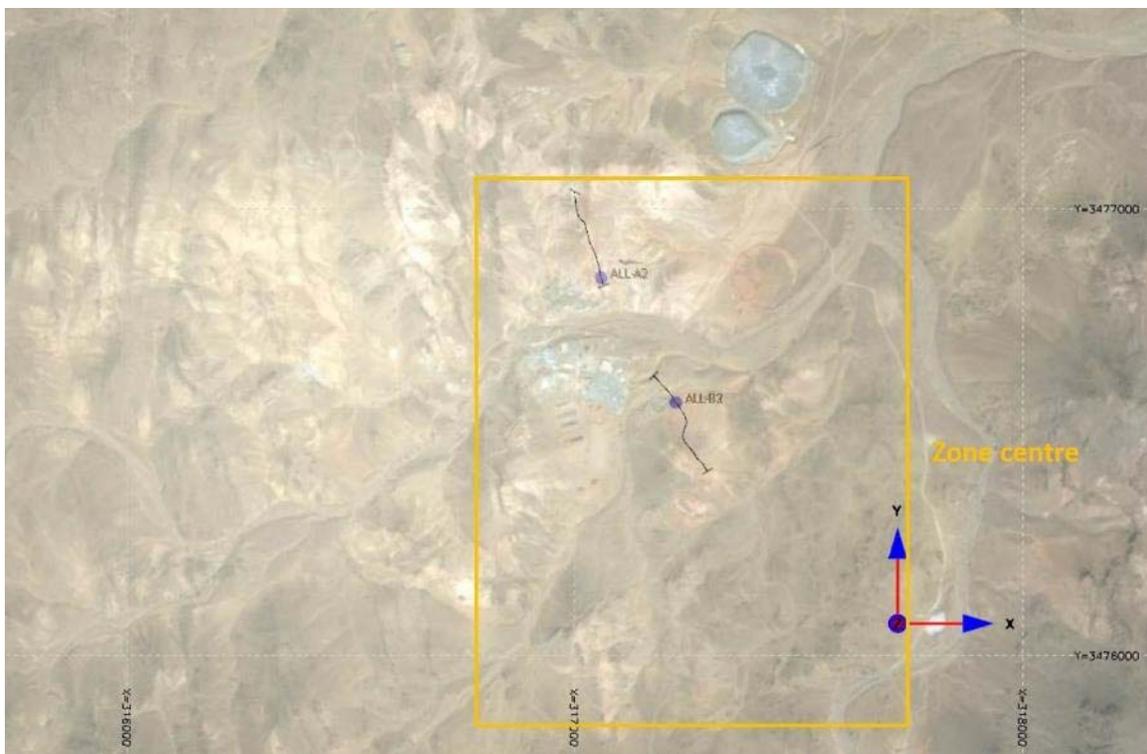


Figure 69: Location of drift samples.

Table 15: Summary of the galleries and adits digitized by GMG.

| Galleries | Meters |
|------------------------|-----------------|
| CENTRE zone Level -50 | 1,287.58 |
| CENTRE zone Level -100 | 523.58 |
| CENTRE zone Level -150 | 1,062.4 |
| Total centre | 2,873.56 |
| SUD zone Level -70 | 582.05 |
| SUD zone Level -120 | 467.83 |
| Total sud | 1,049.88 |
| TIZI zone Level -70 | 681.98 |
| Total Boumadine | 4,605.42 |

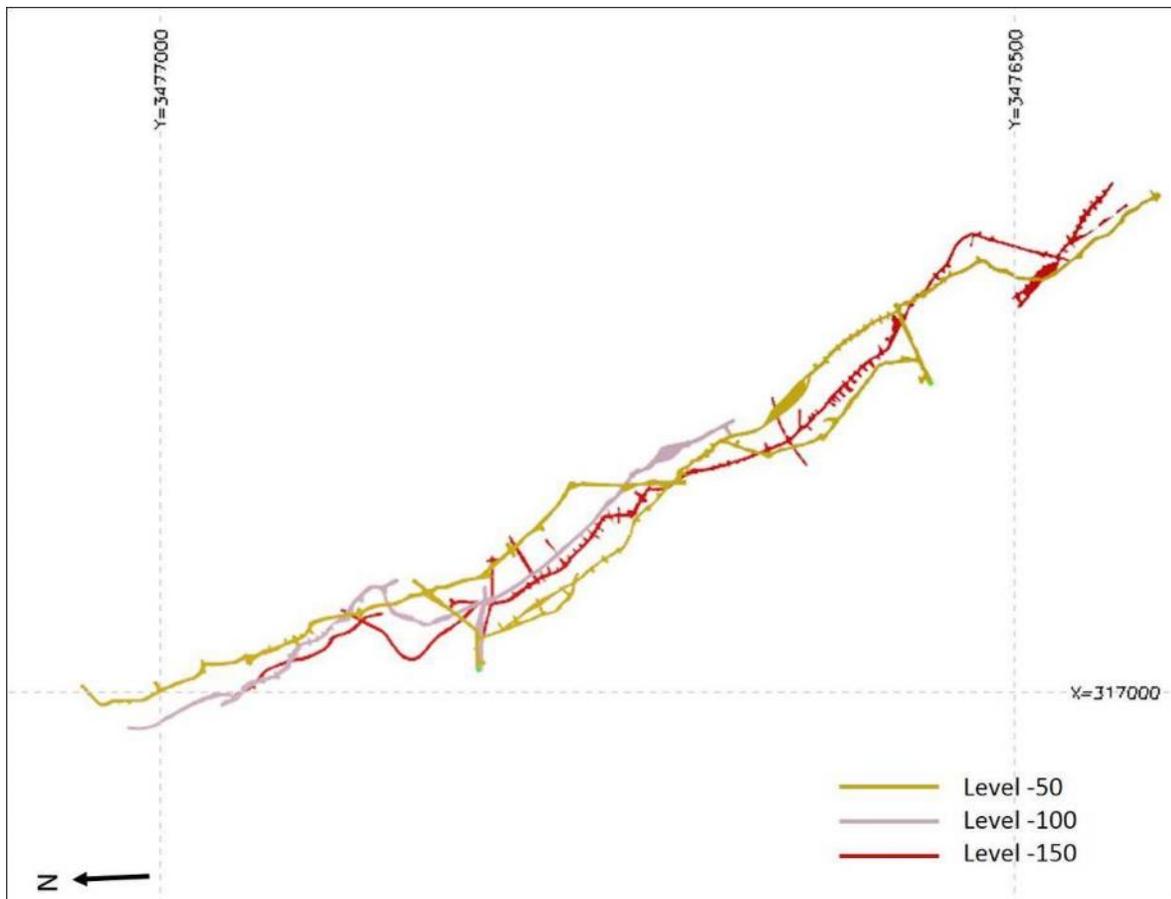


Figure 70: Plan view of the CENTRE zone.

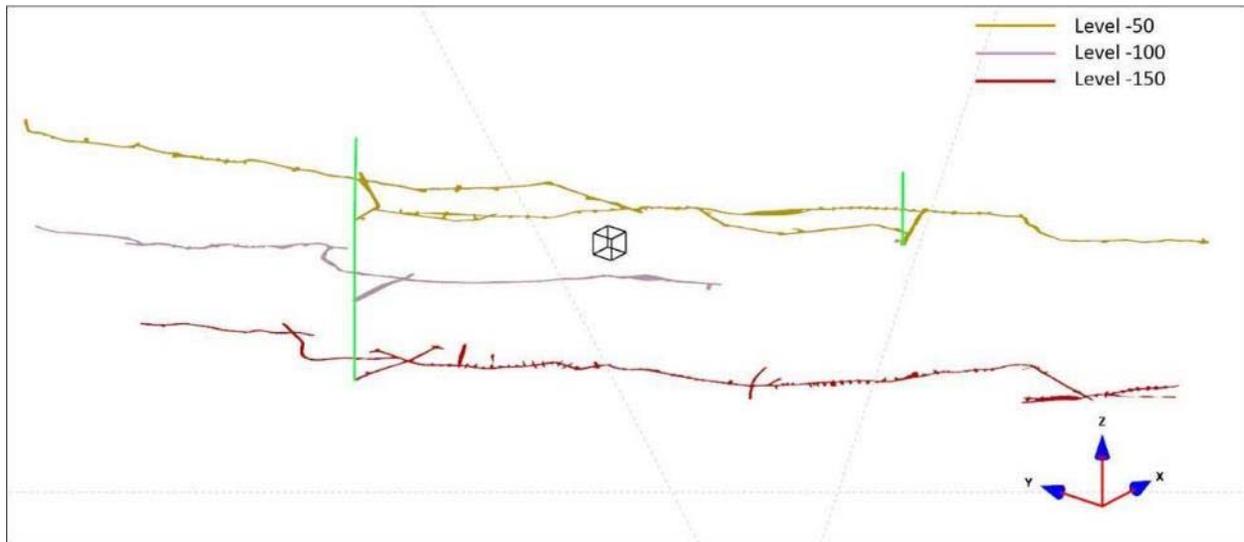


Figure 71: Section view of the CENTRE zone.

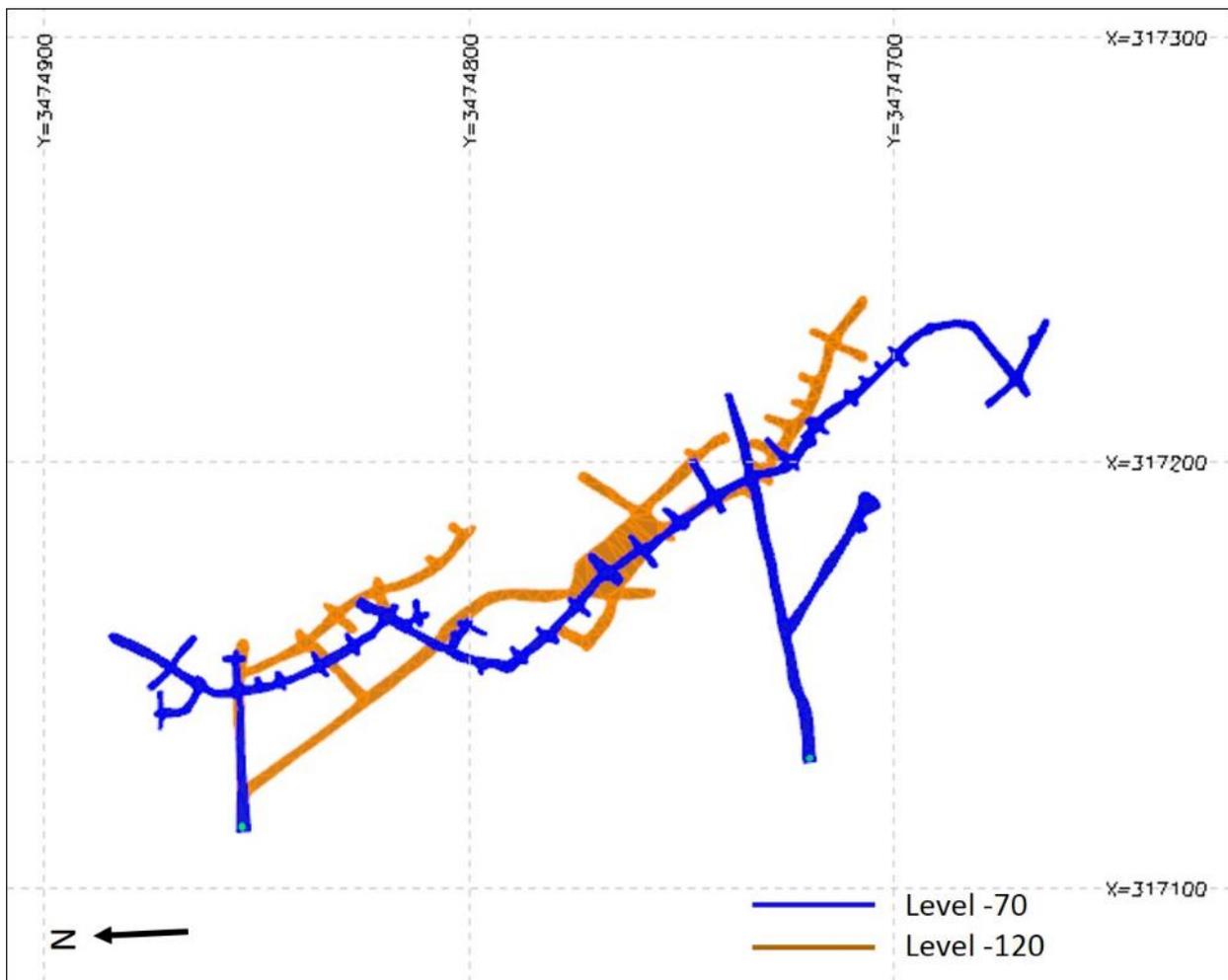


Figure 72: Plan view of the SUD zone.

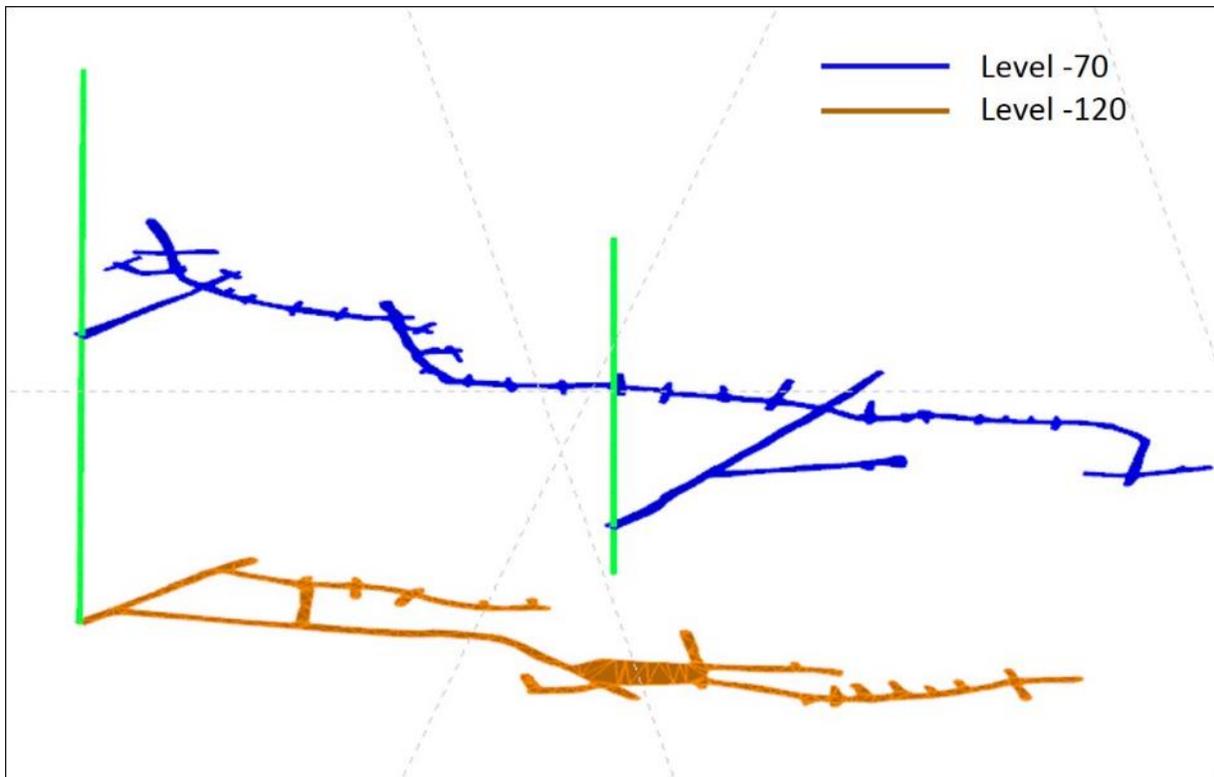


Figure 73: Section view of the SUD zone.

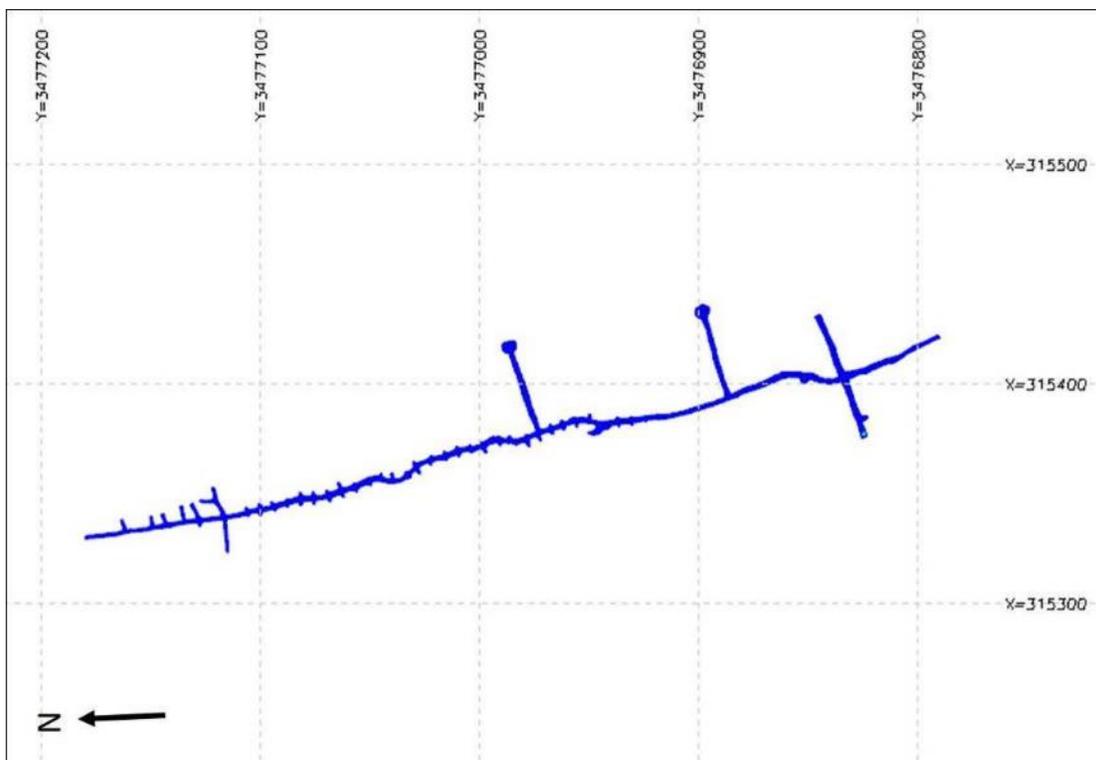


Figure 74: Plan view of the TIZI zone.

12.3 Independent sampling and personal inspections

The authors are Qualified Persons as defined by the NI 43-101. Mr. Rachidi P. Geo., and Mr. Duplessis Eng., visited the Boumadine property in April 2018 and organized the preparation and sampling protocols. GMG has trained the personal on the used and methodology for the sampling of the ancient tailings with the soil hand held AMS tool.

The site visit took place during the drilling period. All aspects that could materially impact the integrity of the resources database (core logging, sampling and database management) were reviewed by GMG.

12.3.1 Core samples

During the site visit, the authors (Merouane Rachidi P.Geo., and Claude Duplessis Eng.) selected 46 individual samples (1/4 core samples, including blanks and standards) for independent sampling from three different holes drilled in zone centre (B-17-02, -01 and -04; Table 16). GMG selected the mineralized intervals with massive pyrite and an interval from the ignimbrite with matrix porosity filled by sulphide cement. The independent samples were sent to AGAT laboratory in Mississauga Ontario (Canada). The same intervals (1/4 core samples) sampled by GMG were also sampled for CMMM and analyzed at laboratory Analyse Développement Minier (ADM) in Morocco for control.

Table 16: Independent samples of holes B-17-01, -02 and -04 assayed at AGAT laboratory.

| Hole name | Sample | From | To | Au ppm | Ag ppm | Cu ppm | Mg % | Mn ppm | Pb ppm | Zn ppm | In ppm |
|-----------|--------|--------|--------|--------|--------|--------|-------|--------|--------|---------|--------|
| B-17-02 | 10302 | 171.10 | 172.10 | 1.71 | 18 | 614 | 0.33 | 300 | 4 270 | 24 200 | 7.50 |
| B-17-02 | 10303 | 172.10 | 173.10 | 1.57 | 26 | 392 | 0.10 | 138 | 1 870 | 16 400 | 16.40 |
| B-17-02 | 10304 | 173.10 | 174.10 | 5.83 | 143 | 2 110 | 0.03 | 85 | 7 240 | 38 300 | 66.10 |
| B-17-02 | 10305 | 174.10 | 175.10 | 3.89 | 146 | 2 100 | <0.01 | 125 | 4 590 | 77 500 | 125.00 |
| B-17-02 | 10306 | 175.10 | 176.10 | 4.09 | 143 | 1 210 | 0.05 | 148 | 7 390 | 51 900 | 71.10 |
| B-17-02 | 10307 | 176.10 | 177.10 | 9.47 | 127 | 6 990 | 0.02 | 213 | 9 750 | 159 000 | 83.50 |
| B-17-02 | 10308 | 177.10 | 178.10 | 7.86 | 120 | 5 130 | 0.02 | 146 | 10 900 | 91 700 | 96.10 |
| B-17-02 | 10309 | 178.10 | 179.10 | 4.40 | 86 | 3 510 | 0.16 | 146 | 5 540 | 37 600 | 27.60 |
| B-17-02 | 10310 | 179.10 | 180.10 | 2.16 | 71 | 2 980 | 0.15 | 159 | 9 060 | 23 400 | 14.90 |
| B-17-01 | 10313 | 27.00 | 28.00 | 0.06 | 4 | 26 | 0.35 | 409 | 1 460 | 3 300 | 1.80 |
| B-17-01 | 10314 | 35.00 | 36.00 | 0.07 | 8 | 47 | 0.40 | 419 | 2 330 | 3 350 | 1.40 |
| B-17-04 | 10315 | 153.00 | 154.00 | 0.26 | 27 | 45 | 0.21 | 227 | 5 820 | 36 600 | 8.60 |
| B-17-04 | 10316 | 154.00 | 155.00 | 0.34 | 55 | 183 | 0.20 | 173 | 6 560 | 21 700 | 7.70 |
| B-17-04 | 10317 | 155.00 | 156.00 | 1.45 | 71 | 156 | 0.04 | 136 | 1 510 | 19 500 | 13.10 |

| Hole name | Sample | From | To | Au ppm | Ag ppm | Cu ppm | Mg % | Mn ppm | Pb ppm | Zn ppm | In ppm |
|-----------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|
| B-17-04 | 10318 | 156.00 | 157.00 | 2.89 | 148 | 1 350 | 0.02 | 79 | 2 570 | 27 800 | 42.80 |
| B-17-04 | 10319 | 157.00 | 158.00 | 8.87 | 302 | 2 750 | <0.01 | 115 | 4 760 | 15 400 | 40.30 |
| B-17-04 | 10320 | 158.00 | 159.00 | 5.68 | 185 | 2 030 | <0.01 | 119 | 17 400 | 62 700 | 60.00 |
| B-17-04 | 10321 | 159.00 | 160.00 | 4.55 | 221 | 1 290 | 0.03 | 142 | 28 800 | 60 000 | 75.10 |
| B-17-04 | 10322 | 160.00 | 161.00 | 0.34 | 15 | 58 | 0.25 | 164 | 2 360 | 3 220 | 3.60 |
| B-17-04 | 10325 | 161.00 | 162.00 | 0.02 | 5 | 18 | 0.23 | 130 | 460 | 551 | 0.60 |
| B-17-04 | 10326 | 162.00 | 163.00 | 0.02 | 6 | 31 | 0.29 | 159 | 356 | 1 450 | 1.20 |
| B-17-04 | 10327 | 163.00 | 164.00 | 0.95 | 29 | 274 | 0.28 | 173 | 6 890 | 14 400 | 7.60 |
| B-17-04 | 10328 | 164.00 | 165.00 | 8.83 | 440 | 1 980 | <0.01 | 151 | 10 100 | 36 400 | 31.70 |
| B-17-04 | 10329 | 165.00 | 166.00 | 3.59 | 245 | 1 330 | 0.15 | 203 | 4 940 | 8 330 | 9.40 |
| B-17-04 | 10330 | 166.00 | 167.00 | 1.94 | 21 | 171 | 0.16 | 133 | 474 | 6 660 | 6.10 |
| B-17-04 | 10331 | 167.00 | 168.00 | 2.51 | 28 | 150 | 0.19 | 69 | 365 | 7 070 | 5.20 |
| B-17-04 | 10332 | 168.00 | 169.00 | 1.87 | 46 | 419 | 0.05 | 70 | 1 440 | 16 500 | 26.10 |
| B-17-04 | 10333 | 169.00 | 170.00 | 0.60 | 31 | 113 | 0.20 | 115 | 432 | 2 100 | 4.20 |
| B-17-04 | 10334 | 170.00 | 171.00 | 1.36 | 129 | 742 | 0.19 | 171 | 820 | 13 800 | 19.70 |
| B-17-04 | 10337 | 171.00 | 172.00 | 6.45 | 144 | 4 430 | 0.07 | 67 | 2 210 | 1 020 | 15.90 |
| B-17-04 | 10338 | 172.00 | 173.00 | 6.11 | 118 | 3 850 | <0.01 | 245 | 2 700 | 59 200 | 52.50 |
| B-17-04 | 10339 | 173.00 | 174.00 | 0.73 | 10 | 191 | 0.19 | 169 | 589 | 1 760 | 1.50 |
| B-17-04 | 10340 | 174.00 | 175.00 | 0.55 | 17 | 102 | 0.22 | 195 | 2 200 | 3 250 | 1.30 |
| B-17-04 | 10341 | 175.00 | 176.00 | 2.46 | 87 | 404 | 0.17 | 197 | 783 | 762 | 2.80 |
| B-17-04 | 10342 | 176.00 | 177.00 | 12.10 | 156 | 5 350 | <0.01 | 50 | 1 530 | 1 770 | 24.20 |
| B-17-04 | 10343 | 177.00 | 178.00 | 23.70 | 314 | 4 170 | <0.01 | 86 | 1 520 | 2 660 | 25.40 |
| B-17-04 | 10344 | 178.00 | 179.00 | 12.40 | 257 | 3 120 | <0.01 | 53 | 954 | 2 490 | 25.50 |
| B-17-04 | 10345 | 179.00 | 180.00 | 7.84 | 340 | 6 820 | <0.01 | 39 | 1 210 | 3 500 | 36.20 |
| B-17-04 | 10346 | 180.00 | 181.00 | 2.82 | 82 | 2 020 | 0.22 | 229 | 948 | 25 000 | 59.70 |

12.3.2 Tailing samples

Several samples (six samples) were also taken from the tailings using a JCB (Figure 75, Figure 76 and Figure 77). Trenches were dug in the tailing piles to facilitate the vertical sampling of different facies. A total of four (4) facies were identified on the tailings TG2 (Figure 79) and are described in Table 17.

Table 17: Tailing samples from TG2.

| Tailing samples | GMG Tag | Head grade Au direct g/t | Head grade Ag direct g/t |
|-----------------------|---------|--------------------------|--------------------------|
| Yellow facies | 10350 | 1.79 | 188 |
| Yellow mustard facies | 10351 | 1.34 | 60 |
| Fibrous facies | 10352 | 1.58 | 133 |
| Black muddy facies | 10353 | 2.16 | 124 |



Figure 75: Realisation of trenches using the JCB on tailing TG2, Boumadine.



Figure 76: On the top of the tailing with the JCB starting trenches.



Figure 77: Tailing sampling at Boumadine property.



Figure 78: Vertical sampling of the tailings TG2, Boumadine property.

Vertical samplings were done on the tailings (TG2). TG2-02 over 1 meter and TG2-01 over 5 meters from the top of the tailings (Figure 77 and Figure 78).

On his way back to Montreal, Mr. Duplessis took some samples from the tailings in his luggage to send them to AGAT laboratory and the results are presented in Table 18.



Figure 79: A) Several facies were identified from the top to the bottom (yellow, yellow mustard, fibrous with copper sulfate and dark muddy). B) The facies samples in plastic bags.

Table 18 : Tailing samples and their correspondant analysis.

| Hole name | Sample | From | To | Au ppm | Ag ppm | Cu ppm | Pb ppm | Zn ppm | Mg % |
|-----------|--------|------|----|-------------|--------|--------|--------|--------|------|
| TG2-02 | 10349 | 0 | 1 | 2.60 | 137.00 | 339 | 1 780 | 4 800 | 0.07 |
| TG2-01 | 10347 | 0 | 1 | 1.14 | 74.00 | 776 | 2 150 | 8 190 | 0.14 |
| TG2-01 | 10348 | 1 | 2 | 1.22 | 96.00 | 830 | 3 290 | 13 000 | 0.19 |
| TG2-01 | 10354 | 2 | 3 | 2.00 | 109.00 | 1 140 | 4 520 | 7 440 | 0.24 |
| TG2-01 | 10355 | 3 | 4 | 2.24 | 165.00 | 1 760 | 7 170 | 11 500 | 0.24 |
| TG2-01 | 10356 | 4 | 5 | 2.11 | 146.00 | 929 | 5 500 | 5 030 | 0.25 |



Figure 80: Sampling over 5 meters from the tailing surface.

During the site visit, the authors (Mr. Rachidi and Mr. Duplessis) have also taken samples from the two tailings for metallurgical testing. They showed the CMMM's team how to proceed with safety.

- For the tailings TG2, two samples were taken (15 kilos each): one from the surface (from 0 m to 2 m), and the second from 2 m to 5 m deep.
- For the tailings TG1, two samples were taken (15 kilos each): one from the surface (from 0 m to 1 m), and the second from 1 m to 3 m deep.

The results associated with these samples are described in section 13.

12.3.3 QA/QC program

- Standards

During the diamond drilling campaign of 2018, three standards were used for the quality control samples for the project (QA/QC program). One homemade standard (STD 2), correspond to a mixture of material collected in tailings (Figure 82). The four (4) other standards are commercial standards prepared by Ore research and exploration Pty Ltd (Oreas 134a (STD1), Oreas 131a (STD3), Oreas 132a (STD4) and Oreas 133a (STD5); Figure 81). These standards were inserted at random in every batch of approximately 40 samples.



Figure 81: Standards used during the drilling campaign of 2018/2019 at Boumadine.



Figure 82: Screening of custom standard STD2 from the tailings.

STD1 (Oreas134a) displayed a relative constant value of Ag, around 200 ppm Ag with a doubtful value of 5 ppm Ag (10961) that authors think was simply mislabelled and is related to a blank sample. The assay values for Au range between 0.01 g/t Au and 0.14 g/t Au, with two suspicious values: 0.3 ppm (sample 10888) and 0.5 ppm Au (sample 17670)(Figure 83 and Figure 84). STD1 displays assay values for zinc and lead that were checked and show no doubtful values (Figure 85).

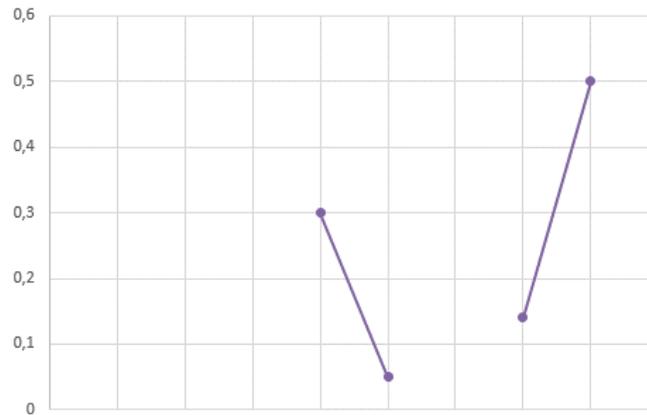


Figure 83: Standard (STD1), Au assay values distribution.

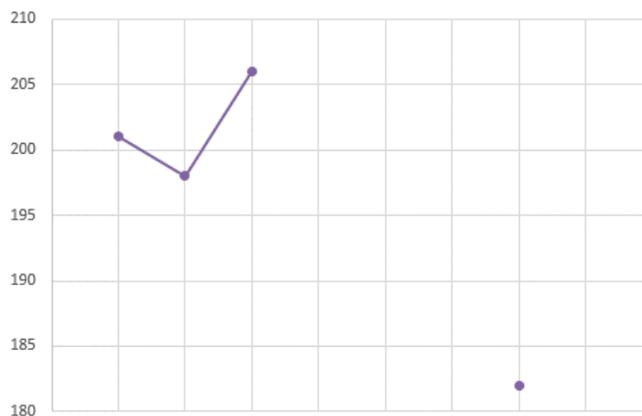


Figure 84: Standard (STD1), Ag assay values distribution.

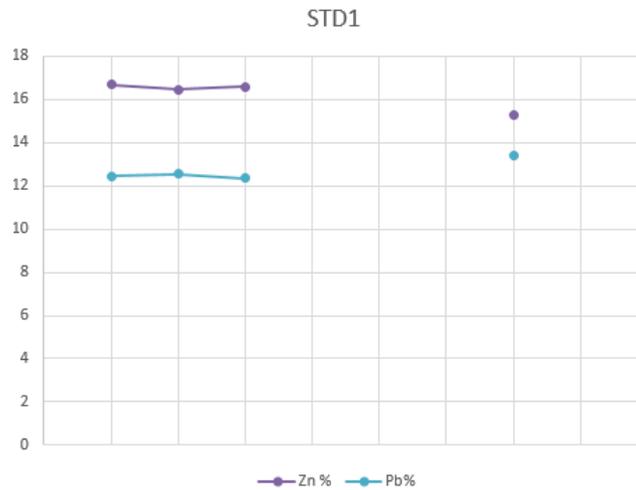


Figure 85: Standard (STD1), Pb% and Zn% assay values distribution.

STD2 (homemade standard, prepared from the tailings) displayed a minimum value of 38 ppm Ag and a maximum value of 202 ppm Ag (Figure 86). Also, three suspicious values between 30 and 100 Ag ppm are noted (Figure 86). STD2 displayed values between 1.68 Au ppm and 3.48 Au ppm (Figure 87), with six suspicious values (19095= 5.88 Au g/t, 18695= 0.49 Au g/t, 18809= 0.05 Au g/t, 19007= 0.3 Au g/t, 10983= 0.33 Au g/t, and 19337= 0.98 Au g/t). STD2 display assay values for zinc and lead that were checked and only show one doubtful value (18695; Figure 88).

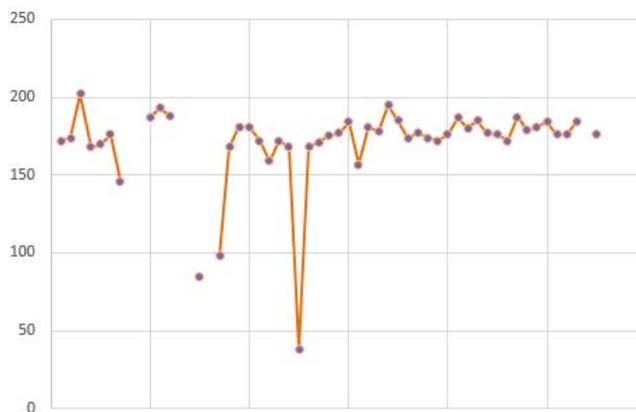


Figure 86 : Standard (STD2) Ag assay values distribution.

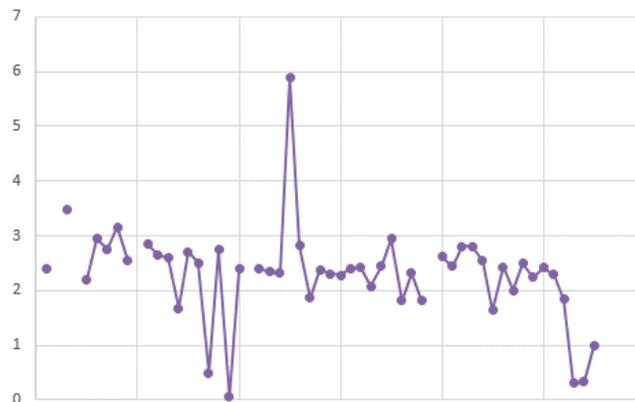


Figure 87: Standard (STD2) Au assay values distribution.

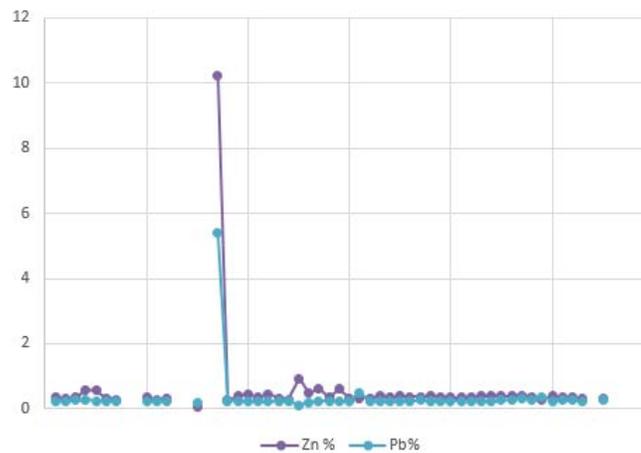


Figure 88: Standard (STD2) Pb% Zn% assay values distribution.

STD3 (Oreas 133a) displayed Ag between 23 and 30 ppm. For Au values, they are between 0.05 Au g/t and 0.11 Au g/t with a suspicious value of 0.96 Au g/t. Two (2) samples were mislabelled: 18594 and 18660, that correspond to STD2.

For STD4 (Oreas 132a), we only have one assay for Zn (0.63%), Pb (0.99%) and Ag (48 ppm). For Au, we have four (4) values: three (3) under limit detection and one (1) of 0.45 Au g/t.

For STD5 (Oreas 133a), the values of Pb are around 5% and for Zn, they are around 10% (Figure 89). For Ag, the values range between 95 and 101 Ag ppm (Figure 91). For Au, we only have four (4) values that range between 0.05 and 0.61 Au ppm (Figure 90).

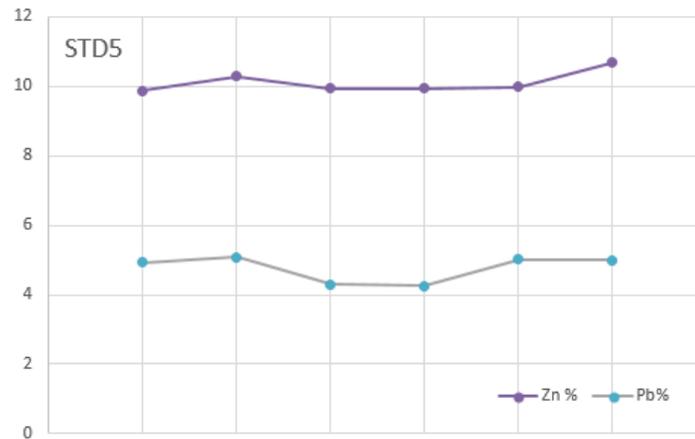


Figure 89: Standard (STD5) Pb% and Zn% values.

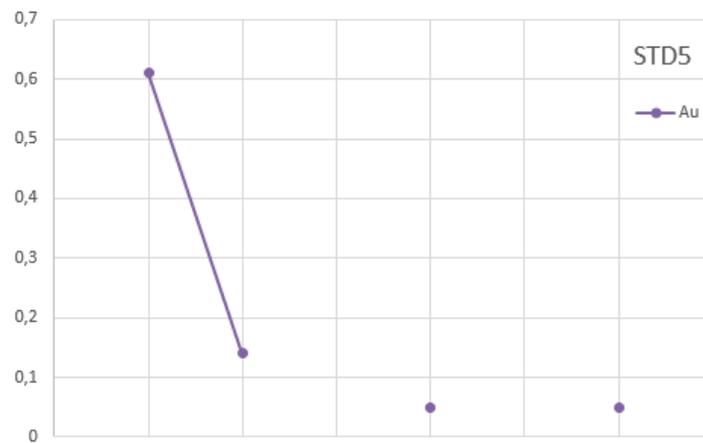


Figure 90: Standard (STD5) Au values in ppm.

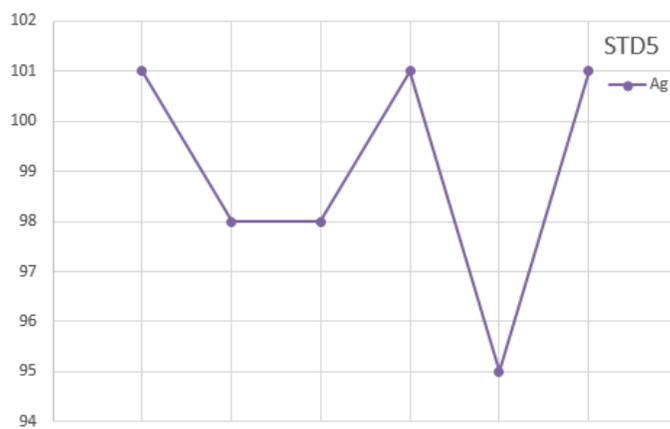


Figure 91: Standard (STD5) Ag values in ppm.

The STD1 and STD2 show uniform values for Au, Ag, Pb and Zn. Hence standards STD3, STD4 and STD5 show variable values for Au and Ag. The changes might be related to mislabelling of the standards during the preparation of the samples at the laboratory.

There are standards with just the results for Au analysis, or the opposite. GMG recommends to analyze all the elements for the standards (Au, Ag, Pb, Zn and Ge). Since the discovery of Germanium, it is necessary to insert also standards with Ge in the batch of samples before sending it all to the laboratory.

- Blanks

The blank samples correspond to sand used for building construction. The blanks were inserted in every batch of approximately 40 samples. Assay values for gold were compared and only minor errors were found (Figure 92 and Figure 93). Specifically, those blank samples (10661, 10523, 10545, 18469, 18671, 18842, 18996, 19018, 19260 and 10972) are above the detection limit of 0.05 g/t gold (Figure 92). Only one blank sample shows more than 0.5 ppm Au and correspond to sample number 18469. This sample value is consistent with the standard (STD 2), suggesting that this sample was mislabelled.

Analyses of blank materials consistently yielded Silver values below the detection limit of 5 g/t silver and only one sample show Ag value of 17 ppm (sample 10523), Figure 92.

Assay values for zinc and lead were checked and no anomalous values were found (Figure 93).

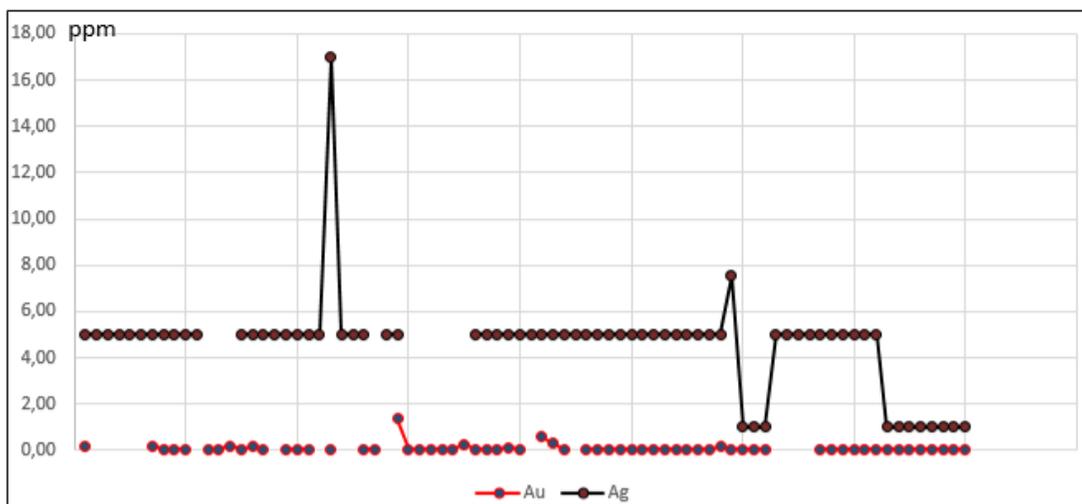


Figure 92: Distribution of the blank assay results (Ag and Au in ppm).

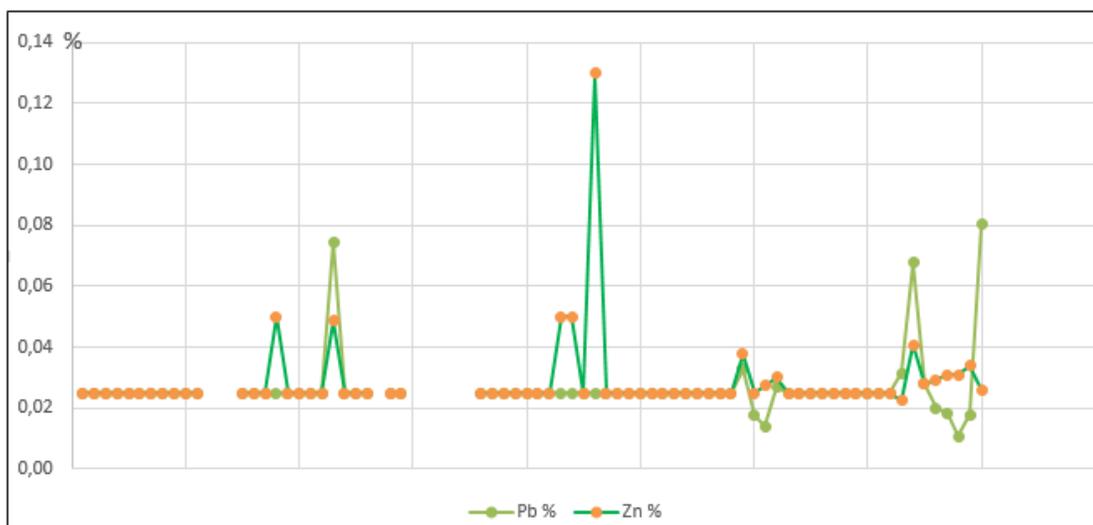


Figure 93: Distribution of the blank assay results (Pb% and Zn%).

- Independent samples

Independent samples (1/4 core samples) were analyzed at both laboratories AGAT in Canada and ADM in Morocco.

A total of 37 samples (1/4 of each core sample selected) were taken from two holes (B-17-02 and B-17-04) drilled at zone CENTRE. During the drilling campaign, Maya Gold and Silver sent the core samples to ADM in Morocco for Fire assay. For inspection purposes, Mr. Duplessis sent core samples (1/4 of each core sample selected) to be assayed at AGAT laboratory in Canada. The figures below (Figure 94, Figure 95 and Figure 96), show the assay results from both laboratories (AGAT and ADM).

The assay results from ADM (1/2 of each core sample selected) show higher values for Au (samples 10563 and 10564 from hole B-17-04; Figure 94) than those analyzed at AGAT laboratory. That can be explained by the nugget effect brought on by assaying smaller size core samples (1/4 core). For the other samples with gold values less than 15 ppm Au, the comparative results are almost similar (Figure 94). For Ag results, the comparative samples show similar values except one sample (10549) that shows a higher Ag value for the sample analysed at AGAT laboratory.

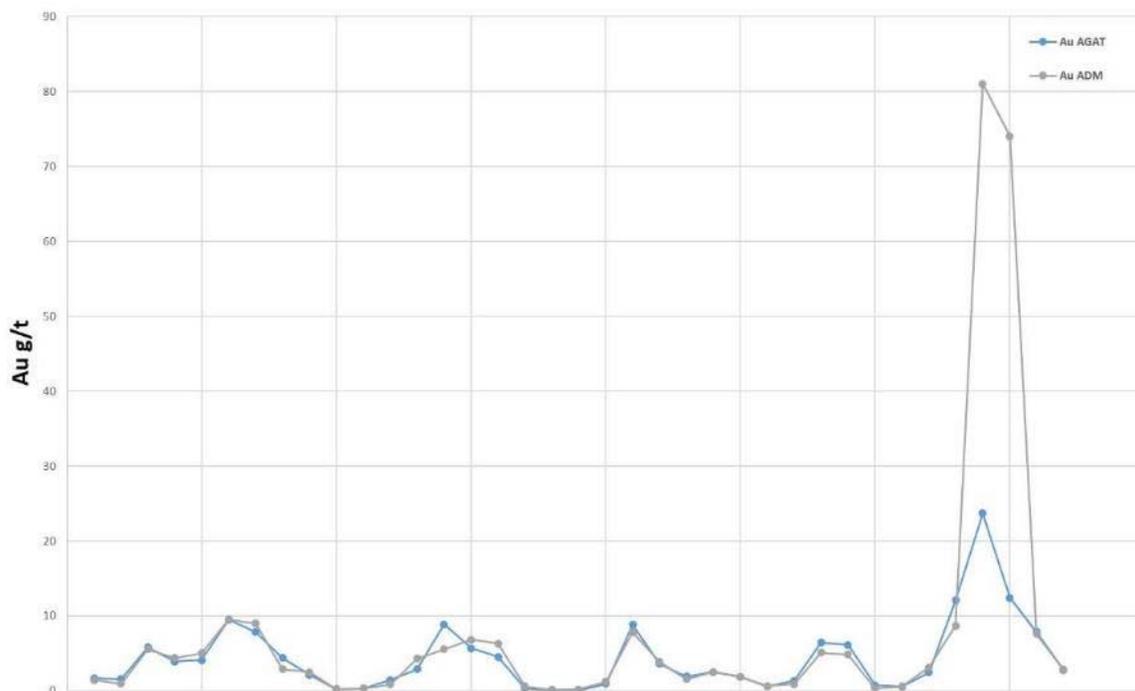


Figure 94: AGAT fire assay values (Au g/t) of independent samples and their respective duplicates analyzed at ADM Laboratory.

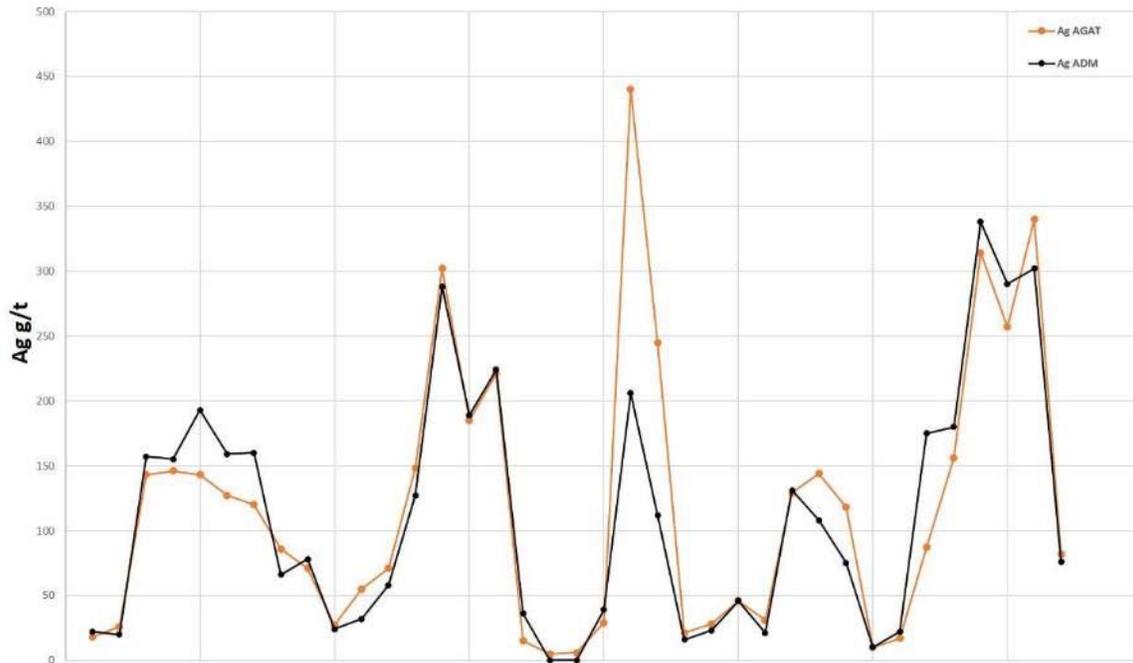
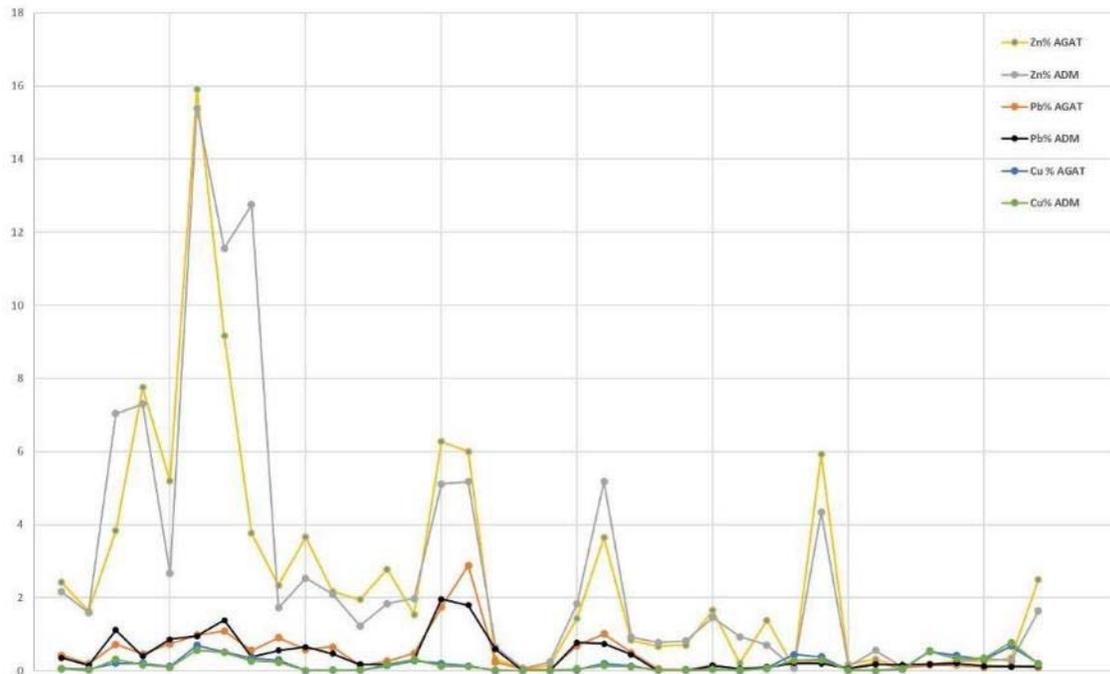


Figure 95: AGAT fire assay values (Ag g/t) of independent samples and their respective duplicates analyzed at ADM Laboratory.



For both laboratories, assay values for zinc, lead and copper were compared and the results are presented in Figure 96. The assay values are quite similar and no abnormal value was detected.

GoldMinds Geoservices is of the opinion that database verification procedures for the Boumadine project comply with industry standards and are adequate for the purposes of Mineral Resource estimation.

13 Mineral processing and metallurgical testing

13.1 Historic Metallurgical Test Work

From 1986 to 1992, many laboratory metallurgical tests, including some pilot plant test work, were carried on the Boumadine mineral material by the societies SODIM and BRPM SODECAT. These tests aimed at the up grading of the recovery, by a selective flotation process of the precious metals in the lead and zinc concentrates. It seems that no cyanidation test work was ever done.

The average chemical analysis of representative mineralised material that was used for the metallurgical tests had the following values:

Table 19: Chemical analysis of mineralised samples used for the metallurgical test work.

| S | Fe | SiO ₂ | Zn | Pb | As | Cu | Cd | Sn | Au | Ag |
|-----|-----|------------------|----|----|----|-------|-------|-------|---------|--------|
| 35% | 29% | 21% | 6% | 2% | 2% | 0.20% | 0.10% | 0.09% | 3.50g/t | 400g/t |

It is believed that the best results of the selective flotation test work were the following:

Table 20: Best results obtained from the selective flotation test work.

| GALENA CONCENTRATE | | SPHALERITE CONCENTRATE | | TAILINGS | |
|-----------------------|-------|---------------------------|--------|----------|------|
| Pb (%) | 41.55 | Zn (%) | 44.50 | Pb (%) | 0.40 |
| Au (g/t) | 24.64 | Au (g/t) | 3.70 | Zn (%) | 0.96 |
| Ag (g/t) | 47.11 | Ag (g/t) | 565.00 | Au (g/t) | 2.38 |
| | | | | Ag (g/t) | 125 |

Metal recoveries in both lead and zinc concentrates were the following:

Table 21: Metal recoveries.

| GALENA CONCENTRATE | | SPHALERITE CONCENTRATE | |
|--------------------|---------|------------------------|---------|
| Pb | 69.08 % | Zn | 77.04 % |
| Au | 13.52 % | Au | 9.53 % |
| Ag | 32.01 % | Ag | 18.03 % |

In 1992, at the end of the exploration and metallurgical test works, the total amount of the resource was 3,839,000 tonnes distributed as follows:

Table 22: Total amount of the resource at the end of the exploration and metallurgical test works in 1992.

| MESURED | | INDICATED | | INFERED |
|------------------|----------|----------------|----------|------------------|
| 1,043,000 Tonnes | | 870,000 Tonnes | | 1,926,000 Tonnes |
| Pb | 0.77 % | Pb | 0.65 % | |
| Zn | 3.65 % | Zn | 3.12 % | |
| Au | 3.66 g/t | Au | 1.56 g/t | |
| Ag | 186 g/t | Ag | 171 g/t | |

13.2 Test Works (2011 – 2017)

13.2.1 URSTM (Rouyn-Noranda, Province of Quebec, Canada)³

In January 2011, a mission organised by the Canadian society Maya Gold & Silver (Maya) visited the Boumadine mine site. Some chosen samples were collected⁴ near the mine portals as well as a non-representative sample from the old tailings pond. These samples were brought to Canada for analysis and metallurgical test works.

³ These samples were chosen more for their look and good grades than their representativeness.

⁴ L'Unité de recherche en technologie minérale is affiliated to the University of Québec in Abitibi-Témiscamingue (UQAT) and relies on a team of high-level scientists and professionals who can intervene in the evaluation of mineral potential, mining, processing and environment.

Table 23: Analysis of the chosen mineralised samples.

| SAMPLE NUMBER | Au g/t | Ag g/t | Cu % | Pb % | Zn % | As % |
|----------------------|------------------|------------------|----------------|----------------|----------------|----------------|
| 15527 | 0.52 | 179 | 0.232 | 3.17 | 13.05 | 6.14 |
| 15528 | 1.83 | 149 | 0.190 | 1.21 | 13.80 | 1.96 |
| 15529 | 2.40 | 146 | 0.126 | 1.52 | 8.57 | 12.20 |

The tailings sample was retrieved from a single place in the dyke of the pond at a depth of approximately 15 cm. Chemical and sieve analysis of the sample are summarised in the following tables.

Table 24: Chemical analysis of the tailings sample.

| Au ppm | Ag ppm | Cu % | Zn % | Pb % | As % |
|------------------|------------------|----------------|----------------|----------------|----------------|
| 1.68 | 111 | 0.076 | 0.365 | 0.194 | 1.16 |

This sample was subjected to a first granulo-chemical analysis.

Table 25: Granulo-chemical analysis of the tailings sample.

| FRACTION μm (mesh) | WEIGHT % | Au ppm | Ag ppm |
|---|--------------------|------------------|------------------|
| Head (analyzed) | 100.00 | 1.68 | 111 |
| +208 (65) | 18.18 | 3.31 | 168 |
| +147 (100) | 11.19 | 2.56 | 115 |
| +104 (150) | 12.63 | 4.87 | 158 |
| +74 (200) | 17.39 | 3.98 | 195 |
| +44 (325) | 21.86 | 4.67 | 196 |
| - 44 (325) | 18.75 | 4.23 | 215 |
| Head (calculated) | 100.00 | 4.10 | 168 |

Since it was impossible to explain the great discrepancy between the analysed and recalculated head grade, a second sub sample was retrieved from the original tailings sample in order to precede a second granulo-chemical analysis.

Table 26: Second granulo-chemical analysis.

| FRACTION µm (mesh) | WEIGHT % | Au ppm | Ag ppm |
|------------------------------|--------------------|------------------|------------------|
| Head (analyzed) | 100.00 | 2.45 | 155 |
| +208 (65) | 30.42 | 2.49 | 135 |
| +147 (100) | 12.98 | 1.79 | 133 |
| +104 (150) | 12.59 | 2.88 | 183 |
| +74 (200) | 14.55 | 2.97 | 211 |
| +44 (325) | 16.76 | 3.53 | 205 |
| - 44 (325) | 12.70 | 2.52 | 194 |
| Head (calculated) | 100.00 | 2.70 | 171 |

Both chemical analysis of the tailings sample shows a great discrepancy between the head grades of the gold and the silver, and also between the analysed and recalculated head grades. For the time being, the only way to explain these discrepancies is by the coarseness of the sample.

These granulo-chemical analyses were followed by a standard bottle cyanide leaching done at the URSTM of Rouyn-Noranda. A first attempt had to be halted because of a too great acidity of the sample (pH 2.13). This same test was resumed a few days later. The material used for the second attempt was washed twice with distilled water, bringing the pH to a more acceptable level of 3.74.

In summary, the leaching of the precious metals from a sub sample with calculated head grades of 3.64 g/t for gold and 138 g/t for silver ground to a P₈₀ of approximately 44 µm (325 mesh) was only 28.0% for gold and more or less 70% for silver.

Because of the great acidity of the sub sample, consumptions of lime and cyanide were: 9.6 kg/t CaCO₃ and 2.79 kg/t NaCN. Which is well beyond consumptions generally used for similar material.

Table 27: Gold leaching kinetics.

| LEACHING TIME (hours) | LEACHING (%) |
|------------------------------|---------------------|
| 2.0 | 23.4 |
| 4.0 | 23.5 |
| 8.0 | 24.2 |
| 19.3 | 26.2 |
| 30.2 | 27.7 |
| 44.2 | 27.8 |

Table 28: Silver leaching kinetics.

| LEACHING TIME (hours) | LEACHING (%) |
|----------------------------------|-------------------------|
| 2.0 | 64.9 |
| 4.0 | 64.6 |
| 8.0 | 67.2 |
| 19.3 | 69.6 |
| 30.2 | 70.6 |
| 44.2 | 70.1 |

The fact that this consumption is well beyond consumptions generally used for similar material seems to point out that a large part of the gold and to some extent, a good part of the silver, are not free even after a relatively fine grind and are in fine inclusion within the sulfides and/or the silicates gangue.

Since the sample was absolutely not representative of the entire Boumadine tailings and thus, of little metallurgical interest, it was decided to stop the laboratory test work.

13.2.2 Nichromet Extraction Inc. (Thetford Mines, Province of Quebec)

13.2.2.1 Oxidation, Leaching and Chloration

Two samples collected from the bottom (BMF) and the top (BMS) of the main dry-stacked tailing located on the mine site of the former Boumadine mine were sent to the Nichromet Extraction Inc. laboratories located in Thetford Mines (Black Lake), Province of Quebec. The specimens weighed respectively 5,156 g and 5,159 g, and were crushed to 80 μm (200 mesh) before being sent for geochemical analysis to the SGS Lakefield Laboratory. The samples are deemed to be representative of the entire tailings impoundment. Results of the assays are presented in the following Table 29.

Table 29: Geochemical analysis of Boumadine tailing samples BMF and BMS performed by the SGS Laboratories.

| Elements | BMS | BMF |
|-----------------|------------|------------|
| Si (wt.%) | 13.60 | 9.52 |
| Fe (wt.%) | 19.40 | 26.00 |
| Mg (wt.%) | 0.16 | 0.11 |
| Ca (wt.%) | 0.19 | 0.15 |
| K (wt.%) | 0.78 | 0.62 |
| Mn (wt.%) | 0.01 | 0.01 |
| Pb (wt.%) | 0.07 | 0.12 |
| Zn (wt.%) | 1.15 | 2.36 |
| Cu (wt.%) | 0.09 | 0.09 |
| Ni (wt.%) | 0.01 | 0.01 |
| Co (wt.%) | 0.01 | 0.01 |

| | | |
|-------------------------|-------------|-------------|
| As (wt.%) | 1.04 | 1.53 |
| Sb (wt.%) | 0.030 | 0.026 |
| Sn (wt.%) | 0.040 | 0.040 |
| Au (g/t) | 1.85 | 2.71 |
| Ag (g/t) | 133 | 180 |
| S ⁻² (wt. %) | 16.00 | 26.00 |
| Hg (g/t) | 1.4 | 2.2 |
| Bi (wt.%) | 0.002 | 0.002 |
| Cd (wt.%) | 0.01 | 0.03 |
| Se (g/t) | 20 | 20 |
| Te (g/t) | 50 | 50 |

13.2.2.2 Standard oxidation

The first step of the hydro-metallurgical process at Nichromet was the oxidation of the mineralised material in an oven at 750 °C in order to get rid of the sulfides that make it resistant to the gold and silver recovery by the means of cyanidation or chloration.

Table 30: Cumulative percentage of As and S⁻² removal after oxidation; samples BMF and BMS.

| Sample | % Extraction | % Extraction |
|--------|--------------|-----------------|
| | As | S ⁻² |
| BMF | 64.81 | 99.80 |
| BMS | 47.68 | 99.49 |

13.2.2.3 Chloration

The chloration was done in an aqueous solution comprising 2% NaOCl, 300 g NaCl/L and 30 g NaBr/L while the mixing and the contact time were of 4 hours at 25 °C. Results are given at Table 31.

Table 31: Rates of Au and Ag extraction after chloration of the oxidized residues; samples BMF and BMS.

| Sample | % Extraction | % Extraction |
|--------|--------------|--------------|
| | Au | Ag |
| BMS | 31.94 | 11.48 |
| BMF | 31.51 | 25.59 |

13.2.2.4 Washing with nitric and sulfuric acids

The third step involves acid washing through a 0.5N HNO₃/H₂SO₄ solution at atmospheric pressure with 20% of solid material. The main purpose of acid washing is to break the Sn-Ag alloys presumably present in the samples, either through dissolution or by bringing only Sn in solution. This provides soluble silver by chloration. Acid washing also solubilizes minerals that can contain gold such as arsenopyrite. Testing took place on the oxidized chlorate sample BM-02 (5 % NaCl). Test results given

in Table 14 show gold and silver extraction of 56% and 65%, respectively. Note that nearly 11% of Ag was insoluble during lixiviation.

Table 32: Cumulative rates of Au and Ag extraction after NaCl oxidation, lixiviation HNO₃/H₂SO₄ and chloration 300/30, 2% NaOCl.

| ELEMENT | Oxidation 5% NaCl (%) | Leaching HNO ₃ /H ₂ SO ₄ (%) | Chloration 2% NaOCl (%) |
|---------|-----------------------------|---|-------------------------------|
| Au | 8.9 | 16.96 | 56.54 |
| Ag | 0.0 | 10.68 | 64.69 |

13.2.2.5 Washing with nitric and sulfuric acids at low % solid

The next step involves acid washing using 50 g of oxidized BMF sample with a mixture of 2 g HNO₃ (69%) and 10 g H₂SO₄ (98%) with a small amount of water to produce an agitated mud during 4 hours at 90°C. Filtration of the residue is followed by chloration. Results show that 60 % of Au and 52% of Ag was extracted (Table 33). Nearly 50% of Ag was put into solution during lixiviation and only 3% was found in the chloration brine. 10% of Sn was extracted during lixiviation.

Table 33: Cumulative rates of Au, Ag and Sn (BMF) after NaCl oxidation, lixiviation 2g HNO₃ and 10 g H₂SO₄, chloration 300/30, 2% NaOCl.

| ELEMENT | Oxidation (%) | Lixiviation HNO ₃ /H ₂ SO ₄ (%) | Chloration (%) |
|---------|------------------|--|-------------------|
| Au | 6.24 | 7.59 | 59.55 |
| Ag | 9.28 | 48.87 | 52.26 |
| Sn | 10.78 | 19.73 | ---- |

13.2.2.6 Washing at high concentration of nitric and sulfuric acid without adding more water

To improve the lixiviation treatment, 50 g of BMS and BMF samples were mixed in a 2g HNO₃ (69%) and 10 g H₂SO₄ (98%) solution without adding water. Strong mixing produced a homogeneous mud which was heated at 160°C during 1½ hrs. Tables 16 and 17 show a 49% extraction for silver which is less than what was obtained when adding water to the solution. However, an extraction of 69 % of gold was achieved for sample BMS and only 18% for sample BMF.

Table 34: Cumulative rates of Au, Ag and Sn extraction (BMF) after oxidation with 2g HNO₃ and 10 g H₂SO₄, chloration 300/30, 2% NaOCl.

| ELEMENT | Oxidation (%) | Lixiviation HNO ₃ /H ₂ SO ₄ (%) | Chloration (%) |
|---------|---------------|--|----------------|
| Au | 6.05 | --- | 17.81 |
| Ag | 0.86 | 9.24 | 40.18 |
| Sn | 4.17 | 8.51 | --- |

Table 35: Cumulative rates of Au, Ag and Sn extraction (BMS) after oxidation with 2g HNO₃ and 10 g H₂SO₄, chloration 300/30, 2% NaOCl.

| ELEMENT | Oxidation (%) | Lixiviation HNO ₃ /H ₂ SO ₄ (%) | Chloration (%) |
|---------|---------------|--|----------------|
| Au | 1.81 | --- | 68.69 |
| Ag | 3.18 | 25.90 | 41.26 |
| Sn | 8.45 | 12.04 | --- |

13.2.2.7 Duration of oxidation

The duration of oxidation and addition of O₂ were also studied for the two tailing samples. The results demonstrate that an amount of 0.084 % S⁻² is found in the BMF residue after a 2 hrs period of oxidation. 0.067% and 0.066% S⁻² occur after 3 hrs for samples BMF and BMS, respectively. Adding O₂ during the last hour of oxidation results in 0.057% and 0.066% S⁻² for samples BMF and BMS, respectively. These results show that a period of 2 hours leads to the removal of 99.9% of S⁻² from the residue.

Table 36: Residual percentage of S⁻² in the BMF and BMS tailings as a fonction of the duration of oxidation and the addition of O₂.

| Oxidation time | BMF | BMS |
|--|-------------------|-------------------|
| hours | % S ⁻² | % S ⁻² |
| 2 (750°C) | 0.084 | x.xxx |
| 3 (750°C) | 0.067 | 0.066 |
| 3 (750°C) + 0.5 to add O ₂ | 0.057 | 0.066 |

In conclusion, the best extraction method for gold and silver seems to be a lixiviation process using a 1N HNO₃/ 2.5N H₂SO₄ solution. Doubling the amount of acid (Table 37) produces an extraction of 62% and 68% of gold for samples BMF and BMS after chloration. These are comparable to the

former results using less acid. For silver, the extraction is 49% and 48% for samples BMF and BMS, which is a significant improvement from the earlier process.

Table 37: Rate of extraction for Au and Ag for re-crushed samples BMF and BMS (lixiviation with 1N HNO₃ / 2.5N H₂SO₄ solution; chloration 300/30 - 2% NaOCl).

| Sample | Au extraction (%) | Ag extraction (%) |
|--------|-------------------|-------------------|
| BMF | 61.98 | 48.76 |
| BMS | 67.63 | 47.74 |

It appears that about 70% of gold can be removed from samples BMF and BMS when a moderate period of oxidation is employed. A longer oxidation rate with injection of O₂ at higher temperature is counterproductive, leading to the formation of more refractory components. These results are presented at table 20.

Table 38: Au and Ag extraction rate for samples BMS and BMF according to the duration of oxidation.

| Process | BMF | | BMS | |
|--|--------------|----|--------------|----|
| | Extraction % | | Extraction % | |
| | Au | Ag | Au | Ag |
| Oxidation 2 hrs + Chloration 300/30 | 68 | 49 | 62 | 48 |
| Oxidation 3 hrs + O ₂ + Leaching HNO ₃ /H ₂ SO ₄ + Chloration 300/30 | 32 | 25 | 32 | 12 |

13.2.3 Production of sulfuric acid and energy (electrical power)

The production of sulfuric acid after sulfide roasting allows the recuperation of heat produced by their combustion. Electric power could be then generated through a cogeneration plant. In case of high value electric power generated from highly pressurized high temperature vapor, it is expected that **250 kWh per ton of sulfuric acid** will be produced (Table 39). Note that the recuperation of energy stemming from the production of sulfuric acid does not take into account the presence of As in the

gas during sulfide roasting. Arsenic oxide will be deposited on the heat exchange tubes reducing the energy transfer. The tubes will need periodic scrubbing.

Table 39: Generation of high-value energy during the production of sulfuric acid.

| Sample | S ²⁻ Grade % | H ₂ SO ₄ generated (t/t of rock) | High Value Energy (kW/h) |
|--------|-------------------------|--|--------------------------|
| BMS | 16.0 | 0.53 | 132.5 |
| BMF | 25.6 | 0.84 | 210 |

13.2.4 Cyanide leaching of oxidized material (URSTM)

Preliminary metallurgical testing by cyanidation on crushed and oxidized tailing material was conducted recently. A 132 g oxidized sample was reduced into pulp (50% solid) in distilled water. The initial gold and silver concentrations are estimated at 3.64 g/t and 118 g/t, respectively. A liquid/solid separation was done with a pressure filter. The initial pH was increased to 10.6 by adding 9.71 g of Ca(OH)₂ and 0.93 g of NaCN. The kinetic cyanidation process was carried out over a 24 hrs period with solution extractions at intervals of 2 min, 25 min, 55 min, 2h25m, 11h12m and 9h01m. The concentration of NaCN and the pH (10.4-12.2) were adjusted during the period of testing. At the end of the cyanidation test procedures, the recovery of Au was very moderate, reaching 66.2%, whereas the recovery for Ag was 61.9%. The consumption of NaCN and Ca(OH)₂ was very high, with 3.4 kg/t and 72.2 kg/t. If the silver recovery is roughly similar with or without oxidation of the tailing residues, there is significant increase in gold recovery when cyanide leaching is applied on oxidized material (66.2% vs. 27.8%).

13.2.5 Conclusion

To conclude, it seems that the gold and the silver from the Boumadine tailings are refractory to cyanide leaching as is and even to a certain point after oxidation of the sulfides. On the other hand, a process comprising the oxidation of the sulfides, acid leaching (HNO₃/H₂SO₄) and chloration is totally inadequate because it is very complicated and requires a great quantity of chemical reagents for a modest recovery of gold and silver (respectively 68% and 49%).

Boumadine tailings are mainly constituted of pyrite and arsenopyrite, with minor concentration of galena and sphalerite. Recent analysis show that the gold and silver grades are similar to the ore in place (less what was floated with the galena and the sphalerite), and that they are in micro nuggets within the sulfides (<5 µm to <1 µm).

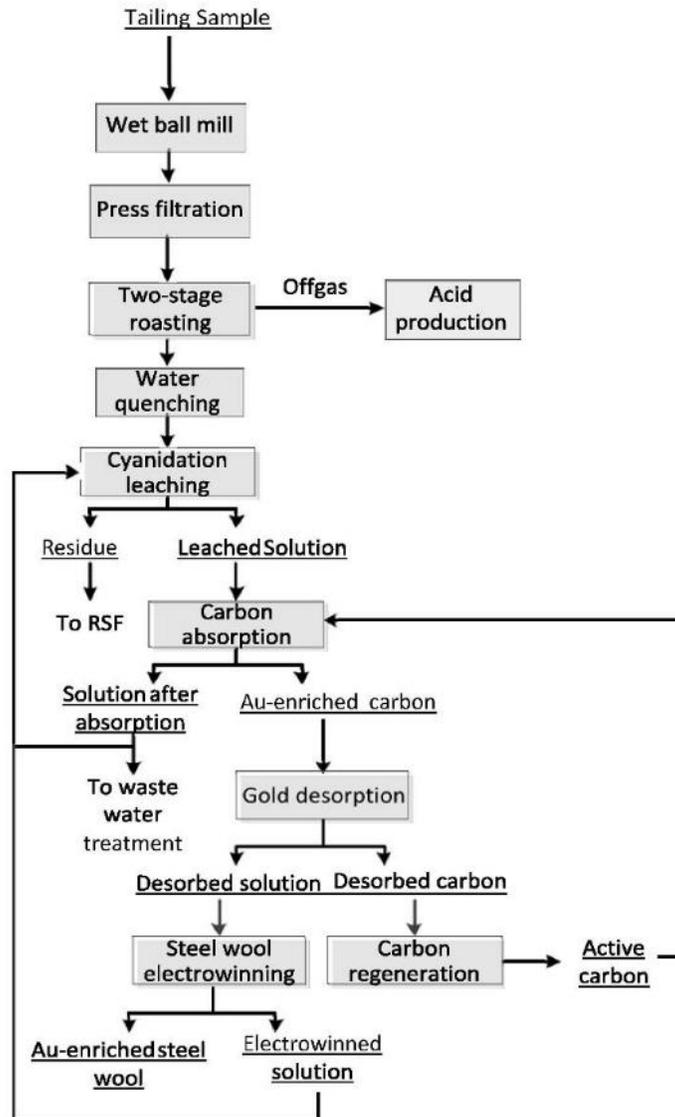
13.3 CINF Engineering Co (China 2017)

At the request of Maya, CINF Engineering Co (CINF) has made a series of preliminary sulfides roasting and acid leaching tests on the Boumadine rejects in 2017. It seems that sulfides roasting followed by cyanide leaching of the gold and the silver have given the best results.

After analyzing the report, the tests were performed in order for CINF to demonstrate that they know how to proceed, to the detriment of the production of a real engineering report. This explains the lack of technical data. The best recipe for an optimal recovery, at least for gold (69.6%), of the Boumadine tailings would be: roasting of the sulfides in two stages at very specific temperatures, followed by cyanide leaching of the roasted material. However, this same recipe is quite deficient for the recovery of the silver (7.4%)⁵.

The CINF proposed process is shown on next page.

⁵ It is not explained in the CINF report but if true, it is possible that the silver got vaporised with the sulfur at the roasting stages or that the silver was oxidised in Ag_2O or Ag_3O_4 making it refractory to cyanidation.



13.3.1 GoldMinds’s Comment on the CINF Roasting-Cyanidation Test on the Boumadine Old Tailings

This test by CINF could not be used as it is, and even less to design a roasting-cyanidation operation.

Mean head grade of the sample was 2.6 g/t Au. We suppose that to clean up the particles surface, CINF wet reground the sample and by doing so, lost 39.3% of the initial mass by dissolution of the sulfates, bringing the head grade of the sample to 3.9 g/t Au. Roasting-cyanidation was carried out on the washed-out sample at that grade. Cyanidation rejects was 1.6 g/t Au, bringing the true gold recovery to some 59%. Now, if we go back to the initial head grade of the sample (2.6 g/t Au), the final gold recovery falls to 38.5%.

13.4 Recent metallurgical test works (2018)

13.4.1 Fresh rock and tailings specific gravity and complete head assays

Table 40: Fresh rock and tailings specific gravity and complete head assays.

| Element | Units | Sampler ID | | | | | | | | | |
|----------------------------|-------|------------|------------------------|--------|--------|--------|--------|-------|-------|-------|-------|
| | | Sampler #1 | Sampler #2 Tailings | 10350 | 10351 | 10352 | 10353 | 10358 | 10359 | 10360 | 10361 |
| Density | kg/t | 4.04 | 3.4 | 2.31 | 2.41 | 2.31 | 3.1 | --- | --- | --- | --- |
| <i>Whole Rock Analysis</i> | | | | | | | | | | | |
| SiO2 | % | 24.9 | 33.1 | 21.4 | 17.4 | 19.5 | 28.5 | --- | --- | --- | --- |
| Al2O3 | % | 1.12 | 2.45 | 5.31 | 4.7 | 4.96 | 6.69 | --- | --- | --- | --- |
| Fe2O3 | % | 46.5 | 36.5 | 14.5 | 21.7 | 15.1 | 27.5 | --- | --- | --- | --- |
| MgO | % | 0.03 | 0.16 | 0.37 | 0.63 | 0.50 | 0.42 | --- | --- | --- | --- |
| CaO | % | 0.02 | 0.29 | 0.55 | 0.49 | 0.54 | 1.16 | --- | --- | --- | --- |
| Na2O | % | 0.45 | 0.08 | 0.22 | 0.34 | 0.22 | 0.37 | --- | --- | --- | --- |
| K2O | % | 0.33 | 0.69 | 1.55 | 1.36 | 1.24 | 1.79 | --- | --- | --- | --- |
| TiO2 | % | 0.02 | 0.15 | 0.11 | 0.13 | 0.10 | 0.14 | --- | --- | --- | --- |
| P2O5 | % | < 0.01 | 0.02 | 0.02 | 0.03 | 0.03 | 0.02 | --- | --- | --- | --- |
| MnO | % | < 0.01 | < 0.01 | 0.02 | 0.02 | 0.02 | 0.03 | --- | --- | --- | --- |
| Cr2O3 | % | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | --- | --- | --- | --- |
| V2O5 | % | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | --- | --- | --- | --- |
| LOI | % | 24.8 | 26.1 | 53.4 | 49.8 | 54.9 | 30.6 | --- | --- | --- | --- |
| Sum | % | 98.2 | 99.5 | 97.5 | 96.7 | 97.1 | 97.2 | --- | --- | --- | --- |
| <i>ICP Scan</i> | | | | | | | | | | | |
| Ag | g/t | 422 | 192 | 188 | 60 | 133 | 124.1 | --- | --- | --- | --- |
| As | g/t | 3410 | 5940 | 6290 | 15600 | 9300 | 9080 | --- | --- | --- | --- |
| Ba | g/t | 52.1 | 233 | 223 | 257 | 197 | 349 | --- | --- | --- | --- |
| Be | g/t | 0.14 | 0.22 | 0.24 | 0.54 | 0.36 | 0.92 | --- | --- | --- | --- |
| Bi | g/t | < 30 | < 30 | < 20 | < 20 | < 20 | < 20 | --- | --- | --- | --- |
| Cd | g/t | 159 | < 20 | 80 | 57 | 72 | 134 | --- | --- | --- | --- |
| Co | g/t | < 60 | < 60 | < 5 | < 5 | < 5 | < 5 | --- | --- | --- | --- |
| Li | g/t | < 20 | < 20 | < 6 | < 6 | < 6 | < 6 | --- | --- | --- | --- |
| Mo | g/t | < 20 | < 20 | 33 | 30 | 42 | 86 | --- | --- | --- | --- |
| Ni | g/t | < 20 | < 20 | < 20 | < 20 | < 20 | < 20 | --- | --- | --- | --- |
| Sb | g/t | 260 | 178 | 200 | 184 | 204 | 228 | --- | --- | --- | --- |
| Se | g/t | < 30 | < 30 | < 30 | < 30 | < 30 | < 30 | --- | --- | --- | --- |
| Sn | g/t | 1420 | 861 | 90 | 117 | 87 | 149 | --- | --- | --- | --- |
| Sr | g/t | 1.82 | 9.13 | 13.9 | 13.3 | 9.93 | 17.1 | --- | --- | --- | --- |

| | | | | | | | | | | | |
|-----------------------|-----|--------|--------|--------|--------|--------|--------|-------|------|-------|-------|
| Tl | g/t | < 30 | < 30 | < 30 | < 30 | < 30 | < 30 | --- | --- | --- | --- |
| U | g/t | < 40 | < 40 | --- | --- | --- | --- | --- | --- | --- | --- |
| Y | g/t | 2.1 | 4.2 | 5.2 | 3.9 | 4.8 | 7.8 | --- | --- | --- | --- |
| <i>Fire Assa</i> | | | | | | | | | | | |
| Au | g/t | 4.29 | 3.20 | 1.79 | 1.34 | 1.58 | 2.16 | 1.75 | 2.10 | 3.26 | 2.52 |
| Ag | g/t | | | | | | | 120 | 165 | 201 | 136 |
| <i>Leco</i> | | | | | | | | | | | |
| S | % | 37.0 | 27.8 | 12.4 | 14.9 | 13.0 | 23.3 | 14.4 | 24.1 | 22.8 | 28.7 |
| S= | % | 36.1 | 24.5 | 0.40 | 5.21 | 0.53 | 20.0 | --- | --- | --- | --- |
| <i>XRF</i> | | | | | | | | | | | |
| Pb | % | 0.41 | 0.30 | 0.31 | 0.23 | 0.33 | 0.64 | 0.35 | 0.55 | 0.31 | 0.30 |
| Zn | % | 1.34 | 0.098 | 0.77 | 1.00 | 0.68 | 1.03 | 0.60 | 1.19 | 0.21 | 1.12 |
| Cu | % | 0.18 | 0.012 | 0.028 | 0.045 | 0.043 | 0.17 | 0.044 | 0.12 | 0.016 | 0.051 |
| <i>ICP-MS</i> | | | | | | | | | | | |
| La | g/t | 3 | 9 | 9 | 7 | 7 | 11 | --- | --- | --- | --- |
| Ce | g/t | 7 | 18 | 17 | 16 | 13 | 24 | --- | --- | --- | --- |
| Pr | g/t | 1.3 | 1.9 | 2.2 | 2.5 | 1.8 | 2.8 | --- | --- | --- | --- |
| Nd | g/t | < 5 | 6 | 9 | 7 | < 5 | 13 | --- | --- | --- | --- |
| Sm | g/t | 0.7 | 0.9 | 1.3 | 1 | 1.7 | 1.6 | --- | --- | --- | --- |
| Eu | g/t | 0.5 | 0.8 | 1.1 | 0.5 | 0.5 | 0.8 | --- | --- | --- | --- |
| Gd | g/t | 0.7 | 1.1 | 1.1 | 0.9 | 1.1 | 1.7 | --- | --- | --- | --- |
| Tb | g/t | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | --- | --- | --- | --- |
| Dy | g/t | 0.9 | 0.9 | 0.8 | 1.2 | 1 | 1.2 | --- | --- | --- | --- |
| Ho | g/t | < 0.3 | 0.3 | 0.4 | < 0.3 | < 0.3 | 0.4 | --- | --- | --- | --- |
| Er | g/t | < 0.5 | 0.8 | 0.7 | 0.5 | < 0.5 | 0.9 | --- | --- | --- | --- |
| Tm | g/t | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 | --- | --- | --- | --- |
| Yb | g/t | < 0.5 | < 0.5 | 0.6 | 0.7 | < 0.5 | 1.1 | --- | --- | --- | --- |
| Lu | g/t | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | --- | --- | --- | --- |
| U | g/t | 0.1 | 0.4 | 0.7 | 1.2 | 0.8 | 1.7 | --- | --- | --- | --- |
| Th | g/t | 1.8 | 2.7 | 2.7 | 2.1 | 2 | 3.1 | --- | --- | --- | --- |
| <i>Fire Assay/ICP</i> | | | | | | | | | | | |
| Pt | g/t | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | --- | --- | --- | --- |
| Pd | g/t | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | < 0.02 | --- | --- | --- | --- |

13.4.2 Fresh material hardness – Ball mill Work Index

A ball mill Work Index test has been made on a sample of fresh rock and has been found to be 10.7 kWh/t.

13.4.3 Metallurgical tests – flotation, roasting and pressure leaching

Since none of the previous lab tests really managed to get decent gold and silver recoveries from the Boumadine fresh material and old tailings, Maya commissioned GoldMinds to work out a series of laboratory tests to be done at the SGS Lakefield laboratory in Ontario, Canada.

Essentially, this new series of tests was to build on previous experiences and truly investigate processes such as roasting and pressure oxidation⁶ on fresh mine and old tailings material.

Process protocols

For the fresh material the process protocols included five (5) tests:

- Flotation → roasting of lead and sulfides concentrate → CIL
- Flotation → roasting of lead and sulfides concentrate → fine grinding of calcine → CIL
- Flotation → pressure oxidation → CIL
- Flotation → pressure oxidation → CIL → hot curing⁷
- Flotation → pressure oxidation → CIL → hot curing → lime boil⁸

⁶ If none of the above would have worked, the next step would be to test the Atmospheric oxidation process ("Albion" process).

⁷ Hot curing (HC) became necessary to recover more silver

⁸ Lime boil (LB) is to dramatically reduce the amount of lime

For the old tailings, the process protocols included six (6) tests⁹ :

- Roasting → CIL (top, oxidised part of the tailings)
- Roasting → CIL (bottom, non or less oxidised part of the tailings)
- Pressure oxidation → CIL (top, oxidised part of the tailings)
- Pressure oxidation → CIL (bottom, non or less oxidised part of the tailings)
- Pressure oxidation → hot curing → CIL (non oxidised part of the tailings)
- Pressure oxidation → hot curing → lime boil → CIL (non oxidised part of the tailings)

13.4.3.1 Fresh Material

A more or less 100 kg sample was taken at the Boumadine site in the ore pile adjacent to the main shaft of the CENTRE zone. The sample was shipped from Morocco to the office of GoldMinds Geoservices in Quebec, Canada, which sent it to SGS Lakefield laboratory after visual inspection.

All of the tests on the fresh material include a flotation phase prior to roasting or pressure leaching. The flotation permitted to dispose of some 25% of the material (carbonates, silicates, oxides, etc.) that did not have to go to roasting or pressure leaching while losing much less than 2% of the gold and the silver.

None of the flotation tests have shown that a lead concentrate, since lead head grade, was too low to produce a smeltable concentrate while having a decent recovery. The lead was therefore coarsely floated to diminish as much as possible its amount in the zinc concentrate, thus avoiding heavy penalties in the case of a commercial operation. Rougher lead concentrate was mixed with the sulfides concentrate and underwent roasting-cyanidation or POX-cyanidation. However, GoldMinds is of the opinion that if the lead head grade in the future operation is equal to historical lead head grade, there will be no problem to obtain a salable lead concentrate while having a sizeable recovery.

⁹ Since the top part of the tailing piles is highly oxidised and it was not possible to predict how the roasting or the pressure leaching would work, it was decided to discriminate it from the less oxidised part of the tailing piles (bottom) for the first four (4) tests and treat them separately. Because the top (oxidised part) of the old tailings account for only 15 to 20% of the whole tailings mass and, for a question of timing, it was decided to do the last two (2) tests only on the bottom (non oxidised) part of the tailings.

1. **Fresh ore:** flotation → roasting of lead and sulfide concentrates → CIL

SGS flotation (Test F7), roasting/CIL (Test CN8)

Calculated head grade: 0.43% Pb, 1.40% Zn, 4.46 g/t Au and 455 g/t Ag.

Zn recovery: **79.5%**

Zn concentrate: **54.2%**

Au recovery: **62.75%** (including the gold recovered in the zinc concentrate)

Ag recovery: **13.95%** (including the silver recovered in the zinc concentrate)

At the view of the above results, it became somewhat evident that a good part of the gold, and almost all of the silver, instead of being in fine inclusions in the sulfides as it is the case for the fresh material, kept being in fine inclusions in the new formed oxides. This is the reason why the test has been resumed to fine grind the calcine prior to cyanidation.

2. **Fresh ore:** flotation → roasting of lead and sulfide concentrates → **fine grinding of calcine** → CIL

SGS flotation (Test F7), roasting/fine grinding/CIL (Test CN9)

Calculated head grade: 0.43% Pb, 1.40% Zn, 4.46 g/t Au and 455 g/t Ag.

Zn recovery: **79.5%**

Zn concentrate: **54.2%**

Au recovery: **84.24%** (including the gold recovered in the zinc concentrate)

Ag recovery: **72.85%** (including the silver recovered in the zinc concentrate)

3. **Fresh ore:** flotation → pressure oxidation of lead and sulfide concentrates → CIL

SGS flotation (Test F7), pressure oxidation/CIL (Test POX CIL-1)

Calculated head grade: **0.43% Pb, 1.40% Zn, 4.46 g/t Au and 455 g/t Ag.**

Zn recovery: **79.5%**

Zn concentrate: **54.2%**

Au recovery: **96.39%** (including the gold recovered in the zinc concentrate)

Ag recovery: **51.21%** (including the silver recovered in the zinc concentrate)

4. **Tailings (oxidised):** pressure oxidation → CIL

SGS Test POX/CIL-2

Au recovery: **87.7%**

AG recovery: **12.1%**

5. **Tailings (non oxidised):** pressure oxidation → CIL

SGS Test POX/CIL-3

Au recovery: **95.4%**

Ag recovery: **3.5%**

6. **Fresh ore:** flotation → pressure oxidation → hot curing → CIL

SGS flotation (Test F7), POX/HC/CIL (Test POX CIL-4)

Calculated head grade: **0.43% Pb, 1.40% Zn, 4.46 g/t Au and 455 g/t Ag.**

Zn recovery: **79.5%**

Zn concentrate: **54.2%**

Au recovery: **96.59%**

Ag recovery: **6.61%**

7. **Tailings (non oxidised):** POX/HC/CIL

SGS Test POX/CIL-5

Au recovery: **43.7%**

AG recovery: **65.7%**

8. **Fresh ore:** flotation → pressure oxidation → hot curing → lime boil → CIL

SGS flotation (Test F7), POX/HC/LM/CIL (Test POX CIL-6)

Calculated head grade: **0.43% Pb, 1.40% Zn, 4.46 g/t Au and 455 g/t Ag.**

Zn recovery: **79.5%**

Zn concentrate: **54.2%**

Au recovery: **97.16%**

Ag recovery: **96.17%**

9. Tailings (non oxidised): POX/HC/LM/CIL

SGS Test POX/CIL-7

Au recovery: **71.6%**

AG recovery: **81.4%**

Table 41: Summary of the most relevant met tests made at SGS.

| TEST # | SAMPLE | TEST | HEAD GRADE (CALC.) | | | | REAGENTS ¹ | | CONCENTRATES | | RECOVERIES | | | |
|-----------|-----------|------------------|--------------------|------|------|-----|-----------------------|------|-----------------|------|-----------------|------|-----------------|-----------------|
| | | | Pb | Zn | Au | Ag | NaCN | CaO | Pb ² | Zn | Pb ² | Zn | Au ³ | Ag ³ |
| | | | % | % | g/t | g/t | kg/t | kg/t | % | % | % | % | % | % |
| F7 | FRESH ORE | FL | 0.43 | 1.40 | 4.46 | 455 | | | 50 | 54.2 | 60 | 79.5 | 98.9 | 98.4 |
| CN8 | FRESH ORE | FL/RSG/CIL | 0.43 | 1.40 | 4.46 | 455 | 1.02 | 1.16 | 50 | 54.2 | 60 | 79.5 | 62.8 | 13.9 |
| CN9 | FRESH ORE | FL/RSG/FG/CIL | 0.43 | 1.40 | 4.46 | 455 | 3.91 | 4.27 | 50 | 54.2 | 60 | 79.5 | 84.2 | 72.9 |
| POX/CIL-1 | FRESH ORE | FL/POX/CIL | 0.43 | 1.40 | 4.46 | 455 | 3.55 | 321 | 50 | 54.2 | 60 | 79.5 | 84.2 | 72.9 |
| POX/CIL-2 | TLS OXY | POX/CIL | | | 2.56 | 144 | 1.00 | 93.2 | | | | | 87.7 | 12.1 |
| POX/CIL-3 | TLS N-OXY | POX/CIL | | | 1.8 | 104 | 0.61 | 73.6 | | | | | 95.4 | 3.5 |
| POX/CIL-4 | FRESH ORE | FL/POX/HC/CIL | 0.43 | 1.40 | 4.46 | 455 | 4.45 | 16.8 | 50 | 54.2 | 60 | 79.5 | 96.6 | 6.6 |
| POX/CIL-5 | TLS N-OXY | POX/HC/CIL | | | 3.27 | 189 | 0.37 | 2.2 | | | | | 43.7 | 65.7 |
| POX/CIL-6 | FRESH ORE | FL/POX/HC/LM/CIL | 0.43 | 1.40 | 4.46 | 455 | 0.9 | 0.6 | 50 | 54.2 | 60 | 79.5 | 97.2 | 96.2 |
| POX/CIL-7 | TLS N-OXY | POX/HC/LM/CIL | | | 3.94 | 218 | 0.25 | 0.3 | | | | | 71.6 | 81.4 |

FL = flotation
 RSG = roasting
 CIL = Carbon in leach
 FG = fine grinding
 TLS OXY = Tailings oxidised
 TLS N-OXY = tailings non oxidised
 HC = Hot cure
 LM = lime boil

¹Reagents are for cyanidation only
²Estimated value
³Include Au and Ag recoveries in Pb and Zn concentrates

13.5 Conclusion

Although these tests are very preliminary, at least they have the merit to show that it is possible to economically recover the gold and the silver from the Boumadine ore. An achievement that no one has done before.

After a very fine grind of the calcine, even if roasting could be a fair metallurgical process for the Boumadine fresh material, especially due to the possibility to produce sulfuric acid and cogenerate electrical power, at the view of the metallurgical tests done so far, pressure oxidation seems to be the best process owing to the very high gold and silver recovery.

More testing, both at bench and pilot plant level, will definitely be necessary. Especially in order to refine the process and better circumscribe the milling cost.

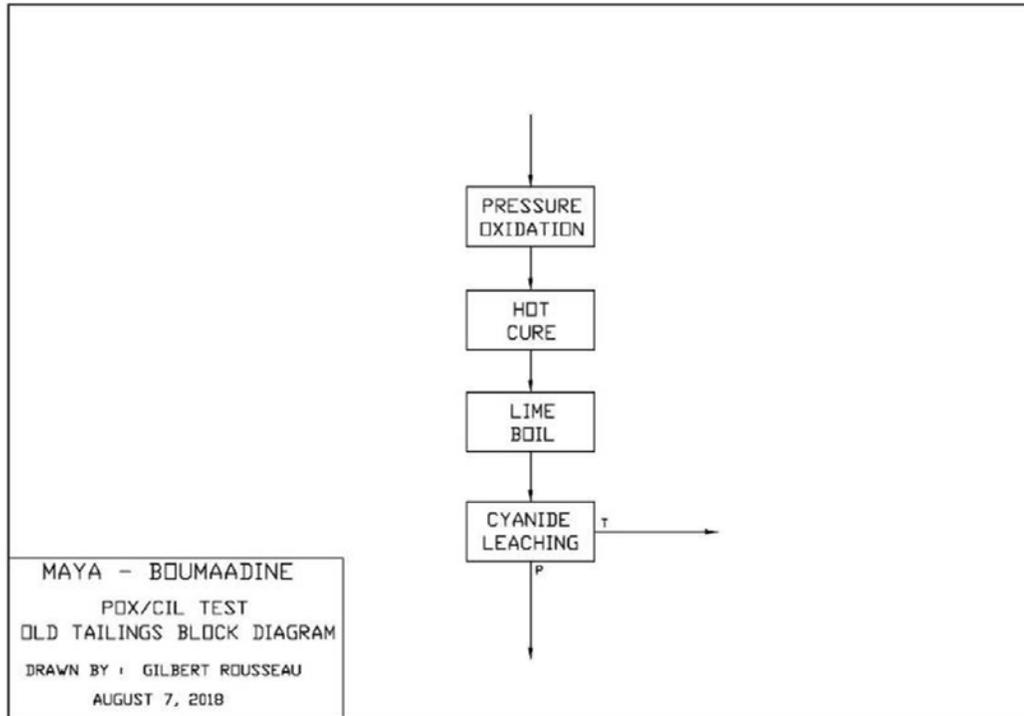


Figure 97: Maya Boumadine old tailings met test block diagram.

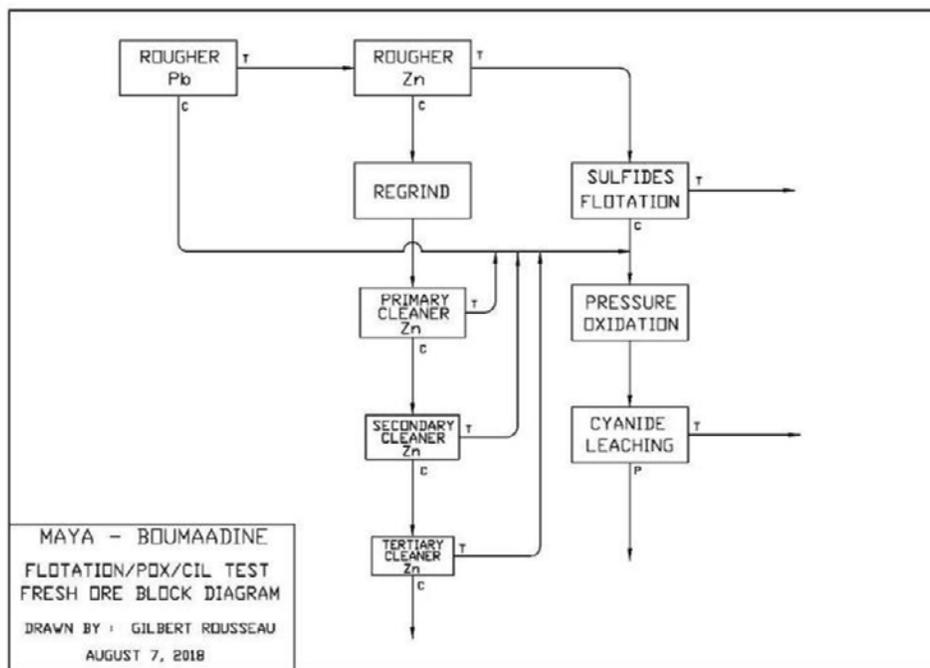


Figure 98: Maya Boumadine fresh material met test block diagram.

14 Mineral resource estimates

14.1 Introduction

This section reports the results of the NI 43-101 mineral resource estimates for the Boumadine polymetallic mine, which is established on historical data and the recent data related to 2017 and 2018 diamond drilling campaigns.

After compilation and validation/verification of the database, the geological interpretation was done by sectors and by geological zones. The database used for this mineral estimate includes drill results obtained from the recent drill program and a detailed topographic surface recently realized. A total of fifty-one (51) 3D envelopes were constructed by connecting the defined mineralized prisms.

The sectional interpretation was guided by grade. The 3D resource model is constructed using Genesis©, a modeling and estimation software.

14.2 Data

For this mineral resource estimation, GMG based itself on the Boumadine drillhole database after compilation. The Boumadine database is made of diamond drillholes (surface and underground), percussion holes, long holes, drift samples, surface samples and topographic surface.

Diamond drill holes (total of 23,261.91 m)

- CENTRE zone: seventy-six collars (76) totalling 13,947.59 m.
- NORD zone: nine (9) collars totaling 616.97m.
- SUD zone: twenty (20) collars totaling 3,435.79 m.
- IMARIREN zone: forty-seven (47) collars totaling 2,888.86 m.
- TIZI zone: fourteen (14) collars totaling 2,372.7 m.

Long holes (total of 699.28 m)

- CENTRE zone: twenty-one (21) long holes totaling 466.78 m.
- SUD zone: twenty-three (23) long holes totaling 168.45 m.
- TIZI zone: six (6) long holes totaling 64.05 m.

Drift samples (total of 516.35 m)

- CENTRE zone: sixty (60) drift samples totaling 268.6 m.
- SUD zone: twenty-six (26) drift samples totaling 96.05 m.
- TIZI zone: sixty-three (63) drift samples totaling 151.70 m.

Alignment (total of 478 m)

The alignments correspond to samples taken along the drift. We were able to compile the data along level -50 of the CENTRE zone with a total of 478 m.

The database used to evaluate the mineral resources is composed of historical data compiled from the mining plans of Boumadine and recent data (mainly diamond drill holes) provided by the Compagnie Minière Maya Maroc (CMMM). GMG performed the verification and validation steps on the core borehole data. After the verification/correction of the compiled data, GMG considered the database suitable for resource estimation.

Drillhole database file name: All DB-Boum_12Avril2019MR.mdb

Collars 589;

Deviations 438;

Assays intervals 4173;

Lithological intervals 2899;

The topography surface was created using a drone and cover around 12.8 km².



Figure 99 : Plan view of the data of the Boumadine polymetallic deposit.

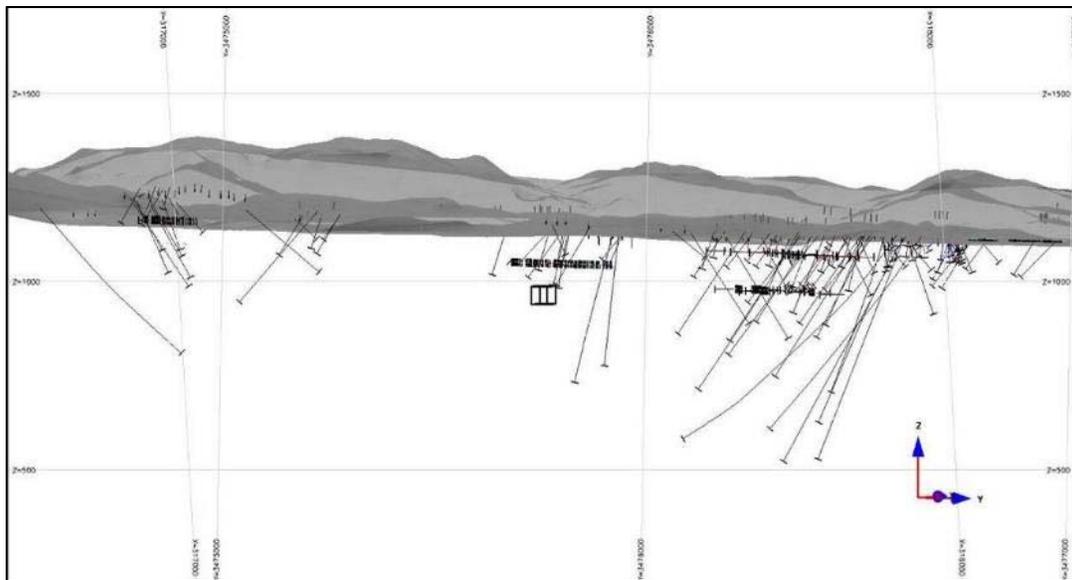


Figure 100 : Longitudinal section looking north – west with all drilling data.

14.3 Capping & compositing

The block model grade interpolation is conducted on composited assay data. A composite length of 1.0 m has been selected and the compositing is conducted from the start of each mineralized intercept of drillholes or channels, and drift data (Figure 101). The last composite kept at the end of the mineralized intercept has a minimum length of 0.1 m. Assays were not capped during intercept and composite calculation. The high grade values are not isolated and distribution is lognormal and continuous (Figure 102).

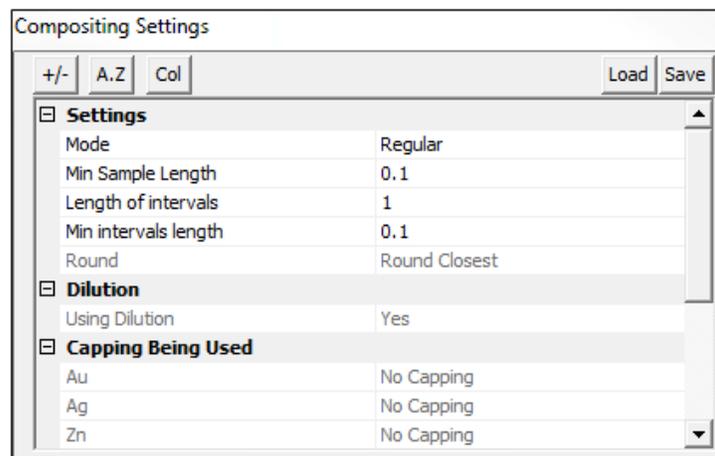


Figure 101: Composite settings.

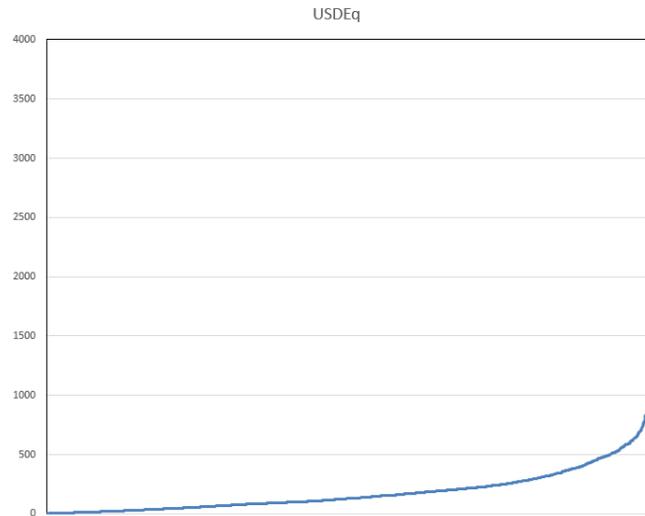


Figure 102 : Cumulative frequency of all USDEq composites at Boumadine property.

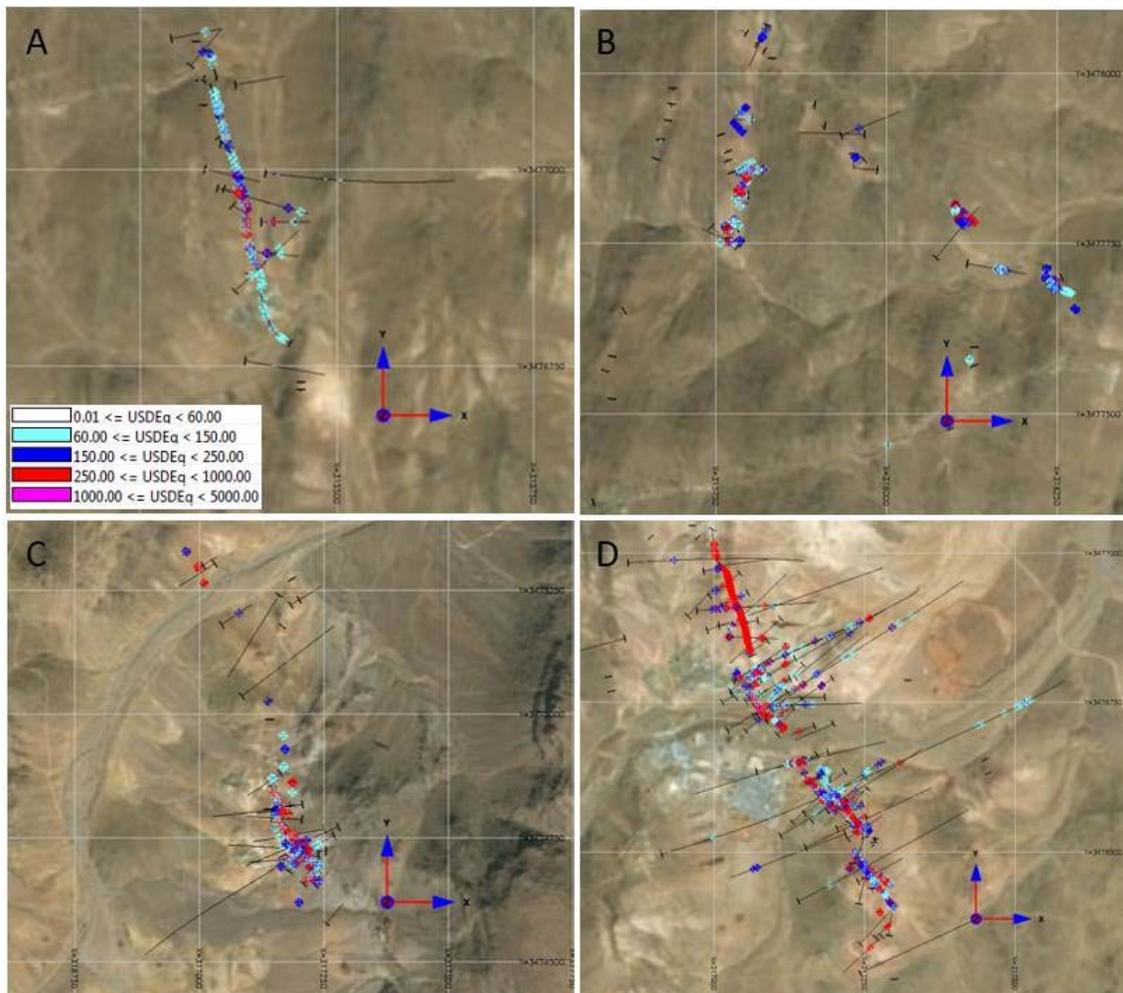


Figure 103: Plan view of the composites distribution; A) TIZI zone, B) IMARIREN Zone, C) SUD zone, D) CENTRE zone.

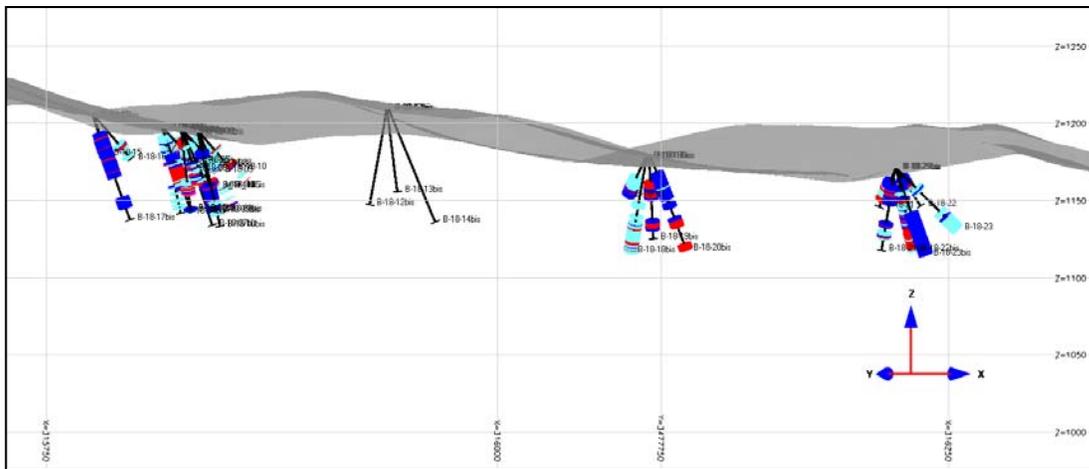


Figure 104: Section view of the IMARIREN zone.

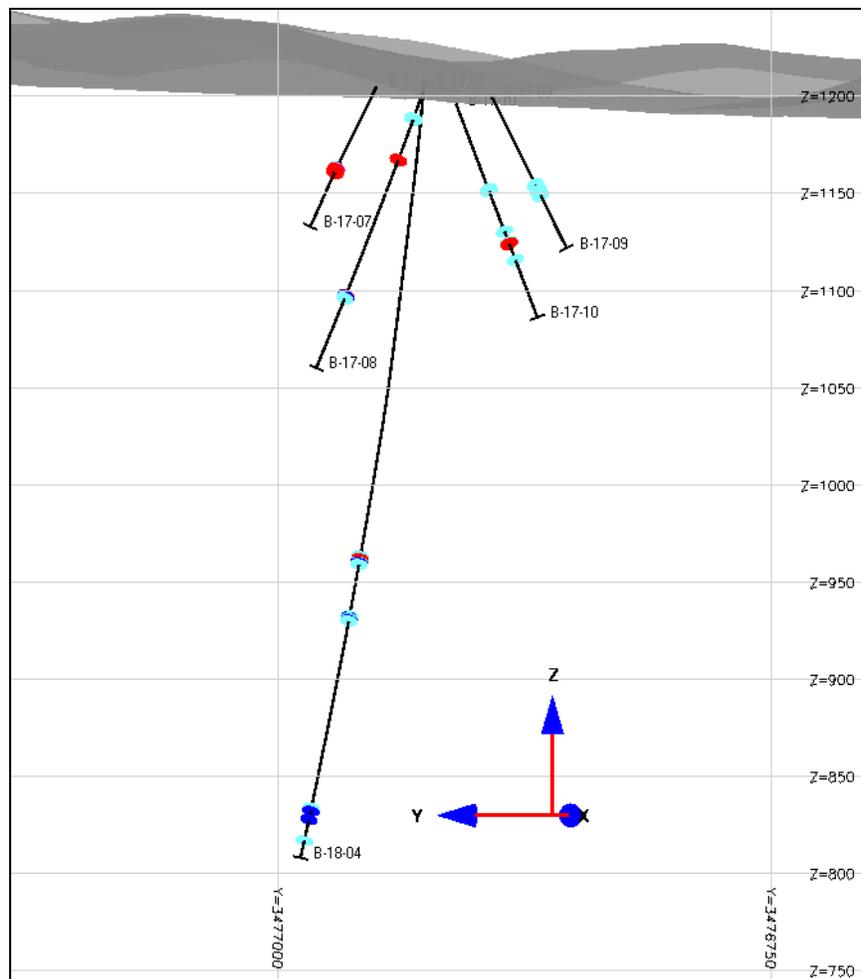


Figure 105: Section view of the TIZI zone.

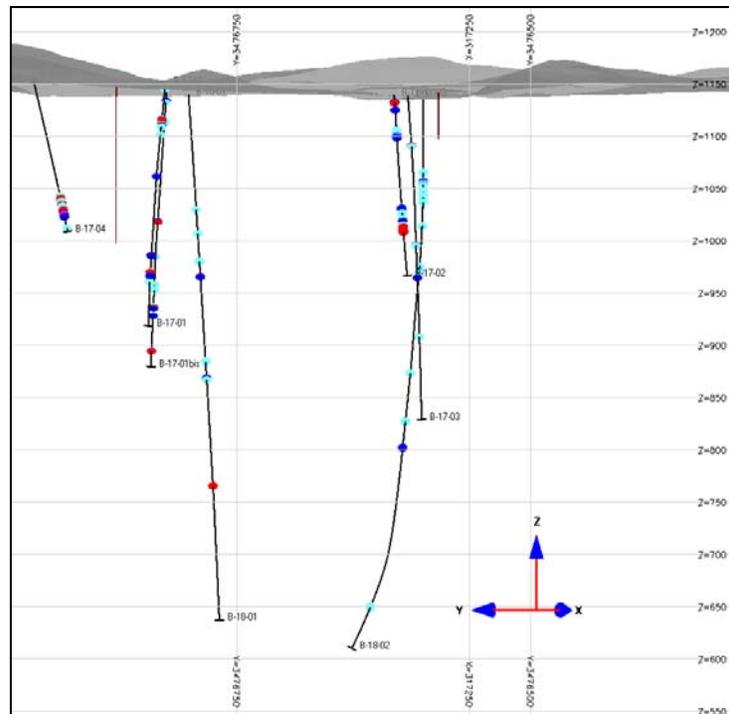


Figure 106: Section view of the CENTRE zone.

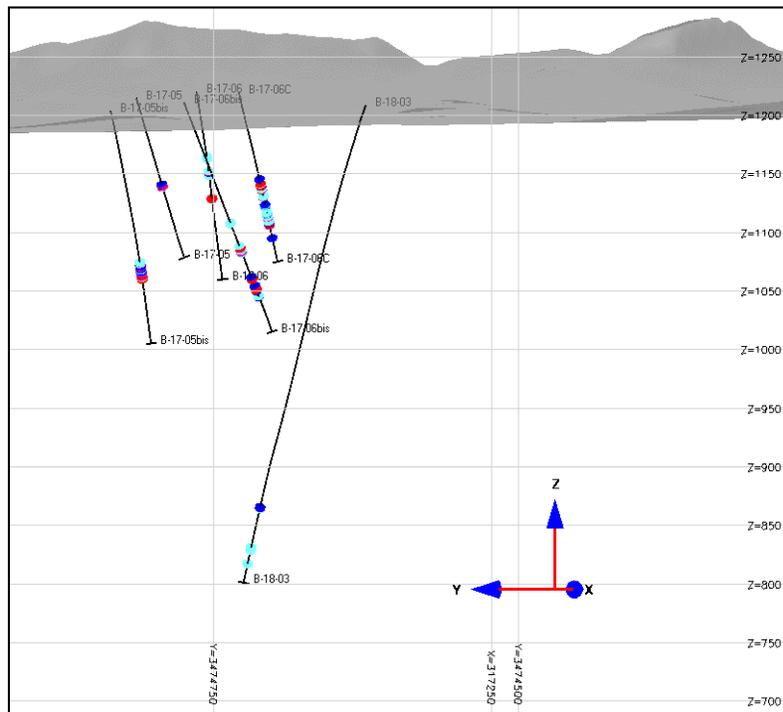


Figure 107: Section view of the SUD zone.

14.4 Density

During the site visit, GMG's geologist took independent core samples from two (2) drillholes (interval of 39 meters core samples from holes B-17-02 and B-17-04). The density result from these intervals shows an average of 3.97 t/m³. In order to calculate tonnage from the volumetric estimates of the block models and to be more conservative a fix density of 3.65 t/m³ was used by GMG for resource estimation. This density reflects the typical mineralized interval composed mainly by ignimbrites and andesites with massive sulfides.

It is recommended to carry density measurements on fresh cores during the next drilling program in order to monitor the density.

For the tailings, two (2) values of specific gravity were used to estimate the mineral resource of the tailings: the oxidized layer of the tailings thick of 2 m with a specific gravity SG= 0.9, the rest of the tailings (humid tailings) with a specific gravity of SG= 1.8 (Figure 108).



Figure 108: Trench dug using the JCB to make sampling easier. The picture shows the oxidized tailing surfaces in yellow color and the humid part of the tailings grey to dark grey.

14.5 Geological interpretation

The mineral resource modelisation is based on a new geological model that considered additional core drilling information and the exploration works at the surface.

The geological interpretation was done by sector. Five (5) sectors have been modeled (TIZI zone, CENTRE, IMARIREN, NORD and SUD). A total of fifty-one (51) envelopes were constructed (not including the tailings) by connecting the defined mineralized prisms on the sections in Genesis©, using assays and the exposed mineralised structures observed and sampled during the site visit.

The mineralized zones correspond mainly to andesite and rhyolite dikes with more than two orientations (NS, N20 and N70). These dikes are associated to the tectonic fractures and shear zones, controlling the emplacement of the polymineralized veins. The principal mineralization consists of massive sulfide veins with several stockworks of secondary monomineralic and polymineralic sulfide veins or veinlets.

The main lithological units (rhyolite, andesite dikes), and exposed mineralized structures were then modelled inside each block bounded by faults and shear zones. Most of the envelopes for block modelling follow the mineralized zone dimensions and have significant widths and sizes. Most of the bodies represent structures and stockworks associated with the north-north east trending corridors, which have a vertical elongated shape locally affected by dextral faults and/or shear with meter to decameter displacements.

A three-dimensional models of level plans and cross-sections was created to enable a better understanding of the inter-relationship between the various mineralized structures found at the Boumadine polymetallic deposit. Each mineralized body (meshed envelopes for block modeling) were validated visually to ensure that grade and classification was geologically reasonable, and also cross validated with openings and historical mine plans.

The geological and mineralization wireframes were constructed using Genesis©, a modelling and mineral estimation software. Statistical analysis and variography was completed with Geostat+ software.

14.6 The block models

14.6.1 The Envelopes

A total of fifty-one (51) envelopes were created from the meshing of prisms. The modelling of envelopes relied on data available in the compiled database and taking into account the mined-out zones (TIZI zone, CENTRE and SUD) during modelling procedures (Figure 109 to Figure 115).

The maximum depth of the mineralized envelopes at TIZI zone is around $Z=972$ m; at IMARIREN zone is around $Z= 1084$ m; NORD zone $Z= 1006$ m; CENTRE zone is around $Z= 598$ m; SUD zone $Z= 790$ m. The following figures present the locations and shapes of the envelopes used for block modelling.

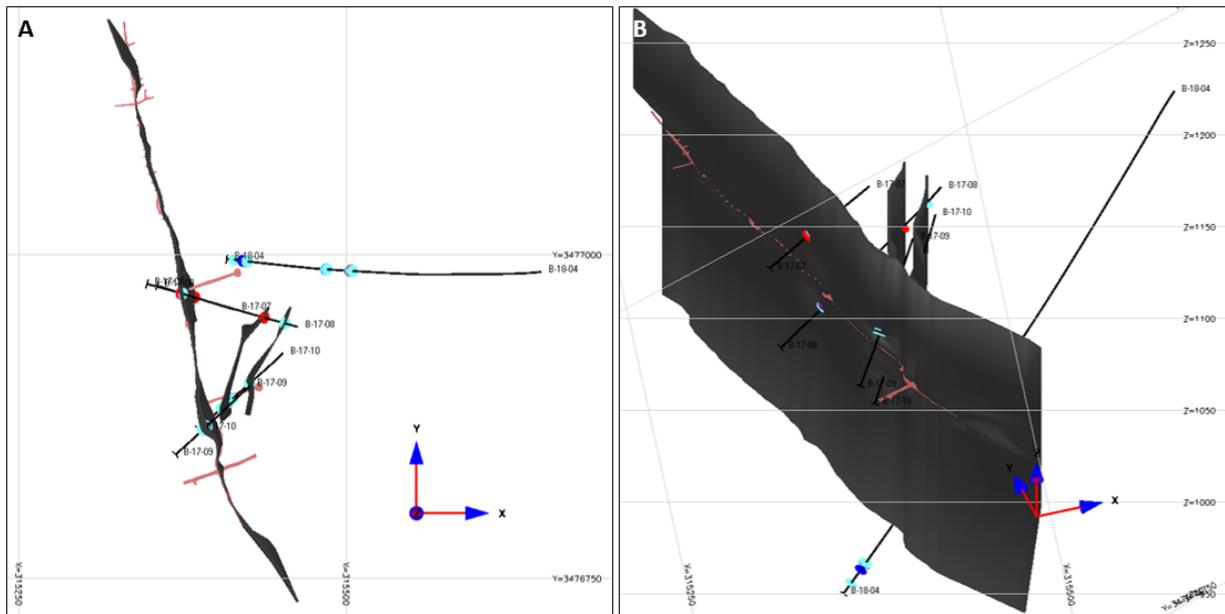


Figure 109: Mineralized envelopes at TIZI zone. A) plan view; B) inclined view looking NE.

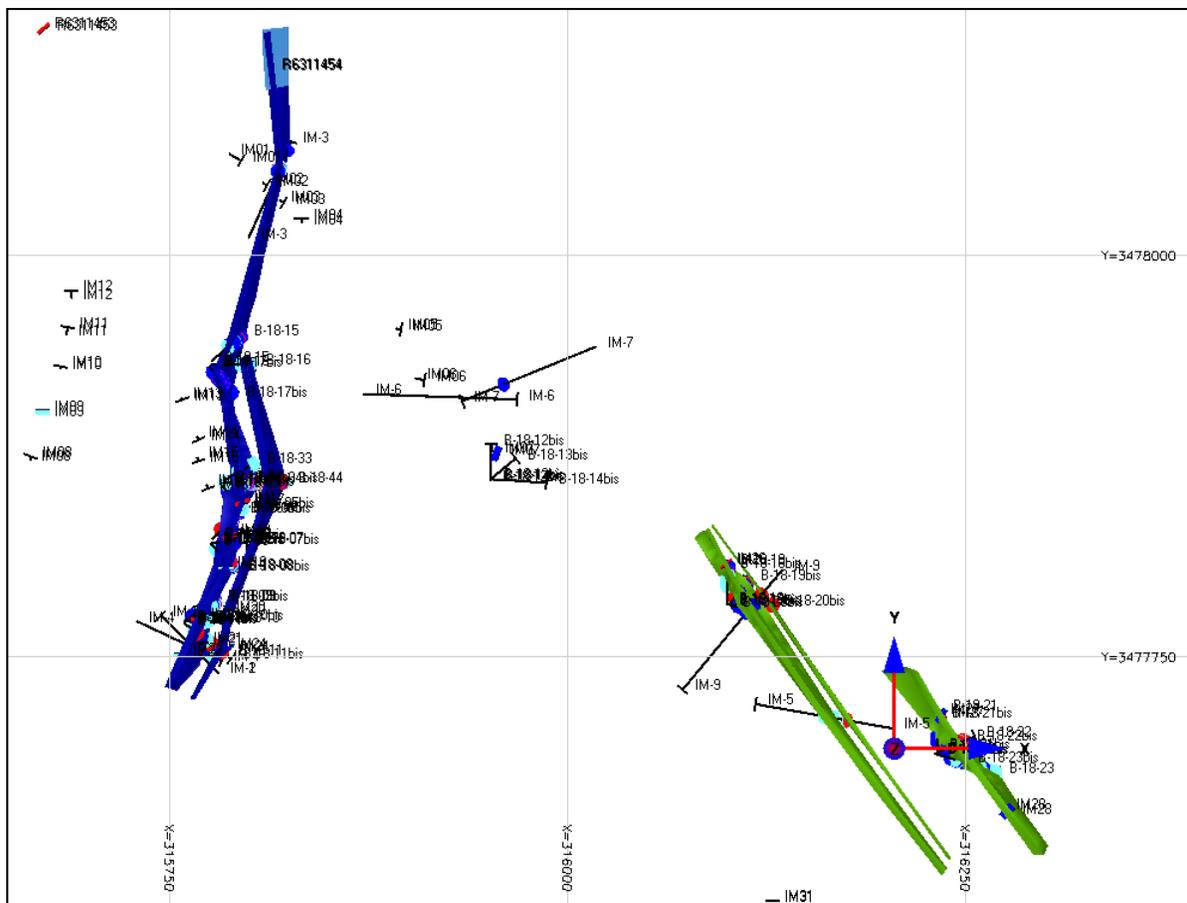


Figure 110: Plan view of the mineralized envelopes at IMARIREN zone.

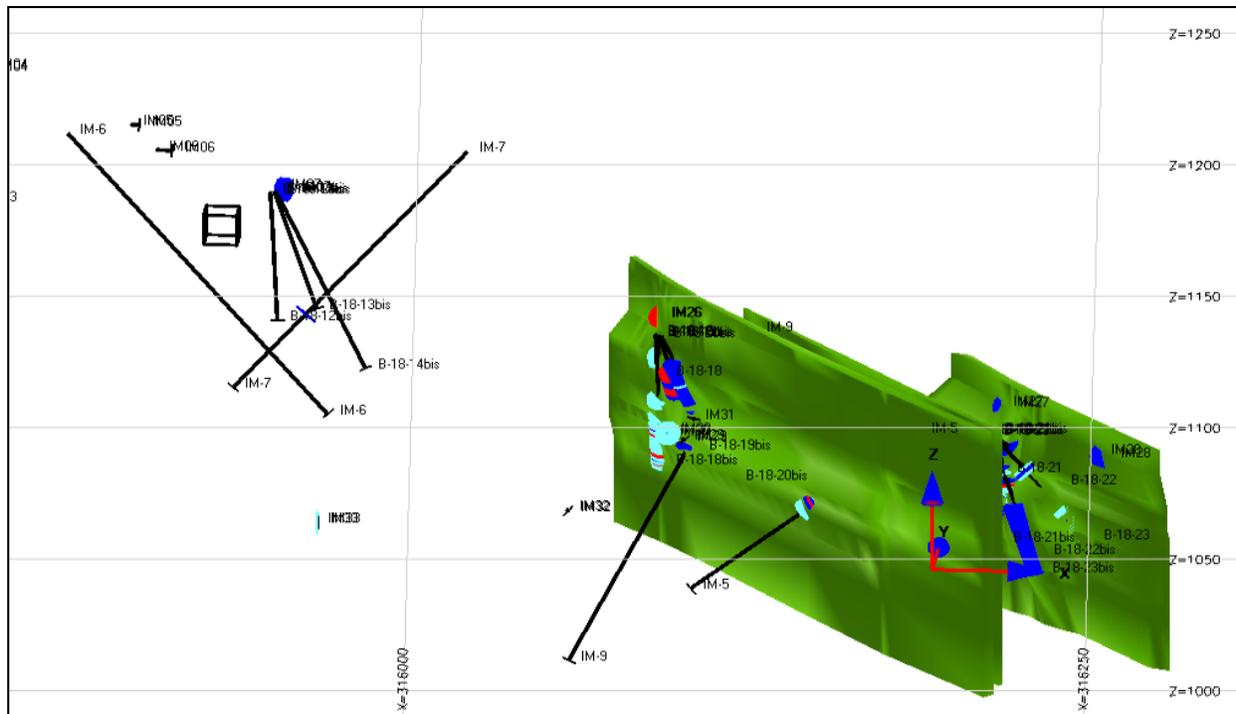


Figure 111: Inclined view of the mineralized envelopes at IMARIREN zone.

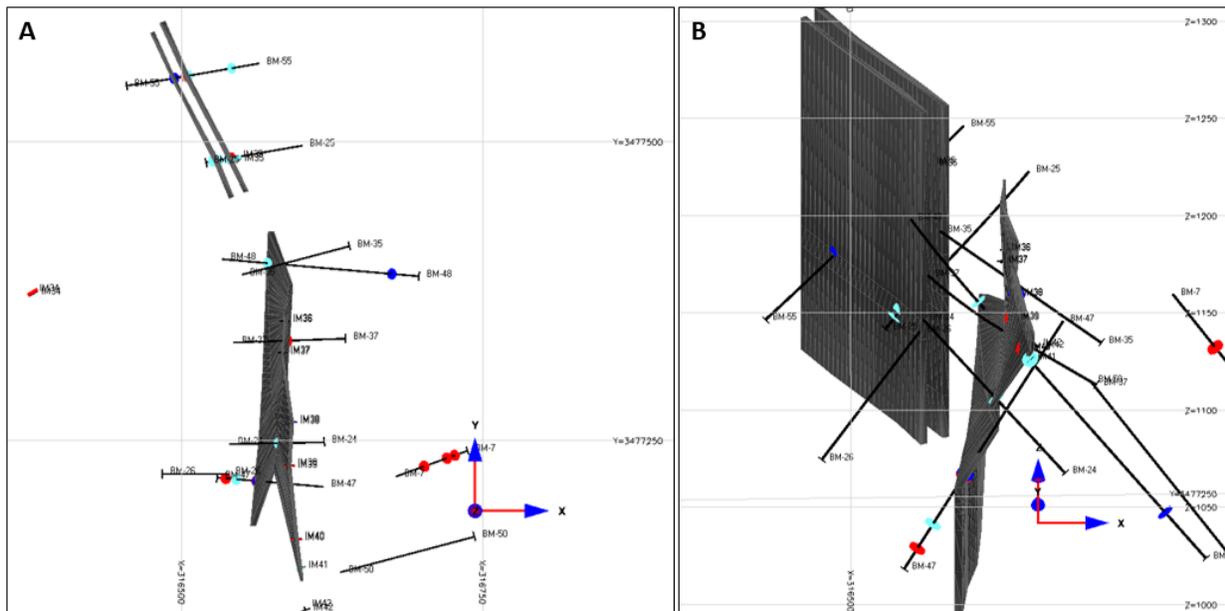


Figure 112: Mineralized envelopes at NORD zone. A) Plan view; B) Inclined view looking to the north.

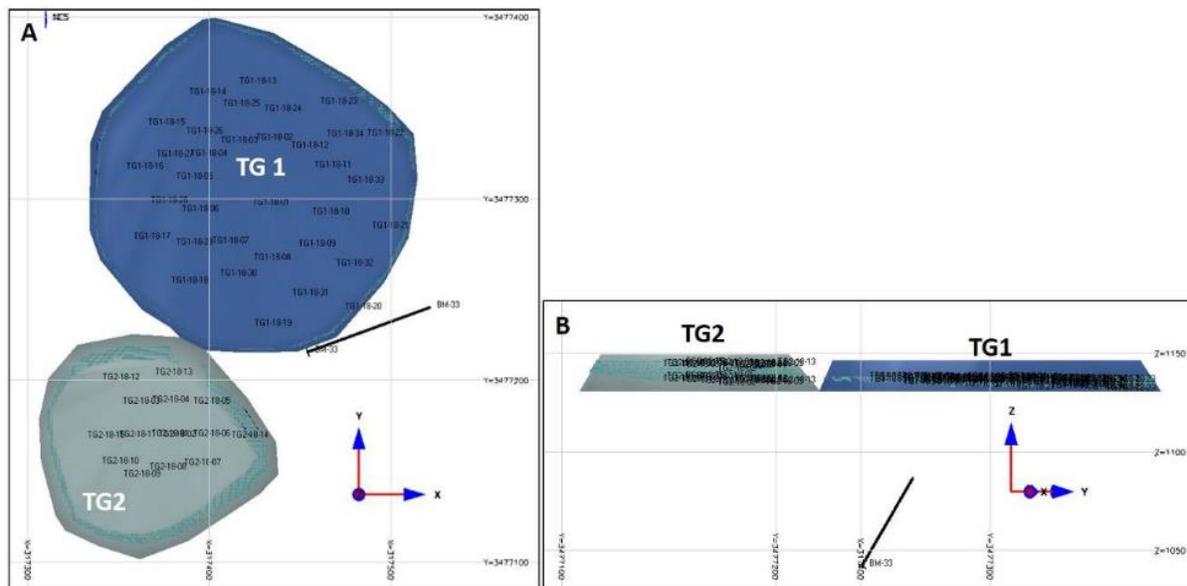


Figure 115: The tailings envelopes. A) Plan view; B) Section view showing the tailings envelopes TG1 and TG2.

For the tailings, two (2) envelopes (Figure 115) were modeled using the recent topography surface and the original topography to map the base of the tailings.

14.6.2 Block Model definition

The property of Boumadine is composed by five (5) zones, excluding the tailings. For each zone, we have bloc grid parameters (Table 42 to Table 47). The origin of the block model is the lower left corner of the mine. The block size (1mE x 1mN x 2mZ) has been defined to respect complex geometry of the envelopes.

Table 42: Block grid parameters for TIZI zone.

| BlocksModel Parameter | | | |
|--|--------|---------|------|
| Envelope | | | |
| | X | Y | Z |
| Block Model Origin | 315000 | 3474400 | 550 |
| Block Size | 1 | 1 | 2 |
| Block Discretization | 1 | 1 | 1 |
| Model Extents | | | |
| | X | Y | Z |
| Starting Coordinates | 315000 | 3474400 | 550 |
| Starting Block Indices | 1 | 1 | 1 |
| Ending Coordinates | 317801 | 3477201 | 1304 |
| Ending Block Indices | 2802 | 2802 | 378 |
| Transformation | | | |
| <input type="checkbox"/> Transform Set Transformation.. | | | |

Table 43: Block grid parameters for IMARIREN zone.

BlocksModel Parameter

Schema | Block Grid | Envelope

| | X | Y | Z |
|----------------------|--------|---------|-----|
| Block Model Origin | 315000 | 3476585 | 550 |
| Block Size | 1 | 1 | 2 |
| Block Discretization | 1 | 1 | 1 |

Model Extents

| | X | Y | Z |
|------------------------|--------|---------|------|
| Starting Coordinates | 315000 | 3476585 | 550 |
| Starting Block Indices | 1 | 1 | 1 |
| Ending Coordinates | 316883 | 3478319 | 1304 |
| Ending Block Indices | 1884 | 1735 | 378 |

Transformation

Transform Set Transformation..

Table 44: Block grid parameters for NORD zone.

BlocksModel Parameter

Schema | Block Grid | Envelope

| | X | Y | Z |
|----------------------|--------|---------|-----|
| Block Model Origin | 315000 | 3476585 | 550 |
| Block Size | 1 | 1 | 2 |
| Block Discretization | 1 | 1 | 1 |

Model Extents

| | X | Y | Z |
|------------------------|--------|---------|------|
| Starting Coordinates | 315000 | 3476585 | 550 |
| Starting Block Indices | 1 | 1 | 1 |
| Ending Coordinates | 316883 | 3478319 | 1304 |
| Ending Block Indices | 1884 | 1735 | 378 |

Transformation

Transform Set Transformation..

Table 45: Block grid parameters for CENTRE zone.

BlocksModel Parameter

Schema | Block Grid | Envelope

| | X | Y | Z |
|----------------------|--------|---------|-----|
| Block Model Origin | 315000 | 3474400 | 550 |
| Block Size | 1 | 1 | 2 |
| Block Discretization | 1 | 1 | 1 |

Model Extents

| | X | Y | Z |
|------------------------|--------|---------|------|
| Starting Coordinates | 315000 | 3474400 | 550 |
| Starting Block Indices | 1 | 1 | 1 |
| Ending Coordinates | 317801 | 3477201 | 1304 |
| Ending Block Indices | 2802 | 2802 | 378 |

Transformation

Transform Set Transformation..

Table 46: Block grid parameters for SUD zone.

BlocksModel Parameter

Schema | Block Grid | Envelope

| | X | Y | Z |
|----------------------|--------|---------|-----|
| Block Model Origin | 315000 | 3474400 | 550 |
| Block Size | 1 | 1 | 2 |
| Block Discretization | 1 | 1 | 1 |

Model Extents

| | X | Y | Z |
|------------------------|--------|---------|------|
| Starting Coordinates | 315000 | 3474400 | 550 |
| Starting Block Indices | 1 | 1 | 1 |
| Ending Coordinates | 317801 | 3477201 | 1304 |
| Ending Block Indices | 2802 | 2802 | 378 |

Transformation

Transform Set Transformation..

Table 47: Block grid parameters for the tailings.

14.6.3 Search ellipsoid and estimation parameters

Search ellipsoids were used to select the composites (point data) used in the estimation of the grade of a block. The following table presents the search ellipsoids with their axis length and orientation.

The median is the short axis, the major is the long axis and the minor is the intermediate axis. Most of the ellipsoids have the long axis oriented in the subvertical direction, similar to observations in the field.

Only for the IMARIREN zone, we used variable ellipsoids to follow the 3D shape variation of the mineralized bodies named Imariren 01.

Table 48: Search ellipsoid list for TIZI zone.

| Name | Show | Color | Shading | Date | Transparency | Azimuth | Dip | Spin | Azimuth2 | Major | Median | Minor | Comments |
|---------------------|-----------|-------|---------|------------------|--------------|---------|-----|------|----------|-------|--------|-------|----------|
| Tizi_Inf | Visible | | Gouraud | 11-04-2019 16:25 | None | 345 | 0 | 0 | 0 | 300 | 15 | 300 | inf |
| Tizi_bis_Inf | Visible | | Gouraud | 11-04-2019 16:25 | None | 16 | 0 | 0 | 0 | 300 | 15 | 300 | inf |
| Tizi_Ind | Visible | | Gouraud | 13-09-2018 12:53 | None | 345 | 0 | 0 | 0 | 40 | 10 | 40 | Ind |
| Tizi_bis_Ind | Visible | | Gouraud | 13-09-2018 10:59 | None | 16 | 0 | 0 | 0 | 40 | 10 | 40 | Ind |
| Tizi_bis_02_passe02 | Visible | | Gouraud | 10-09-2018 14:50 | None | 205 | 0 | 0 | 0 | 80 | 20 | 120 | passe02 |
| Tizi_bis_passe02 | Visible | | Gouraud | 10-09-2018 14:41 | None | 202 | 0 | 0 | 0 | 80 | 20 | 120 | passe02 |
| Tizi_passe02 | Visible | | Gouraud | 10-09-2018 13:21 | None | 167 | 0 | 0 | 0 | 80 | 20 | 120 | passe02 |
| Tizi_bis_02_passe01 | Invisible | | Gouraud | 13-11-2017 11:23 | None | 205 | 0 | 0 | 0 | 40 | 10 | 60 | Passe1 |
| Tizi_bis_passe01 | Invisible | | Gouraud | 10-11-2017 16:01 | None | 202 | 0 | 0 | 0 | 40 | 10 | 60 | Passe1 |
| Tizi_passe01 | Invisible | | Gouraud | 10-11-2017 15:30 | None | 167 | 0 | 0 | 0 | 40 | 10 | 60 | Passe1 |

Table 49: Search ellipsoid list for IMARIREN zone.

| Name | Show | Color | Shading | Date | Transparency | Azimuth | Dip | Spin | Azimuth2 | Major | Median | Minor |
|-----------------------------|-----------|-------|---------|------------------|--------------|---------|-----|------|----------|-------|--------|-------|
| Imariren_corps03_ind | Visible | | Gouraud | 11-04-2019 15:50 | None | 20 | 0 | 0 | 0 | 30 | 10 | 30 |
| Imariren_corps01_inf | Visible | | Gouraud | 11-04-2019 15:33 | None | 20 | 0 | 0 | 0 | 400 | 80 | 400 |
| Imariren_corps01_ind | Visible | | Gouraud | 11-04-2019 15:31 | None | 20 | 0 | 0 | 0 | 30 | 10 | 30 |
| Imariren_corps01bis_passe02 | Invisible | | Gouraud | 28-03-2019 17:37 | None | 19 | 0 | 0 | 0 | 150 | 25 | 180 |
| Imariren_corps01bis_passe01 | Visible | | Gouraud | 28-03-2019 17:36 | None | 19 | 0 | 0 | 0 | 120 | 20 | 140 |
| Imariren_corps04_passe02 | Invisible | | Gouraud | 27-03-2019 09:46 | None | 322 | 0 | 0 | 0 | 55 | 20 | 45 |
| Imariren_corps04_passe01 | Invisible | | Gouraud | 27-03-2019 09:45 | None | 322 | 0 | 0 | 0 | 35 | 15 | 40 |
| Imariren_corps02_passe02 | Invisible | | Gouraud | 27-03-2019 09:17 | None | 322 | 0 | 0 | 0 | 75 | 20 | 50 |
| Imariren_corps02_passe01 | Invisible | | Gouraud | 27-03-2019 09:16 | None | 322 | 0 | 0 | 0 | 55 | 15 | 40 |
| Imariren_corps01_passe02 | Invisible | | Gouraud | 09-10-2018 13:27 | None | 20 | 0 | 0 | 0 | 80 | 35 | 90 |
| Imariren_corps01_passe01 | Invisible | | Gouraud | 09-10-2018 13:26 | None | 20 | 0 | 0 | 0 | 60 | 20 | 70 |

Table 50: Search ellipsoid list for NORD zone.

| Name | Show | Color | Shading | Date | Transparency | Azimuth | Dip | Spin | Azimuth2 | Major | Median | Minor |
|----------------------|---------|-------|---------|------------------|--------------|---------|-----|------|----------|-------|--------|-------|
| nord_corps02_inf | Visible | | Gouraud | 11-04-2019 16:39 | None | 153 | 0 | 0 | 0 | 300 | 60 | 300 |
| nord_corps01_inf | Visible | | Gouraud | 11-04-2019 16:39 | None | 170 | 0 | 0 | 0 | 300 | 60 | 300 |
| nord_corps02_ind | Visible | | Gouraud | 11-04-2019 16:38 | None | 153 | 0 | 0 | 0 | 40 | 10 | 40 |
| nord_corps01_ind | Visible | | Gouraud | 11-04-2019 16:38 | None | 170 | 0 | 0 | 0 | 40 | 10 | 40 |
| nord_corps02_passe02 | Visible | | Gouraud | 09-10-2018 13:10 | None | 153 | 0 | 0 | 0 | 80 | 30 | 80 |
| nord_corps02_passe01 | Visible | | Gouraud | 09-10-2018 13:10 | None | 153 | 0 | 0 | 0 | 60 | 20 | 60 |
| nord_corps01_passe02 | Visible | | Gouraud | 09-10-2018 13:03 | None | 170 | 0 | 0 | 0 | 100 | 25 | 110 |
| nord_corps01_passe01 | Visible | | Gouraud | 09-10-2018 13:02 | None | 170 | 0 | 0 | 0 | 60 | 20 | 70 |

Table 51: Search ellipsoid list for CENTRE zone.

| Name | Show | Color | Shading | Date | Transparency | Azimuth | Dip | Spin | Azimuth2 | Major | Median | Minor | Comments |
|--------------------------|-----------|-------|---------|------------------|--------------|---------|-----|------|----------|-------|--------|-------|----------|
| Zone_centre_Meas | Visible | | Gouraud | 12-04-2019 14:37 | None | 333 | 0 | 0 | 0 | 30 | 15 | 30 | |
| Zone_centre_inf | Visible | | Gouraud | 11-04-2019 16:51 | None | 333 | 0 | 0 | 0 | 400 | 100 | 400 | |
| Zone_centre_ind | Visible | | Gouraud | 11-04-2019 16:50 | None | 333 | 0 | 0 | 0 | 60 | 15 | 60 | |
| Zone_centre_21bis_P2 | Invisible | | Gouraud | 05-04-2019 09:43 | None | 347 | 0 | 0 | 0 | 100 | 30 | 120 | 25 |
| Zone_centre_21bis_P1 | Invisible | | Gouraud | 05-04-2019 09:43 | None | 347 | 0 | 0 | 0 | 50 | 20 | 60 | 25 |
| Zone_centre_env15_P2 | Invisible | | Gouraud | 05-04-2019 09:35 | None | 322 | 0 | 0 | 0 | 100 | 30 | 120 | 24 |
| Zone_centre_env15_P1 | Invisible | | Gouraud | 05-04-2019 09:35 | None | 322 | 0 | 0 | 0 | 50 | 20 | 60 | 24 |
| Zone_centre_ouest_bis_P2 | Invisible | | Gouraud | 05-04-2019 09:29 | None | 328 | 0 | 0 | 0 | 120 | 30 | 160 | 23 |
| Zone_centre_ouest_bis_P1 | Invisible | | Gouraud | 05-04-2019 09:29 | None | 328 | 0 | 0 | 0 | 60 | 20 | 80 | 23 |
| Zone_ouest_P2 | Invisible | | Gouraud | 05-04-2019 09:20 | None | 321 | 0 | 0 | 0 | 100 | 40 | 160 | 22 |
| Zone_ouest_P1 | Invisible | | Gouraud | 05-04-2019 09:19 | None | 321 | 0 | 0 | 0 | 50 | 20 | 80 | 22 |
| Zone_centre_18_P2 | Invisible | | Gouraud | 05-04-2019 09:05 | None | 333 | 0 | 0 | 0 | 100 | 30 | 120 | 20 |
| Zone_centre_18_P1 | Invisible | | Gouraud | 05-04-2019 09:05 | None | 333 | 0 | 0 | 0 | 50 | 20 | 60 | 20 |
| Zone_centre_bis5_P2 | Invisible | | Gouraud | 05-04-2019 08:42 | None | 324 | 0 | 0 | 0 | 100 | 30 | 140 | 18 |
| Zone_centre_bis5_P1 | Invisible | | Gouraud | 05-04-2019 08:42 | None | 324 | 0 | 0 | 0 | 50 | 20 | 70 | 18 |
| Zone_centre_bis4_P2 | Invisible | | Gouraud | 05-04-2019 08:23 | None | 322 | 0 | 0 | 0 | 100 | 30 | 120 | 17 |
| Zone_centre_bis4_P1 | Invisible | | Gouraud | 05-04-2019 08:23 | None | 322 | 0 | 0 | 0 | 50 | 20 | 60 | 17 |
| Zone_centre_24_P2 | Invisible | | Gouraud | 04-04-2019 16:00 | None | 358 | 0 | 0 | 0 | 100 | 30 | 120 | 13 |
| Zone_centre_24_P1 | Invisible | | Gouraud | 04-04-2019 16:00 | None | 358 | 0 | 0 | 0 | 50 | 20 | 60 | 13 |
| Zone_centre_bis2_P2 | Invisible | | Gouraud | 04-04-2019 15:43 | None | 352 | 0 | 0 | 0 | 100 | 30 | 140 | 12 |
| Zone_centre_bis2_P1 | Invisible | | Gouraud | 04-04-2019 15:43 | None | 352 | 0 | 0 | 0 | 50 | 20 | 70 | 12 |
| Zone_centre_bis6_P2 | Invisible | | Gouraud | 04-04-2019 15:29 | None | 333 | 0 | 0 | 0 | 100 | 30 | 160 | 11 |
| Zone_centre_bis6_P1 | Invisible | | Gouraud | 04-04-2019 15:28 | None | 333 | 0 | 0 | 0 | 50 | 20 | 80 | 11 |
| Zone_centre_bis3_P2 | Invisible | | Gouraud | 04-04-2019 15:15 | None | 336 | 0 | 0 | 0 | 100 | 30 | 160 | 10 |
| Zone_centre_bis3_P1 | Invisible | | Gouraud | 04-04-2019 15:15 | None | 336 | 0 | 0 | 0 | 50 | 20 | 80 | 10 |
| Zone_centre_bis_P2 | Invisible | | Gouraud | 04-04-2019 14:53 | None | 330 | 0 | 0 | 0 | 100 | 30 | 160 | 9 |
| Zone_centre_bis_P1 | Invisible | | Gouraud | 04-04-2019 14:52 | None | 330 | 0 | 0 | 0 | 50 | 20 | 80 | 9 |
| Zone_centre_Ctr_P2 | Invisible | | Gouraud | 04-04-2019 13:56 | None | 322 | 0 | 0 | 0 | 120 | 30 | 160 | 8 |
| Zone_centre_Ctr_P1 | Invisible | | Gouraud | 04-04-2019 13:55 | None | 322 | 0 | 0 | 0 | 60 | 20 | 80 | 8 |
| Zone_centre_env14_P2 | Invisible | | Gouraud | 04-04-2019 13:48 | None | 321 | 0 | 0 | 0 | 70 | 30 | 120 | 7 |
| Zone_centre_env14_P1 | Invisible | | Gouraud | 04-04-2019 13:47 | None | 321 | 0 | 0 | 0 | 50 | 20 | 60 | 7 |
| Zone_centre_env13_P2 | Invisible | | Gouraud | 04-04-2019 13:25 | None | 331 | 0 | 0 | 0 | 100 | 30 | 120 | 6 |
| Zone_centre_env13_P1 | Invisible | | Gouraud | 04-04-2019 13:25 | None | 331 | 0 | 0 | 0 | 50 | 20 | 60 | 6 |
| Zone_centre_Ext_Est_P2 | Invisible | | Gouraud | 04-04-2019 13:17 | None | 326 | 0 | 0 | 0 | 120 | 30 | 160 | 5 |
| Zone_centre_Ext_Est_P1 | Invisible | | Gouraud | 04-04-2019 13:16 | None | 326 | 0 | 0 | 0 | 60 | 20 | 80 | 5 |
| Zone_centre_bis7_P2 | Invisible | | Gouraud | 04-04-2019 12:47 | None | 331 | 0 | 0 | 0 | 120 | 30 | 160 | 4 |
| Zone_centre_bis7_P1 | Invisible | | Gouraud | 04-04-2019 12:46 | None | 331 | 0 | 0 | 0 | 60 | 20 | 80 | 4 |
| Zone_centre_Est_bis2_P2 | Invisible | | Gouraud | 04-04-2019 12:06 | None | 340 | 0 | 0 | 0 | 60 | 30 | 120 | 3 |
| Zone_centre_Est_bis2_P1 | Invisible | | Gouraud | 04-04-2019 12:06 | None | 340 | 0 | 0 | 0 | 50 | 20 | 60 | 3 |
| Zone_centre_Est_P2 | Invisible | | Gouraud | 04-04-2019 11:24 | None | 340 | 0 | 0 | 0 | 100 | 30 | 160 | 2 |
| Zone_centre_Est_P1 | Invisible | | Gouraud | 04-04-2019 11:24 | None | 340 | 0 | 0 | 0 | 50 | 20 | 60 | 2 |
| Zone_centre_Est_bis_P2 | Invisible | | Gouraud | 04-04-2019 10:53 | None | 337 | 0 | 0 | 0 | 100 | 30 | 120 | 1 |
| Zone_centre_Est_bis_P1 | Invisible | | Gouraud | 13-11-2017 14:15 | None | 337 | 0 | 0 | 0 | 50 | 20 | 60 | 1 |

Table 52: Search ellipsoid list for SUD zone.

| Name | Show | Color | Shading | Date | Transparency | Azimuth | Dip | Spin | Azimuth2 | Major | Median | Minor | Co... |
|---------------------------|-----------|-------|---------|------------------|--------------|---------|-----|------|----------|-------|--------|-------|---------|
| Sud_bis_3 | Invisible | | Gouraud | 14-11-2017 11:55 | None | 140 | 0 | 0 | 0 | 40 | 5 | 80 | Passé 1 |
| Zone_Sud_Ind_P2 | Visible | | Gouraud | 12-04-2019 09:12 | None | 4 | 0 | 0 | 0 | 40 | 15 | 40 | P2 |
| Zone_Sud_Ind_P1 | Visible | | Gouraud | 12-04-2019 09:11 | None | 321 | 0 | 0 | 0 | 40 | 15 | 40 | P1 |
| Sud_Ouest_Ind | Invisible | | Gouraud | 14-09-2018 09:55 | None | 125 | 0 | 0 | 0 | 10 | 5 | 20 | Ind |
| Sud_Ouest_bis_Ind | Invisible | | Gouraud | 14-09-2018 10:08 | None | 130 | 0 | 0 | 0 | 10 | 5 | 20 | Ind |
| Sud_Ouest_bis_2_ind | Invisible | | Gouraud | 14-09-2018 10:05 | None | 120 | 0 | 0 | 0 | 10 | 5 | 20 | Ind |
| Sud_nord_Ind | Invisible | | Gouraud | 13-09-2018 16:43 | None | 161 | 0 | 0 | 0 | 10 | 5 | 20 | Ind |
| Sud_Centre_Ind | Invisible | | Gouraud | 14-09-2018 09:00 | None | 138 | 0 | 0 | 0 | 10 | 5 | 20 | Ind |
| Sud_Centre2_Ind | Invisible | | Gouraud | 14-09-2018 09:52 | None | 138 | 0 | 0 | 0 | 10 | 5 | 20 | Ind |
| Zone_Sud_centre2_P2 | Visible | | Gouraud | 08-04-2019 07:50 | None | 313 | 0 | 0 | 0 | 120 | 30 | 120 | 047P02 |
| Zone_Sud_Ouest_bis03_P2 | Visible | | Gouraud | 08-04-2019 08:21 | None | 315 | 0 | 0 | 0 | 60 | 15 | 80 | 12P02 |
| Zone_Sud_Ouest_bis03_P1 | Visible | | Gouraud | 08-04-2019 08:20 | None | 315 | 0 | 0 | 0 | 40 | 15 | 50 | 12P01 |
| Zone_Sud_Ouest_bis_new_P2 | Visible | | Gouraud | 08-04-2019 08:14 | None | 312 | 0 | 0 | 0 | 80 | 30 | 100 | 11P02 |
| Zone_Sud_Ouest_bis_new_P1 | Visible | | Gouraud | 08-04-2019 08:14 | None | 312 | 0 | 0 | 0 | 40 | 15 | 50 | 11P01 |
| Zone_Sud_Ouest_bis2_P2 | Visible | | Gouraud | 08-04-2019 08:11 | None | 301 | 0 | 0 | 0 | 60 | 20 | 100 | 10P02 |
| Zone_Sud_Ouest_bis2_P1 | Visible | | Gouraud | 08-04-2019 08:11 | None | 301 | 0 | 0 | 0 | 40 | 15 | 50 | 10P01 |
| Zone_Sud_Ouest_P2 | Visible | | Gouraud | 08-04-2019 08:03 | None | 305 | 0 | 0 | 0 | 80 | 15 | 100 | 09P02 |
| Zone_Sud_Ouest_P1 | Visible | | Gouraud | 08-04-2019 08:03 | None | 305 | 0 | 0 | 0 | 40 | 15 | 50 | 09P01 |
| Sud_Ouest_passe02 | Invisible | | Gouraud | 12-09-2018 16:54 | None | 125 | 0 | 0 | 0 | 60 | 15 | 120 | 8 |
| Sud_Ouest_passe1 | Invisible | | Gouraud | 14-11-2017 10:38 | None | 125 | 0 | 0 | 0 | 30 | 10 | 60 | 8 |
| Sud_centre3_P2 | Visible | | Gouraud | 08-04-2019 07:59 | None | 328 | 0 | 0 | 0 | 80 | 30 | 100 | 08P02 |
| Sud_centre3_P1 | Visible | | Gouraud | 08-04-2019 07:58 | None | 328 | 0 | 0 | 0 | 40 | 15 | 50 | 08P01 |
| Zone_Sud_centre2_P1 | Visible | | Gouraud | 08-04-2019 07:50 | None | 313 | 0 | 0 | 0 | 60 | 15 | 60 | 07P01 |
| Sud_Ouest_bis_pass02 | Invisible | | Gouraud | 13-09-2018 10:02 | None | 130 | 0 | 0 | 0 | 60 | 15 | 100 | 7 |
| Sud_Ouest_bis_pass01 | Invisible | | Gouraud | 14-11-2017 11:13 | None | 130 | 0 | 0 | 0 | 30 | 10 | 50 | 7 |
| Zone_sud_centre_P2 | Visible | | Gouraud | 08-04-2019 07:42 | None | 320 | 0 | 0 | 0 | 120 | 30 | 120 | 06P02 |
| Zone_sud_centre_P1 | Visible | | Gouraud | 08-04-2019 07:42 | None | 320 | 0 | 0 | 0 | 60 | 15 | 60 | 06P01 |
| Sud_nord_passe02 | Invisible | | Gouraud | 12-09-2018 16:36 | None | 161 | 0 | 0 | 0 | 40 | 15 | 80 | 6 |
| Sud_nord_pass01 | Invisible | | Gouraud | 14-11-2017 09:41 | None | 161 | 0 | 0 | 0 | 25 | 5 | 50 | 6 |
| Zone_sud12_P2 | Visible | | Gouraud | 08-04-2019 07:31 | None | 5 | 0 | 0 | 0 | 40 | 10 | 50 | 05P02 |
| Zone_sud12_P1 | Visible | | Gouraud | 08-04-2019 07:30 | None | 5 | 0 | 0 | 0 | 40 | 10 | 50 | 05P01 |
| Sud_Centre_pass02 | Invisible | | Gouraud | 12-09-2018 16:45 | None | 140 | 0 | 0 | 0 | 80 | 15 | 140 | 5 |
| Sud_Centre_pass01 | Invisible | | Gouraud | 14-11-2017 10:21 | None | 140 | 0 | 0 | 0 | 40 | 10 | 80 | 5 |
| Zone_sud_nord_P2 | Visible | | Gouraud | 08-04-2019 07:25 | None | 348 | 0 | 0 | 0 | 80 | 30 | 120 | 04P02 |
| Zone_sud_nord_P1 | Visible | | Gouraud | 08-04-2019 07:24 | None | 348 | 0 | 0 | 0 | 40 | 15 | 60 | 04P01 |
| Sud_Centre02_pass02 | Invisible | | Gouraud | 12-09-2018 16:53 | None | 130 | 0 | 0 | 0 | 60 | 15 | 120 | 4 |
| Sud_Centre2_pass01 | Invisible | | Gouraud | 12-09-2018 16:52 | None | 130 | 0 | 0 | 0 | 30 | 5 | 60 | 4 |
| Zone_sud_11_P2 | Visible | | Gouraud | 08-04-2019 07:09 | None | 1 | 0 | 0 | 0 | 60 | 10 | 100 | 03P02 |
| Zone_sud_11_P1 | Visible | | Gouraud | 08-04-2019 07:09 | None | 1 | 0 | 0 | 0 | 30 | 5 | 50 | 03P01 |
| Sud_Ouest_bis_2pass02 | Invisible | | Gouraud | 13-09-2018 09:48 | None | 120 | 0 | 0 | 0 | 75 | 15 | 120 | 3 |
| Sud_Ouest_bis_2pass01 | Invisible | | Gouraud | 14-11-2017 11:37 | None | 120 | 0 | 0 | 0 | 30 | 5 | 60 | 3 |
| Zone_Sud_10_P2 | Visible | | Gouraud | 08-04-2019 06:54 | None | 311 | 0 | 0 | 0 | 120 | 20 | 120 | 02P2 |
| Zone_Sud_10_P1 | Visible | | Gouraud | 08-04-2019 06:54 | None | 311 | 0 | 0 | 0 | 60 | 10 | 60 | 02P1 |
| Sud_ouestbis3_pass02 | Invisible | | Gouraud | 05-10-2018 10:15 | None | 136 | 0 | 0 | 0 | 50 | 10 | 80 | 2 |
| Sud_ouestbis3_pass01 | Invisible | | Gouraud | 05-10-2018 10:15 | None | 136 | 0 | 0 | 0 | 25 | 5 | 40 | 2 |
| Zone_Sud_09_P2 | Visible | | Gouraud | 08-04-2019 06:48 | None | 323 | 0 | 0 | 0 | 60 | 10 | 100 | 01P2 |
| Zone_Sud_09_P1 | Visible | | Gouraud | 08-04-2019 06:46 | None | 323 | 0 | 0 | 0 | 30 | 5 | 50 | 01P1 |
| Sud_Centre3_pass02 | Invisible | | Gouraud | 05-10-2018 09:52 | None | 138 | 0 | 0 | 0 | 50 | 10 | 80 | 1 |
| Sud_Centre3_pass01 | Invisible | | Gouraud | 05-10-2018 09:49 | None | 148 | 0 | 0 | 0 | 25 | 5 | 40 | 1 |
| Zone_Sud_Inf_P2 | Visible | | Gouraud | 12-04-2019 09:13 | None | 4 | 0 | 0 | 0 | 400 | 80 | 400 | |
| Zone_Sud_Inf_P1 | Visible | | Gouraud | 12-04-2019 09:12 | None | 321 | 0 | 0 | 0 | 400 | 80 | 400 | |

Search ellipsoids were used for the grade estimation and follow the geological interpretation trends. Block grades were interpolated from the composites within the envelopes in two passes using the inverse distance to the square methodology. For run one and two, we used a number of composites limited to twelve (12) with a minimum of two (2).

Variables (Au, Ag, Pb, Zn and Ge) were estimated using the composites within the envelopes. With the first pass estimating to the full variogram range and the second pass using a search ellipse around twice the size of the first pass.

The mineral resource models were validated for each zone by visually comparing block estimates with borehole data on a section by section, and by elevation basis.

For the tailings, the mineral resource estimation was prepared using the data from holes drilled by the soil sampler.



Figure 116: Tailings sampling with Maya's team.



Figure 117: Tailing core samples taken by the soil sampler placed in a plastic box.

14.6.4 Mineral resource classification

The mineral resource classification of the Boumadine polymetallic deposit was based on the confidence in the geological interpretation, the geological continuity at the surface of the mineralisation, and the quality/quantity of the exploration data supporting the estimates.

The mineral resources were classified using the search ellipsoids for each category:

- Measured mineral resources were estimated using the results from the last drilling campaign. We used a maximum of twelve (12) composites and a minimum of two (2) composites from the same drill hole.
- Indicated mineral resources were estimated using a maximum of twelve (12) composites per block and a minimum of two (2) composites from the same drill hole. And the remaining blocks within the envelopes are classified as inferred mineral resource blocks.
 - o Search ellipsoid radius measured 30m x 30m x 15m.
 - o Search ellipsoid radius indicated 40m x 40m x 15m.
 - o Remaining inferred.

14.6.5 Removal of mined out areas

In order to accurately estimate the resources, GMG removed the mined out volumes (stopes, drifts and adits – digitized from historical plans) after the block model estimation since the mined out volumes were included in the modeled envelopes.

The mined out zones were digitized using the mine plans from TIZI zone, CENTRE and SUD (Figure 118, Figure 119 and Figure 120).

GMG recommends to Maya to do a survey using the GeoSight cavity monitoring system (CMS) to get an accurate 3D mapping of underground voids, shafts, stopes and adits.

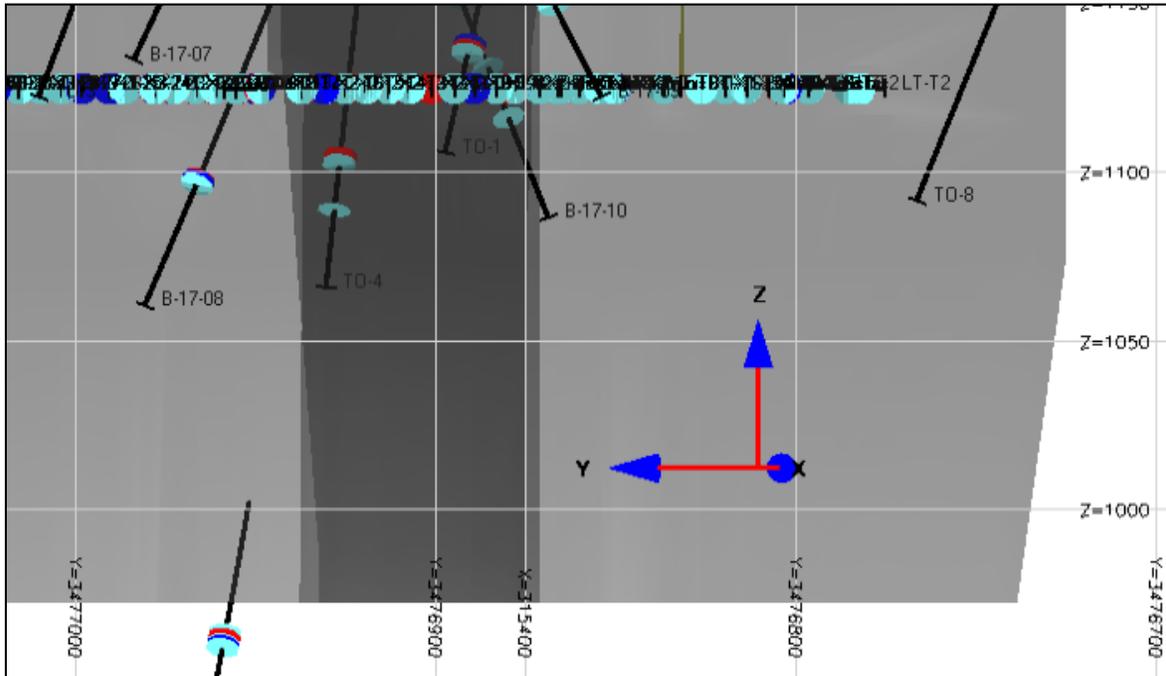


Figure 118: Section TIZI zone with the mined out zone in yellow color.

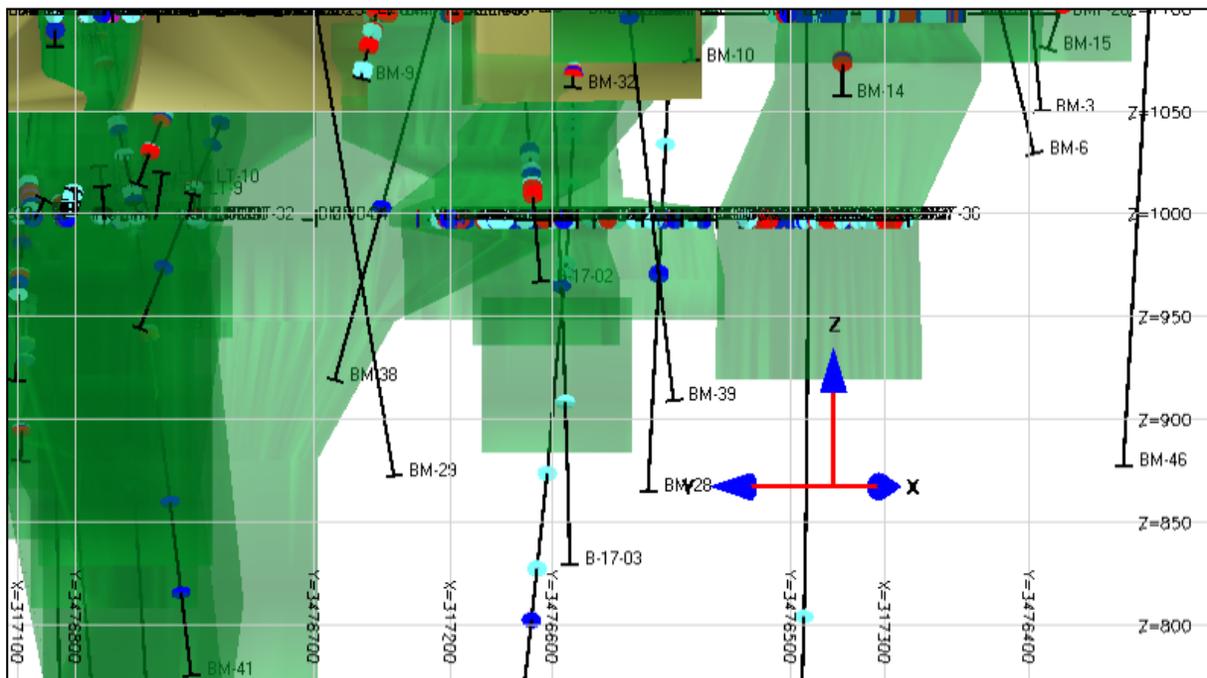


Figure 119: Section CENTRE zone with the mined out zone in yellow color.

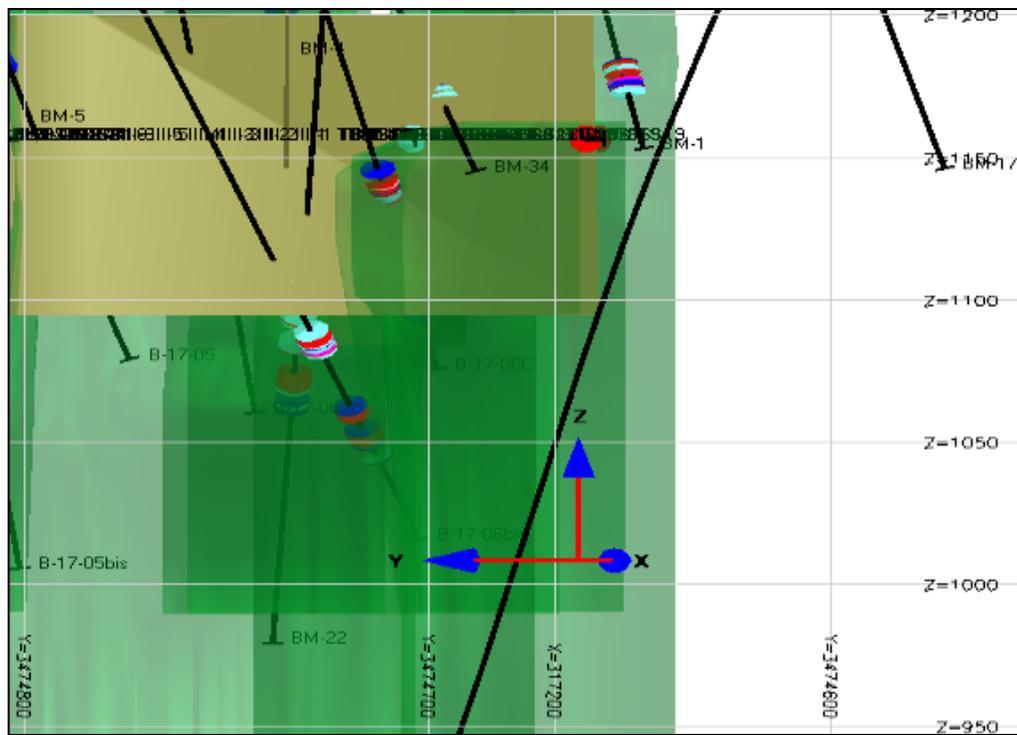


Figure 120: Section SUD zone with the mined out zone in yellow color.

14.6.6 Block models

The envelopes have been filled by regular blocks and only composites within the envelopes have been used to estimate the grades of the blocks. The following figures (Figure 121 to Figure 125) presents the block model of CENTRE zone, SUD, TIZI, NORD and IMARIREN.

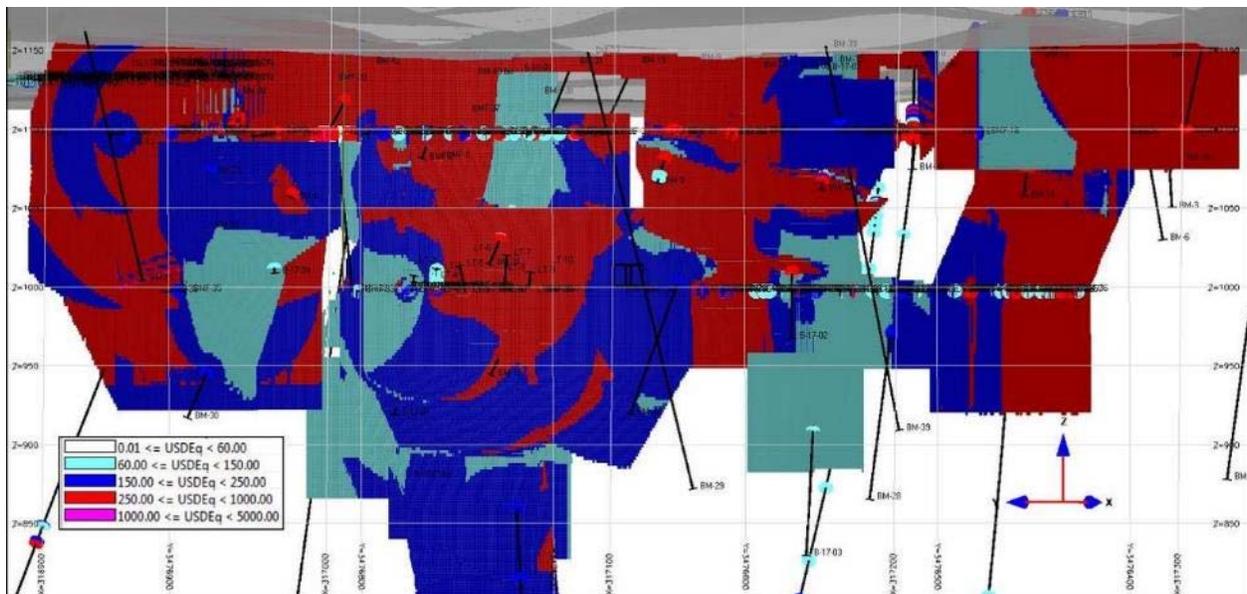


Figure 121: Block model view of CENTRE zone, color coded by USDEq value.

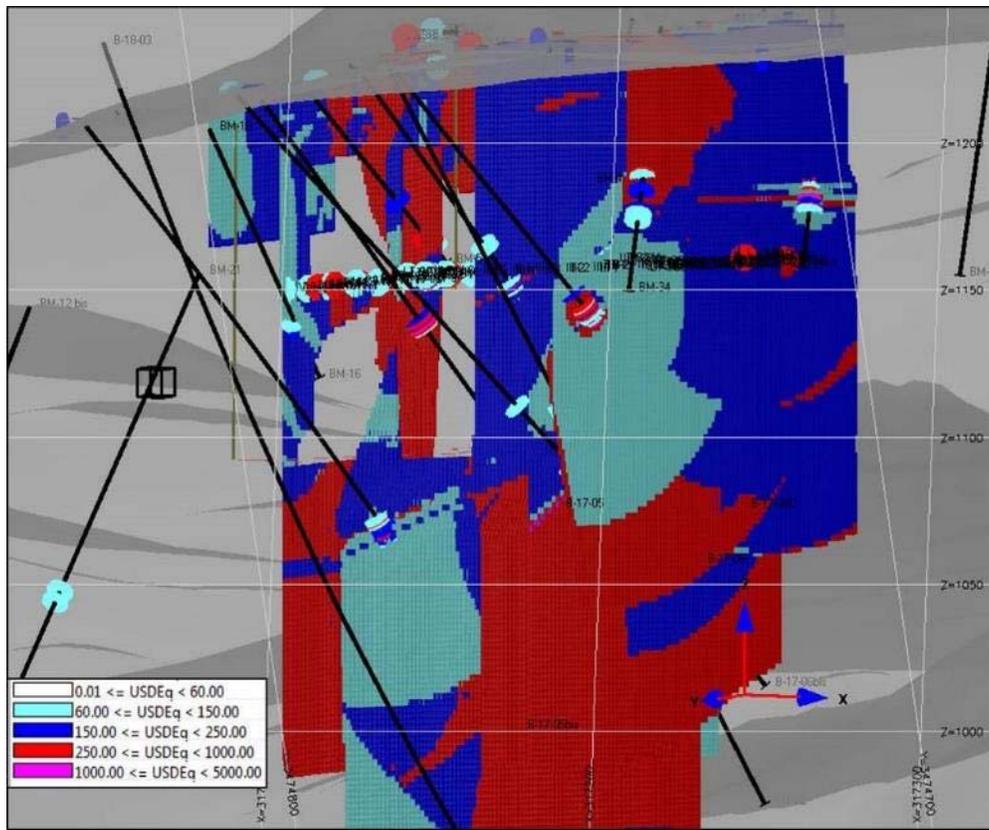


Figure 122: Block model view of SUD zone, color coded by USDEq value.

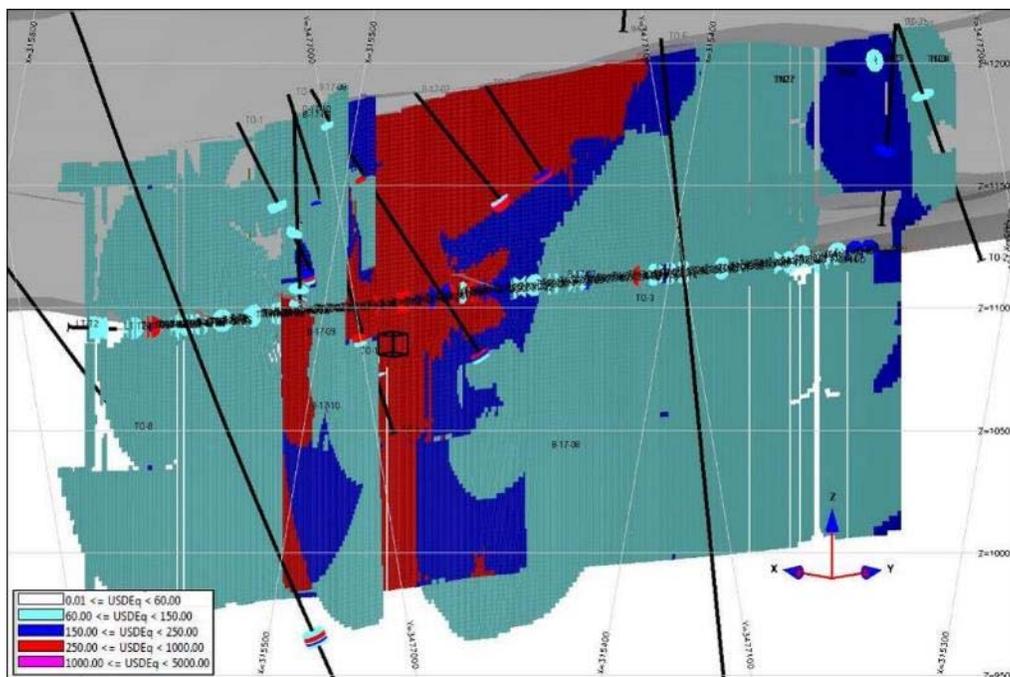


Figure 123: Block model view of TIZI zone, color coded by USDEq value.

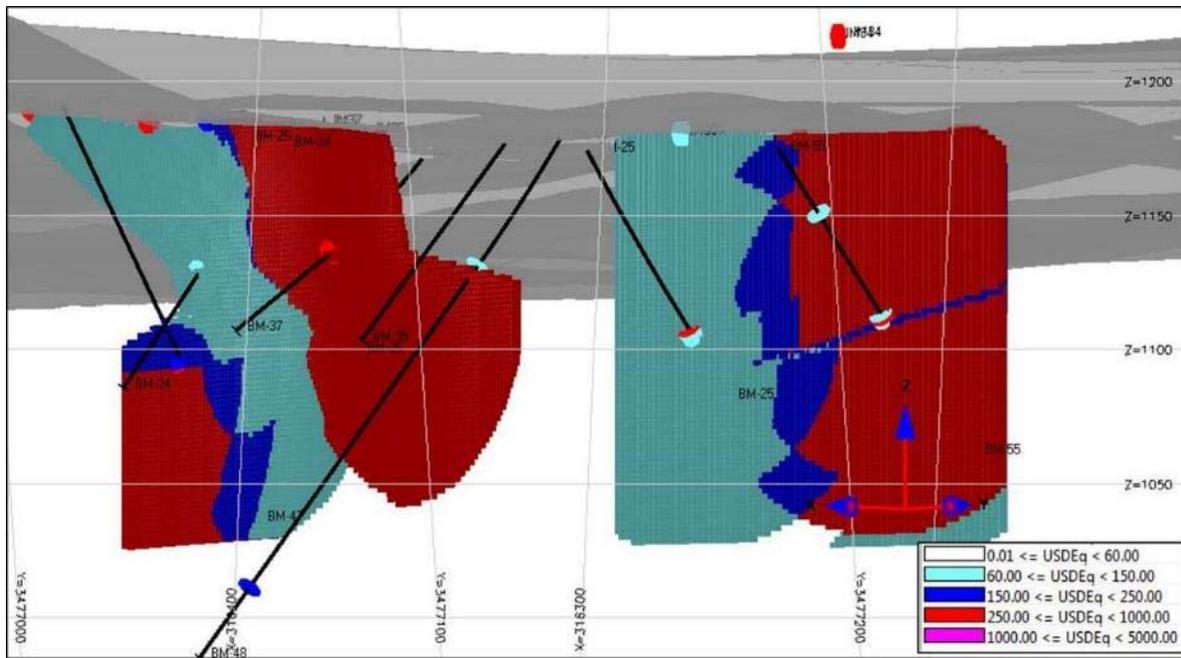


Figure 124: Block model view of NORD zone, color coded by USDEq value.

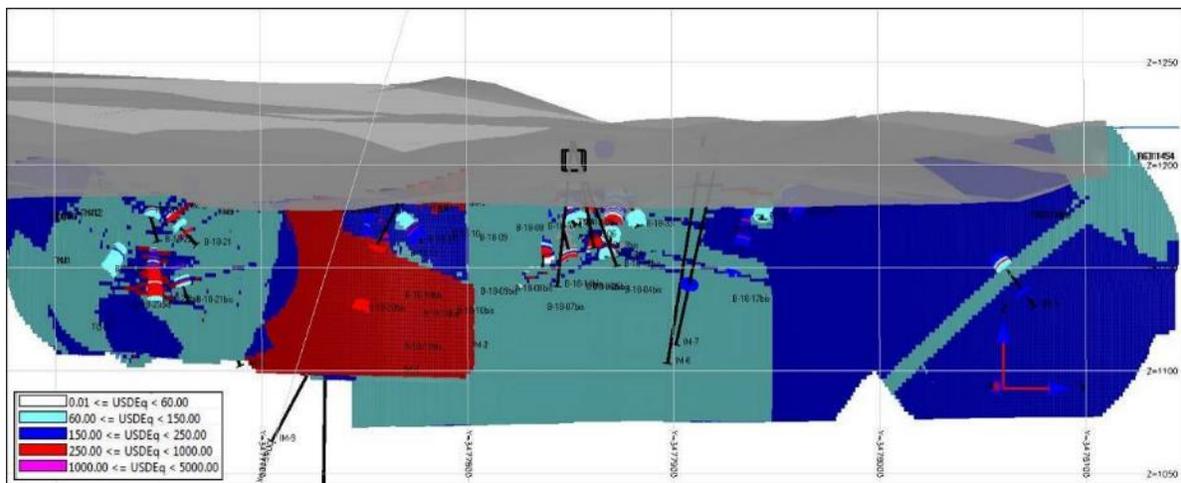


Figure 125: Block model view of IMARIREN zone, color coded by USDEq value.

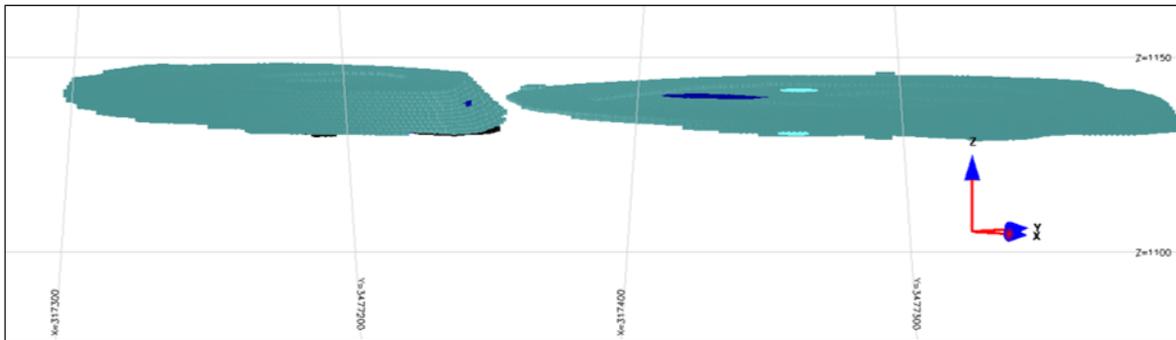


Figure 126: Block models of the tailings, color coded by USDEq value.

14.6.7 Mineral resource estimation

The following table summarizes mineral resource estimates, combining fifty-one (51) block models. The mined out volumes were removed from the estimated resources. The old tailings are included in the mineral resources (Table 53).

The measured and indicated resources total 2,532,000 tonnes at 250.61 USDEq (measured 337,000 tonnes at 251.65 USDEq; indicated 2,195,000 tonnes at 250.45 USDEq) with a total of 489,000 ounces of Au equivalent. Inferred resources total 6,451,000 tonnes at 222.96 USDEq (total of 1,102,000 ounces of Au equivalent).

Mineral reserves and mineral resources are as defined by CIM Definition Standards on Mineral Resources and Mineral Reserves. Mineral resources which are not mineral reserves do not have demonstrated economic viability.

Table 53: Total mineral resource at Boumadine polymetallic mine including the tailings (rounded numbers).

| Mineral resource estimate | Au g/t | Ag g/t | Zn% | Pb% | Ge g/t | USDEq | Au eq | Tonnes | Au eq (oz) |
|-----------------------------|--------|--------|------|------|--------|--------|-------|-----------|------------|
| Total Measured | 3.89 | 142.12 | 0.54 | 0.13 | 0.00 | 251.65 | 6.02 | 337 000 | 65 000 |
| Total Indicated | 1.57 | 127.88 | 3.06 | 1.20 | 3.90 | 250.45 | 6.00 | 2 195 000 | 423 000 |
| Total Meas & Ind | 1.88 | 129.77 | 2.73 | 1.06 | 3.38 | 250.61 | 6.00 | 2 532 000 | 489 000 |
| Total Inferred | 1.56 | 89.55 | 2.73 | 1.16 | 5.08 | 222.96 | 5.31 | 6 451 000 | 1 102 000 |

The USDEq was calculated using the equation below and the price list in the Table 54:

$$\text{USDEq} = (\text{Au g/t} \times 41.8) + (\text{Ag g/t} \times 0.5) + (\text{Zn\%} \times 28.75) + (\text{Pb\%} \times 20.1) + (\text{Ge g/t} \times 2.2).$$

Table 54: Price list of Au, Ag, Zn, Pb and Ge.

| Elements | Oz price |
|----------|---------------|
| Au | 1300 USD |
| Ag | 15.5 USD |
| Elements | ton price |
| Zn | 2875 USD |
| Pb | 2010 USD |
| Ge | 2 200 000 USD |

The table below (Table 55) shows the mineral resource estimates by zones, including the tailings (239,000 tonnes at 168.22 USDEq; 31,000 ounces Au eq). The germanium is only estimated in IMARIREN zone.

Table 55: Mineral resource estimates by zones (ne: not estimated).

| Mineral resource Boumadine | Au g/t | Ag g/t | Zn % | Pb % | Ge g/t | USDEq | Au eq | Tonnes | Au eq (oz) |
|----------------------------|--------|--------|------|------|--------|--------|-------|-----------|------------|
| Measured tailings | 2.30 | 144 | ne | ne | ne | 168.22 | 4.02 | 239 000 | 31 000 |
| Measured CENTRE zone | 7.76 | 137.52 | 1.86 | 0.43 | ne | 455.40 | 10.89 | 98 000 | 34 000 |
| Indicated CENTRE zone | 2.7 | 129.40 | 2.69 | 0.60 | ne | 265.57 | 6.35 | 587 000 | 120 000 |
| Meas + ind CENTRE zone | 3.40 | 130.56 | 2.57 | 0.58 | ne | 292.69 | 7.00 | 685 000 | 154 000 |
| Inferred CENTRE zone | 1.9 | 90.27 | 2.78 | 1.15 | ne | 231.36 | 5.54 | 3 865 000 | 688 000 |
| indicated SUD zone | 1.42 | 172.80 | 3.40 | 1.67 | ne | 276.97 | 6.63 | 983 000 | 209 000 |
| inferred SUD zone | 1.68 | 142.24 | 2.69 | 1.28 | ne | 244.60 | 5.85 | 652000 | 123000 |
| indicated NORD zone | 0.54 | 71.95 | 4.73 | 1.31 | ne | 220.72 | 5.34 | 278 000 | 48 000 |
| Inferred NORD zone | 0.79 | 99.38 | 4.98 | 1.61 | ne | 257.97 | 5.94 | 582 000 | 111 000 |
| indicated Tizi | 1.13 | 75.32 | 2.24 | 1.23 | ne | 174.00 | 4.16 | 97 000 | 13 000 |
| inferred Tizi | 1.12 | 120.79 | 2.01 | 1.18 | ne | 189.00 | 4.52 | 414 000 | 60 000 |
| Indicated Imariren | 0.93 | 30.38 | 1.12 | 0.59 | 34.24 | 173.42 | 4.15 | 250 000 | 33 000 |
| Inferred imariren | 0.38 | 30.12 | 1.47 | 0.82 | 34.90 | 166.54 | 3.98 | 938 000 | 120 000 |

We used only 7.59 Mt of mineralized material in this preliminary economic assessment (PEA) calculation, resources at depth in CENTRE zone and SUD as well as the tailings are not used in this PEA.

14.6.8 Discussions

The project site is uninhabited and the closest residential area is located in the town of Tinejdad.

The actual situation and the commodity prices of Silver, Gold, Zinc Lead and Germanium are favorable for the economic development of the Boumadine Mine.

At the moment of writing this report, the Kingdom of Morocco is a politically stable country with a strong history of mining and qualified workforce, either for underground workings or concentrator operations. Certain risks will always exist in mining development projects, but for this project, the authors believe that they are of low impact.

No adverse protests or objections to the mine development have been observed at Boumadine site and the closest village. The population expressed their total confidence in the project, expecting that more jobs will be created as commented by people met during our 2018 site visit.

Additional studies and fieldwork will be conducted for several environmental components to collect more information in order to have a better understanding of the receiving environment. The claims are not grafted with any environmental liabilities that the authors are aware of.

The authors are not aware about significant factors and risks that may affect access or the ability to perform work on the property.

The Boumadine deposit is subject to a number of known and unknown risks, uncertainties, and other factors that can affect the development of the project:

- Mineral resources are not mineral reserves as they do not have demonstrated economic viability;
- The possibility to transfer mineral resource to mineral reserve if a study demonstrate that the resources are economically viable;
- The tonnage and the grade of the reported inferred resources in this report are uncertain in nature. There has been insufficient exploration work to define these resources as measured or indicated and it is also uncertain whether further exploration would result in upgrading any of the inferred resource to measured or indicated category;
- The mineral resource estimates are undiluted and insitu.

The authors have taken all possible actions to ensure that the mineral resource statements are accurate. The authors rely on historical and recent data and independent sampling results.

15 Reserves

There are no mineral reserves in this study.

16 Mining methods

16.1 Introduction

This PEA report is based on the mineral resource estimate prepared by GMG with technical cut-off date of drill data of March 29th 2019. For the purpose of the PEA, mineral resources in all categories have been considered in the mining evaluation. The mineral resources considered includes the vertical interval from: surface (1150zm elevation) to the 915zm elevation for CENTRE zone; surface (1248zm elevation) to the 997zm elevation for SUD zone; surface (1225zm elevation) to the 978zm elevation for TIZI zone; surface (1220zm elevation) to the 1080zm elevation for NORD zone; surface (1198zm elevation) to the 1078zm elevation for IMARIREN zone;

The mineralized zones are mainly subvertical with a wide variation in thickness.

The Boumadine PEA project assumes the processing of an average 1500 tpd for the first two years and after increasing to 2000 for the third year and the subsequent years up to the end of the mine life.

It is schedule to start mining by open pit for the first two years the top of IMARIREN zone and mining underground the CENTRE and NORD zone, simultaneously. The financial analysis presumes that all IMARIREN is being extracted by underground method cost wise.

In order to minimize development requirements and take advantage of the polymetallic deposit geometry, the cut and fill mining method was selected for underground exploitation. This mining method is also considered ideal for steeply dipping high grade deposits and highly selective. It is also recommended to use the open long-hole mining method with sub-levels for the wider deposits of each zones.

16.2 Geotechnical and hydrological parameters

The Boumadine deposit is located in generally competent rock and has a steep overall dip, making it readily mined using free falling methods. No new information is available for this PEA, and a geotechnical evaluation for the purpose of underground mine design and open pit design has not been performed at this level.

No known hydrogeological difficulties presently exist at the Boumadine project. In general, the Boumadine project does not have dewatering issues for mining. No hydrogeological evaluation was performed for this PEA.

16.3 Stope preparation workings

There will be two main stoping methods. The majority of the mining will be done through a cut-and-fill type method (see Figure 127). A jumbo type is drilling a section, blasting it up to the end of the zone. After the walls (which are waste) are slashed, so the equipment can go on top of it to continue the same sequence again and again. The other method is through long holes if the sections are wider than 5 meters.

16.4 Mill feed grade estimation

The future processing plant will be built to process 2000 metric tons per day and by assuming 330 working days per year, amounting to 660,000 tonnes per year. For the first two years a production of 1500 metric tonnes per day will be achieved and will increase at 2000 metric tonnes per day up to year 2032. Tonnage will come from the 5 zones during the duration of the mine life. See Table 57 for the spread between each zones during time.

All major underground accesses for the 5 zones have been computed and taken into account for the proposed mine development of the PEA.

The surface extraction should use drill, blast, load, haul to crusher. A fleet was initially selected and the management of CMMM prefers to use national mining contractors to reduce the capex burden.

For the underground mining equipment, it was proposed to use the same type of equipment used at the Zgounder mine. The equipment was initially selected as a fleet, since the Zgounder is actually using its own staff and mining contractors, the company wants to pursue in that route for the Boumadine project and equipment list elaborated by GoldMinds should be used as reference for the equivalence only. With the present total mineralized material for the PEA being on the order of 7.5Mt, the mine life would be 11 years with a start-up to 1500 tpd followed by the 2000tpd. The mineralized material available is 7.59Mt at 1.03% Pb, 3% Zn, 1.67 Au g/t, 101.76 Ag g/t. Which includes the Imariren Germanium 1.19Mt at 34.76 g/t where 200Kt is mined in the first 2 years and later gradually from 2030 to 2033.

The mining dilution is estimated to be less than 5% and mining recovery close to 99% as mineralized zone are mainly composed of massive sulfides which are clearly evident. The effective dilution and mining recovery will have to be tested and sorting to maximize recovery is considered for next step.

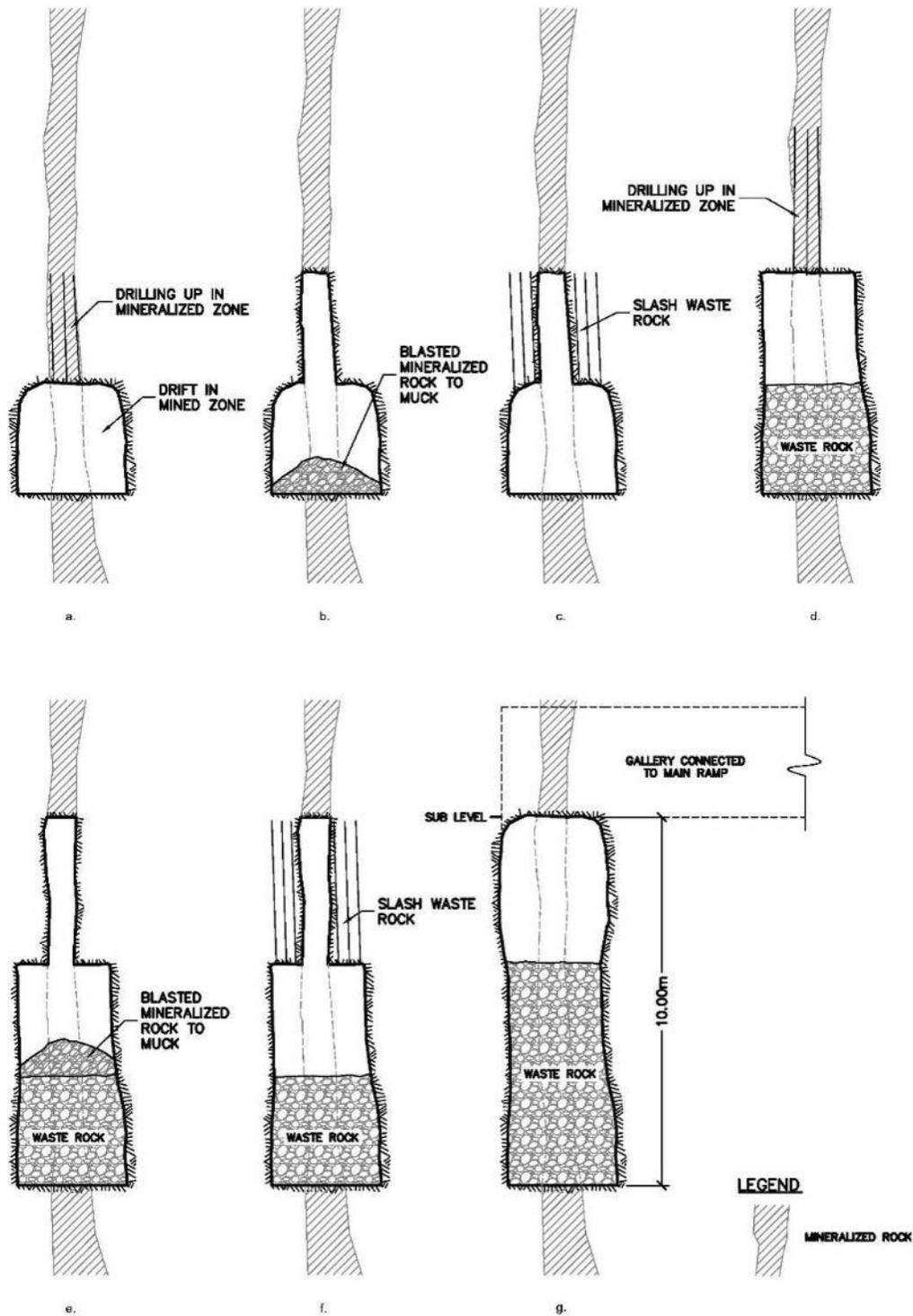


Figure 127: Section views, cut-and-fill type method.

16.5 Proposed mining methods

16.5.1 Underground mining

At Boumadine the mineralized zones are generally vertical with irregular shapes and scattered mineralization. The cut and fill mining method will be used for exploitation and this method is considered ideal for steeply dipping high grade deposits. This mining method is also highly selective where high grade sections can be mined separately from the low grade rock that will be left in the stopes.

Cut and fill mining excavates the mineralized material in horizontal slices, starting from a bottom undercut advancing upward. The material is drilled, blasted, loaded and removed from the stope which is then backfilled with waste rock. The fill serves both to support stope walls and as a working platform when mining the next slice. Backfill selection is dependent on the quality of the host rock and the size of equipment working on top of the backfill.

GMG propose to excavate a main ramp from surface for each of these zones: CENTRE, down to elevation 915zm, SUD down to elevation 1000zm, NORD down to elevation 1080zm, TIZI down to elevation 978zm. The main ramp for IMARIREN will start from the bottom of the IMARIREN open pit down to elevation 1078zm. For the Excavations of the ramp, we assumed 4.5 meters of advance per day.

GMG also proposes the excavation of some main raises for ventilation and escape way purposes. For CENTRE zone an alimak raise will be done from level 915zm up to surface and the main ramp will connect with the existing galleries. For the NORD zone, a raise will be done from level 1080zm up to surface 1220zm (140 meters). Same for IMARIREN from level 1078zm up to surface 1198zm. For the SUD zone, a raise will be done from level 997zm and will connect to an existing raise at level 1097zm. For the TIZI zone, also a raise will be developed from level 978zm and will connect to an existing raise at level 1125zm. Development details are included in Table 58.

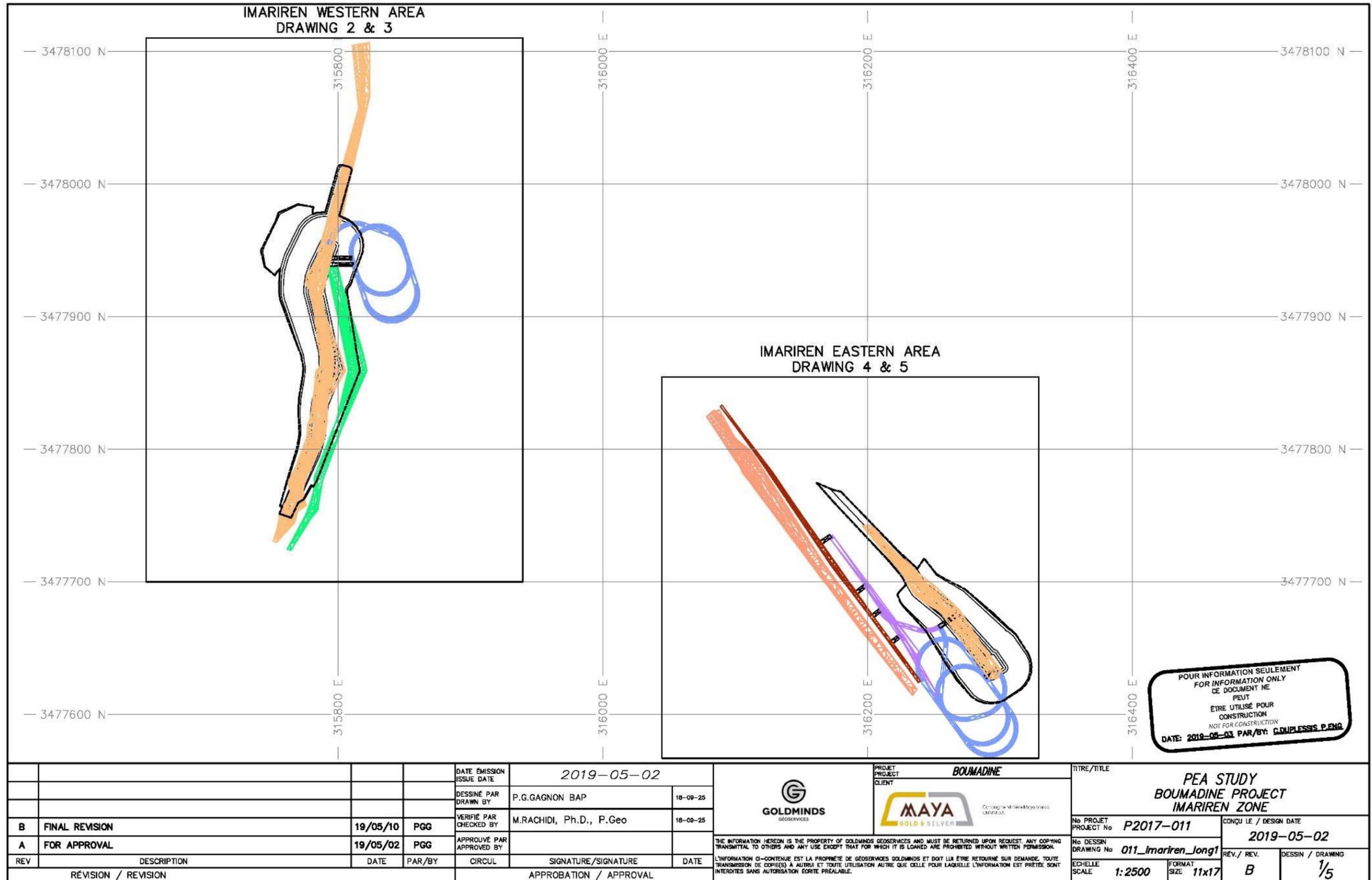


Figure 128: IMARIEN zone, general layout.

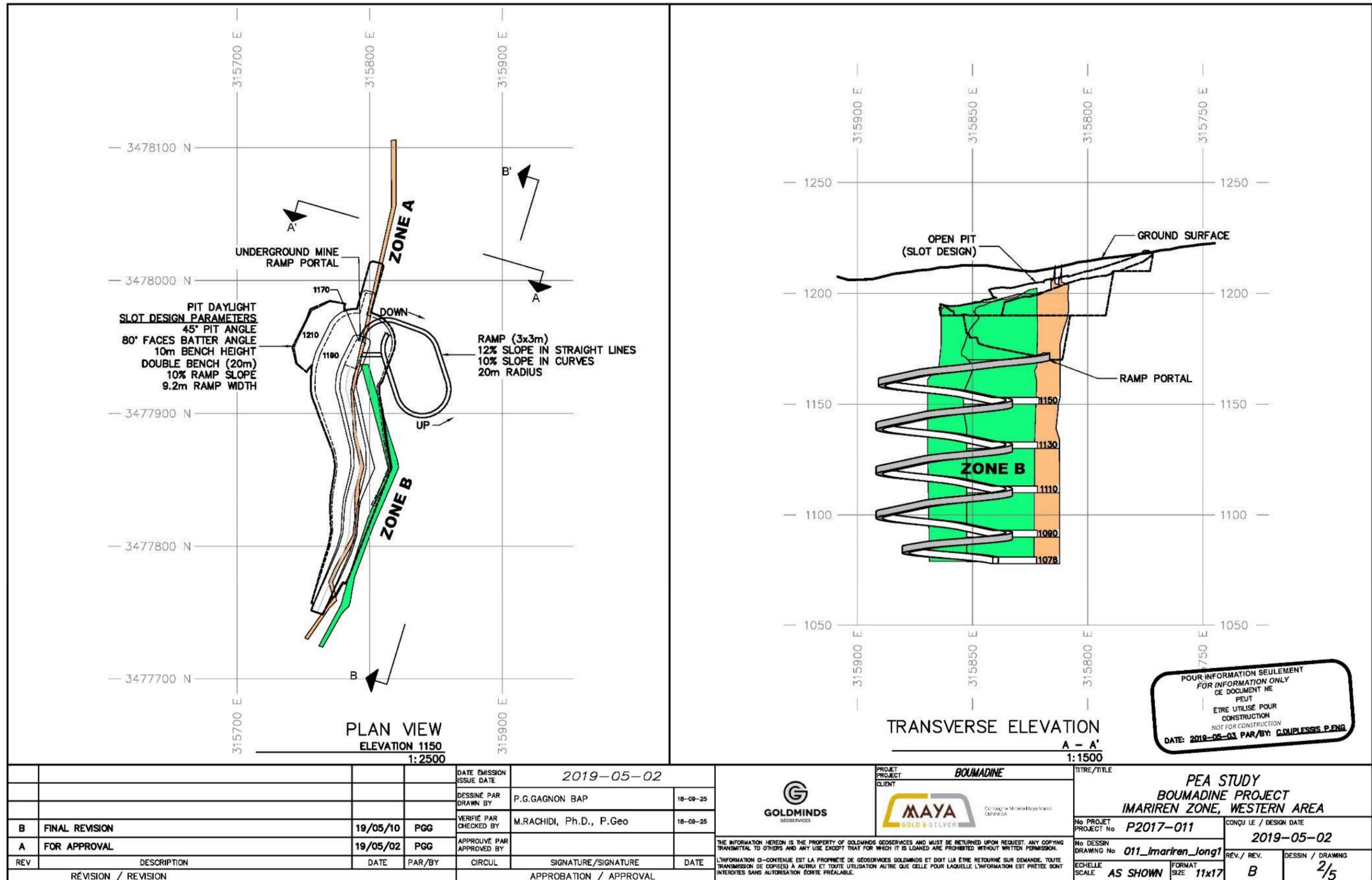


Figure 129: IMARIREN zone, western area, plan view and transverse elevation.

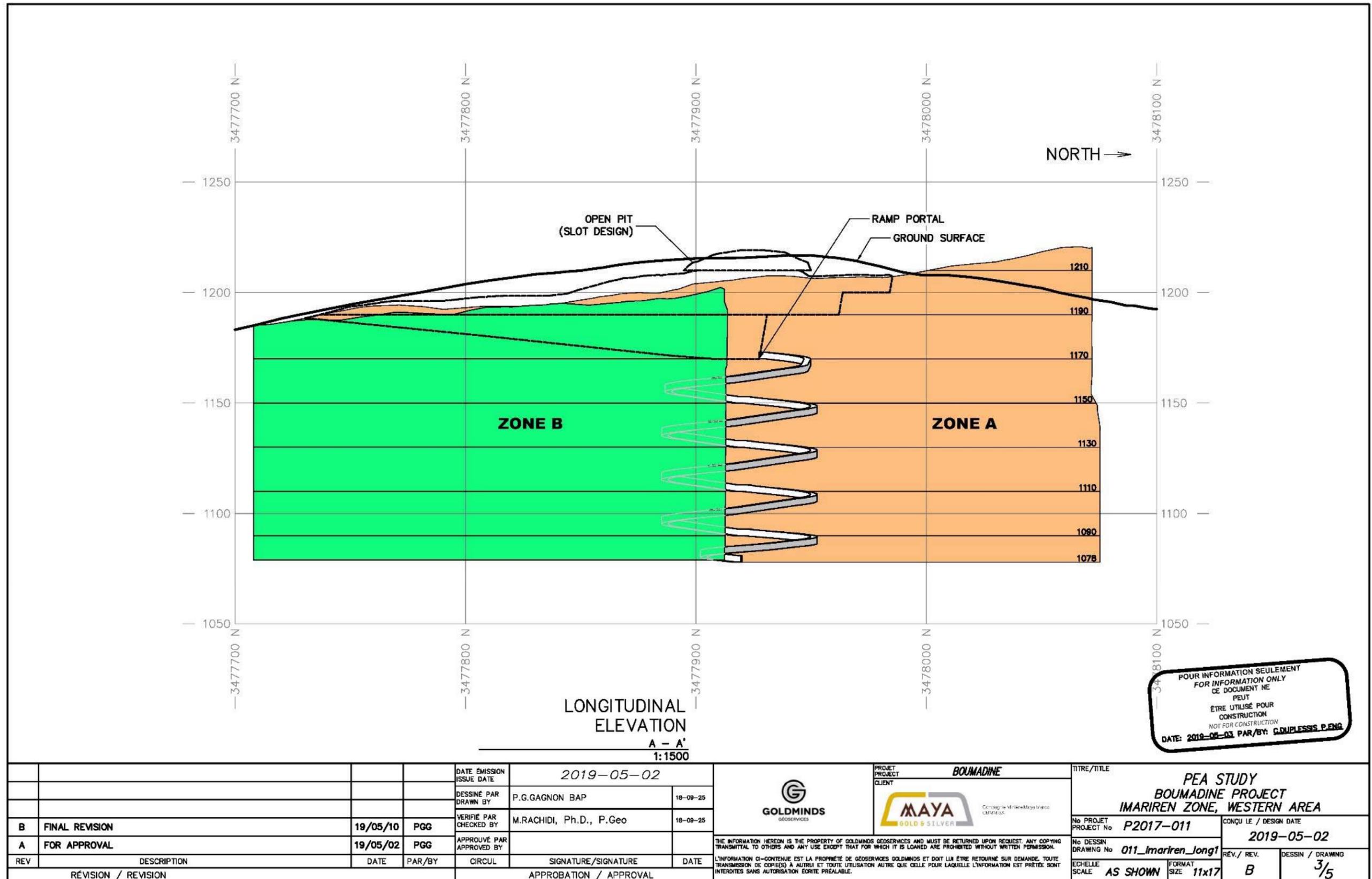


Figure 130: IMARIEN zone, western area, longitudinal elevation.

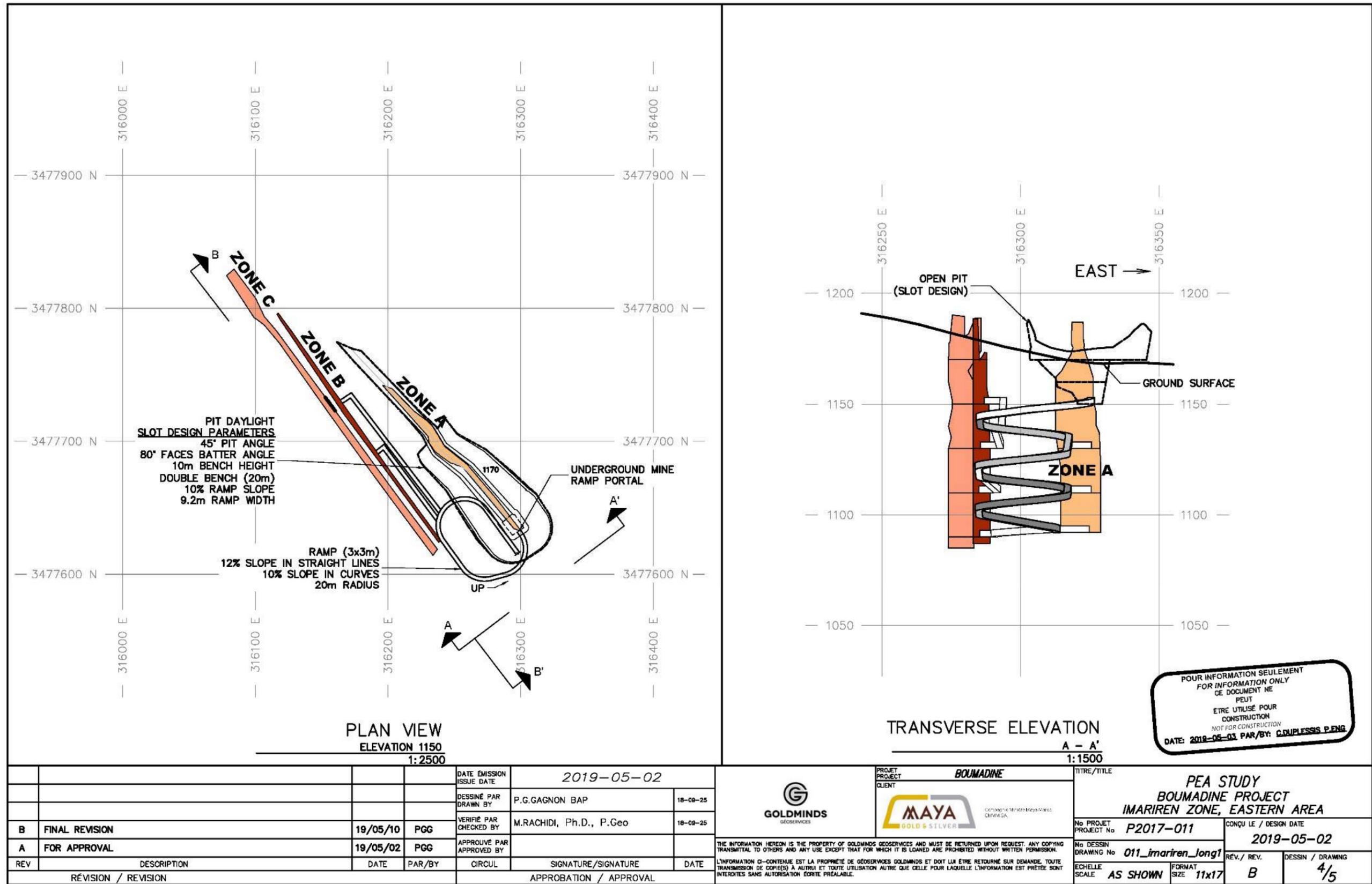


Figure 131: IMARIREN zone, eastern area, plan view and transverse elevation.

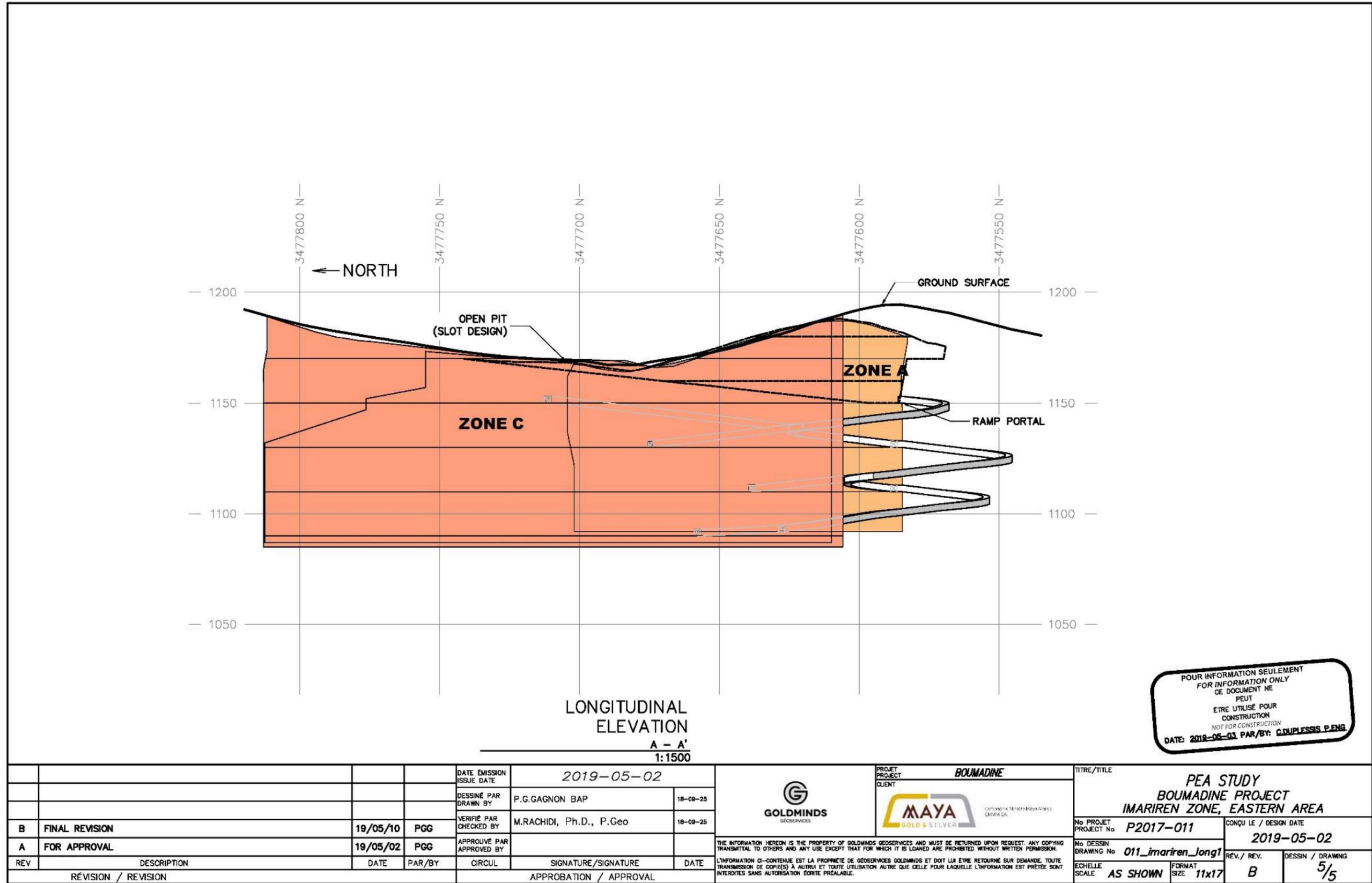


Figure 132: IMARIREN zone, eastern area, longitudinal elevation.

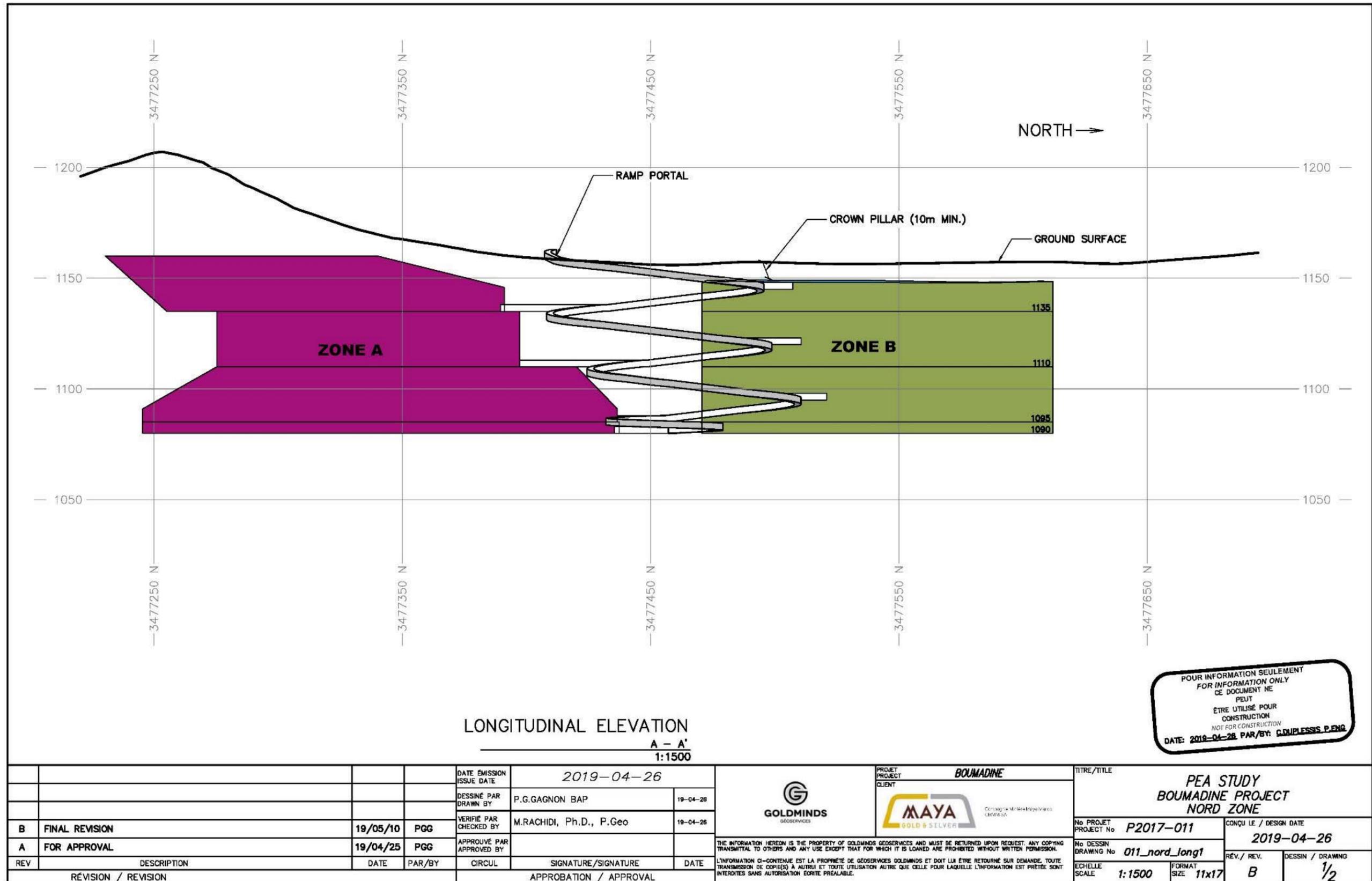


Figure 133: NORD zone, longitudinal elevation.

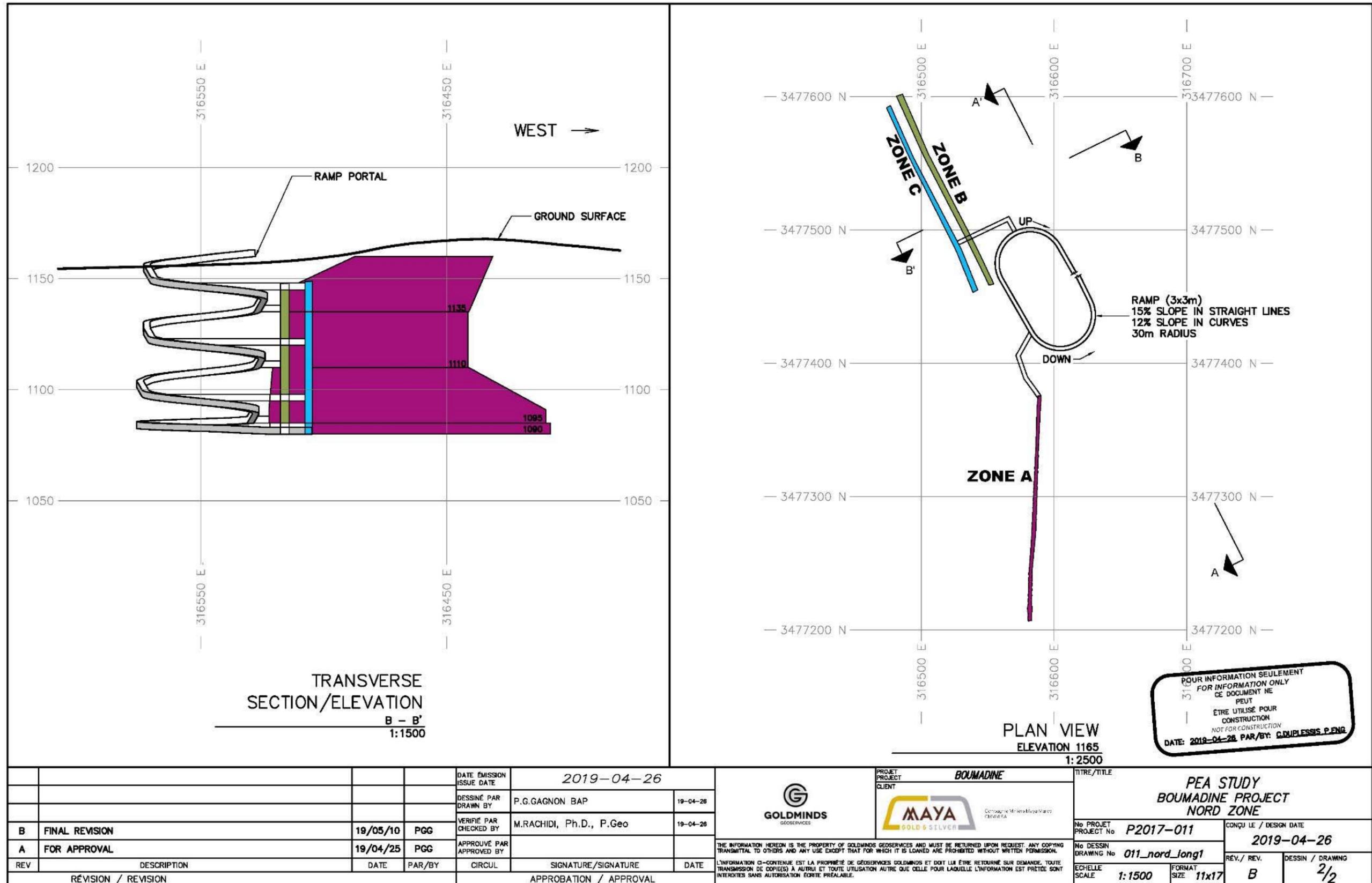


Figure 134: NORD zone, transverse elevation and plan view.

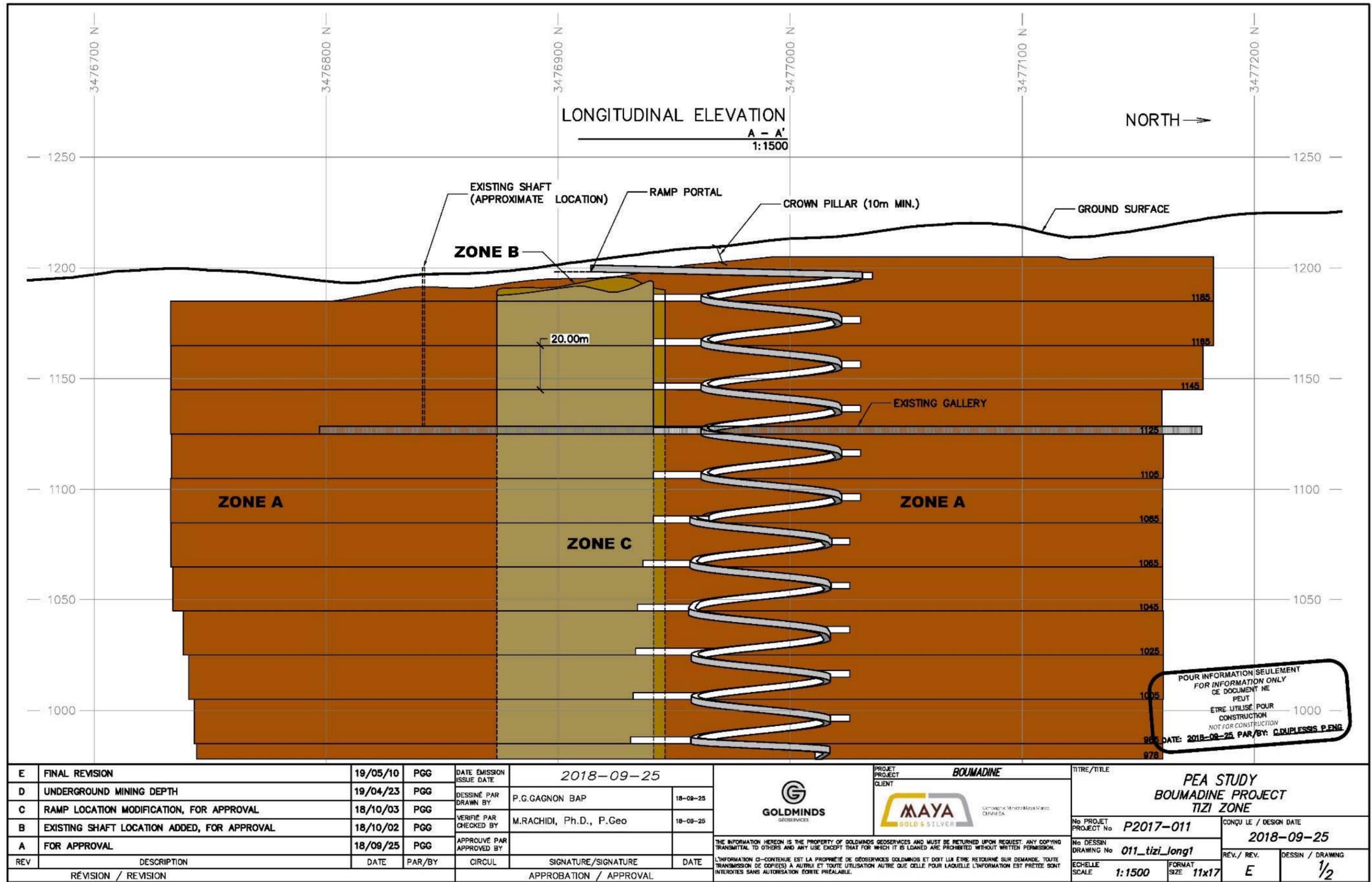


Figure 135: TIZI zone, longitudinal elevation.

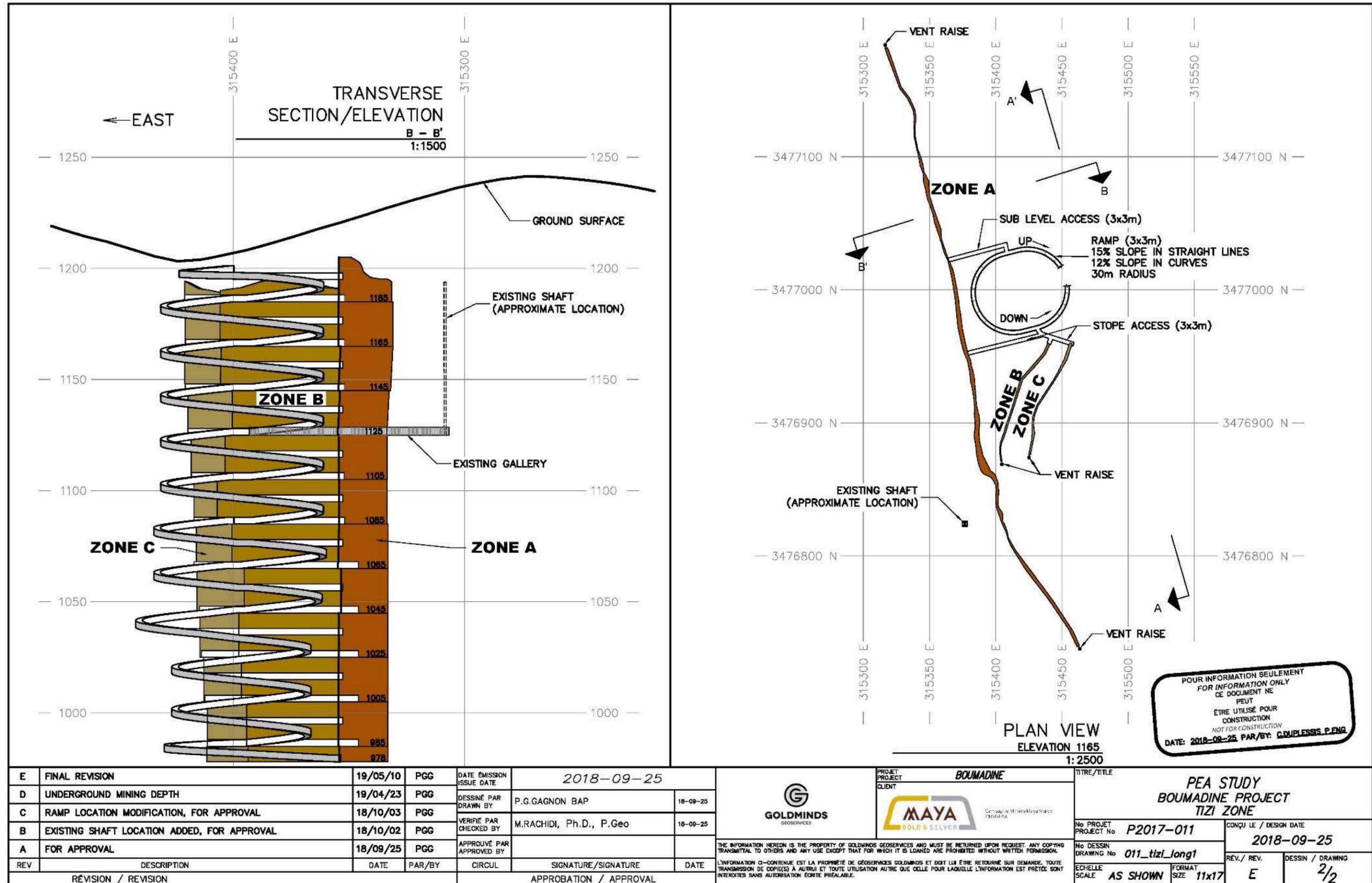


Figure 136: TIZI zone, transverse elevation and plan view.

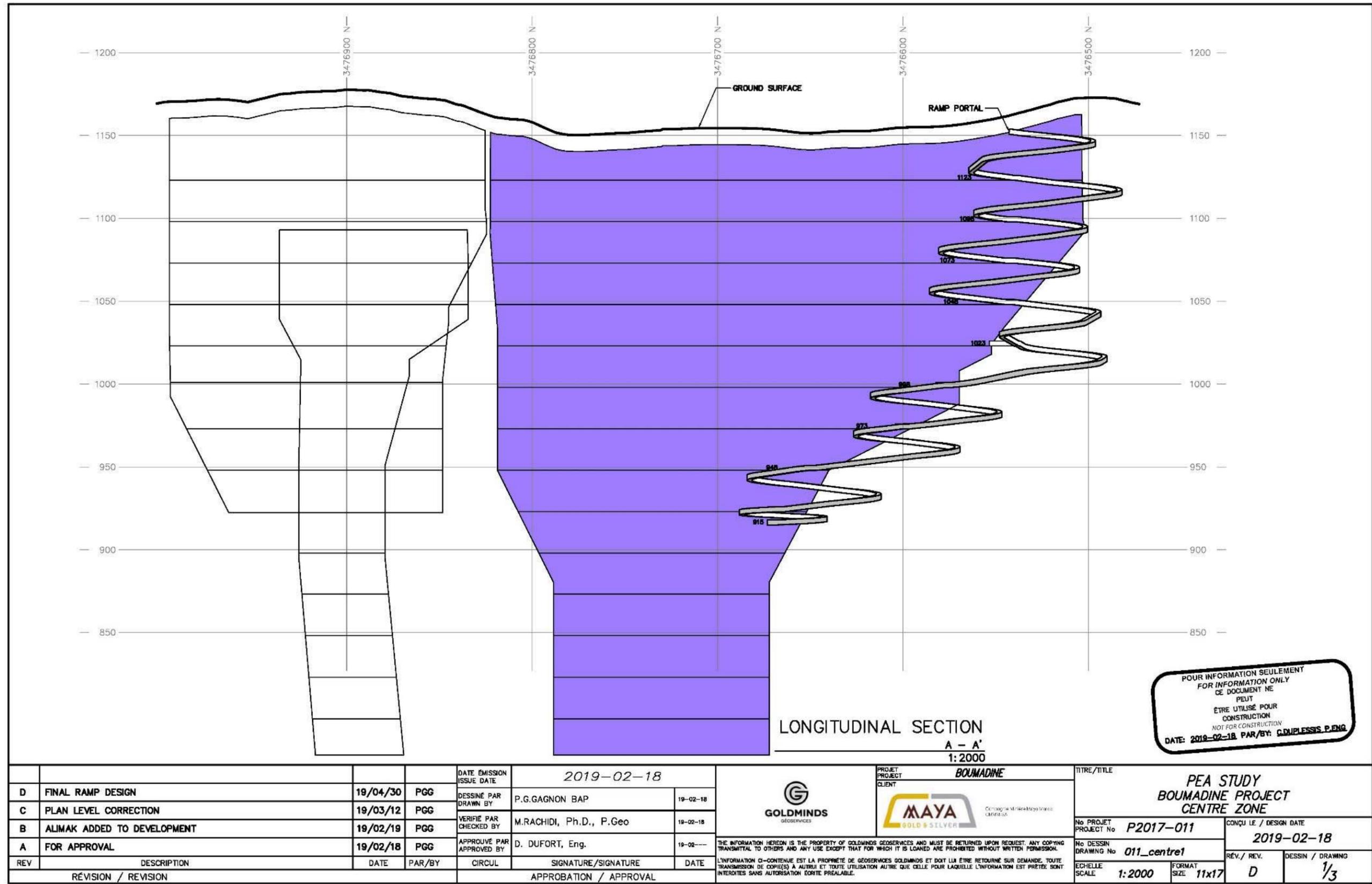
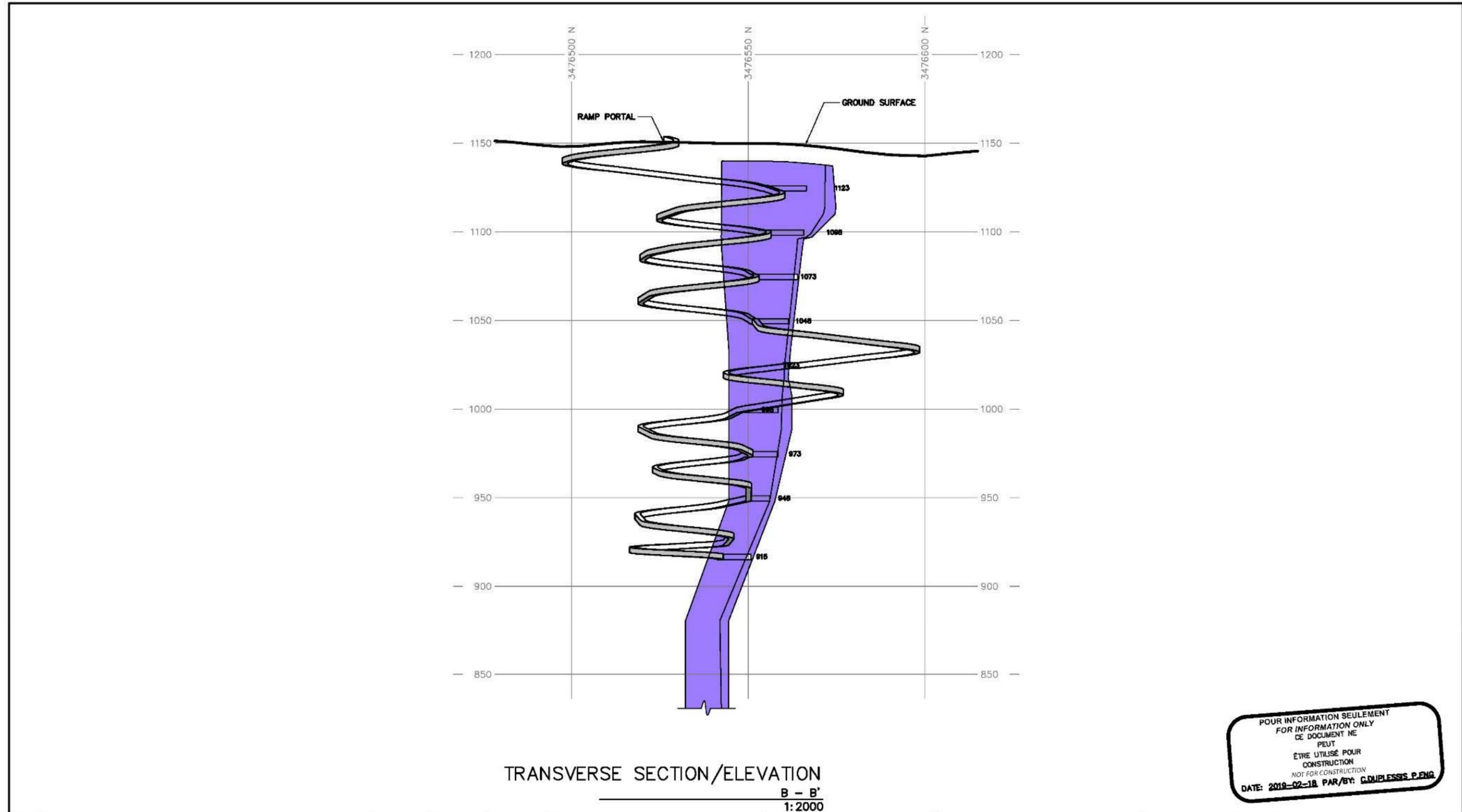


Figure 137: CENTRE zone, longitudinal elevation.



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|---------------------|-----------------------------|----------|----------------------------|----------------------------|-------------------------|-----------|---|-----------|------------------------|---------------|---|-----------|
| | | | DATE ÉMISSION / ISSUE DATE | 2019-02-18 | | | PROJET / PROJECT CLIENT | BOUMADINE | | TITRE / TITLE | PEA STUDY BOUMADINE PROJECT CENTRE ZONE | |
| D | FINAL RAMP DESIGN | 19/04/30 | PGG | DESSINÉ PAR / DRAWN BY | P.G.GAGNON BAP | | 19-02-18 | | | | No PROJET / PROJECT No | P2017-011 |
| C | PLAN LEVEL CORRECTION | 19/03/12 | PGG | VERIFIÉ PAR / CHECKED BY | M.RACHIDI, Ph.D., P.Geo | 18-02-18 | | | CONÇU LE / DESIGN DATE | 2019-02-18 | | |
| B | ALIMAK ADDED TO DEVELOPMENT | 19/02/19 | PGG | APPROUVÉ PAR / APPROVED BY | D. DUFORT, Eng. | 19-02---- | | | No DESSIN / DRAWING No | 011_centre1 | | |
| A | FOR APPROVAL | 19/02/18 | PGG | | | | | | ECHELLE / SCALE | 1:2000 | FORMAT / SIZE | 11x17 |
| REV | DESCRIPTION | DATE | PAR/BY | CIRCUL | SIGNATURE/SIGNATURE | DATE | THE INFORMATION HEREON IS THE PROPERTY OF GOLDMINDS GEOSERVICES AND MUST BE RETURNED UPON REQUEST. ANY COPYING, TRANSMISSION TO OTHERS AND ANY USE EXCEPT THAT FOR WHICH IT IS LOANED ARE PROHIBITED WITHOUT WRITTEN PERMISSION. L'INFORMATION CI-CONTENUE EST LA PROPRIÉTÉ DE GEOSERVICES GOLDMINDS ET DOIT LUI ÊTRE RETOURNÉE SUR DEMANDE. TOUTE TRANSMISSION DE COPIE(S) À AUTRUI ET TOUTE UTILISATION AUTRE QUE CELLE POUR LAQUELLE L'INFORMATION EST PRÊTÉE SONT INTERDITES SANS AUTORISATION ÉCRITE PRÉALABLE. | | RÉV./ REV. | D | DESSIN / DRAWING | 2/3 |
| RÉVISION / REVISION | | | | APPROBATION / APPROVAL | | | | | | | | |

Figure 138: CENTRE zone, transverse elevations.



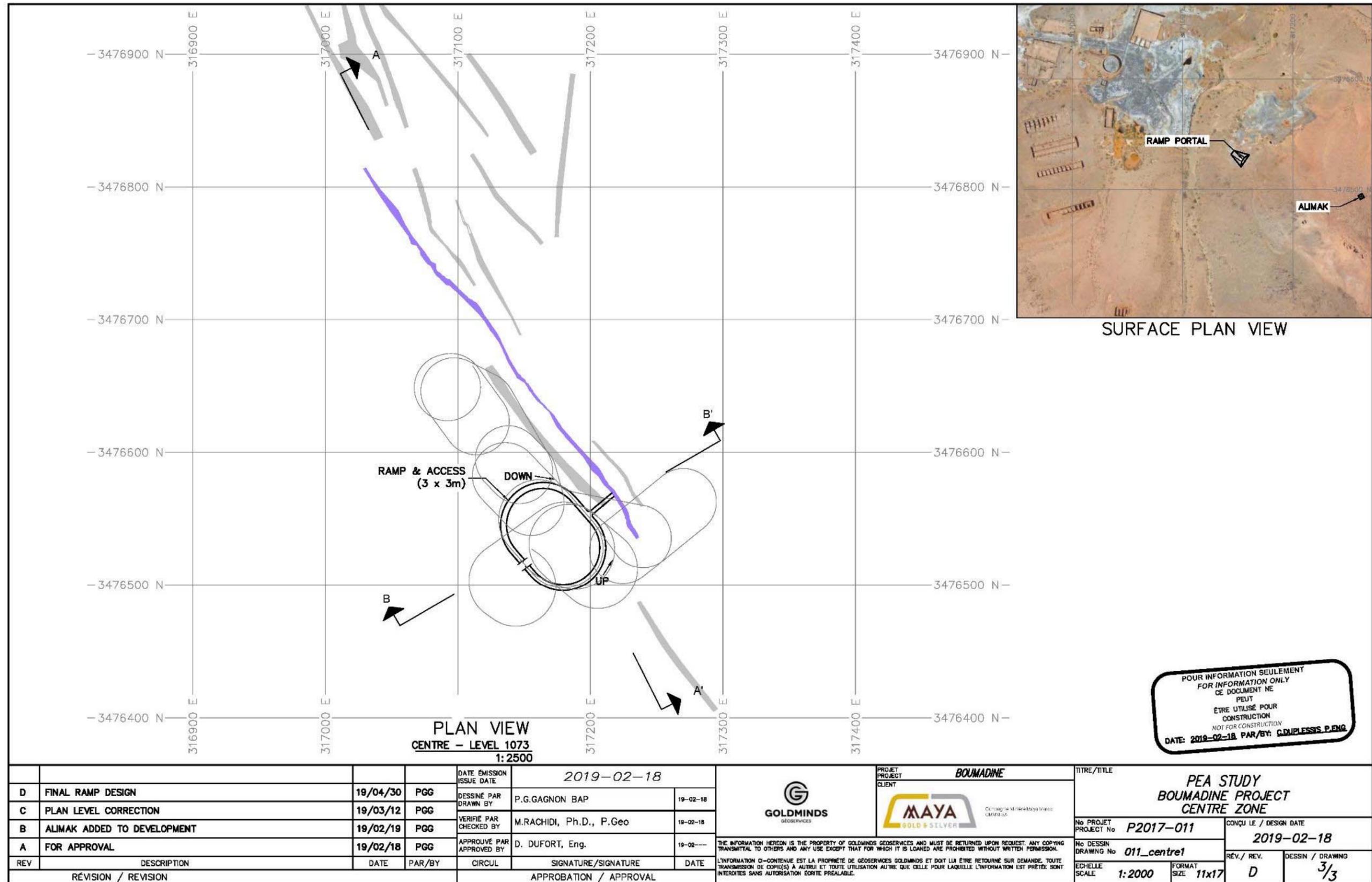


Figure 139: CENTRE zone, plan view.

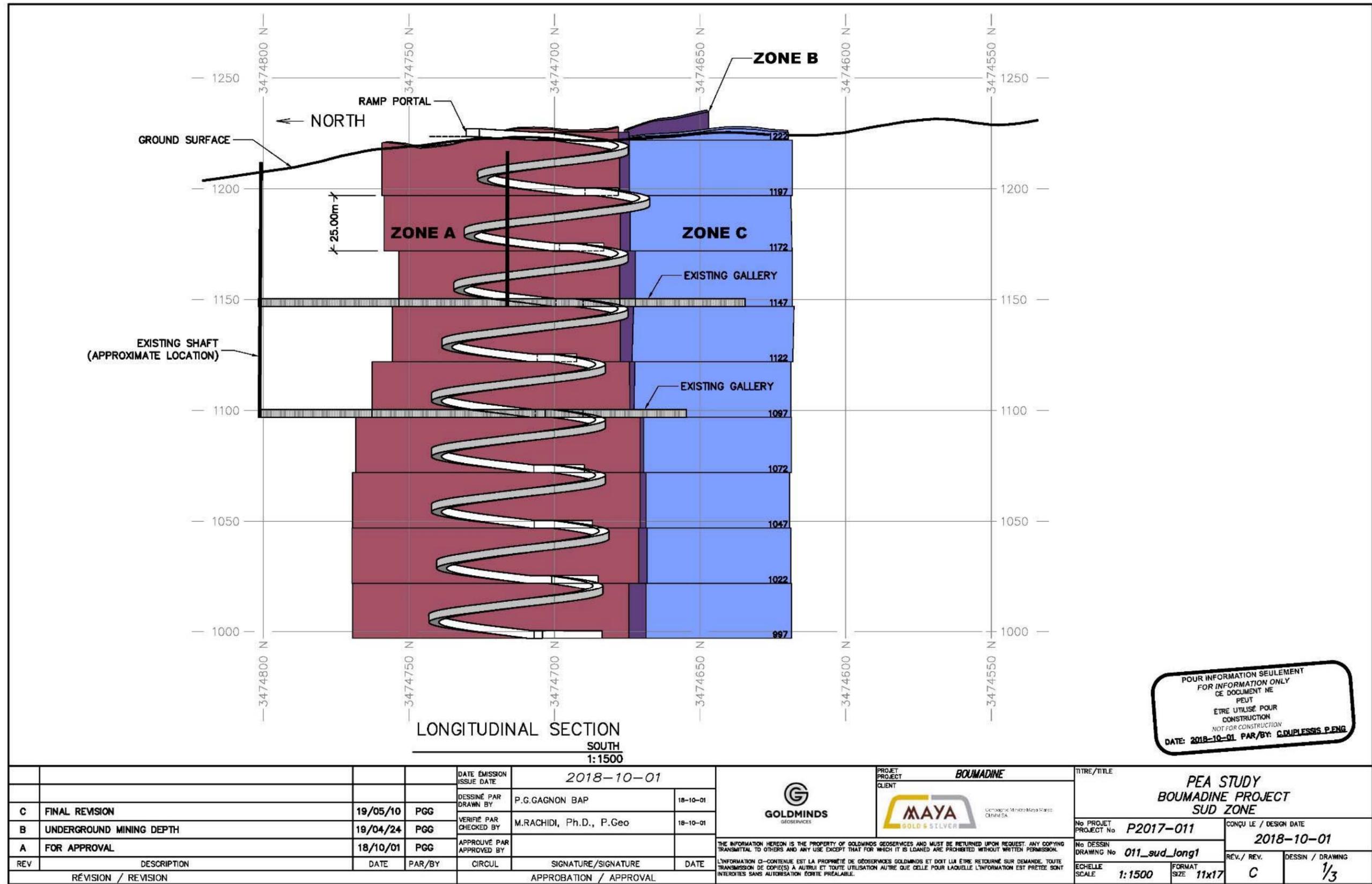


Figure 140: SUD zone, longitudinal elevation.



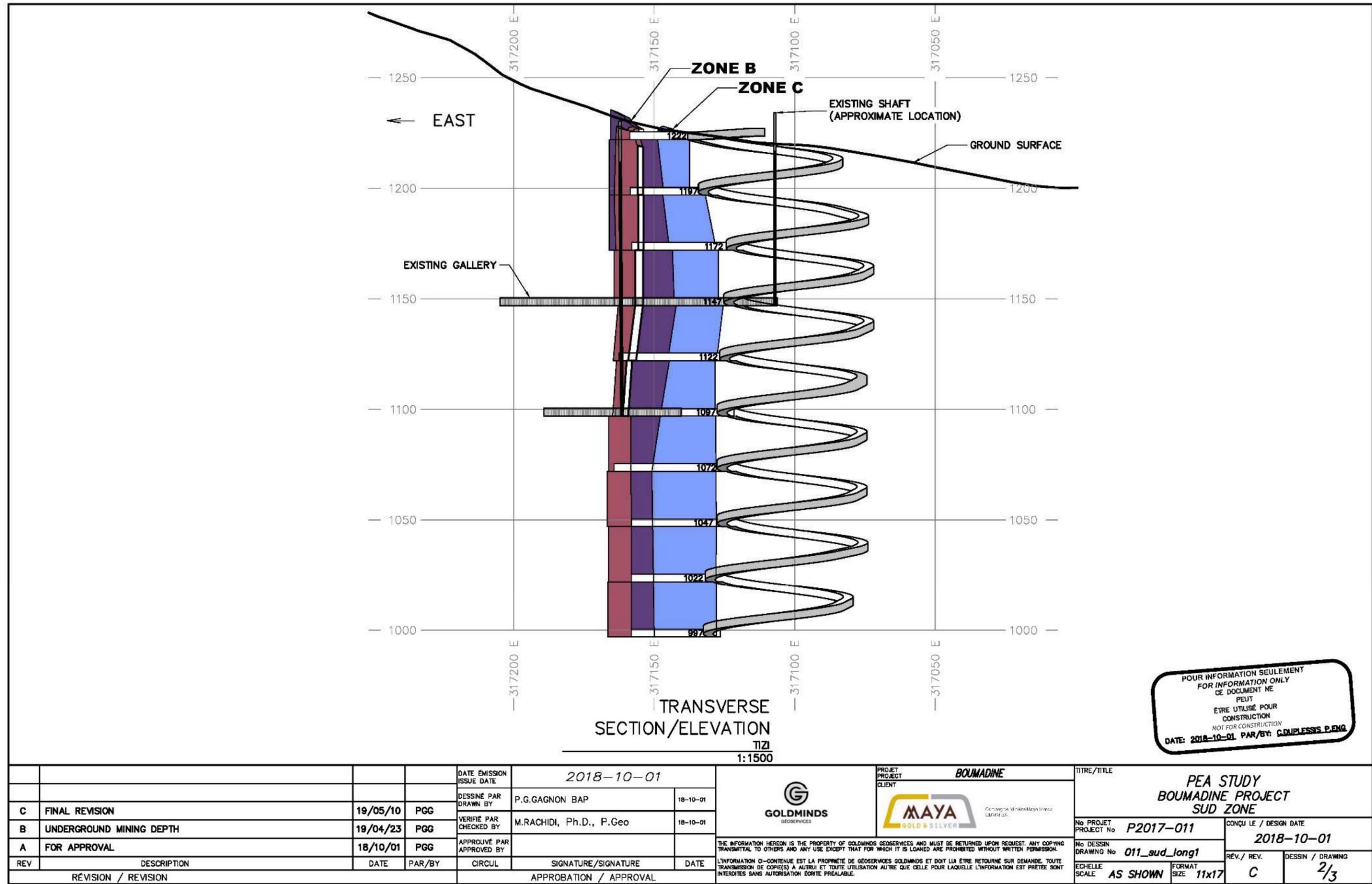


Figure 141: SUD zone, transverse elevation.



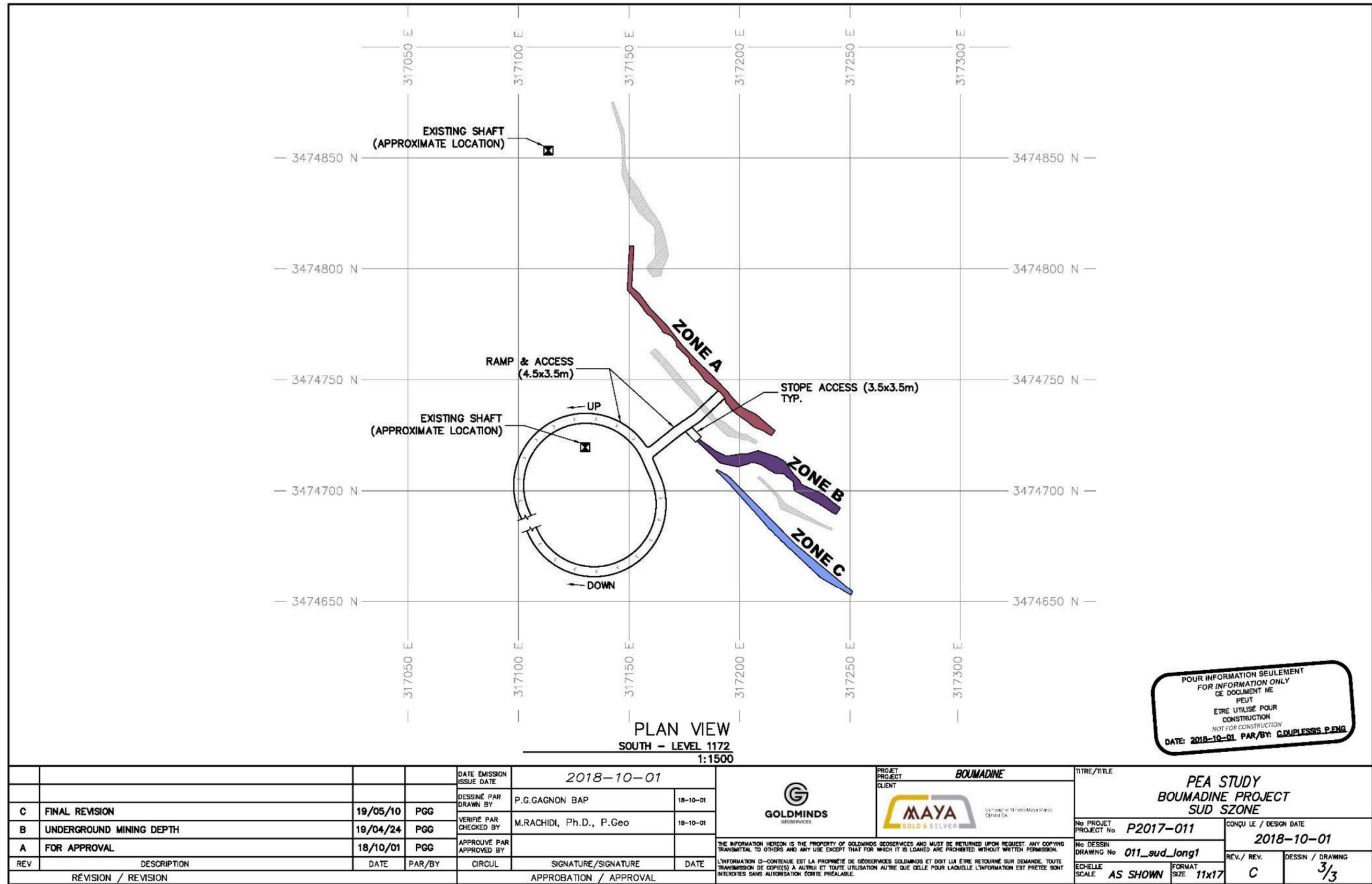


Figure 142: SUD zone, plan view.

16.5.2 Pit constrain start-up

Two pit designs were modeled at IMARIREN zone and the figure below shows their locations (Figure 143).

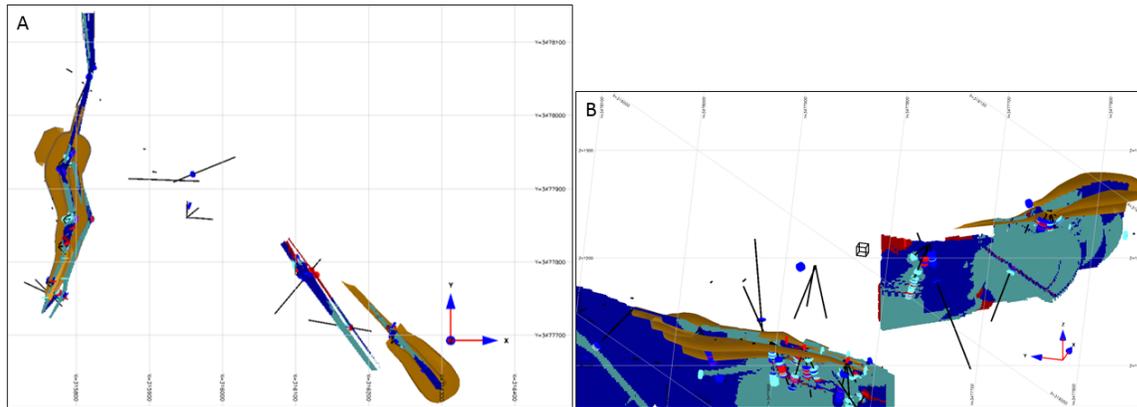


Figure 143: Whittle modeled at IMARIREN zone, A) plan view showing wittle and blocs model

The in-pit resource is 63000 metric tonnes of indicated and 41000 metric tonnes of inferred. The table below (Table 56) show the details on the resources in-pit at Zone IMARIREN. In this study the additional 100Kt will be taken by underground.

Table 56 : Pit constrained mineral resource estimate (rounded numbers).

| Resources Inpit IMARIREN zone | Au g/t | Ag g/t | Zn% | Pb% | Ge g/t | USDEq | Au Eq | Tonnes | Au eq (oz) |
|----------------------------------|-----------|-----------|------|------|-----------|--------|-------|--------|------------|
| Indicated | 0,92 | 35,66 | 0,51 | 0,94 | 38,83 | 175,45 | 4,20 | 63 000 | 8 500 |
| Infered | 0,46 | 45,16 | 0,58 | 1,40 | 29,97 | 152,32 | 3,64 | 41 000 | 4 800 |

16.5.3 Mineralized material available for the PEA

The mineralized material used for this PEA is a revised pit optimization reducing the waste/mineralized material ratio with a design allowing mineralized material to be retrieved by underground method and existing development.

All the mineralized resources at Boumadine will be extracted using underground method. The modeling of the pit designs at IMARIREN zone was done in case the direction of Maya Gold and Silver want to exploit this zone in open pit and serves a relatively fast access to mineralize material at start-up since the project schedule is tight.

16.6 Production rates, life of mine and mining dilution

The future plant will be built to process 2000 metric tons per day, assuming 330 working days per year, which amounts to 660,000 tonnes per year.

Table 57: Tonnage per day production per zone

| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| tpd | | | | | | | | | | | | | |
| CENTRE | * | 900 | 900 | 1500 | 1500 | 1500 | 1500 | 1500 | 1500 | 715 | | | |
| NORD | * | 300 | 300 | 500 | 500 | 500 | 500 | | | | | | |
| SUD | 0 | | | | | | * | 500 | 500 | 500 | 1000 | 700 | 615 |
| TIZI | 0 | | | | | | | | * | 285 | 300 | 500 | 460 |
| IMARIREN u/g | 0 | | | | | | | | * | 500 | 700 | 800 | 840 |
| IMARIREN pit | | 300 | 300 | | | | | | | | | | |
| TPD | 0 | 1500 | 1500 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 1915 |
| 330 days of mining per year | | | | | | | | | | | | | |
| * development phase | | | | | | | | | | | | | |

16.7 Mining developments

The underground infrastructure design has been conceptually optimized in this PEA. The allowances have been made in the cost estimate for the major facilities described in this section.

The underground infrastructure is generally represented in the table below (Table 58).

Table 58: Waste development (General note: all ramps have a 10% grade when turning and 12% grade when going straight).

| TYPE | from LEVEL | to LEVEL | LENGTH (m) | DIMENSIONS | NOTE: |
|------------------------|------------|----------|------------|-------------|--|
| CENTRE | | | | | |
| MAIN RAMP | 1150 | 915 | 2357 | 4.5x3.5m | |
| SUB-LEVEL/STOPE ACCESS | | | 177 | 3.5mx3.5m | |
| VENT RAISE | 1150 | 915 | 235 | 2.5mx2.5m | For ventilation and escapeway purpose (alimak) |
| SUD | | | | | |
| MAIN RAMP | 1248 | 1000 | 2027 | 4.5x3.5m | |
| SUB-LEVEL/STOPE ACCESS | | | 715 | 3.5mx3.5m | |
| VENT RAISE | 1097 | 1000 | 97 | 2.5mx2.5m | For ventilation and escapeway purpose (alimak) |
| TIZI | | | | | |
| MAIN RAMP | 1225 | 978 | 2468 | 4.5m X 3.5m | |
| SUB-LEVEL/STOPE ACCESS | | | 1725 | 3.5m X 3.5m | |
| VENT RAISE | 1125 | 978 | 147 | 2.5mx2.5m | For ventilation and escapeway purpose (alimak) |
| NORD | | | | | |
| MAIN RAMP | 1248 | 1000 | 868 | 4.5m X 3.5m | |
| SUB-LEVEL/STOPE ACCESS | | | 367 | 3.5m X 3.5m | |
| VENT RAISE | 1097 | 1000 | 97 | 2.5mx2.5m | For ventilation and escapeway purpose (alimak) |
| IMARIREN | | | | | |
| MAIN RAMP | 1198 | 1078 | 1768 | 4.5x3.5m | |
| SUB-LEVEL/STOPE ACCESS | | | 149 | 3.5mx3.5m | |
| VENT RAISE | 1200 | 1078 | 122 | 2.5mx2.5m | For ventilation and escapeway purpose (alimak) |

The waste development presented above comprises ramps (9488 m), raises (698 m) and gallery accesses (3133 m). It is important to realize that these main development workings spread over a ten year period.

Mine infrastructure does not include refuge stations, material storage areas, electrical substations, main sump and pumping stations, maintenance facilities, fuel and lube bays, secondary sumps and drain holes cutouts, remuck and backfill bays as we are at PEA level and these should be taken into account and detailed in a PFS.

All ore of all the underground zones will be transported via hauling trucks to surface via the main ramps. Each of the zones for now are too shallow to install a shaft with a skip and cage system.

16.8 Underground mining equipment

The mining underground equipment that will be mostly used in the Boumadine mine are equipment for loading and hauling. The equipment used will be of the same type of the ones used at Zgounder mine for two reasons: the deposits are likely the same and we will save on inventory and maintenance parts.

New equipment will be purchased by the client or provided by the mining contractor. For underground drilling, only T28 and T23 jacklegs are used for the production and development. Maya Gold and Silver is expected to obtain new drilling equipment for production and development. It is necessary to purchase the drifting jumbo for the ramping program in the PEA to achieve the tonnage required. We also recommend the use of Atlas Copco Cavo 310 for the development sites accessible only by raises accesses, which can be rapidly dismantled and easily transported through small raises.

Table 59: List of the proposed underground equipment.

| Equipment | Brand | Model |
|----------------------|-------------|-------------|
| Development drill | Atlas Copco | Boomer 282 |
| Scoop | China | XYWJ-1.5B |
| Production drill | Simba | M4 |
| Emulsion charger | MacLean | EC3 |
| Atlas Copco Cavo 310 | Atlas Copco | Cavo 310 |
| Transport truck | China | XYUK-8 |
| Wheeled loader | Komatsu | WA800-3 |
| Drill definition | Sandvik | DE110 |
| Service Truck | Dux | P1-Porter |
| Transport | Toyota | Landcruiser |

For the equipment, the Brand and the model type is only for clarity and size purposes. Other brand could be utilized at the discretion of Maya Gold and Silver.

Below, you will see the list of equipment needed for each of the 5 zones. For a detailed daily tonnage per zone see Table 60

Table 60: List of the proposed underground equipment, CENTRE zone (starting full production 2023, 1500tpd)

| Equipment | Brand | Model | Quantity |
|---|-------------|-------------|----------|
| Development drill | Atlas Copco | Boomer 282 | 8 |
| Scoop | China | XYWJ-1.5B | 9 |
| Production drill | Simba | M4 | 1 |
| Emulsion charger | MacLean | EC3 | 1 |
| Atlas Copco Cavo 310 | Atlas Copco | Cavo 310 | 1 |
| Transport truck | China | XYUK-8 | 11 |
| Wheeled loader (surface) | Komatsu | WA800-3 | 1 |
| Drill definition | Sandvik | DE110 | 1 |
| Truck (service, rockbolt,flat bed, explosives etc) | Dux | P1-Porter | 7 |
| Transport | Toyota | Landcruiser | 7 |

Table 61: List of the proposed underground equipment, NORD zone (starting full production 2023, 500tpd)

| Equipment | Brand | Model | Quantity |
|---|-------------|-------------|----------|
| Development drill | Atlas Copco | Boomer 282 | 2 |
| Scoop | China | XYWJ-1.5B | 3 |
| Production drill | Simba | M4 | 0 |
| Emulsion charger | MacLean | EC3 | 1 |
| Atlas Copco Cavo 310 | Atlas Copco | Cavo 310 | 1 |
| Transport truck | China | XYUK-8 | 3 |
| Wheeled loader (surface) | Komatsu | WA800-3 | 0 |
| Drill definition | Sandvik | DE110 | 1 |
| Truck (service, rockbolt,flat bed, explosives etc) | Dux | P1-Porter | 2 |
| Transport | Toyota | Landcruiser | 2 |

Table 62: List of the proposed underground equipment, SUD zone (starting production 2027 for 500tpd and 2030 at 1000tpd)

| Equipment | Brand | Model | Quantity |
|---|-------------|-------------|----------|
| Development drill | Atlas Copco | Boomer 282 | 2 |
| Scoop | China | XYWJ-1.5B | 3 |
| Production drill | Simba | M4 | 0 |
| Emulsion charger | MacLean | EC3 | 1 |
| Atlas Copco Cavo 310 | Atlas Copco | Cavo 310 | 1 |
| Transport truck | China | XYUK-8 | 3 |
| Wheeled loader (surface) | Komatsu | WA800-3 | 0 |
| Drill definition | Sandvik | DE110 | 1 |
| Truck (service, rockbolt,flat bed, explosives etc) | Dux | P1-Porter | 2 |
| Transport | Toyota | Landcruiser | 2 |

The SUD zone will take the equipment from the Nord zone but because we need to do development we need to buy some equipment before production in 2027.

Table 63: List of the proposed underground equipment, TIZI zone(starting production in 2029)

| Equipment | Brand | Model | Quantity |
|-------------------------|-------|-------|----------|
| ALL EQUIPMENT WILL COME | | | |
| FROM CENTRE ZONE | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Table 64: List of the proposed underground equipment, IMARIREN zone (starting production 2027 for 500tpd and 2030 at 1000tpd)

| Equipment | Brand | Model | Quantity |
|---|-------------|-------------|----------|
| Development drill | Atlas Copco | Boomer 282 | 2 |
| Scoop | China | XYWJ-1.5B | 3 |
| Production drill | Simba | M4 | 0 |
| Emulsion charger | MacLean | EC3 | 1 |
| Atlas Copco Cavo 310 | Atlas Copco | Cavo 310 | 1 |
| Transport truck | China | XYUK-8 | 3 |
| Wheeled loader (surface) | Komatsu | WA800-3 | 0 |
| Drill definition | Sandvik | DE110 | 1 |
| Truck (service, rockbolt,flat bed, explosives etc) | Dux | P1-Porter | 2 |
| Transport | Toyota | Landcruiser | 2 |

For the IMARIREN zone, equipment will have to be bought because the used equipment will be utilized at the SUD and TIZI zones.

A program for underground communications should be installed at Boumadine. GoldMinds Geoservices recommend to investigate the possibility to have a hand held radios for crews, supervisors, engineers, geologists, surveyors and maintenance personnel. A central dispatch station should be installed at the mine site to provide a continuous communications link with underground personnel if suitable in the context At least between the laboratory, the office, the new mill and the mine entrance as cellular phone coverage is not always reliable outside. The detailed design for the underground and surface communications system and distribution is not included in this study.

The equipment list is a proposition to guide the mining contractors in Morocco as they could provide similar model and equipment equivalent for the purpose to achieve the proposed mining and development scenario.

The mine schedule is conceptual in nature and is subject to change. An average grade is used in the economic analysis while we are aware the conceptual schedule aimed at having higher grades at the beginning to reduce payback period. Decision was made by GMG project manager not to include this schedule in the cash flow at this stage.

16.9 Mine ventilation

Underground mine ventilation is a real issue to provide a flow of air with sufficient volume to dilute and remove dust and noxious gases and to regulate temperature.

16.9.1 The projected situation

The Boumadine deposit which includes the 5 different zones assumes the processing of an average 1500 tpd for the first two years with an envisaged expansion to 2000 tpd for the remaining of the mine life.

All the development planned requires more mechanization with motorized equipment and the need of the ventilation is indispensable to work in safe conditions.

The ventilation system of the 5 zones will all be the same. As a start, the fresh air will come down from the main ramp until the ramp has access to actual openings and actual raise from surface. At that point the fresh air will come down from that shaft to ventilate the ramp and the stoping areas. When the ramp will be at the final elevation, a raise will be done under the actual shaft and will connect to it so the fresh air will come down from surface up to the bottom of the mine. At the same time, that raise/shaft will become the second escape way.

To ensure an optimal supply or distribution of fresh air in compliance with health and safety requirements, air flow sensors and gas sensors (if needed) will be installed in several working areas.

As an example:

The fresh air requirements in the underground mining area is determined according to the method suggested by the Quebec Metal Mining Association Inc. Three approaches are used to estimate required fresh air flows taking into the consideration daily tonnage, mechanization degree, air speed, crushing equipment and number of employees. An average of the three approaches allow the estimation of the total flow rate to be injected into the mine.

The first step is the evaluation of the fresh air needed while the use of the equipment listed below. This evaluation is based on the power engine and their utilisation rate. The CANMET homologation was considered for the most part of this evaluation.

Table 65 Fresh air needed following the CANMET certification (as an example)

| Equipment | Brand | Model | Qty | % of uses | Engine | | Approval | Need in fresh air unit (m³/s) | % applied to approval | Fresh air flow (m³/s) |
|--|-------------|-------------|-----|-----------|---------------|------------------|----------|-------------------------------|-----------------------|-----------------------|
| | | | | | Marque | Model | | | | |
| Development drill | Atlas Copco | Boomer 282 | | 0,5 | Deutz | F5I912W | CANMET | 2,93 | 100 | |
| Scoop | China | XYWJ-1.5B | | 1 | Deutz | TCD 2012 L04 | CANMET | 3.63 | 100 | |
| Production drill | Simba | M4 | | 1 | Deutz | TCD 2012 L04 | CANMET | 3,63 | 50 | |
| Emulsion charger | MacLean | EC3 | | 1 | Deutz | TCD 2012 L04 | CANMET | 3,64 | 100 | |
| Transport truck | China | XYUK-8 | | 1 | Deutz | TCD 2012 L04 | CANMET | 3.63 | 100 | |
| Wheeled loader | Komatsu | WA800-3 | | 1 | KOMATSU | SAA12V140E-3 | CANMET | 4,81 | 100 | |
| Drill definition | Sandvik | DE110 | | 1 | Mercedes-Benz | OM904LA (148 HP) | CANMET | 4,34167 | 50 | |
| Truck(service, flat, explosives ,etc) | Dux | P1-Porter | | 1 | Mercedes-Benz | OM904LA (173 HP) | CANMET | 3,72833 | 100 | |
| Transport | Toyota | Landcruiser | | 1 | Toyota | D1503T (127 HP) | CANMET | 3,445 | 50 | |
| | | | | | | | | | | |

During the initial development within the ramp the ventilation will be carried out by the auxiliary fans in series before being connected to the global system. Connections will be made as the ramp continues to the lower levels of the mine. The fresh air will be conveyed into the mine through a vertical shaft and will draw air downward into different mine levels and the stale air comes out of the mine through the ramp. Auxiliary fans will be required, however, to carry air into areas hard-to-reach, refuges and other by-pass circuits away from the main ventilation system.

The recommended ventilation system is a pushing system with the main surface fan.

To ensure optimal supply or distribution of fresh air, in compliance with health and safety requirements, air flow sensors and gas sensors (if needed) should be installed in several work areas and in the ramp. In order to allow easy movement of mine workers, the maximum speed of air in the crossing point should be limited to around 10m/s.

16.10 Manpower

When the production will be at 2000 tpd the manpower of the Boumadine site will increase to a total of 319 workers: 14 administration, 26 (electricians, mechanics, etc), 27 supervision, 51 development,131 production and 70 services operation.



Except for the geology (exploration and production planning), laboratory (analysis and samples preparation), mill operations, mine site administration, mining/stopping operations, all ramp, shaft and raise development will be done by contractors.

No living camp will be installed on site except a canteen. People will travel and stay locally

17 Recovery methods

17.1 Process description

The process plant will be designed to recover the lead, the zinc, the gold, the silver and the germanium from the fresh ore and the old tailings by a combination of flotation, pressure oxidation and cyanidation. For the fresh mine material the mill will incorporate the following sections : run-of-mine ore storage, a two-stage crushing plant, crushed ore storage, a double stages grinding bay with cyclone classification, lead, zinc and sulfides flotation, pressure oxidation of the sulfides concentrate, leaching (cyanidation) of the gold and the silver, refining and finally a water and reagents distribution system. For the old tailings, the process will be the same except that since the lead and the zinc were already floated and recovered during the 1989-1992 mining-milling operations, there will be no crushing, grinding or flotation. Process of old tailings will be done whenever there will be shortage of fresh ore from the mining operations. Even if for the first two years of operation the mill feed rate will be only 1500 tpd, the mill will be designed to process 2000 tpd since it will be the feed rate from 2023 to the depletion of the actual known resources. The mill process will be monitored at all time by a central Program Logic Controller (PLC).

For the ease of reading, only major milling pieces of equipment are enumerated and described in this report.

17.1.1 Crushing

Mining material grading approximately 1.03% Pb, 3.00% Zn, 1.67 g/t Au, 101.76 g/t Ag and Ge from 7.2 to 25.92 g/t will be hauled from the open pit and/or the underground openings by off the road trucks and whenever possible is dumped directly on a static grizzly. However, because the mining and crushing operations will not always be on the same time schedule, it is assumed that 25% of the time the haul trucks will proceed to a RoM stock pile and the rest of the time will dump directly onto the grizzly above the crusher feed hopper. The RoM stockpile area is sized to hold approximately 5,000 tonnes of ore. Secondary handling of the ore will be by a front-end loader that will, among other things, be used to feed the crusher hopper with stockpiled RoM ore as necessary.

Because of the underground mining method (long hole) and open pitting, some part of the incoming feed will be coarser than the grizzly apertures. The oversize will be broken in place with a stationary hydraulic rock breaker. From the grizzly the ore falls into an out of mine ore hopper. The hopper feeds via a vibrating feeder a jaw crusher. From the jaw crusher, the material falls on a first conveyor belt feeding a coarse ore bin. From the coarse ore bin, the ore is conveyed to a double deck screen in close circuit with a Symons short head cone crusher. Screen undersize (10 mm) is conveyed to two fine ore bins in parallel. Each fine ore bin has a dedicated feeder at the bottom. Before entering the mill, the ore is weighed with a weight-meter installed on the conveyors feeding the rod mill.

All in all, crushing capacity is approximately 100 tonnes per hour.

17.1.2 Grinding

From the fine ore bins, the material is conveyed to a rod mill. Rod mill discharge is pumped to a set of cyclones. Cyclones underflow flows by gravity to a ball mill. Ball mill discharges into the same pump box as the rod mill and is pumped to same set of cyclones. Circulating load will be in the 300% range.

Cyclones underflow will flow by gravity back to the ball mill while cyclones overflow at a fineness of approximately $D_{80} = 105 \mu\text{m}$ will flow by gravity to a reagents conditioner before flowing also by gravity to the first cell of the lead flotation rougher.

17.1.3 Flotation

17.1.3.1 Lead

Lead will be floated first. Even if because of the low head grade (0.41% Pb) of the sample tested at SGS failed to produce a smeltable lead concentrate while having a decent lead recovery, the author is confident that if the deposit Pb head grade is similar to the historic head grade, there will be no problem to obtain at least a concentrate grading 50% Pb along with a recovery of 60%. The weight recovery should be in the 1.3% range.

More than probably the lead circuit will require one stage of roughing, one stage of scavenging and two to three stages of cleaning.

17.1.3.2 Zinc

Prior to floating the zinc, the lead rougher-scavenger tailings will be reground in a ball mill to a fineness of approximately $D_{80} = 44 \mu\text{m}$. The zinc circuit will comprise one rougher-scavenger stage followed by 3 cleaner stages.

According to some flotation tests made at SGS, it is anticipated that the zinc concentrate will be in the 55% range while the recovery will be around 80% for a weight recovery (mass pull) of approximately 2.0%.

It is anticipated the germanium will be recovered with the zinc.

17.1.3.3 Other sulfides

In order to eliminate as much as possible of most of the non gold and silver bearing materials before the treatment of the gold and the silver (mainly silicates), all other sulfides left in the zinc scavenger tailings will be floated and concentrate sent to the gold and silver pressure oxidation + carbon in leach (POX/CIL) circuits. By doing so, some 25% of the non gold and silver bearing material will be eliminated for a very modest loss of 1.0% gold and 1.5% silver.

The sulfide concentrate will be thickened to 50% solid before being pumped to a pre-leach tank and from there pressure pumped to a POX autoclave.

17.1.4 Pressure oxidation (POX)

Pressure oxidation will last some 120 minutes at 50% solid in a 4-compartment autoclave reservoir at approximately 4,000 kPa (40 bars) and 230° C. A cryogenic oxygen plant capable of supplying some 12,000 m³/h of oxygen per tonne of sulfide (one tonne O₂ per tonne of sulfide) going to the autoclave will have to be incorporated to the circuit.

17.1.4.1 Sulphates redissolution

The sulphates redissolution will be done at 95°C during four to five hours in acid resistant tanks. This operation is done to greatly reduce the amount of lime at the cyanide leaching and corollary produce stable ferro-arsenide compounds. The acidic liquor will be neutralized with cheap limestone or, to save on sulfuric acid, recirculated back to the POX autoclave.

17.1.5 Cyanide leaching

After dissolution of the sulphates, the slurry will be allowed to cool down and filtered. The solid part will be repulped at 50% solid and pumped to a standard 2,000 tpd CIL process circuit. Cyanide leaching will be done for 24 hours. Cyanide (NaCN) and carbon concentrations will be maintained at 1.0 and 10.0 g/l throughout the whole leaching time. pH will be maintained at all time with addition of lime (CaO) between 10.5 and 11.

17.1.6 Carbon elution

The carbon elution circuit (ZADRA type circuit) comprises mainly a loaded carbon tank, an acid wash tank, a carbon strip vessel and a bank of electrowinning cells. Stripped carbon is reactivated in a horizontal kiln, quenched and classified. Classifier oversize is ready to be reused while very fine carbon particles are filtered in a filter press and kept aside to be eventually shipped to an outside smelter.

17.1.6.1 Refining

Because the whole mill will be serviced electrically by the Moroccan Office National d'Électricité (ONE), refining will be done with induction type furnaces. Since the CIP circuit will not discriminate between the gold and the silver, ingot bars will contain a mixture of both metals.

17.1.7 Cyanide destruction circuit

The tailings from last CIP tanks are pumped to a SO₂-air cyanide destruction circuit. The cyanide destruction circuit will consist in an aerated reactor tank where sodium bisulphite and copper sulfate are added. Slurry from this first reactor tank overflows into a second non-aerated one. Chemicals

added to the second reactor tank are lime and copper sulfate. Slurry from the second reactor tank overflows into a pump box prior to be pumped to the new tailings pond.

17.1.8 Tailings

Since the cyanide from the CIP circuit will be destructed directly in the mill before being pumped to a new tailings pond and because the solid part of the tailings being mostly oxides and silicates thus will not be acid generative, new impoundment problems will be mostly limited to finding a suitable emplacement. Tailings will be pumped from the mill to a settling pond of which the bottom and the sides will be lined with an impervious PVC membrane. This settling pond will in turn overflow into a seeping free polishing pond. The water from the polishing pond will be pumped back to the mill. Presently, the author does not have enough information to elaborate any further.

17.2 Services

For the purpose of this report, the services are limited to the supply of water, electrical power, maintenance and laboratories.

17.2.1 Water

17.2.1.1 Mill operation

If well operated, the demand in new water shall be minimal. Fresh water will more than probably come from wherever it was coming when the mine was in operation between 1989 and 1992. For the first two years of operation (1500 tpd) the total demand in water for the mill operation alone should be around 1,500,000 litres per day out of which 300,000 litres will be fresh water. The other 1,200,000 litres will be recirculated water mainly from the thickeners overflow and the polishing pond. After the year 2023 when the mill will operate at full capacity (2000 tpd) the demand in water will be in the same proportion as at 1500 tpd.

17.2.1.2 Employees

Potable water will come from a well dug in the vicinity of the mill. Since the whole mill will require a work force of around 50 employees, at an average of 100 litres/day/employee (no shower), the water requirement for the employees alone will be around 5000 litres per day. Used water will not be mixed with the tailings water and will be directed to nearby septic tanks followed by a leaching field.

17.2.2 Electrical power

Electrical power provided by the Office National d'Électricité (ONE) will be brought from the village of Goulmima via a 10MVA power line. This power line will be powerful enough to supply the future 2000 tpd mill operations. However, upon milling the fresh material, most of the total power will be

taken for the mill alone and new power sources will have to be brought in for the other mine services (mining, laboratories, offices, shops, living quarters, core shack, etc).

17.2.3 Maintenance

The maintenance for the mill will be supplied by the mine maintenance department. Four millwrights and two electricians working day shift only will be detached from the maintenance shops and be at all time part of the mill operation. It will be the maintenance department obligation to keep around the clock enough trades men to cope with any urgencies.

17.2.4 Laboratories

A combined assay/metallurgical laboratory will be built on site. The laboratory will service all departments of the mine (geology, mining and milling) and will be equipped with all necessary pieces of equipment such as laboratory crushers, grinding mills and pulverisers, fire assay ovens, precision balances, atomic absorption spectrometer (AAS), chemicals, glassware, laboratory sieve screens, flotation machine, vacuum pump, etc.

17.3 Metal recoveries at the flotation stage

From very limited metallurgical tests mate at the SGS Laboratory in Lakefield, Ontario, it is anticipated that the metal grades and recoveries at the flotation stage for the fresh ore will be as follows:

Table 66: Anticipated concentrate grades and recoveries at the flotation stage.

| Grade & Recovery | Lead Conc. | Zinc Conc. | Sulfide Conc. | Sulfide Tails | |
|------------------|--------------|---------------|---------------|---------------|--------------|
| Pb % | 50* | 0.23 | 0.15 | 0.07 | |
| Zn % | | 54.2 | 0.13 | 0.04 | |
| Ge g/t | | 97.2** | | | |
| Au g/t | | 3.48 | 5.18 | 0.19 | |
| Ag g/t | | 880 | 339 | 29.4 | Total |
| Rec Pb % | 60.0* | 1.8 | 24.1 | 14.1 | 100 |
| Rec Zn % | 13.3* | 79.5 | 6.5 | 0.7 | 100 |
| Rec Ge % | | 75.0** | | | 100 |
| Rec Au % | 9.8* | 8.2 | 80.9 | 1.1 | 100 |
| Rec Ag % | 27.7* | 18.8 | 51.9 | 1.6 | 100 |

*All figures in the lead concentrate column are assumed since because of the low Pb head grade of the sample tested no lead concentrate could be produced.

** Germanium concentrate and recovery in the zinc concentrate column are also assumed since germanium was not assayed.

17.4 Overall metal grades and recoveries – Flotation + POX/CIL

Table 67: Overall metal grades and recoveries – flotation + POX/CIL.

| FLOTATION + POX/CIL | | | | | | | | | | | | | | | |
|---------------------|------------|------|-----|-----|-----|-----------------|-------------|-------------|-------------|-----|------------------------|-------------|-------------|-------------|-------------|
| FEED | HEAD GRADE | | | | | FLOTATION CONC. | | | WEIGHT REC. | | TOTAL METAL RECOVERIES | | | | |
| | Pb | Zn | Au | Ag | Ge | Pb | Zn | Ge | Pb | Zn | Pb | Zn | Ge | Au | Ag |
| | % | % | g/t | g/t | g/t | % | % | g/t | % | % | % | % | % | % | % |
| OLD TAILINGS | | | 2.3 | 144 | | | | | | | | | | 71.6 | 81.4 |
| FRESH ORE | 1.03 | 3.00 | 1.7 | 102 | 5.4 | 50.0 | 54.2 | 97.2 | 1.3 | 2.0 | 60.0 | 79.5 | 75.0 | 97.2 | 96.2 |

17.5 Mill operation process costs (OPEX)

GoldMinds is of the opinion that the average cost of milling the 7.59 M tonnes of the Boumadine presently known resource and the 239,000 tonnes of the old tailings will be US \$45.76/tonne (2019 constant dollar value).

Table 68: Processing cost at 1500 tpd years 2021 – 2022.

| POSTS | COST PER TONNE US\$ |
|-------------------------------|----------------------------|
| Processing Consumables | 17.45 |
| Salaries | 6.90 |
| Grid Power | 5.00 |
| Spares, Repairs & Maintenance | 8.80 |
| SUB TOTAL 1 | 38.15 |
| G & A \approx 10% | 3.82 |
| SUB TOTAL 2 | 41.97 |
| Contingencies 10% | 4.1965 |
| TOTAL | 46.16 |

Note : 46.28\$/t is used in the cash flow analysis, the above table is a refined calculation and cash flow is not updated accordingly.

Table 69: Processing cost at 2000 tpd years 2023 – 2033.

| POSTS | COST PER TONNE US\$ |
|-------------------------------|----------------------------|
| Processing Consumables | 17.45 |
| Salaries | 6.50 |
| Grid Power | 5.00 |
| Spares, Repairs & Maintenance | 8.80 |
| SUB TOTAL 1 | 37.75 |
| G & A \approx 10% | 3.78 |
| SUB TOTAL 2 | 41.53 |
| Contingencies 10% | 4.1525 |
| TOTAL | 45.68 |

These costs are strictly for the mineral processing and the recovery of the lead, the zinc, the gold, the silver and the germanium from the Boumadine ore and old tailings. The limits for the cost estimation start at the out of mine stockpile and/or the old tailings impoundments and end at the new tailings pound. General and administrative costs (G&A) are included but are limited to the mill operation and do not consider any costs related to the mine or Maya Gold & Silver head office.

Milling costs are mainly based on salaries, consumption of reagents and other consumables, supplies, maintenance and electrical power. The costs presented in the following table include the fringe benefits. The mill operation cost is considered to have an accuracy of +/-30%.

Reagents and other consumables are limited to the grinding media, flotation reagents, flocculent for the thickeners, oxygen and chemical reagents for the pressure oxidation, sodium cyanide, lime and activated carbon for the CIP circuit, silica sand and other fluxes for the refinery, chemicals for the cyanide destruction circuit, gas oil for the loader and hauling trucks, gasoline for the small service vehicles, some chemicals for the assay office and the mill laboratory and different lubricants for the mill machinery.

17.6 Mill construction costs (CAPEX)

An initial capex of US \$35M is budgeted to cover the construction of the mill. This amount covers the time to build the mill structure including the purchase and the installation of all major mill machinery. Even if for the years 2021 to 2023 the feed rate to the mill will be only 1500 tpd, the mill will immediately be designed to accommodate the future 2000 tpd tonnage.

An amount of some US \$5M is foreseen in 2023 for minor changes to the mill to upgrade the feed rate from 1500 tpd to 2000 tpd. These amounts are deemed to have an accuracy of +/-30%.

17.7 Mill preproduction costs and sustaining capital expenditure

Another amount of US \$5M has been budgeted for the mill preproduction costs and the sustaining capital expenditure.

17.7.1 Mill preproduction costs

The mill preproduction costs amount to US \$4.4M and are mainly for the purchase of a 3-month supply of chemical reagents plus other consumables, some inventory for the warehouse and a 3-month commissioning period.

Table 70: Mill preproduction costs.

| | Costs - US\$ |
|---------------------------------|------------------|
| Chemical reagents + consumables | 1,000,000 |
| Warehouse inventory | 200,000 |
| Three-month commissioning | 3,200,000 |
| TOTAL | 4,400,000 |

17.7.2 Mill sustaining capital expenditure

An amount of US \$600,000 has been allotted for the mill sustaining capital expenditure. Out of this money, about a third will be for the raise, from time to time, of the tailings pond embankment(s).

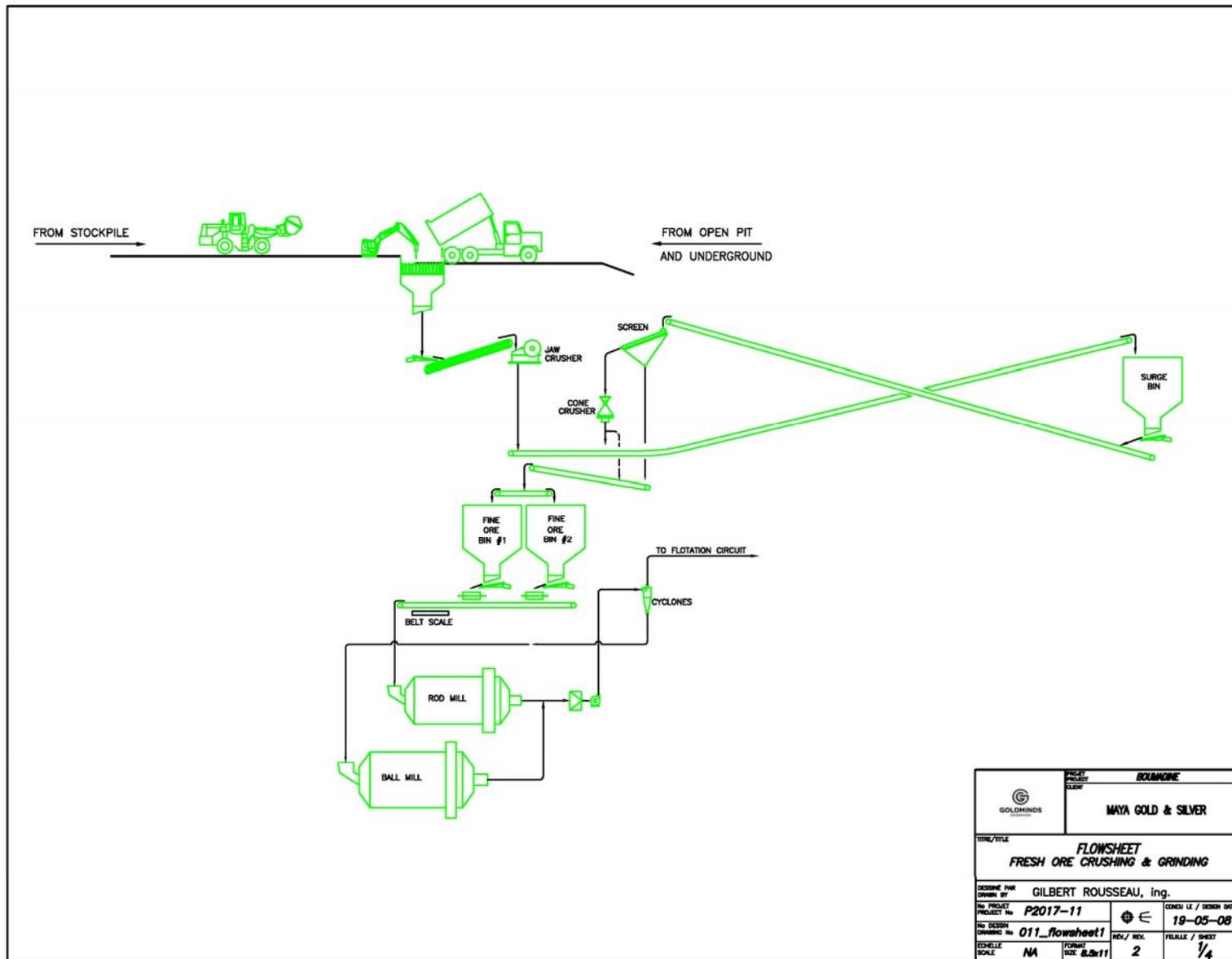


Figure 144: Flowsheet, fresh ore crushing & grinding.

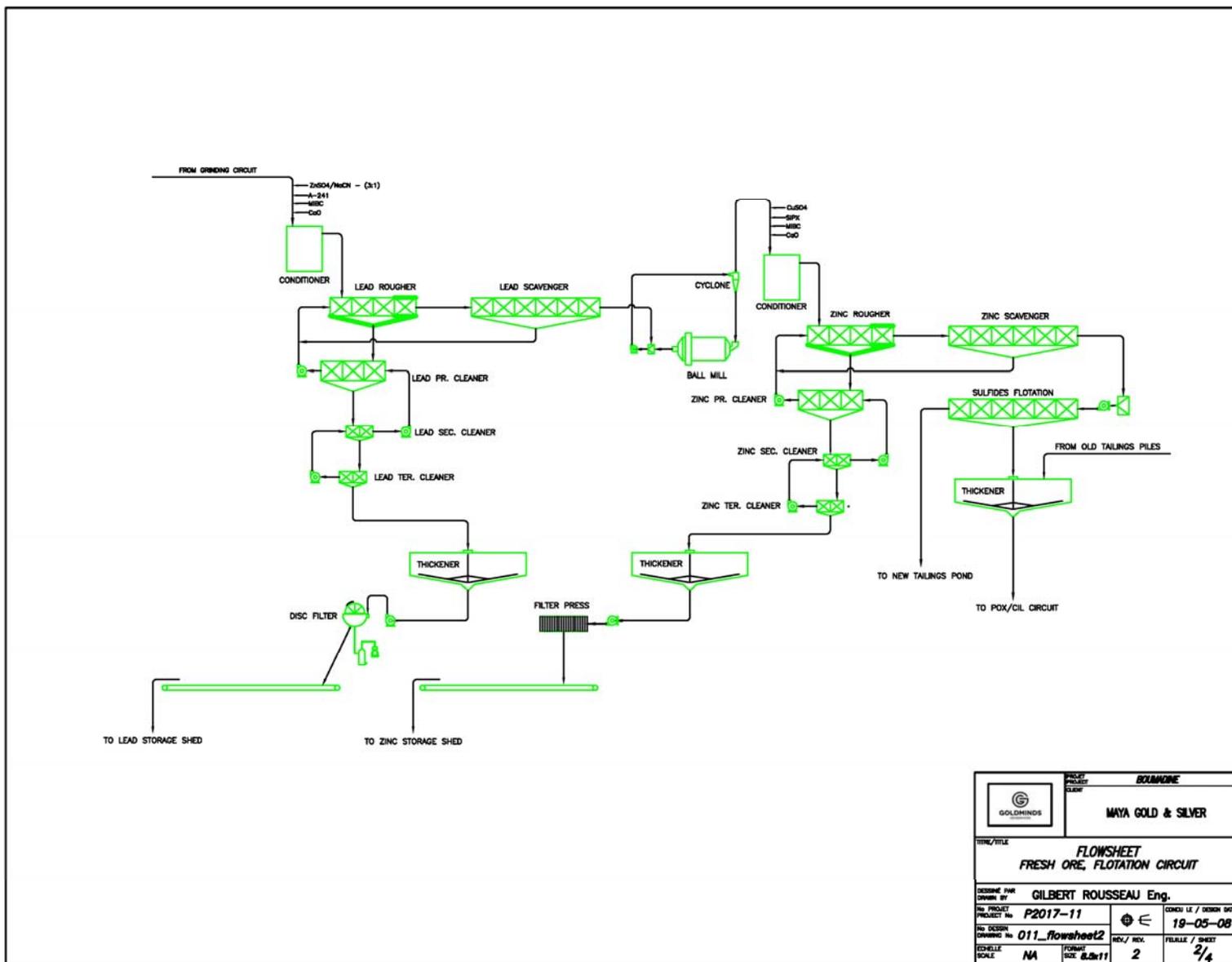


Figure 145: Flowsheet, fresh ore, flotation circuit.

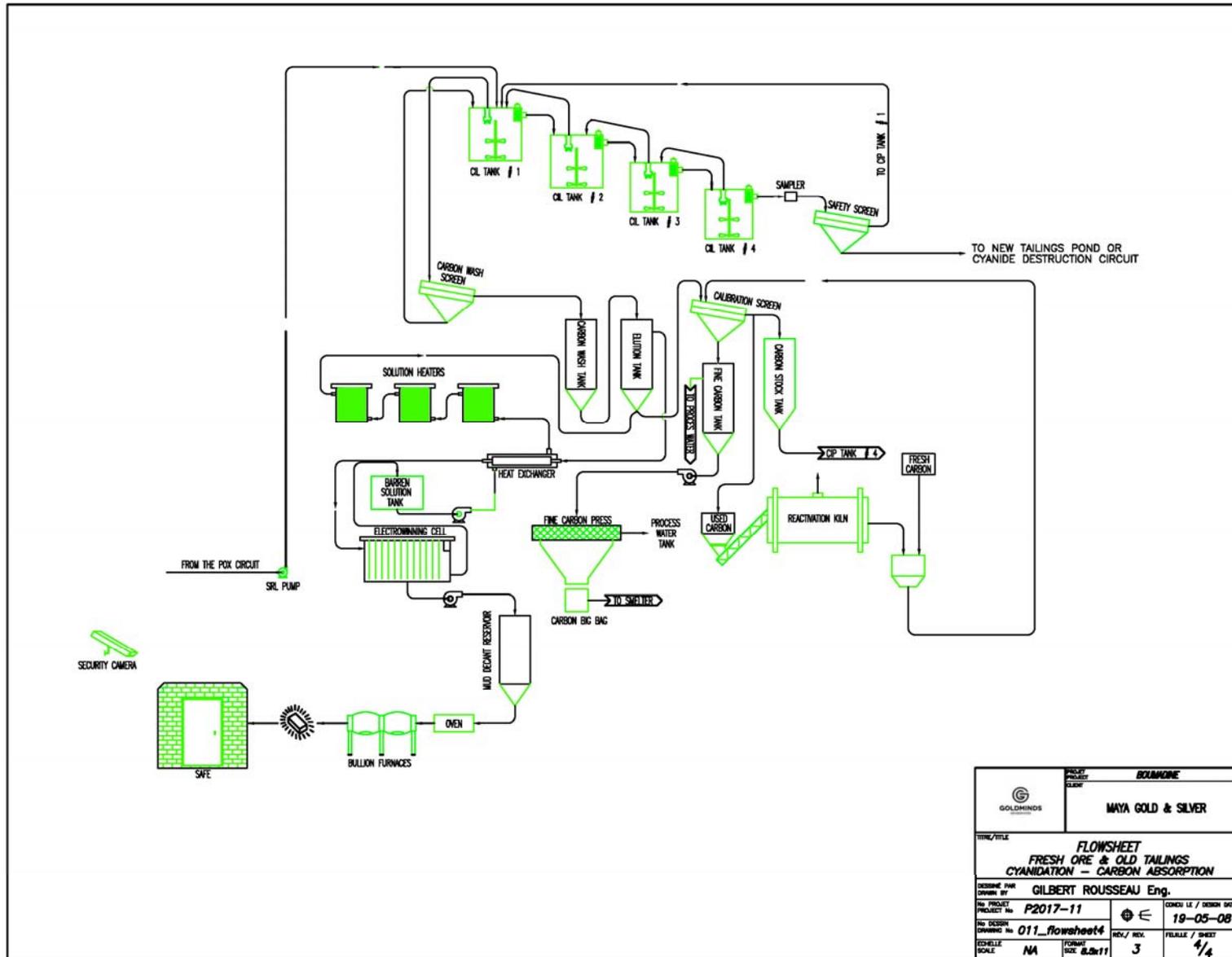


Figure 147: Flowsheet, fresh ore & old tailings cyanidation – carbon absorption.

18 Project infrastructures

18.1 Boumadine mine site and access road

Lead and Zinc concentrates will be transported from the Boumadine mine site to the Port of Agadir using a standard combination of semi-trailer. The trucks will carry up to a gross weight of 38 t maximum of 40 t as per regulation and a concentrate payload of 30 to 32t. This will require verification under the national regulations to allow use on the public highway system related to possible weight and bridge capacity.

Approximately 600 km of road where 20 km of road will require upgrading the dirt road to connect to the N10 at Tinejad. The route National 10 goes to the Port of Agadir. It is a 9 hour drive by car with two short stops.

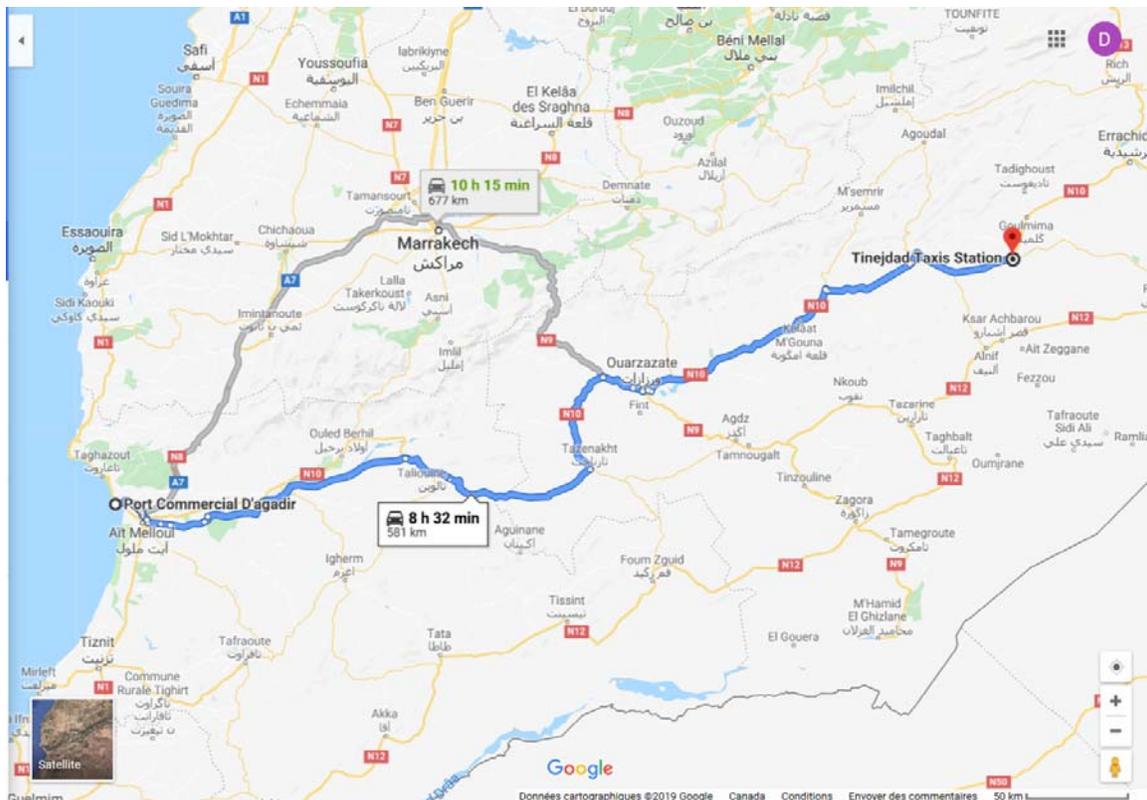


Figure 148: Route to the port of Agadir from Tinejad (source Google map)

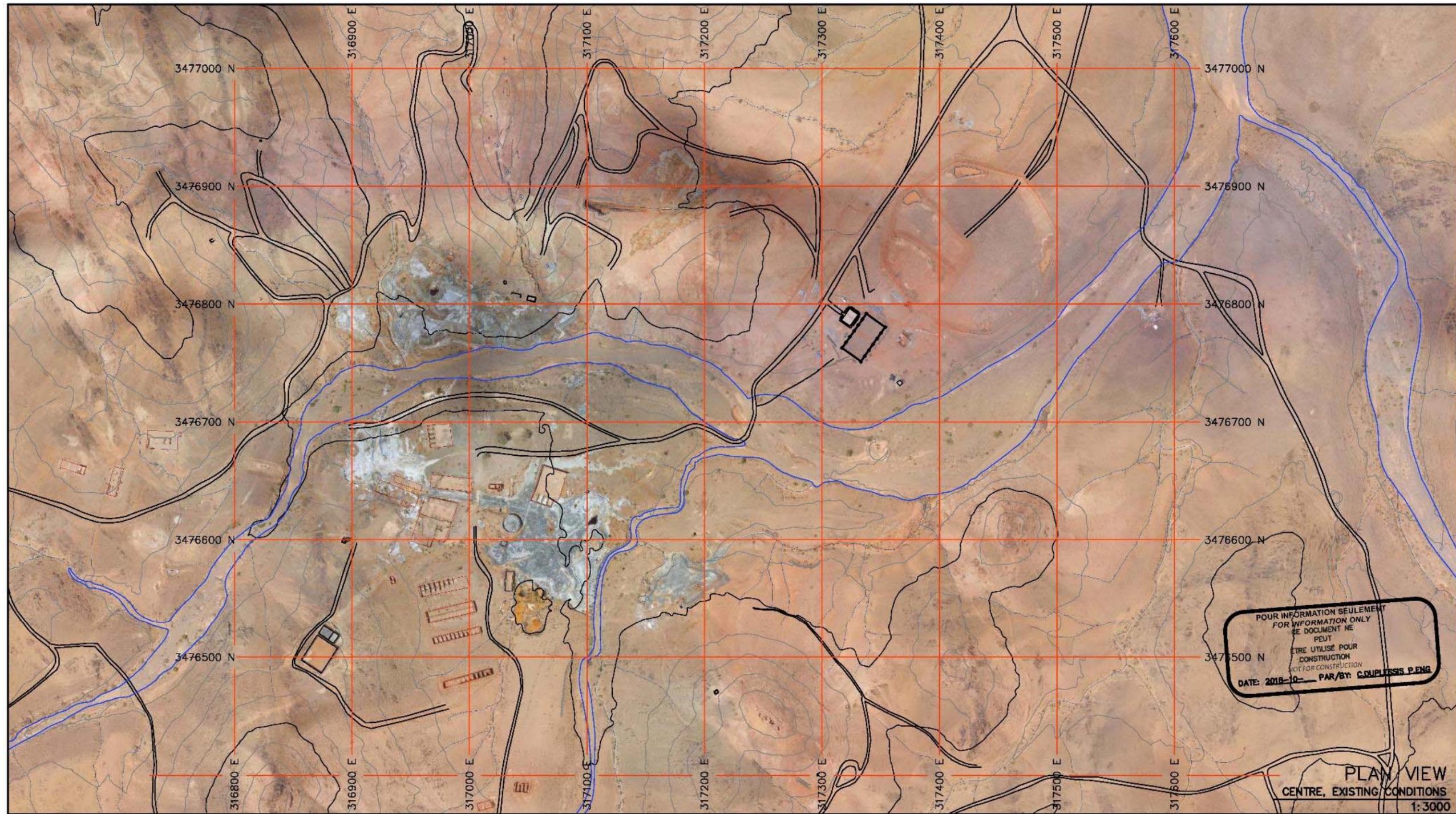
It is anticipated that the truck cycle time from the mine site to the port and back to mine will be approximately 24 hours. Concentrate transport has been designed based on haulage schedule of 330 days per year. This allows for interruptions such as landslides, floods, road maintenance operations, civic holidays, labour disputes and day/night/climatic conditions affecting visibility.

Operating consumables required by the mine that have foreign supply will be imported to the Port of Agadir. The route to access the mine will be the same as used by the concentrate shipments. Roads

will connect various mine facilities, including the proposed small open pit, truck shop, conveyor locations, process plant and crushers, electrical substations, and administrative buildings.

No Port Logistics has been addressed at this stage. The transport scheduled to 22,770 tonnes of concentrate (9,900t Zinc concentrate & 12,870t Lead concentrate) per year at the beginning and increase to reach 30,360t after 2 years if all goes well afterward.





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PLAN VIEW
 CENTRE, EXISTING CONDITIONS
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| | | | | | | | | | | | | | | |
|-----|---------------------|----------|--------|-----------------------------|-------------------------|----------|--|-----------|-------------------------|--------------------------------|----------------|------------------------|------------------|-----|
| | | | | DATE EMISSION ISSUE DATE | 2018-10-__ | | PROJECT CLIENT | BOUMADINE | TITRE/TITLE | PEA STUDY BOUMADINE PROJECT | | | | |
| | | | | DESSINÉ PAR DRAWN BY | P.G.GAGNON BAP | | 18-10-18 | | | No PROJECT PROJECT No | P2017-011 | CONÇU LE / DESIGN DATE | 2018-10-__ | |
| B | FINAL REVISION | 19/05/09 | PGG | VERIFIÉ PAR CHECKED BY | M.RACHIDI, Ph.D., P.Geo | 18-10-__ | <small>THE INFORMATION HEREON IS THE PROPERTY OF GOLDMINDS GEOSERVICES AND MUST BE RETURNED UPON REQUEST. ANY COPYING TRANSMITTAL TO OTHERS AND ANY USE EXCEPT THAT FOR WHICH IT IS LOANED ARE PROHIBITED WITHOUT WRITTEN PERMISSION.</small> | | No DESSIN DRAWING No | 011_general02 | REV./ REV. | B | DESSIN / DRAWING | 1/1 |
| A | FOR APPROVAL | 18/10/__ | PGG | APPROUVÉ PAR APPROVED BY | | | <small>L'INFORMATION CI-CONTENUE EST LA PROPRIÉTÉ DE GEOSERVICES GOLDMINDS ET DOIT LUI ÊTRE RETOURNÉE SUR DEMANDE. TOUTE TRANSMISSION DE COPIE(S) À AUTRUI ET TOUTE UTILISATION AUTRE QUE CELLE POUR LAQUELLE L'INFORMATION EST PRÊTÉE SONT INTERDITES SANS AUTORISATION ÉCRITE PRÉALABLE.</small> | | ECHELLE SCALE | AS SHOWN | FORMAT SIZE | 11x17 | | |
| REV | DESCRIPTION | DATE | PAR/BY | CIRCUL | SIGNATURE/SIGNATURE | DATE | | | | | | | | |
| | RÉVISION / REVISION | | | | APPROBATION / APPROVAL | | | | | | | | | |

Figure 149: Existing site conditions, CENTRE zone.

18.2 Power

Given the site's close proximity to Goulmina, a preliminary power request was addressed to the ONE to determine the connection to the ONE (Office Nationale de l'Energie et de l'eau Potable) grid. The exchange on the preliminary power request of 4500KVA is to connect the mine to Goulmina. The connection document No 800117998 of March 21st 2019 identifies the station to connect as PT060_022_Goulmima 60-22 KV Goulmima Additional details have to be put in place and studied. The transmission line connecting Goulmima substation to the plant site should be a single-circuit 10MVA line that is approximately 30 km long. Alternative options for the line path will be reviewed during the prefeasibility study to ensure that the most cost effective option is selected for the final design. At that stage, local power utility will also be engaged to confirm interconnection and permitting requirements. Appendix C has a map that shows the proposed power line path.

18.3 Buildings

Plant and ancillary buildings will be pre-engineered and modular to the greatest extent possible, and will include:

- + Gatehouse
- + Mine infrastructure area building consisting of truck shop, truck wash, mine offices, mine dry and warehouse
- + Laboratory
- + Administration building
- + Mill dry facility and plant change rooms
- + Plant workshop and warehouse

18.4 Accommodations

Due to the relatively close location to cities and villages, the construction and operations workforce will be housed in these nearby town's guesthouses and hotels. No camp except a canteen is planned on site. During operation bus shuttle are scheduled for transportation of workforces from mine site to the nearest town on a regular basis, provision in capex for buses are included.

At the site limited facility is planned. The facility will be built from modular structures or traditional constructed building with infrastructure for water distribution, sewage treatment, catering, first-aid, and other facilities required for the personnel. The facility will be powered through an overhead power line connection from the main substation and will also have a backup diesel generator at its location. The construction accommodations have not been sized based on the fact workforce would be traveling. As the construction workforce decreases, parts of the facility will be reassigned to operations

personnel and for use as operations offices. The construction facility will become the operations facility upon project completion.

18.5 Fuel supply & Storage

Diesel fuel will be delivered to the mine site using tanker trucks. The fuel storage tanks will be single-walled within a lined containment berm. Tank design will comply with appropriate regulatory requirements.

Provisions will be made for fuel storage and dispensing prior to permanent facilities being completed. Fuel for construction will be the responsibility of each individual contractor.

18.6 Water supply

GoldMinds has identified locations of potential water supply sources that are under consideration for the Boumadine project and these will require investigation for water well exploration and drilling in the year 2019. The locations have been identified based on regional geology and topography, hydrographic map and they range between 7 km to 28 km away from the plant site, and therefore 7.5 km was used as primary pipeline length.

The assumption at this phase of the project is that all wells will be located in relatively close proximity of each other and will produce sufficient water supply to meet the water demands of the project. The water supply capacity of nearby valley Errachidia aquifers district will need to be tested and confirmed during the next phase in 2019.

Water will be pumped from the wells to an intermediate fresh water holding tank for distribution to process water, fire water, facility water treatment, and other facilities. Booster station(s) will be installed as needed to deliver water from the location of the wells to plant site. It is suggested to put one vertical turbine pump and three booster pumps at this level of study. Due to the relatively high operating pressure, carbon steel piping should be used. There should be opportunity to optimize the design of this preliminary system during the next step. Construction water source will have to be confirmed during the next step.

Due to the arid region, water recovery processes will be reviewed and further optimized during the feasibility study. Areas to assess will include consideration of the type of tailings thickening to reduce the make-up water requirement.

18.7 Tailing Storage

Conceptual tailing storage facility has been designed and identified in Appendix C. A geotechnical investigation program will be required for the selected sites. The principal objective of the tailing storage facility is to ensure protection of the regional water during operations and closure, while containing solid waste materials within a geotechnically stable engineered facility. The tailings will be discharged as a thickened slurry. The tailings stream to the retention pond will be directly discharged to the impoundment at various locations around the facility to maximize the storage capacity of the

tailing storage facility. The tailings will also be utilized to provide a low-permeability seal on the alluvium base through strategic deposition practices to ensure the supernatant pond is over tailings covering the alluvial basin.

There should be one active tailings pond with bottom liner where flotation tails and tails of cyanidation which will have passed in the cyanide destruction plant will be sent to the active tailing's pond. Several tailings pond may be required over time. The liner installation should be considered to minimize seepage below the limits of the tailing storage facility that a liner system be installed down to bedrock along with a seepage collection well system installed downstream of the main embankment that will capture seepage above the bedrock/alluvial interface in the center of the storage facility. During deposition of the Pox/CIL tailings, the tailings will be alkaline due to the addition of lime to the process circuit. Additional testwork is required to better understand the short- and long-term geochemistry of the tailings and the effect of the addition of lime along with any additional mitigation measures that may be required during or after operations.

18.8 Electrical energy backup

Each zone will have a back-up generator (500MW) to continue to supply electricity to the fans in case of a power failure.

18.9 Site camp

No site camp will be available at the Boumadine site.

A nursing home will be built on site with the acquisition of an ambulance.

18.10 Compressed air

Each zones will have two electric air compressors of about 1444 m³/h each to supply the compressed air for underground usage. A back-up unit on wheels could be bought in case of emergency and could be use by all the zones.

The estimated requirement of air consumption for mining is outlined in the following Table.

Table 71: Mine Compressed Air Requirement

| Mine Compressed Air Requirements | Number | Demand l/s | Usage % | TOTAL l/s |
|---|------------|---------------|------------|--------------|
| Long-hole drill - A Copco BBC 120 | 1 | 167 | 70% | 116.9 |
| Jack Legs - A Copco BBC 17 | 6 | 60 | 50% | 180 |
| Stoppers - A Copco 46 | 4 | 75 | 50% | 150 |
| Blower pipes, small tools & miscellaneous | 2 | 100 | 25% | 50 |
| Shops and repairs | Estimation | | | 50 |
| Sub-total | | | | 547 |
| Losses: 10% | | | | 55 |
| Total: l/s | | | | 602 |
| Total: m³/min | | | | 36 |

The total air requirement is then 2200 m³/h, which is 75% of the output of the two compressors. There is therefore more than sufficient available compressed air at the site. The concentrator operates on its own system of compressed air. Dimensioning of additional compressed air equipment during production increase will have to be refined and calibrated. Each of the mineralized bodies will have its mining method determined as some of the mineralized zone may be mined by traditional manners to reduce mine dilution and define amount of working air required.

18.11 Repair shop and warehouse

There is a new warehouse already built on site, repair shop has to be added. Provision is included in the study.

18.12 Explosive magazines

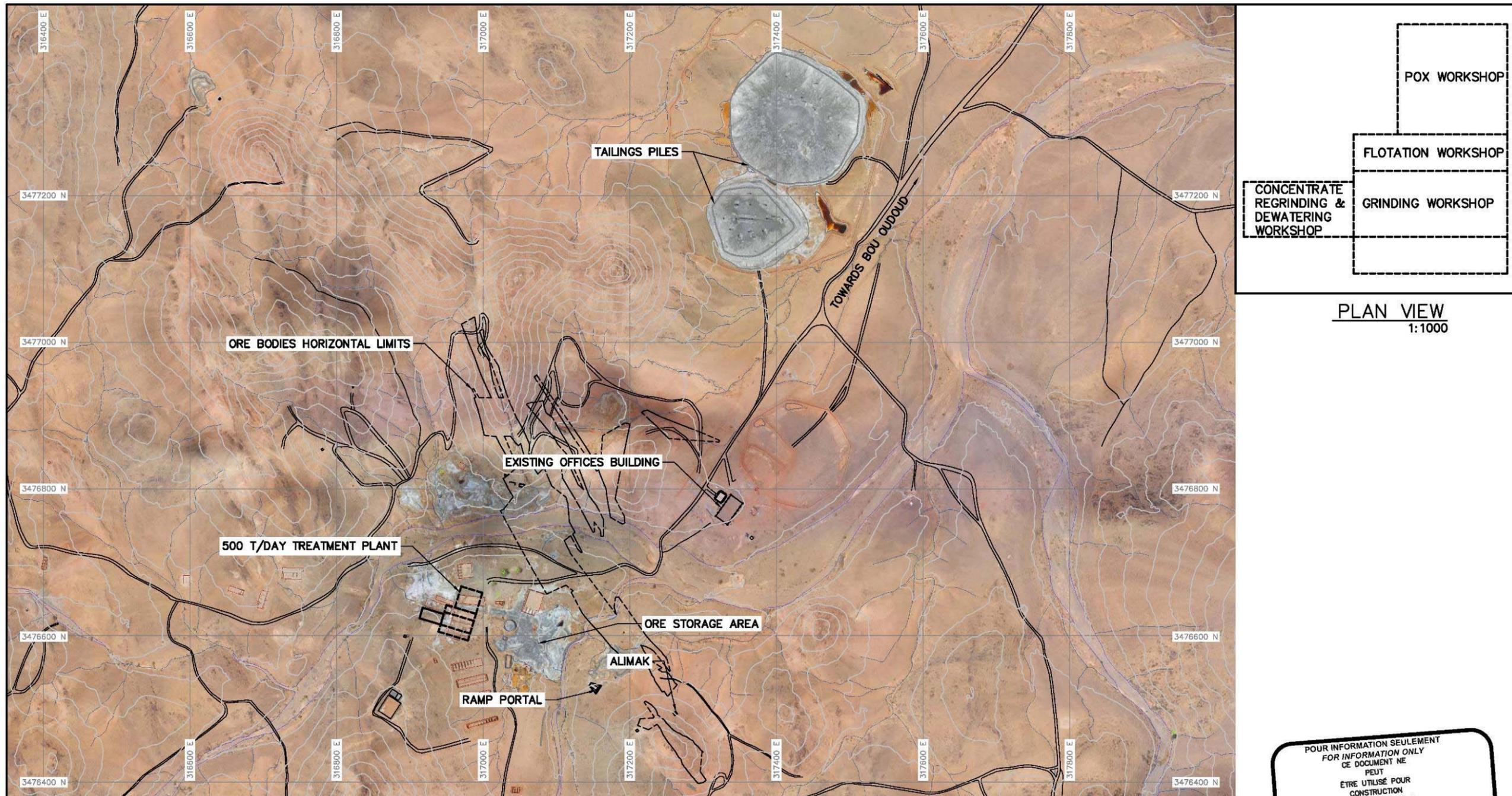
The explosive magazines will be in a safe area and each zone will have their own explosives site and magazines

18.13 On-site roads

On site roads/trails already exist and they will be upgraded from time to time with waste rock.

18.14 Concentrator

This item is fully described in section 17.



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PLAN VIEW
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| | | | DATE EMISSION ISSUE DATE | 2019-02-20 | | | TITRE/TITLE PEA STUDY BOUMĀDINE PROJECT CENTRAL ZONE, TREATMENT PLANT INFRASTRUCTURE | | |
| C | FINAL REVISION | 19/05/09 | DESSINÉ PAR DRAWN BY | P.G.GAGNON BAP | 19-02-20 | | No PROJET PROJECT No P2017-011 | CONÇU LE / DESIGN DATE 2019-02-20 | |
| B | FOR DISCUSSIONS | 19/03/13 | VERIFIÉ PAR CHECKED BY | G.ROUSSEAU, Eng. | 18-02-20 | | No DESSIN DRAWING No 011_GenLay | RÉV./ REV. C | DESSIN / DRAWING 1/1 |
| A | FOR DISCUSSIONS | 19/02/20 | APPROUVÉ PAR APPROVED BY | D.DUFORT, Eng. | 19-02-20 | | ECHELLE SCALE AS SHOWN | FORMAT SIZE 11x17 | |
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Figure 150: Treatment Plant location.



19 Market study and Contracts

19.1 Market Studies

Maya Gold & Silver has not completed any formal marketing studies with respect to gold, silver, lead, zinc & germanium production that would result from the mining and processing of resources from Boumadine at this stage. The company management is well aware of who can buy and where. Initial discussions on the concentrate have been initiated with different processors. The PEA study uses reference comparable values in the Moroccan context with consensus.

Gold and Silver production from the sulfide concentrate poured at the site will likely be sold either under a hedging transaction or on the spot market. Terms and conditions included as part of the sales contracts will be typical of similar contracts for the sale of doré throughout the world. There are many markets in the world where gold is bought and sold, and it is not difficult to obtain a market price at any particular time. The gold and silver market is very liquid with a large number of well-informed potential buyers and sellers active at any given time.

For the base metals Pb & Zn and special metal Ge, the product of the mine will be a conventional Lead concentrate and a Zinc concentrate, the Germanium is associated with the zinc concentrate. Each of the concentrate contains precious metals made of gold and silver which the company should receive credit for. This is generally considered to be marketable in a conventional manner, with fixed price per tonne of concentrate assumed for treatment. No deleterious elements are forecast to be present in the concentrate and however a general 10USD/t penalty have been modelled.

The concentrate parameters and amount of gold and silver recovered at the mine site versus portion in the concentrate have been forecast based on testwork described in Section 13.

The QP has reviewed the information provided by Maya on marketing and metal price projections, and note that the internal information provided is consistent with the source documents used, and that the information is consistent with what is publicly available on industry norms and other studies. The information can be used in mine planning and financial analyses in the context of this Report.

The concentrates are to be trucked to the existing concentrate export port of Agadir on the Atlantic coast and exported to smelters in Europe or Asia.

A total charge of 265 USD/t is applied to each tonne of the concentrates: for transportation, smelting, refining, ingots and penalty.

In the study after application of each component recovery taken into account an average of 96% is applied to have payable metals.

Gold (source Kitco)

The gold price has varied along in the last 19 years and in general over the years has generally increased reaching peak of 1850USD/Oz, from 2013 to now it has oscillated between 1025 and 1425 stabilizing in the 1300USD/Oz. There are different public studies showing extreme increase as well as others showing lowering of the commodity price. The use of 1321 USD/Oz at the beginning of the project with slight increase to 1400USD for the rest of project life is considered realistic and reasonable as political & economic tensions are increasing and people will seek refuge value at medium term. The following chart shows Gold price from year 2000 to now.

> [kitco](#) > [charts](#) > [historical gold](#) > [result](#)

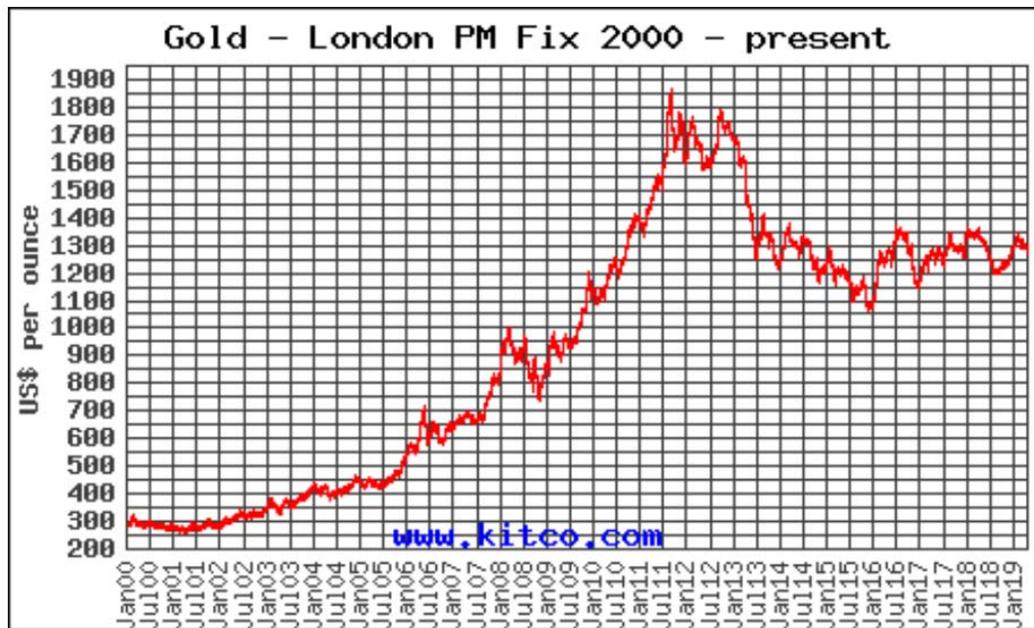


Figure 151: Gold price from 2000 to 2019 (kitco)

Silver (source Kitco)

The silver price has varied along in the last 19 years and in general over the years has generally increased reaching peak of 45.83USD/Oz, from 2013 to now it has oscillated between 14 and 23 stabilizing in the 17USD/Oz. Similar to gold there are different public studies showing extreme increase as well as others showing lowering of the commodity price. The use of 19 USD/Oz at the beginning of the project with slight increase to 21USD for the rest of project life is considered lightly optimistic in relation to current market but still realistic and reasonable as political & economic tensions are increasing and people will seek refuge value at medium term more accessible than gold. The following chart shows Silver price from year 2000 to now.

> [kitco](#) > [charts](#) > [historical silver](#) > [result](#)

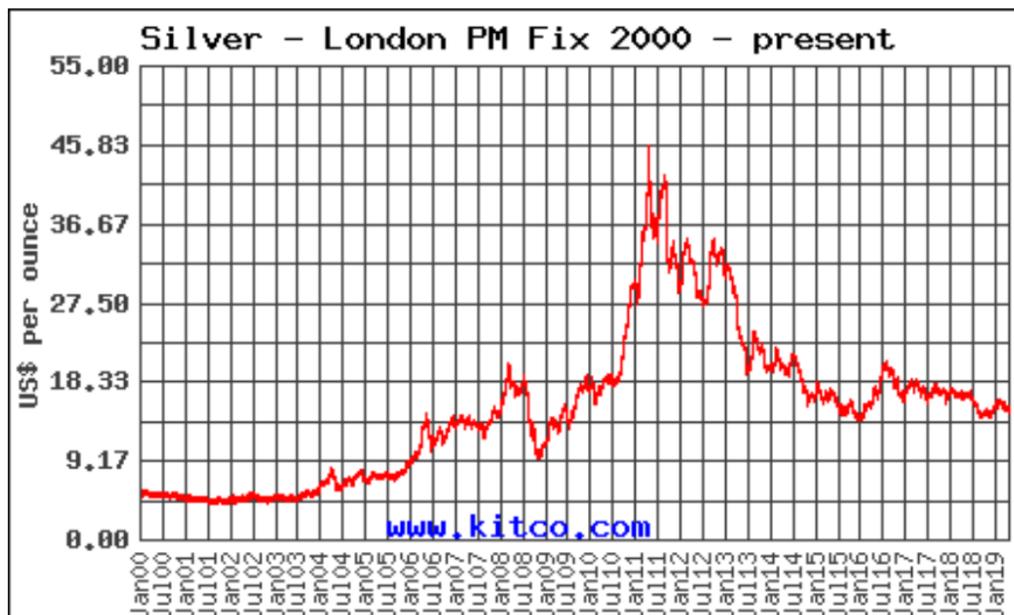


Figure 152: Silver price from 2000 to 2019

The company, Maya is already selling its silver from its Zgounder Millenium Silver Mine and has contract in place for ZMSM which is independent from the current project. A new contract will have to be put in place or modified if the same is used.

The use of 2900USD/t for Zinc at the beginning of the project is practically at the current market price followed by an increase to 3200USD/t for the rest of the mine life. There is actually shortage of Zinc inventory as being used as anti-corrosion around the world and there are no signs of decline for the moment.

HISTORICAL PRICE GRAPH



Figure 153: Zinc price (source LME)

The use of 2204USD/t of lead at the beginning of the project is practically at the current market price followed by an increase to 2600USD/t for the rest of the mine life. There is actually shortage of Lead production and it is still used in batteries which does not require weight reduction no signs of decline for the moment.

HISTORICAL PRICE GRAPH



Figure 154: Lead price (source LME)

Germanium is used as special metal in high technology applications such as optic fibers and infrared. Ge is a by-product of refining normally from Zinc refiners. The price used in the study is 2200USD/Kg. It is assumed that 95% of the Germanium is associated with the zinc and is recovered in the Zinc concentrate which is recovered at 79.5% for an effective scheduled Ge recovery of 75.5%. Subject to change with further testing.



Figure 155: Germanium price per Kg (HighCharts.com)

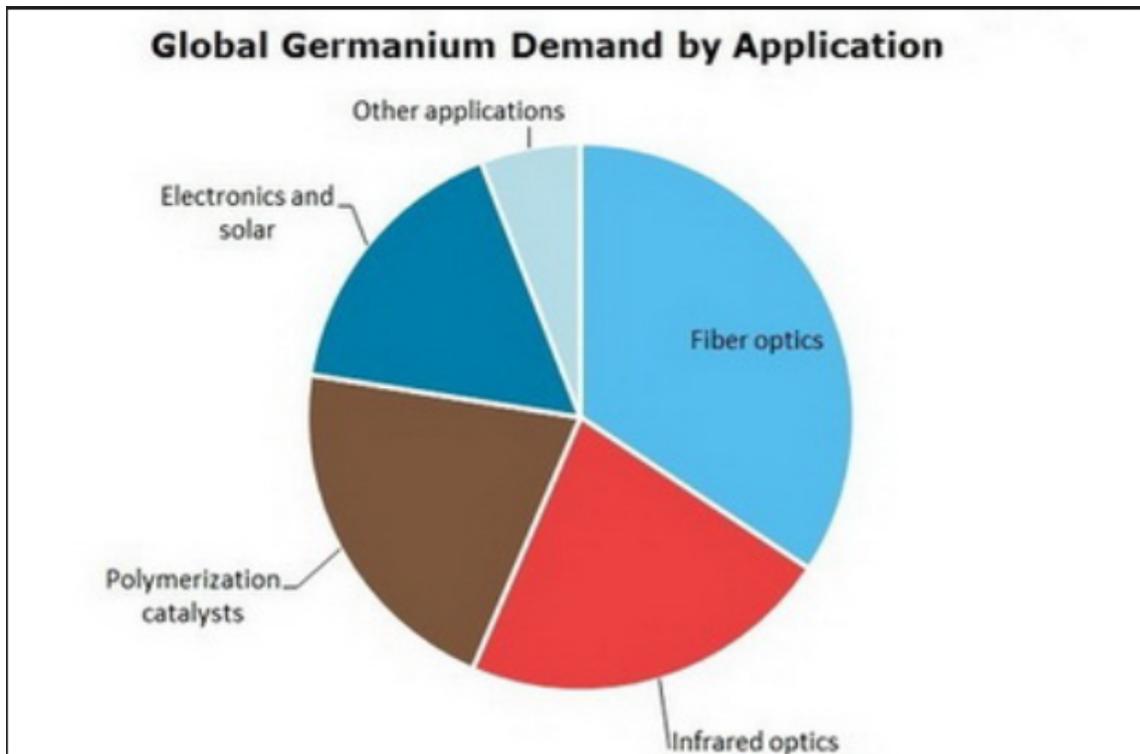


Figure 156: Global germanium demand by application

The above graph presents demand and application of the metal in the world.

GoldMinds considers the prices used in this study to be consistent with the range of prices being used for other project studies of this level.

20 Environmental studies, permitting, and social or community impact

There is no current environmental study nor social community impact study. The company going forward will have to prepare an exhaustive study to comply with the regulations. The law No 12-03 is described here. Financial provision has been made in order to prepare such studies by Moroccan specialists and service groups.

Moroccan Law No. 12-03 on Environmental Impact Assessments

(Traduction made by GMG – Original in French is the legal document)

Chapter 1: Definitions and Scope

Article 1: For the purposes of this law, it means:

1 - "Environment": all the natural elements and human settlements, as well as economic, social and cultural factors that favor the existence, transformation and development of the natural environment, living organisms and human activities.

2 - "Environmental impact study": preliminary study to evaluate the direct or indirect effects that can reach the environment in the short, medium and long term following the realization of economic and development projects and the implementation of establish basic infrastructure and identify measures to remove, mitigate or compensate for negative impacts and improve the positive effects of the project on the environment.

3 - "Petitioner": natural or legal person, author of an application for authorization or approval concerning a project subject to the environmental impact study.

4 - "Environmental acceptability": decision issued by the government environmental authority, in accordance with the opinion of the national committee or regional environmental impact assessment committees, attesting to the feasibility of the view of a project subject to the environmental impact study.

5 - "Project": all projects of activities, works, developments and works, undertaken by any natural or legal person, private or public who, because of their nature, size and location, implantation in sensitive or protected areas, must be the subject of an environmental impact study.

6 - "Directives": reference documents defining the main elements that must be included in the terms of reference of the impact study of a project subject to this study.

7 - "Terms of Reference": reference document defining the important environmental aspects and requirements to be taken into account in the preparation of the impact study. It specifies the method that must be adopted to detect and analyze the potential impact of the project on the environment.

8 - "Sensitive areas": wetlands, protected areas and areas of biological and ecological utility as well as those located on groundwater and on water drainage sites.

Article 2: All the projects mentioned in the list annexed to this law, undertaken by any natural or legal person, private or public, which because of their nature, size or location may have negative impacts on the biophysical and human environment and are subject to an environmental impact assessment.

Article 3: When a project subject to the environmental impact study is subdivided into several complementary components or whose implementation is staggered over time, the impact study must cover the entire project.

Article 4: Not subject to the provisions of this law, projects falling under the authority of national defense. However, these projects must be carried out in such a way as not to expose the population and the environment in general to danger.

Chapter II: Objectives and Content of the Environmental Impact Statement

Article 5: The purpose of the environmental impact study is:

1 - to evaluate in a methodical and preliminary way, the possible repercussions, the direct and indirect effects, temporary and permanent of the project on the environment and in particular on the humans, the fauna, the flora, the soil, the water , air, climate, natural environments and biological balances, the protection of historic properties and monuments, where appropriate on the convenience of the neighborhood, hygiene, public safety and security while taking into consideration interactions between these factors;

2 - to remove, mitigate and compensate for the negative effects of the project:

3 - to highlight and improve the positive impacts of the project on the environment;

4 - to inform the population concerned about the negative impacts of the project on the environment.

Article 6: The environmental impact study shall include:

1 - an overall description of the initial state of the site likely to be affected by the project, in particular its biological, physical and human components;

2 - a description of the main components, characteristics and stages of implementation of the project including the manufacturing processes, the nature and quantities of raw materials and energy resources used, the liquid, gaseous and solid discharges as well as the waste generated by the realization or the exploitation of the project:

3 - an evaluation of the positive, negative and harmful impacts of the project on the biological, physical and human environment that may be affected during the construction, exploitation or development phases on the basis of the terms of reference and guidelines provided for this purpose; effect;

4 - the measures envisaged by the petitioner to eliminate, reduce or compensate for the damaging effects of the project on the environment as well as measures to enhance and improve the positive impacts of the project;

5 - a monitoring and follow-up program of the project and the planned training, communication and management measures to ensure the execution, operation and development in accordance with the technical requirements and environmental requirements adopted by the study;

6 - a concise presentation on the legal and institutional framework related to the project and the building in which will be executed and operated as well as the projected costs of the project;

7 - a summary note summarizing the content and conclusions of the study;

8 - a simplified summary of the information and the main data contained in the study intended for the public.

Article 7: The authorization of any project subjected to the environmental impact study is subordinated to a decision of environmental acceptability. This decision is one of the documents in the application file submitted to obtain the project authorization.

Chapter III: National Committee and Regional Environmental Impact Assessment Committees

Article 8: A national committee and regional environmental impact assessment committees are set up under the authority of the Government responsible for the environment. The purpose of these committees is to examine environmental impact studies and to give their opinion on the environmental acceptability of projects. The formalities for the creation of the national committee and the regional committees, the operating procedures and the attributions of these committees are set by regulation.

Article 9: Each project submitted to the environmental impact study gives rise to a public inquiry. The purpose of this survey is to enable the population concerned to become aware of the potential impacts of the project on the environment and to collect their observations and related proposals. These observations and proposals are taken into consideration during the review of the Environmental Impact Assessment. Public projects referred to in the first paragraph of this section are exempted from public inquiry provided for by other laws and regulations, provided the study is made available to the public. impact on the environment during the course of this survey. The conditions of this public inquiry are fixed by regulation.

Article 10: The administration shall take all necessary measures to ensure that the information and conclusions relating to the environmental impact study be available to the public during the public inquiry period with the exception of information and data that are considered confidential. For this purpose, the petitioner is required to notify the administration in writing of the information and data he considers confidential. The data and information relating to the project, the dissemination of which may be prejudicial to the interests of the developer, are considered confidential under the first paragraph of this article, with the exception of information relating to the negative impacts of the project on the project environment. The conditions and procedures for consulting the impact study are laid down by regulation.

Article 11: The officers entrusted by the administration are, during the exercise of their functions, the consultation or the examination of the environmental impact studies or the follow-up of the projects submitted to these studies, as well as members of the national committee and the regional impact assessment committees referred to in Article 8 above, who are bound by the obligation of professional secrecy and the non-disclosure of data and information relating to projects submitted for impact studies on the environment, on pain of the application of the provisions of the Penal Code in force.

Article 12: The costs of the public inquiry shall be borne by the petitioner. The detailed rules for the application of this article are laid down by regulation.

Article 13: The costs of carrying out the environmental impact study shall be borne by the petitioner unless otherwise provided by the legislation in force.

Chapter IV skipped voluntarily (related to Infractions & justice)

Appendix of the projects submitted to the environmental impact study

1 - Unhealthy, uncomfortable or dangerous establishments classified in the first category.

2 - Infrastructure Projects

- Construction of roads (national roads and motorways);
- Railways;
- Airports;
- Urban planning;
- Development of industrial zones;
- Commercial ports and marinas;
- Dams or other facilities designed to retain and store water in a permanent manner;
- Tourist complexes, particularly those located on the coast, in the mountains and in rural areas;
- Storage or disposal facilities regardless of their nature and method of disposal;
- Sewage treatment plants and ancillary works;
- Emissaries for marine evacuation;
- Transport of dangerous or toxic materials.

3 - Industrial projects

3.1 - Extractive industry:

- Mines; - Sand and gravel pits;
- cement works;
- plaster industry;
- Transformation of cork.

3.2 - Energy industry:

- Installations for the storage of gas and all flammable products;
- oil refineries;
- Major energy transfer work;
- Thermal power stations and other installations with a heating capacity of at least 300 MW;
- Nuclear center;
- Hydroelectric power stations.

3.3 - Chemical industry:

- Chemicals, pesticides, pharmaceuticals, varnish paints, elastomers and peroxides manufacturing plants;
- Launch of new chemicals on the market;

- Extraction, processing and transformation of asbestos.

3.4 - Treatment of metals:

- Steel plants;
- Surface treatment and coating of metals;
- Boilermaking and metal appliances.

3.5 - Food industry:

- Canned animal and vegetable products;
- Manufacture of dairy products;
- Brewery;
- Manufacture of confectionery and beverages;
- Fishmeal and fish oil plants;
- Industrial starch;
- Sweets and transformation of molasses;
- Flour mills and semolina;
- Oil mills.

21 Capital and operating cost

21.1 Capital costs

The initial Capital expenditures (capex) required to build and for 4 years of operation is just over 89MUS\$.

The other capital expenditures are not required at the beginning but later over the years and are included as sustaining capital for the purpose of the calculation. An estimated total amount of 120.35 MUSD is required.

Under the terms of the general conditions of a Preliminary Economic Assessment (PEA), the estimation of all costs is made with a margin of certainty of about 30%. In the next level study, the prices for machinery and equipment including delivery, taxes and a minimum of spare parts will have to be identified. The summary and details of capital costs is provided in the following Tables.

Table 72: Capex Summary for the first 4 year of operation

| Description | Cost - US |
|---|---------------------|
| Power Line + Power Stations | \$3 000 000 |
| Flotation + POx/CIL Mill 15000 tpd | \$ 35 000 000 |
| Well, pumps and water line | \$ 2 500 000 |
| Fresh water reservoir | \$ 350 000 |
| Main Ramps/Drift + vent system+garage/warehouse | \$ 8 185 000 |
| New Tailings | \$ 2 500 000 |
| Site Preparation Road | \$ 1 000 000 |
| Office & Services | \$750 000 |
| Pick-up trucks | \$ 250 000 |
| Staff Mini-buses | \$ 300 000 |
| Utility Loader and truck | \$ 350 000 |
| Security system & Camera | \$250 000 |
| Explosive magazine/compressors | \$750 000 |
| Expansion 2000 t/d 50% | \$ 5 000 000 |
| Generators | \$ 1 840 000 |
| Fuel tanks | \$ 100 000 |
| Exploration Drilling & Studies | \$ 5 000 000 |
| Water Treatment plant | \$ 550 000 |
| UG Equipment | \$ 12 560 000 |
| Gate & balance | \$ 250 000 |
| Communication system | \$500 000 |
| Sub-Total | \$80 985 000 |
| Contingencies | \$ 8 098 500 |
| Total initial capex | \$89 083 500 |

1US\$=10Dirhams

An additional capex of 26.3MUSD is required to enable the whole development of the mine. Sustaining estimated at 5MUSD for a total project capital requirement of 120.35MUSD. Details of sequence follow in development schedule.

21.2 Surface capex

This section describes items required at surface required for the PEA ramp-up. The surface mining fleet is not considered in the Surface Capex. The items are identified in previous table

21.3 Concentrator capex

The Capex and Opex for the mills are described in section 17 of this report.

Initial capex of 35M + 5M (included in the initial Capex table) and additional 5M to total 45MUSD for the whole mill.

The capex above includes the mill cost, and the mill infrastructure construction estimated cost.

21.4 Underground total mine equipment capex

The main developments and items are tabulated as capex for the PEA scenario presented and are estimated to be a minimum cost. The Tables below are the total equipment Capex costs for each zones detailed per type of equipment. The TIZI zone will use available equipment from the CENTRE and SUD zone. For the mining equipment, jumbos, scooptrams and 5 cubic meters dumpers will be the main equipment used. An estimation of \$275,000US will be imputed for those equipment as an average.

Table 73: Underground total mine equipment Capex Summary (CENTRE zone)

| Equipment | Marque | Model | Quantity | COST \$KUS | TOTAL COST |
|---|-------------|-------------|----------|------------|------------|
| Development drill | Atlas Copco | Boomer 282 | 8 | 275 | 2200 |
| Scoop | China | XYWJ-1.5B | 9 | 250 | 2250 |
| Production drill | Simba | M4 | 1 | 275 | 275 |
| Emulsion charger | MacLean | EC3 | 1 | 125 | 125 |
| Atlas Copco Cavo 310 | Atlas Copco | Cavo 310 | 1 | 50 | 50 |
| Transport truck | China | XYUK-8 | 11 | 275 | 3025 |
| Wheeled loader (surface) | Komatsu | WA800-3 | 1 | 175 | 175 |
| surface truck | | | 1 | 65 | 65 |
| Drill definition | Sandvik | DE110 | 1 | 100 | 100 |
| Truck (service, rockbolt, flat bed, explosives etc) | Dux | P1-Porter | 7 | 150 | 1050 |
| Transport | Toyota | Landcruiser | 7 | 30 | 210 |
| | | | | | 9525 |

Table 74: Underground total mine equipment Capex Summary (NORD zone)

| Equipment | Marque | Model | Quantity | COST \$KUS | TOTAL COST |
|--|-------------|-------------|----------|------------|------------|
| Development drill | Atlas Copco | Boomer 282 | 2 | 275 | 550 |
| Scoop | China | XYWJ-1.5B | 3 | 250 | 750 |
| Production drill | Simba | M4 | 0 | 275 | |
| Emulsion charger | MacLean | EC3 | 1 | 125 | 125 |
| Atlas Copco Cavo 310 | Atlas Copco | Cavo 310 | 1 | 50 | 50 |
| Transport truck | China | XYUK-8 | 3 | 275 | 825 |
| Wheeled loader (surface) | Komatsu | WA800-3 | 0 | | |
| surface truck | | | | | |
| Drill definition | Sandvik | DE110 | 1 | 100 | 100 |
| Truck (service, rockbolt, flat bed, explosives etc) | Dux | P1-Porter | 2 | 150 | 300 |
| Transport | Toyota | Landcruiser | 2 | 30 | 60 |
| | | | | | 2760 |

Table 75: Underground total mine equipment Capex Summary (SUD zone)

| Equipment | Marque | Model | Quantity | COST \$KUS | TOTAL COST |
|---|-------------|-------------|----------|------------|------------|
| Development drill | Atlas Copco | Boomer 282 | 2 | 275 | 550 |
| Scoop | China | XYWJ-1.5B | 3 | 250 | 750 |
| Production drill | Simba | M4 | 0 | 275 | |
| Emulsion charger | MacLean | EC3 | 1 | 125 | 125 |
| Atlas Copco Cavo 310 | Atlas Copco | Cavo 310 | 1 | 50 | 50 |
| Transport truck | China | XYUK-8 | 3 | 275 | 825 |
| Wheeled loader (surface) | Komatsu | WA800-3 | 0 | 175 | |
| Drill definition | Sandvik | DE110 | 1 | 100 | 100 |
| Truck (service, rockbolt,flat bed, explosives etc) | Dux | P1-Porter | 2 | 150 | 300 |
| Transport | Toyota | Landcruiser | 2 | 30 | 60 |
| | | | | | 2760 |

Table 76: Underground total mine equipment Capex Summary (IMARIREN zone)

| Equipment | Marque | Model | Quantity | COST \$KUS | TOTAL COST |
|---|-------------|-------------|----------|------------|------------|
| Development drill | Atlas Copco | Boomer 282 | 2 | 275 | 550 |
| Scoop | China | XYWJ-1.5B | 3 | 250 | 750 |
| Production drill | Simba | M4 | 0 | 275 | |
| Emulsion charger | MacLean | EC3 | 1 | 125 | 125 |
| Atlas Copco Cavo 310 | Atlas Copco | Cavo 310 | 1 | 50 | 50 |
| Transport truck | China | XYUK-8 | 3 | 275 | 825 |
| Wheeled loader (surface) | Komatsu | WA800-3 | 0 | 175 | |
| Drill definition | Sandvik | DE110 | 1 | 100 | 100 |
| Truck (service, rockbolt,flat bed, explosives etc) | Dux | P1-Porter | 2 | 150 | 300 |
| Transport | Toyota | Landcruiser | 2 | 30 | 60 |

Table 77: Boumadine CAPEX

| | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|-----------------------------|----------|------|------|------|------|------|----------|------|----------|------|------|------|------|------|------|
| tpd | | | | | | | | | | | | | | | |
| CENTRE | develop. | 900 | 900 | 1500 | 1500 | 1500 | 1500 | 1500 | 1500 | 715 | | | | | |
| NORD | develop. | 300 | 300 | 500 | 500 | 500 | 500 | | | | | | | | |
| SUD | 0 | | | | | | develop. | 500 | 500 | 500 | 1000 | 700 | 615 | | |
| TIZI | 0 | | | | | | | | develop. | 285 | 300 | 500 | 460 | | |
| IMARIREN underg. | 0 | | | | | | | | develop. | 500 | 700 | 800 | 840 | | |
| IMARIREN pit | | 300 | 300 | | | | | | | | | | | | |
| TOTAL per day | 0 | 1500 | 1500 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 1915 | 0 | 0 |
| 330 days of mining per year | | | | | | | | | | | | | | | |

CAPEX (K US\$) PHASE 1

| DEVELOPMENT | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ramp development CENTRE zone, surface elevation 1150-915 (2357.5m) \$1350/m | 1520 | 1520 | 145 | | | | | | | | | | | | 3185 |
| stope access(177m) \$1050/m | 87 | 96 | | | | | | | | | | | | | 183 |
| ramp development NORD zone, surface elevation 1220-1080 (868m) \$1350/m | 630 | 540 | | | | | | | | | | | | | 1170 |
| stope access(367m) \$1050/m | 155 | 230 | | | | | | | | | | | | | 385 |
| ramp development SUD zone, surface elevation 1248-1000 (2027m) \$1350/m | | | | | | | 1350 | 1385 | | | | | | | 2735 |
| stope access(452m+263m=715m) \$1050/m | | | | | | | 375 | 375 | | | | | | | 750 |
| ramp development TIZI zone, surface elevation 1225-978 (2468m) \$1350/m | | | | | | | | | 1520 | 1520 | 290 | | | | 3330 |
| stope access(1162m+563m=1725m) \$1050/m | | | | | | | | | 905 | 905 | | | | | 1810 |
| ramp development IMARIREN zone East and North, surface elevation, 1198-1078 (1768m) \$1350/m | | | | | | | | | 1190 | 1190 | | | | | 2380 |
| stope access(70m+79m=149m) \$1050/m | | | | | | | | | 78 | 78 | | | | | 156 |

UNDERGROUND MINING EQUIPMENT

| | | | | | | | | | | | | | | | |
|--|------|------|--|------|------|-----|------|--|------|------|--|--|--|--|------|
| CENTRE zone | 2100 | 2100 | | 2600 | 2700 | | | | | | | | | | 9500 |
| NORD zone | 1400 | 1400 | | | | | | | | | | | | | 2800 |
| SUD zone | | | | | 500 | 900 | 1400 | | | | | | | | 2800 |
| will take equipment from NORD zone plus 100% | | | | | | | | | | | | | | | |
| IMARIREN zone | | | | | | | | | 1400 | 1400 | | | | | 2800 |
| TIZI zone | | | | | | | | | | | | | | | |
| will take equipment from CENTRE zone | | | | | | | | | | | | | | | |

GENSET (VENTILATION BACK-UP)

| | | | | | | | | | | | | | | | |
|--|--|------|--|--|--|--|--|--|--|--|--|--|--|--|------|
| CENTRE zone (2 back-up for life of mine) | | 1000 | | | | | | | | | | | | | 1000 |
| NORD zone (2 back-up for life of mine) | | 1000 | | | | | | | | | | | | | 1000 |
| SUD zone will take one back-up from CENTRE zone | | | | | | | | | | | | | | | |
| IMARIREN zone will take one back-up from NORD zone | | | | | | | | | | | | | | | 0 |
| TIZI zone will take one back-up from NORD zone | | | | | | | | | | | | | | | 0 |

EXPLOSIVES MAGAZINES

| | | | | | | | | | | | | | | | |
|-----------------|-----|--|--|----|--|--|--|--|----|--|--|--|--|--|-----|
| IMARIREN+CENTRE | 100 | | | | | | | | | | | | | | 100 |
| NORD | 50 | | | | | | | | | | | | | | 50 |
| SUD | | | | 50 | | | | | | | | | | | 50 |
| IMARIREN | | | | | | | | | 50 | | | | | | 50 |
| TIZI | | | | | | | | | 50 | | | | | | 50 |

GARAGE + SURFACE STORAGE

| | | | | | | | | | | | | | | | |
|----------------------------|------|------|--|--|--|--|--|--|--|--|--|--|--|--|------|
| buildings & installations | 1000 | 1000 | | | | | | | | | | | | | 2000 |
| compressor for underground | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--|-----|-----|--|--|-----|----|--|--|-----|-----|--|--|--|--|--|--|--|-----|
| CENTRE zone | 100 | 100 | | | | | | | | | | | | | | | | 200 |
| NORD zone | 100 | 100 | | | | | | | | | | | | | | | | 200 |
| SUD zone | | | | | 150 | 50 | | | | | | | | | | | | 200 |
| IMARIREN zone | | | | | | | | | 100 | 100 | | | | | | | | 200 |
| TIZI zone will take compressor from CENTRE or NORD zones | | | | | | | | | | | | | | | | | | |

| VENTILATION | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | |
|--|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|------------|------|------|------|------|--------------|
| shaft rehabilitation from level 1050 CENTRE zone | 200 | | | | | | | | | | | | | | | 200 |
| up to surface with main fan installed | | 200 | | | | | | | | | | | | | | 200 |
| ventilation raise from 915 level to 1050 (alimak) 135M, \$1200/M | | 80 | 85 | | | | | | | | | | | | | 165 |
| CENTRE zone fans | | 100 | 100 | 100 | 100 | | | | | | | | | | | 400 |
| NORD zone fans and raise 140M at \$1200/m from level 1097 up to level 1000 | | 200 | 100 | | | | | | | | | | | | | 300 |
| SUD zone fans and raise (\$115k), from level 1080 up to surface level 1220, 97m at \$1200/m | | | | | | | 200 | 215 | | | | | | | | 415 |
| TIZI zone fans and raise (\$88k) from level 1125 up to level 978, 147m at \$1200/m alimak | | | | | | | | | 300 | 88 | 88 | | | | | 476 |
| IMARIREN zone fans and raise (\$73k) from level 1200 up to level 1078, 122m at \$1200/m alimak | | | | | | | | | 373 | 73 | | | | | | 446 |
| TOTAL | 7442 | 9666 | 430 | 2750 | 3450 | 950 | 3325 | 2075 | 5966 | 5254 | 378 | | | | | 41686 |

Capex \$41,686,000

21.5 Sustaining & working capital

The expected life of mine (LoM) of 12 years as calculated in this study is short, and capital replacements costs are in theory very limited. The major equipment and vehicles have a replacement life which is fortunately and normally longer than the LoM. For that matter a \$5 000 000 has been scheduled: \$2.5 in 2027 and another 2.5 in 2029

21.6 Rehabilitation and mine closure

There is not provision for rehabilitation and no mine closure plan, however, the environmental cost for this is included in operating cost and 0.50\$/t from the 1.75\$/t in the cash flow (Administration & Environment) is attributed to progressive and accumulation of money for the final cost, it represent 3.75MUSD for the whole project life.

21.7 Operating costs

The estimated operating costs of development and mining were prepared mainly from Zgounder costs as provided by Maya ZMSM operation. For the extraction by open pit the costs are in range with country contractor costs.

Table 78: Total Operating costs at Boumadine Project for the PEA

| Items | Total Cost US | Cost US\$/t milled |
|---------------------------------------|--------------------|--------------------|
| Waste development cost | 56,790,000 | \$7.50 |
| Mineralized material production cost | 154,600,000 | \$20.44 |
| Mineralized material Process cost | 347,305,200 | \$45.76 |
| General and administration cost & Env | 13,282,500 | \$ 1.75 |
| Royalty and management fee(s) | 99,678,917 | \$13.13 |
| Total | 211,390,000 | \$27.94 |

Total tonnage :7,561,950 t.m. (7.59Mt)

21.7.1 Direct mining operating costs estimates

The underground development costs in both waste and mineralization are actual figures and for the open pit they have been compared with other similar operations.

The underground mining cost of mineralized material used is 24\$ per metric tonne for the total mine life. Cost is split between ore (75%) and waste (25%).

The mining of mineralized material in open pit is expected to be 6\$/mt and \$6/mt for the waste for the life of the open pit (2 years). The cost of the waste includes transportation to the waste dump and the preparation work for the pit.

The underground mining cost of waste material is expected to remain the same for the whole project at 8\$/t. The tonnage assigned to that cost is 15% of the production UG.

The waste development in pit may be used for infrastructure or mechanic fill in UG stope. The study did not go in such level of details.

There is no optimization either for the pit and the different ramps and mine openings for the different zones.

The environmental cost provision of 0.50\$/ is fixed for whole mine life.

As per the owner information, smelting of concentrate, transportation to port, refining charges with insurance and shipping totals 265\$/t.

The detailed development costs for the underground mine have not been prepared at this stage. As general information entrepreneur costs used for different works are:

- + 1050 USD/m for 3.5m x 3.5m ramp
- + 1350 USD/m for 4.5m x 4.5m ramp
- + 1200 USD/m for raises 2.5m x 2.5m done by alimak.

There is no shaft because for now until further exploration the 5 zones are relatively close to the surface.

The different main ramp system for the 5 zones proposed with average of 4.5m/day advance over 330 day/year .

The company has monthly compilation cost control and management reports for the Zgounder mine. The authors have had access to all these reports. Only to give an example to support the cost analysis and assumptions: their cost to develop a ramp of 4m x 4m less than 12% dip is \$400US per meter (report included in appendix). GMG feels confident with the costs we used above for the study.

Table 80: Total manpower required to achieve a production of 2000tpd.

| Manpower required for 2000 m.t. per day operation | |
|--|--------------|
| | Total |
| Supervision | |
| superintendant | 1 |
| safety | 3 |
| captains | 4 |
| mine foremen | 12 |
| services foremen | 4 |
| administrative | 13 |
| services (mechanics, electricians , etc) | 24 |
| mine operation | 119 |
| mine development | 46 |
| mine services (rockbolt ,explosives ,etc) | 64 |
| Total | 290 |
| 10% more for vacation replacement , | 29 |
| sickness, week-ends etc | |
| GRAND TOTAL | 319 |

22 Economic Analysis

22.1 Cautionary statement

The results of the economic analyses discussed in this section represent forward- looking information as defined under Canadian securities law. The results depend on inputs that are subject to a number of known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those presented in the report. Information that is forward-looking includes:

- Mineral Resource estimates;
- Assumed commodity prices and exchange rates;
- Mine production plans;
- Projected recovery rates;
- Sustaining and operating cost estimates;
- Assumptions as to environmental, permitting and social risks.
- Changes to costs of production from what is assumed;
- Unexpected variations in quantity of mineralised material, grade, or recovery rates;
- Geotechnical and hydrogeological considerations during mining being different from what was assumed and was experienced in the past;
- Failure of plant, equipment, or processes to operate as anticipated;
- Accidents, labour disputes and other risks of the mining industry.

22.2 Financial Model Parameters

The economic analysis assumes a 100% equity financed project. The economic analysis takes into account the fact that Maya Gold & Silver's effective ownership in Boumadine is 85%. Its Joint Venture partner ONHYM has to pay its 15% portion of the Capex.

All dollar amounts in this analysis are expressed in United States dollars (USD), unless otherwise specified. The economic analysis includes the entire project life, comprising two years of construction and over 12 years of mining and milling. Corporate sunk costs to that point in time, including costs for exploration, technical studies, and permitting, are excluded from initial capital and have not been considered in the estimation of tax depreciation pools. The basis of the project economic analysis is summarized in following table. Details of the capital and operating cost estimates are described in Section 21. The production schedules used for the economic analysis are described in Section 16. Metallurgical recoveries are described in Section 13.

22.3 Economic Analysis

The production schedule upon which the economic analysis for each of the Zones of the Boumadine is provided and discussed in Section 16.



The economic analysis for the overall project is summarized in following table. The NPV at 6.5% is discounted Q2 2019. The overall combined Boumadine Project Phase 1 (1500t/d) and Phase 2 Expansion (+500T/d) internal rate of return (IRR) is 53% (post-tax), and the payback (after-tax) is 1.4 years.

Table 81: Project Base Case Economic Parameters and Assumptions

| Items | Units | Values |
|---|--------------|------------|
| Silver price (yearly average) | US/oz | \$21.00 |
| Gold Price (yearly average) | US/oz | \$1,380.00 |
| Lead Price (Yearly average) | US/t | \$2,501 |
| Zinc Price (Yearly average) | US/t | \$3,125 |
| Germanium (Yearly average) | US/Kg | \$2,200 |
| Processed tonnage over LoM | metric tonne | 7,590,000 |
| Silver metal production | ounces | 19,734,105 |
| Gold metal production | ounces | 327,226 |
| Lead metal production | metric tonne | 38,749 |
| Zinc metal production | metric tonne | 149,540 |
| Germanium metal production | kg | 16,150 |
| Royalty on sales (ONHYM) | % | 3.0 |
| Maya Management Fees | % | 2.75 |
| Taxes for the first 5 years on gross revenues for a new company | % | 0.5 |
| Taxes after the first 5 years on profits | % | 17.5 |

+ In Morocco taxes are low with 0.5% on revenue for the first five year of operation for a new company and thereafter a 17.5% applies on profit.

+ Maya Gold & Silver has 85% of the project value with its partner ONHYM having the remaining 15%.

+ The exchange rate used is 1USD:10 Dirhams.

+ The cash flow does not take into account inflation.

+ The study supposed an escalation of commodity price as follow starting June 2021:

- Lead at 2204USD/t beginning of project up to June 2024 and then 2600USD/t for the rest of project life
- Zinc at 2900USD/t beginning of project up to June 2024 and then 3200USD/t for the rest of project life
- Gold at 1321USD/Oz beginning of project up to June 2024 and then 1400USD/Oz for the rest of project life
- Silver at 19USD/Oz beginning of project up to June 2024 and then 21USD/Oz for the rest of project life
- Germanium at 2200USD/kg for the whole project life

The project cash flow summary of the base case is shown in the following table:

Table 82: Project Cash Flow Summary BOUMADINE.

| Items | Value US\$ |
|---------------------------------|-----------------|
| Total revenue of sales | \$1,731,996,000 |
| Total operating costs | \$772,050,000 |
| Pre-tax discounted (6.5%) NPV | \$574,821,000 |
| After-tax discounted (6.5%) NPV | \$497,650,000 |

Highlights of the Boumadine Polymetallic Mine PEA Study:

- A project life of 12 years with the current resources starting in 2021 and ending in 2033;
- Project Internal Rate of Return of 56% pre-tax and 53% after-tax;
- Project pre-tax Net Present Value of US\$574.8M (discounted at 6.5%) or US\$665.9M (discounted at 5%) at variable commodity prices;
- Project after-tax Net Present Value of US\$497.6M (discounted at 6.5%) or US\$576.7M (discounted at 5%) at variable commodity prices;
- The extraction of 7.59Mt at 1.03%Pb, 3% Zn, 1.67 g/t Au, 101.76 g/t Ag and 5.4 g/t Ge for production of 1.304M Oz of Gold Equivalent where 29.4% comes from Measured and Indicated and 70.6% from Inferred mineral resources.
- Milling starting at 1500tpd in June 2021 increasing to 2000 tpd during the period June 2023 until June 2033;
- Production starts at 83,746 Ounces of Gold Eq for 2 years increasing to 105,684 ounces of Gold Eq in the 3rd year and 109,158 per year thereafter until June 2029. Production then increases to 116,208 OzEq in 2030, 119,028 OzGEq in 2031, 120,438 OzGEq in 2032 and 129,462 OzGEq in 2033 for an average yearly production during the entire period of 108,675 Ounces of Gold Eq;
- Total operating costs of US \$101.72 per tonne (averaged over the expected life of the mine);
- Capex and sustaining capital requirements of US \$120.35M, where initial capex requirement is 89 M USD;
- The Boumadine PEA was prepared as an exclusive underground extraction of mineralized material fresh rock with limited tonnage extraction by open pit. The reprocessing of old tailings is not included in the economic analysis and such estimates could be enhanced by the optimization of the extraction sequence and configuration.
- Gold Equivalent calculation for economic analysis is:

$$\text{AuEq} = ((\text{Pb}\% \times 2204\text{USD}/\text{t} \times 60\% \text{ rec}) + (\text{Zn}\% \times 2900\text{USD}/\text{t} \times 79.5\% \text{ rec}) + (\text{Au g}/\text{t} \times 1321\text{USD}/\text{Oz} / 31.103 \times 97.2\% \text{ rec}) + (\text{Ag g}/\text{t} \times 19\$/\text{Oz} / 31.103 \times 96.2\% \text{ rec}) + (\text{Ge g}/\text{t} \times 2.2\$ \times 75\% \text{ rec})) / (1321 \$\text{USD} / 31.103)$$
- The projected mine contemplates a 1500 tpd mining with processing at a flotation mill with associated POx/CIL followed by an increase to 2000 tpd mining with the upgrades flotation mill.

The parameters used in the study are based on existing operating costs of similar mines in operation in Morocco. The metallurgical testing has been done to achieve recovery parameters applied to the resource material under study. The dimensioning of the mine and the mill is related to the amount of identified resources and is subject to change with further drilling over time. The selection of the commodity price is discussed in section 19. The calculation of gold

equivalent in this study is used for comparative reason as over 57.5% of the mineral resources value is made of precious metals gold 30.3% , silver 27.2%, zinc contribute to 31.4%, lead 6.6% and Germanium 4.4%.

Cautionary note: the preliminary economic assessment is preliminary in nature that it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized.

The following table presents the detailed cash flow.

Table 83: Detailed cash flow

| MAYA BOUMADINE 1500tpd -2000tpd | | GOLDMINDS 12-04-2019 | | | | | | | | | | | | | | | |
|--|--------|----------------------|-------------|-------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|
| Years | US\$ | -3 | -2 | -1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Total |
| Source | | June 2019 | June 2020 | June 2021 | June 2022 | June 2023 | June 2024 | June 2025 | June 2026 | June 2027 | June 2028 | June 2029 | June 2030 | June 2031 | June 2032 | June 2033 | |
| Diluted ROM Head Grade Pb | % | | | | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 | 1.03 | |
| Diluted ROM Head Grade Zn | % | | | | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | |
| Diluted ROM Head Grade Au | g/t | | | | 1.67 | 1.67 | 1.67 | 1.67 | 1.67 | 1.67 | 1.67 | 1.67 | 1.67 | 1.67 | 1.67 | 1.67 | |
| Diluted ROM Head Grade Ag | g/t | | | | 101.76 | 101.76 | 101.76 | 101.76 | 101.76 | 101.76 | 101.76 | 101.76 | 101.76 | 101.76 | 101.76 | 101.76 | |
| Diluted ROM Head Grade Ge | g/t | | | | 7.2 | 7.2 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 12.6 | 14.4 | 25.92 | |
| ROM Head Grade S | % | | | | 37.8 | 37.8 | 37.8 | 37.8 | 37.8 | 37.8 | 37.8 | 37.8 | 37.8 | 37.8 | 37.8 | 37.8 | |
| Forecasted Mining Tonnage | t/year | | | | 495000 | 495000 | 660000 | 660000 | 660000 | 660000 | 660000 | 660000 | 660000 | 660000 | 660000 | 660000 | 7,590,000 |
| POX/CIL TonFeed | t/year | | | | 345015 | 345015 | 460020 | 460020 | 460020 | 460020 | 460020 | 460020 | 460020 | 460020 | 460020 | 460020 | |
| Theoretical Pox/CIL | t/day | | | | 1045.5 | 1045.5 | 1394 | 1394 | 1394 | 1394 | 1394 | 1394 | 1394 | 1394 | 1394 | 1394 | |
| Total Metal Recovery | | | | | | | | | | | | | | | | | |
| Pb | % | | | | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | |
| Zn | % | | | | 79.5 | 79.5 | 79.5 | 79.5 | 79.5 | 79.5 | 79.5 | 79.5 | 79.5 | 79.5 | 79.5 | 79.5 | |
| Au | % | | | | 97.2 | 97.2 | 97.2 | 97.2 | 97.2 | 97.2 | 97.2 | 97.2 | 97.2 | 97.2 | 97.2 | 97.2 | |
| Ag | % | | | | 96.2 | 96.2 | 96.2 | 96.2 | 96.2 | 96.2 | 96.2 | 96.2 | 96.2 | 96.2 | 96.2 | 96.2 | |
| Ge x Rec Con Zn | % | | | | 75.525 | 75.525 | 75.525 | 75.525 | 75.525 | 75.525 | 75.525 | 75.525 | 75.525 | 75.525 | 75.525 | 75.525 | |
| Total Metal Prouction | | | | | | | | | | | | | | | | | |
| Pb | Tonne | | | | 3,059 | 3,059 | 4,079 | 4,079 | 4,079 | 4,079 | 4,079 | 4,079 | 4,079 | 4,079 | 4,079 | 4,079 | 38,749 |
| Zn | Tonne | | | | 11,806 | 11,806 | 15,741 | 15,741 | 15,741 | 15,741 | 15,741 | 15,741 | 15,741 | 15,741 | 15,741 | 15,741 | 149,540 |
| Au | Oz | | | | 25,834 | 25,834 | 34,445 | 34,445 | 34,445 | 34,445 | 34,445 | 34,445 | 34,445 | 34,445 | 34,445 | 34,445 | 327,226 |
| Ag | Oz | | | | 1,557,956 | 1,557,956 | 2,077,274 | 2,077,274 | 2,077,274 | 2,077,274 | 2,077,274 | 2,077,274 | 2,077,274 | 2,077,274 | 2,077,274 | 2,077,274 | 19,734,105 |
| Ge | kg | | | | 2,692 | 2,692 | - | - | - | - | - | - | 4,486 | 6,281 | 7,178 | 12,920 | 16,150 |
| Metal Prices | | | | | | | | | | | | | | | | | |
| Pb | USD/t | | | | 2,204 | 2,204 | 2,600 | 2,600 | 2,600 | 2,600 | 2,600 | 2,600 | 2,600 | 2,600 | 2,600 | 2,600 | 2,534 |
| Zn | USD/t | | | | 2,900 | 2,900 | 2,900 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 3,125 |
| Au | USD/Oz | | | | 1,321 | 1,321 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 | 1,400 | 1,380 |
| Ag | USD/Oz | | | | 19.0 | 19.0 | 19.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21.0 | 21 |
| Ge | USD/kg | | | | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 |
| Metal Value | | | | | | | | | | | | | | | | | |
| Pb | | | | | 6,742,256 | 6,742,256 | 10,604,880 | 10,604,880 | 10,604,880 | 10,604,880 | 10,604,880 | 10,604,880 | 10,604,880 | 10,604,880 | 10,604,880 | 10,604,880 | 119,533,313 |
| Zn | | | | | 34,236,675 | 34,236,675 | 45,648,900 | 50,371,200 | 50,371,200 | 50,371,200 | 50,371,200 | 50,371,200 | 50,371,200 | 50,371,200 | 50,371,200 | 50,371,200 | 567,463,050 |
| Au | | | | | 34,126,242 | 34,126,242 | 45,501,657 | 48,222,800 | 48,222,800 | 48,222,800 | 48,222,800 | 48,222,800 | 48,222,800 | 48,222,800 | 48,222,800 | 48,222,800 | 547,759,345 |
| Ag | | | | | 29,601,157 | 29,601,157 | 39,468,210 | 43,622,758 | 43,622,758 | 43,622,758 | 43,622,758 | 43,622,758 | 43,622,758 | 43,622,758 | 43,622,758 | 43,622,758 | 491,275,346 |
| Ge | | | | | 5,921,764 | 5,921,764 | - | - | - | - | - | - | 9,869,607 | 13,817,450 | 15,791,371 | 28,424,468 | 79,746,425 |
| Tot All Metal Value | | | | | 110,628,095 | 110,628,095 | 141,223,646 | 152,821,638 | 152,821,638 | 152,821,638 | 152,821,638 | 152,821,638 | 162,691,245 | 166,639,088 | 168,613,010 | 181,246,107 | 1,805,777,479 |
| AuEq Oz Produced | | | | | 83,746 | 83,746 | 106,907 | 109,158 | 109,158 | 109,158 | 109,158 | 109,158 | 116,208 | 119,028 | 120,438 | 129,462 | 1,305,325 |
| Payable Tot Met Value | 0.96 | | | | 106,202,971.50 | 106,202,971.50 | 135,574,700.44 | 146,708,772.87 | 146,708,772.87 | 146,708,772.87 | 146,708,772.87 | 146,708,772.87 | 156,183,595.59 | 159,973,524.68 | 161,868,489.22 | 173,996,262.31 | 1,733,546,380 |
| MinMat Mined & Processed | t/year | | | | 495,000 | 495,000 | 660,000 | 660,000 | 660,000 | 660,000 | 660,000 | 660,000 | 660,000 | 660,000 | 660,000 | 660,000 | 7,590,000 |
| MinMat Production Cost (UG) | \$/t | | | | 27.7 | 27.7 | 27.7 | 27.7 | 27.7 | 27.7 | 27.7 | 27.7 | 27.7 | 27.7 | 27.7 | 27.7 | |
| MinMat Production Cost (UG) | \$ | | | | 13,711,500 | 13,711,500 | 18,282,000 | 18,282,000 | 18,282,000 | 18,282,000 | 18,282,000 | 18,282,000 | 18,282,000 | 18,282,000 | 18,282,000 | 18,282,000 | 210,243,000 |
| Waste & Stope Preparation (UG) | t/year | | | | 74,250 | 74,250 | 99,000 | 99,000 | 99,000 | 99,000 | 99,000 | 99,000 | 99,000 | 99,000 | 99,000 | 99,000 | |
| Waste & Stope Preparation (UG) | \$/t | | | | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | |
| Waste & Stope Preparation (UG) | \$ | | | | 594,000 | 594,000 | 792,000 | 792,000 | 792,000 | 792,000 | 792,000 | 792,000 | 792,000 | 792,000 | 792,000 | 792,000 | 9,108,000 |
| MinMat Processing | \$/t | | | | 46.28 | 46.28 | 45.68 | 45.68 | 45.68 | 45.68 | 45.68 | 45.68 | 45.68 | 45.68 | 45.68 | 45.68 | |
| MinMat Processing | \$ | | | | 22,908,600 | 22,908,600 | 30,148,800 | 30,148,800 | 30,148,800 | 30,148,800 | 30,148,800 | 30,148,800 | 30,148,800 | 30,148,800 | 30,148,800 | 30,148,800 | 347,305,200 |
| Ingots & Concentrate transport , insurance & refiner cost | \$/t | | | | 265.00 | 265.00 | 265.00 | 265.00 | 265.00 | 265.00 | 265.00 | 265.00 | 265.00 | 265.00 | 265.00 | 265.00 | |
| cost | \$ | | | | 6,034,050 | 6,034,050 | 8,045,400 | 8,045,400 | 8,045,400 | 8,045,400 | 8,045,400 | 8,045,400 | 8,045,400 | 8,045,400 | 8,045,400 | 8,045,400 | 92,522,100 |
| Administration & Environment | \$/t | | | | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 | 1.75 | |
| Administration & Environment | \$ | | | | 866,250 | 866,250 | 1,155,000 | 1,155,000 | 1,155,000 | 1,155,000 | 1,155,000 | 1,155,000 | 1,155,000 | 1,155,000 | 1,155,000 | 1,155,000 | 13,282,500 |
| ONHYM Royalties (on sales) | 3.00% | | | | 3,186,089 | 3,186,089 | 4,067,241 | 4,401,263 | 4,401,263 | 4,401,263 | 4,401,263 | 4,401,263 | 4,685,508 | 4,799,206 | 4,856,055 | 5,219,888 | 52,006,391 |
| Maya & Management Fees (on sales) | 2.75% | | | | 2,920,582 | 2,920,582 | 3,728,304 | 4,034,491 | 4,034,491 | 4,034,491 | 4,034,491 | 4,034,491 | 4,295,049 | 4,399,272 | 4,451,383 | 4,784,897 | 47,672,525 |
| Total of Expenses | | | | | 50,221,070.86 | 50,221,070.86 | 66,218,745.28 | 66,858,954.44 | 66,858,954.44 | 66,858,954.44 | 66,858,954.44 | 66,858,954.44 | 67,403,756.75 | 67,621,677.67 | 67,730,638.13 | 68,427,985.08 | 772,139,717 |
| Boumadine Project Profit before Amortization and Taxes | | | | | 55,981,901 | 55,981,901 | 69,355,955 | 79,849,818 | 79,849,818 | 79,849,818 | 79,849,818 | 79,849,818 | 88,779,839 | 92,351,847 | 94,137,851 | 105,568,277 | 961,406,663 |
| ONHYM Participation | 15% | | | | 8,397,285.10 | 8,397,285.10 | 10,403,393.27 | 11,977,472.76 | 11,977,472.76 | 11,977,472.76 | 11,977,472.76 | 11,977,472.76 | 13,316,975.83 | 13,852,777.05 | 14,120,677.66 | 15,835,241.58 | 144,210,999 |
| Initial Capital | \$ | | 17,816,700 | 53,450,100 | 17,816,700 | 2,500,000 | 2,500,000 | | 3,300,000 | 2,490,000 | 3,400,000 | 245,000 | 5,164,000 | 6,466,000 | 202,000 | | 115,350,500 |
| Sustaining Capital | \$ | | | | | | | | | 2,500,000 | | 2,500,000 | | | | | 5,000,000 |
| Total Capital Expenditure (Capex) | | | 17,816,700 | 53,450,100 | 17,816,700 | 2,500,000 | 2,500,000 | 0 | 3,300,000 | 4,990,000 | 3,400,000 | 2,745,000 | 5,164,000 | 6,466,000 | 202,000 | 0 | 120,350,500 |
| MAYA Net Annual Cash Flow before Taxes - (EBITDA) | | | -17,816,700 | -53,450,100 | -17,816,700 | 48,005,197 | 48,005,197 | 62,680,866 | 71,906,837 | 68,606,837 | 66,916,837 | 68,506,837 | 69,161,837 | 74,593,912 | 76,432,342 | 84,266,557 | 744,517,689 |
| MAYA Net Cumulative Cash Flow before Taxes - (EBITDA) | | | -17,816,700 | -71,266,800 | -89,083,500 | -41,078,303 | 6,926,895 | 69,607,761 | 141,514,598 | 210,121,435 | 277,038,271 | 345,545,108 | 414,706,945 | 489,300,857 | 565,733,199 | 573,567,414 | 583,818,790 |
| Discounted MAYA Cash Flow at 6.5% - NPV | | | 373,879,997 | | | | | | | | | | | | | | |
| IRR | | | 43% | | | | | | | | | | | | | | |
| Boumadine Total Project Cash Flow before Taxes - (EBITDA) | | | -17,816,700 | -53,450,100 | -17,816,700 | 70,485,857 | 70,485,857 | 87,55 | | | | | | | | | |

22.4 Sensitivity Analysis

A sensitivity analysis was performed examining capital costs, operating costs and commodity price. The Project is most sensitive to fluctuations in commodity price and less sensitive to variations in capital and operating costs. The grade is not presented in the sensitivity graph because the impact of changes in the grade mirror the impact of changes in the commodity price. The following figure present the graph of sensitivity from -30% to + 30% variation from the base case selected parameters.

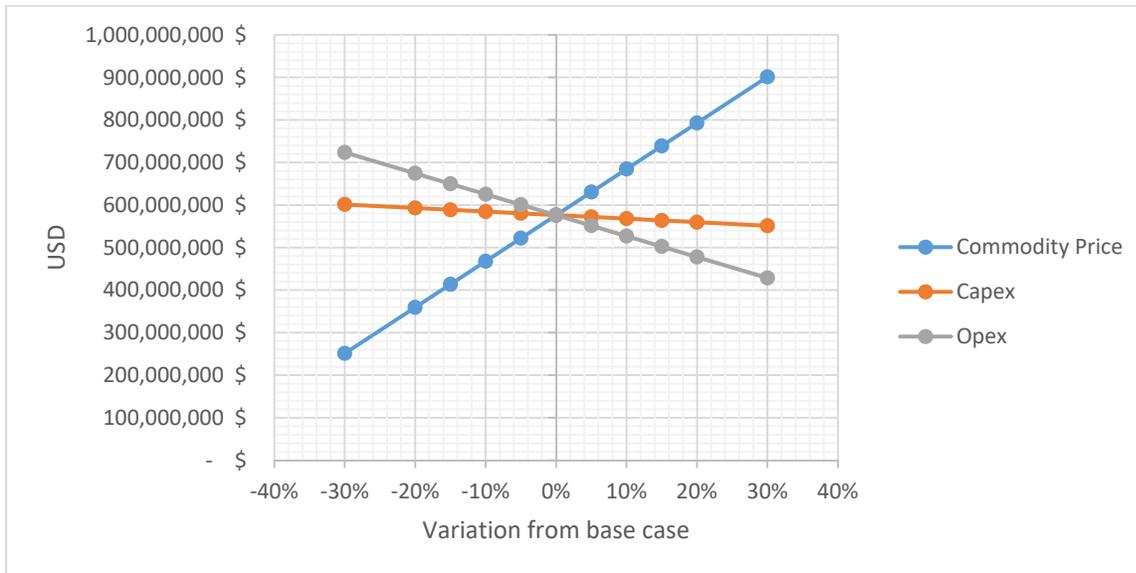


Figure 157: NPV (6.5%) before tax sensitivity graph

As well, in order to present the project as one snap shot current time, a cash flow has been done using commodity prices fixed for the whole mine life as prices of March 29th 2019. Where Lead sells for 2021.5 USD/t, Zinc sells for 2,999 USD/t, Gold sells for 1295USD/Oz, Silver sells for 15.10 USD/Oz, Germanium sells for 2200USD/kg. The project NPV (6.5%) reach 442.93MUSD with an IRR of 50% before tax and 383.184MUSD with IRR of 47% after tax.

23 Adjacent properties

The property of Boumadine is surrounded by several mines, recently exploited, active or under development (Figure 158).

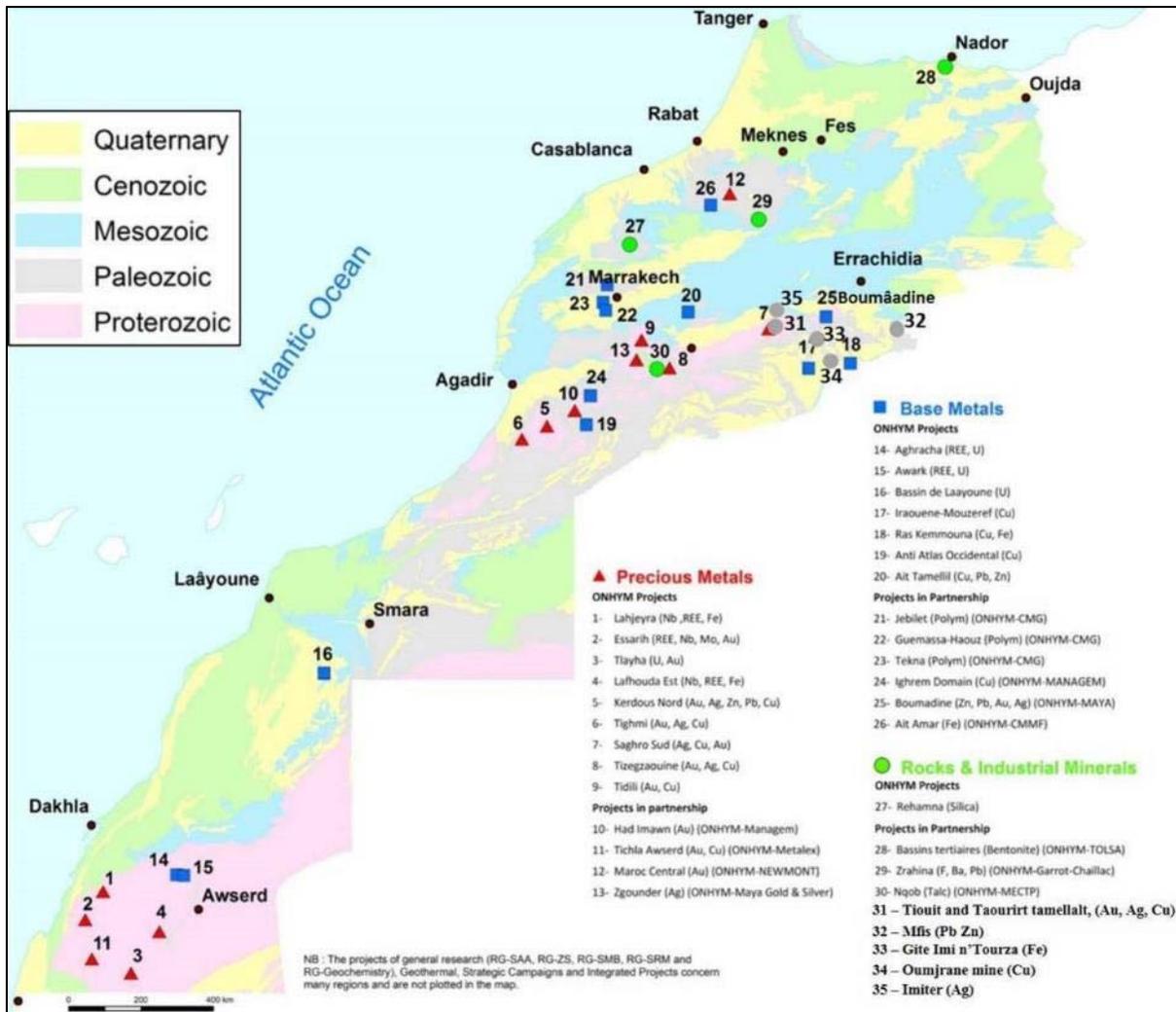


Figure 158: Location of the most important mines of Morocco, classified according to their compositions.



Figure 159: Location of the important mines near Boumadine property.

- Imiter (Ag – Hg)

The world-class Imiter silver deposit is located on the northern side of the Saghro massif at around 80 km to the east from the Boumadine property (Figure 160). The Imiter Ag–Hg deposit is one of the largest silver deposits in the world. It consists of a Neoproterozoic epithermal vein deposit associated with a felsic volcanic event (Levrèsse, 2001; Cheilletz et al., 2002). In the Imiter area, the oldest sedimentary rocks are represented by Neoproterozoic sequences of black shales, with intercalations of pyrite-bearing layers folded and metamorphosed to the lower greenschist facies during the late Neoproterozoic and unconformably overlain by a Paleozoic sedimentary succession (Figure 162).

The silver mineralization is controlled by the 7 km long Imiter normal fault zone which offsets the Neoproterozoic (PII, following the regional terminology) metasedimentary black shale and greywacke series and the late Neoproterozoic (PIII) volcanic rock succession (Leistel and Qadrouci 1991; Ouguir et al. 1994). The mineralization is genetically related to felsic volcanics (domes and dikes) dated at ca. 550 Ma (ion-probe U–Pb dating on zircon; Levrèsse, 2001), coeval with regional extensional tectonics. This epithermal event postdates a discrete base metal episode associated with granodiorite intrusives dated at 572 ± 5 Ma (ion-probe U–Pb dating on zircon; Levrèsse, 2001).

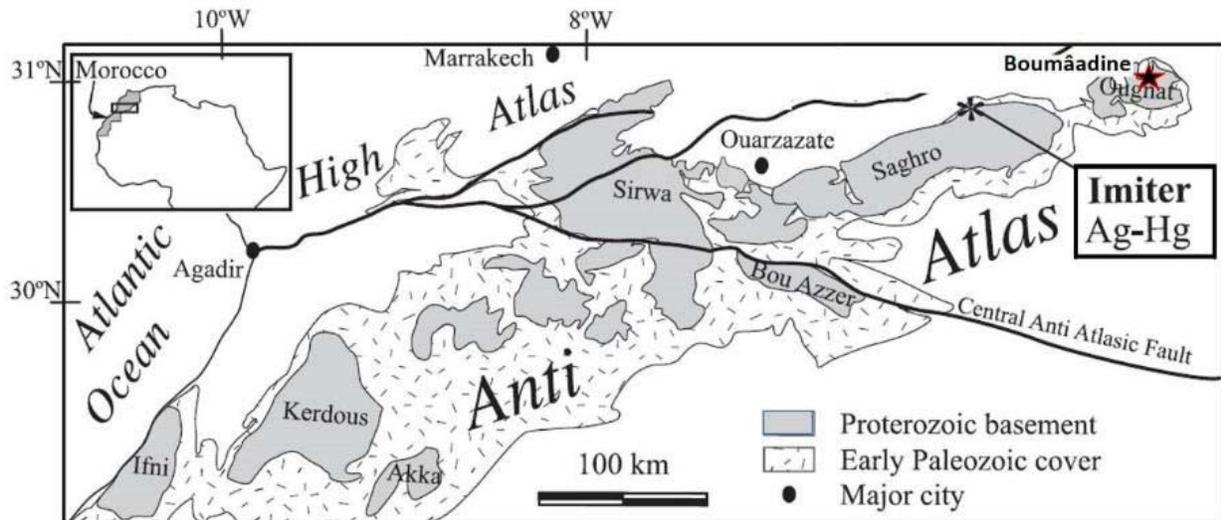


Figure 160: Localisation of the Imiter mine related to the polymetallic deposit of Boumadine (From Levresse et al., 2004).



Figure 161: View of the open pit leading to the mine galleries (Mouttaqi et al., 2011).

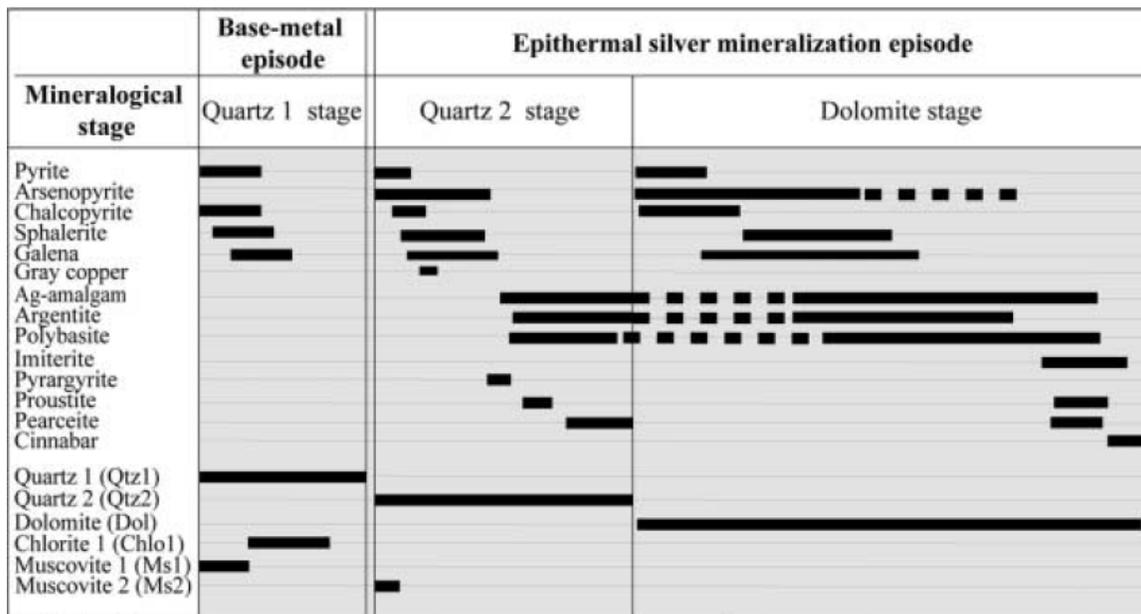


Figure 162: The paragenetic succession in the Imiter deposit and tectonic regimes during the epithermal silver mineralization episode (From Cheilletz et al., 2002).

In the Anti-Atlas Mountains, the Precambrian–Cambrian transition appears as an important period for the formation of major, productive precious-metal deposits associated with volcanic events and extensional tectonics. The Imiter silver deposit constitutes a Precambrian analogue to modern epithermal deposits (Cheilletz et al., 2002).

- Oumjrane

The Oumjrane Bou Nahas mine is located in the eastern Ant-Atlas, south western part of the Maider basin at around 50 km to the SE Alnif (Figure 163, Figure 164 and Figure 165).

The Oumjrane-Bou n’Has mine is located far from the Precambrian axis, which is very remarkable for such an epigenetic copper deposit. The Oumjrane site was exploited from the Middle Ages, the old excavations affect almost all the copper veins. The site has been the subject of several mineral exploration campaigns, notably by the BRPM (actual ONHYM). In 2010 MANAGEM, start exploration works and announce a mineral resources not NI 43-101 of about 2 million tonnes with an average grade of 2.7% Cu.

Copper mineralization of the Oumjrane deposit results from the hydrothermal paleocirculations with the identification three metalliferous episodes. The first, with Fe essentially characterized by a pyritic mineralization with traces of chalcopyrite and ankerite gangue, the second with Cu, precipitates most of the economic mineralization (chalcopyrite) with a siliceous guangue, and the third with galena in a barytic gangue. All the mineralizations subsequently underwent a supergene alteration which gave rise to copper-enriched metal species, such as native copper, covellite, malachite and azurite.

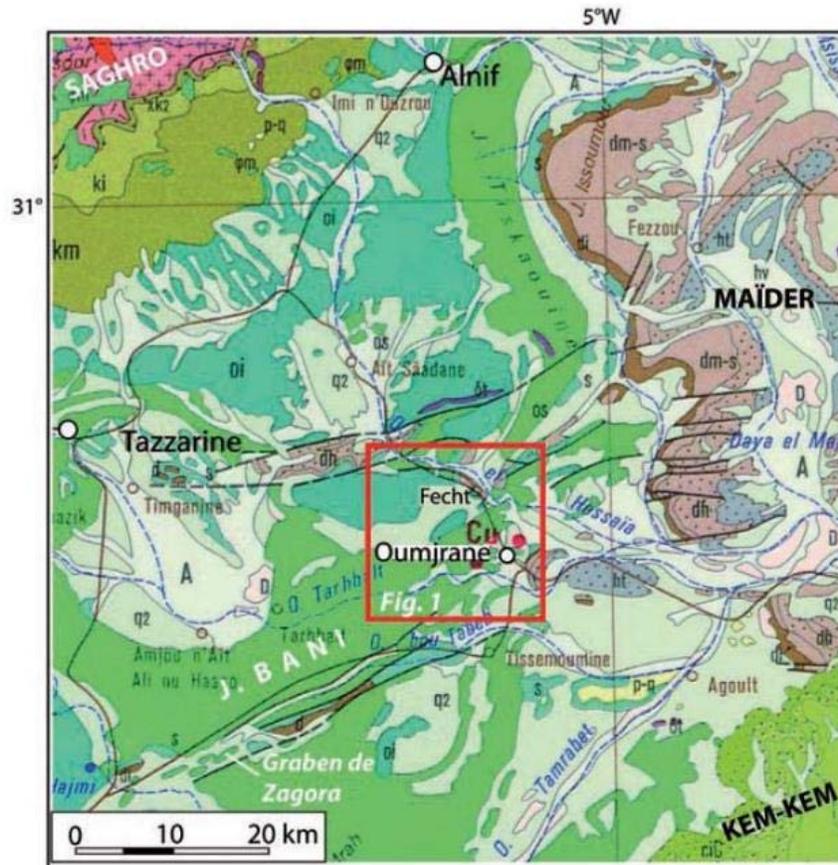


Figure 163: Geological framework of the Oumjrane Bou’Nahas Cu-bearing district (a part of the geological map of Morocco, scale 1/1000 000).



Figure 164: Panorama of the Oumejrane Bou’Nahas mine (Mouttaqui et al., 2016).

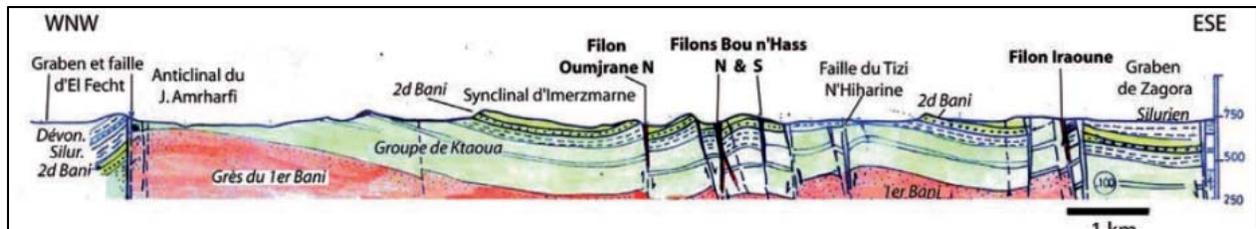


Figure 165: Geological cross-section of the Oumjrane area, after Popov & Belkasmı 1983.

- Saghro SE (Ag and Cu)

The project's area is situated at around 70 Km to the East from Boumadine property. The Saghro property is bordered to the north by Dades and Todgha valleys, to the east by Ougnat and Tafilalt and to the south by the Jbel Bani Paleozoic formations (Figure 158). The access to this area of the project is possible either from Alnif or Boumalne cities using roads and tracks.

The property is situated in the Precambrian inlier of Saghro which constitutes a segment extending over an area of about 4000 km². The two mineralized occurrences actually known in the area of Saghro south project are:

- Akka n'Oulili consisting of a N-S quartz and carbonate vein with a breccia texture extending over 3.5 km with a thickness up to 8 m. It is hosted in the pink granite of Bougaffer, the mineral association is composed of chalcopryrite, chalcocite and native copper (ONHYM website).
- Tizi N'Oussatour where the mineralization appears at the surface as an impregnation of malachite, azurite, chalcocite and bornite in the volcanic rocks (ONHYM website).

Recently, The ONHYM has realized a drilling campaign of 8 diamond drill totalizing 1061 m; the results show the copper and silver mineralization continue at depth: One of the holes has intersected three impacts of 6.5m, 3m and 2.3m with the respective grades of 2.5% Cu and 259.5 g/t Ag, 0.6% Cu and 161.1 g/t Ag and 0.2% Cu, 33.3 g/t Ag.

- Tiouit (Au)

The Tiouit gold deposit is situated at around 70km to the East from the Boumadine property. The Tiouit deposit is located at 22 km at the SE of the Boumalne N'Dades town.

The Tiouit gold deposit occurs in the central part of the Precambrian Saghro inlier in the eastern Anti-Atlas orogen. Tiouit deposit is described as genetically associated with pervasively metamorphosed, arc-related granodiorite (ca. 690 ±57Ma). The host rocks consist of metamorphosed sedimentary, volcanic, and volcanoclastic rocks of the Neoproterozoic Ouarzazate Supergroup (Chaker, 1997; Bouabdellah et al., 2016).

The Tiouit deposit was discovered in the 1940s and exploited intermittently from 1950 to 1996 by several mining companies (COMANSOUR from 1950-1959, Canadian West Field Minerals Ltd from

1959-1964, SODECAT from 1982-2000). The Tiouit total production approximating 1 Mt of ore at an average grade of 7 ppm Au, 67 ppm Ag and 0.45% Cu (Alansari and Sagon 1997).

The Auriferous Tiouit mineralization is structurally controlled and consists of numerous discontinuous subparallel sulphide veins and disseminations distributed over an area of 3 x 2 km. The mineralization are hosted in altered Tiouit granodiorite, 9km from the contact with the younger Isk-n-Alla granite. The highest gold and sulphide concentrations occur in veins having the largest pyrite halos scattered in four different zones (North, central, South and Northeast, Figure 166).

The Tiouit mine was closed after depletion of the mineral resources. A private company is operating now and processing the old tailings for gold.

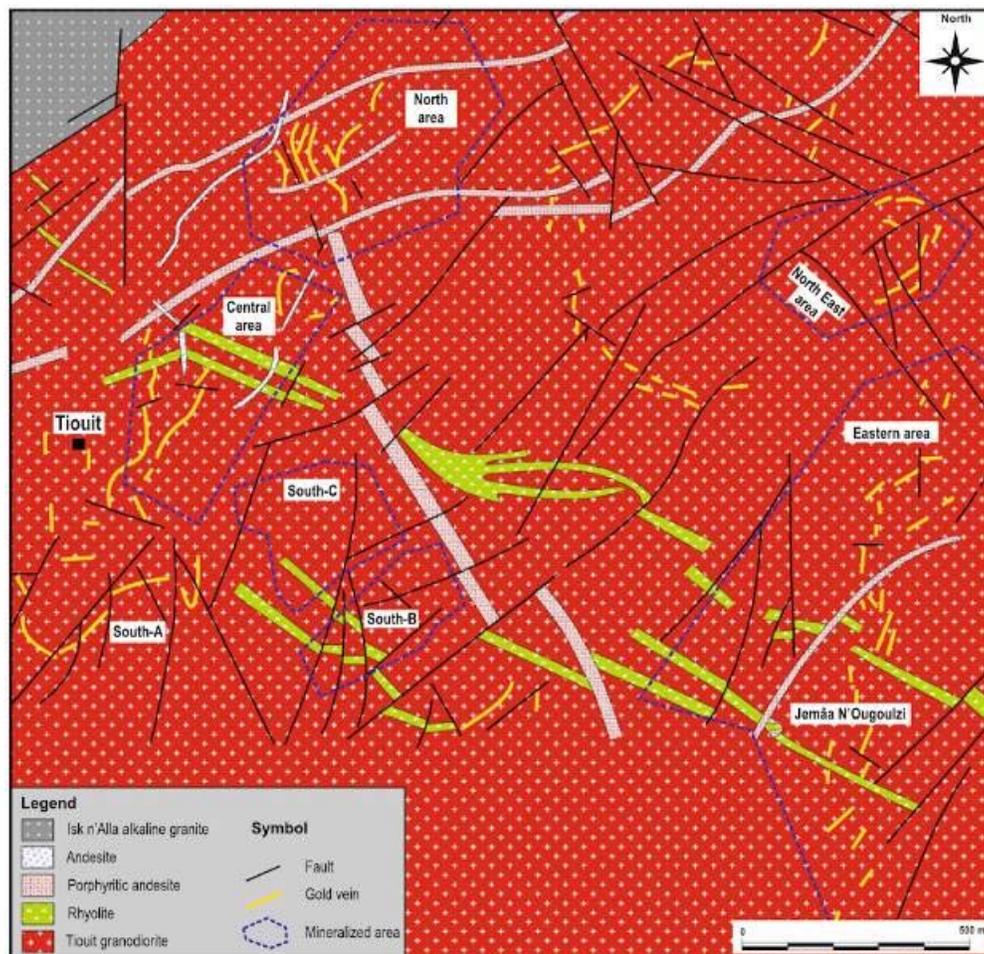


Figure 166: Detailed mine-scale geology of the Tiouit deposit (From Bouabdellah et al., 2016).

- Taourirt Tamellalt (Au)

The mineralised deposit of Taourirt-Tamellalt is located at around 20km at the SE of Boumalne Dadès and at around 10km to the North from Tiouit deposit.

The granitic intrusion of Taourirt-Tamellalt is located at the Northern flank of JbelSaghro. This intrusion is exposed on the surface on 10 hectares and show leucocratic granite with biotite and muscovite (ONHYM website).

The surface samples taken from this area as well as the cores drilled carried out during several campaign clearly show the existence of sulphide paragenesis with native gold in inclusions. The assay results can reach 23.5 g/t Au but remain however related to the narrow quartz veins that not exceed 0.2m (ONHYM website).

- Mfis (Pb Zn)

Mfis deposit is located at around 130km SE of Errachidia and correspond to a NE-veined zone of 2km large to the east of the old lead and barite Mfis deposit (Figure 158). This area was the object of geological surveys and surface sampling program by ONHYM in 2012. Iron oxides and traces of Pb, Ni and Cu have been detected, particularly in the artisanal excavations related to the old mining activities. The assay results of the surface samples show a principal Pb-Zn mineralization with a high values of Pb that can exceed 10% Pb and Zn range between 1 to 10% Zn. Lead is associated with silver in some zones and the Ag values range between 20 to 325 ppm Ag. The Cu values are generally lower, but may locally exceed 1% Cu. The results of Ni do not reach 1000 ppm Ni and only one sample that gave 0.7%Ni (ONHYM website).

ONHYM holds two exploration permits in this sector, east of the old Mfis lead mine.

- Imi N°Tourza mine (Fe)

The deposit Imi N°Tourza is located at around 35 km to the SW from the Boumadine property. The Imi n°Tourza mine is opened in the Lower Ordovician beds in the structural saddle between both basement massifs; it is a syngenetic, oolitic iron mine in the oriental Anti-Atlas.

The mine was exploited since 1951 by Mokta et Hadid. In 1961 the BRPM carry out a drilling program to develop the Imi N°Tourza deposit. A detailed geological studies have been conducted by Destombes (1963) and Broothaers (1977). Between 2005 and 2007 MANAGEM carried out research and exploration works. The mine is currently closed, but could restart soon, an Indian company has shown his interest in the project.

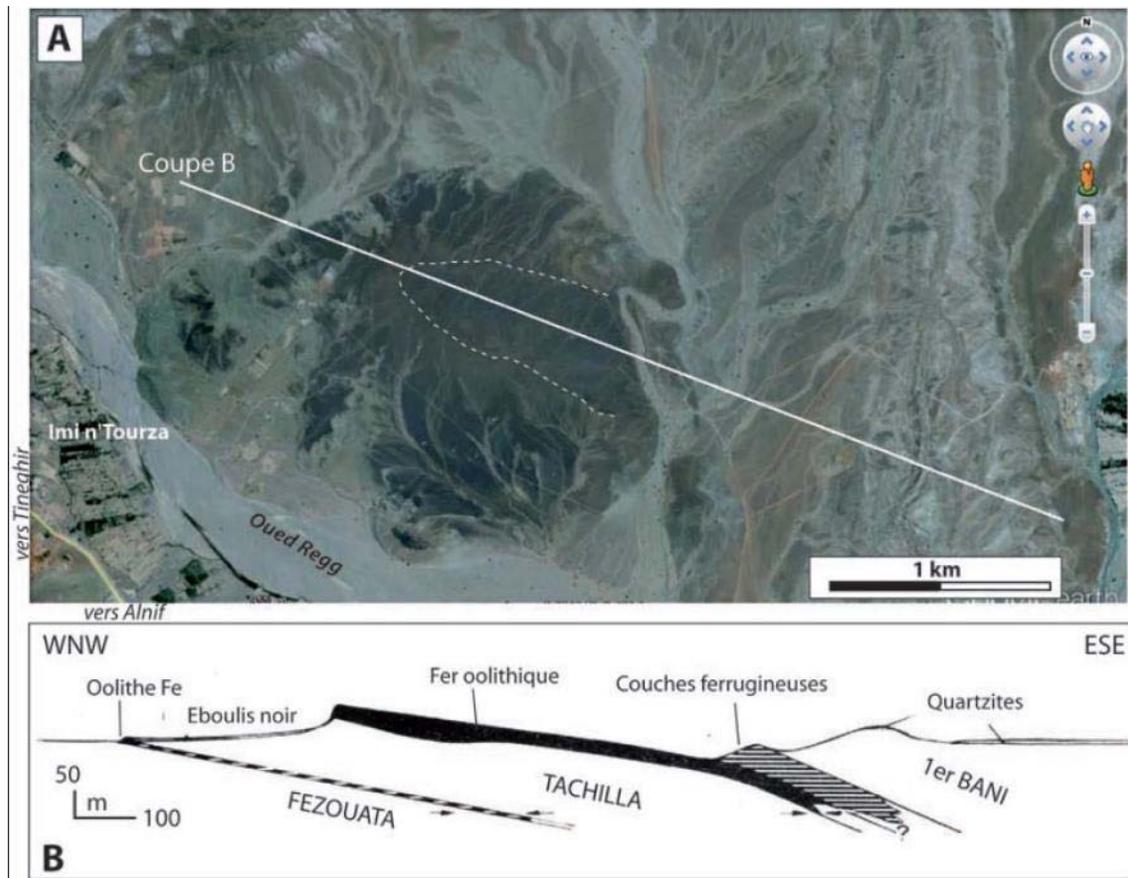


Figure 167: The Tourza iron deposit. A) Satellite view (google earth); B) Geological cross-section (Broothaers, 1977).

24 Other relevant data and information

The 15% OHNYM participation is not free carry at Boumadine and ONHYM will have to invest its share in the capex requirement otherwise it will be diluted accordingly by Maya Gold & Silver. Should ONHYM maintain its right by investing 15% of Capex requirement, then Maya Gold and Silver will only require to finance 85% of the identified Capex of the project.

25 Interpretation and conclusions

25.1 Summary

The outcomes of the Project PEA include the following interpretations and conclusions:

- A project life of 12 years with the current resources starting in 2021 up to 2033;
- The extraction of 7.59Mt at 1.03%Pb, 3% Zn, 1.67 g/t Au, 101.76 g/t Ag and 5.4 g/t Ge for production of 1.304M Oz of Gold Equivalent where 29.4% comes from measured & Indicated and 70.6% from Inferred mineral resources.
- Project Internal Rate of Return of 56% pre-taxes and 53% after-taxes;
- Project pre-tax Net Present Value of US\$574.8M (discounted at 6.5%) or US\$665.9M (discounted at 5%) at variable commodity prices;
- Project after-tax Net Present Value of US\$497.6M (discounted at 6.5%) or US\$576.7M (discounted at 5%) at variable commodity prices;
- Milling starting at 1500 tpd in June 2021 to increase to 2000 tpd in June 2023 up to June 2033;
- Total operating cost of US \$101.72 per tonne (averaged over the expected mine's life);
- Capex and sustaining capital requirements of US \$120.35M
- The projected mine contemplates a 1500 tpd mining with processing at a flotation mill with associated POx/CIL followed by an increase to 2000 tpd mining with the upgrade flotation mill.

GoldMinds Geoservices recommends that the project proceeds to the prefeasibility level of advanced study. In addition, the Project merits further field investigation and geological exploration to determine the optimum configuration for advanced studies.

25.2 Geology

The following conclusions can be derived from the mineral resource estimation:

- The mineral resource discussed herein concern the historical mineralized zones. These zones are open to the west and to the northwest. Surface sampling allow the identification of some new zones and their investigation with diamond drilling is the next step for exploration outside the extents of the current modelled mineralization.
- There is an opportunity to upgrade the mineral resources of the property by adding the assays results of the Ge. The assaying of the existing pulps of the mineralized zones intersected at zone CENTRE, SUD AND TIZI.
- For the tailings only gold and silver were included in the mineral estimation. Additional assaying on existing pulps should include Zn, Pb and Ge.

- Additional geological studies and drilling to potentially increase the size of the mineral resource.

25.3 Mining

The mining costs in Morocco are well documented and reliable as recent and effective. The extraction should not be a problem. It is recommended to test ore sorters at Boumadine since they proved to increase recovery and reduce dilution in other mining projects. Dilution and mining recovery assessment at Boumadine of the existing stope walls should be looked at once the first level of the center zone is accessible in order to validate and support the hypothesis used in this PEA.

25.4 Metallurgy and Processing

All the metallurgical tests done recently and in the past as well as the Boumadine mining-milling operation conducted between 1989 and 1992 concluded that even if the ore seems to respond very well to the flotation of the sulfides, it is refractory to direct cyanidation of the precious metals.

The relatively good zinc, gold and silver recoveries obtained on recent metallurgical tests made at SGS Lakefield' laboratories on some fresh material must be taken cautiously. These tests were done on a 100 or so kilograms sample that was collected on surface near what was supposed to be the location of the past Boumadine crushing plant. The only thing that could be said about this sample is that most probably it came from the Boumadine CENTRE zone. GoldMinds cannot guarantee that the sample was representative even of the CENTRE zone of the ore body much less of the whole mineralisation.

The lead and the germanium recoveries are also subject to caution since they are assumed in this report.

Because of the too low Pb head grade of the sample tested, no lead concentrate could be produced at the lab while having a reasonable recovery. So GoldMinds just presupposed a concentrate grade of 50% Pb with a recovery of 60% if the lead in the future feed to the mill is more or less the same as the historical value. As for the germanium, its discovery in the IMARIREN zone came too late to be tested. Since it is felt that the germanium will float with the zinc and the zinc recovery is very decent, an arbitrary recovery of 75% was temporary allotted for the germanium in this report. Some metallurgical tests are presently being done to assert this value.

However, since the lead and the germanium account for less than 14% of the overall economy of the project, even if their recovery at the flotation would be null, according to the metallurgical tests, the mining of the Boumadine ore would still be very profitable. A computerized calculation of the overall recovery of all metals in the sample (Pb, Zn, Ag, Au, and Ge) returned a gold grade equivalent of 5.40 g/t. Without the lead and the germanium, the gold equivalent only decline to 4.65 g/t, bringing the NPV and the IRR after taxes from: US \$497.65M and 53% to a respectable: US \$399.159M and 47%.

25.5 Infrastructures

The project require the construction of a number of key infrastructure components to support the planned production facilities. The following key infrastructure and service requirements were identified to support the mining and processing operations:

- On-site access roads, mine haul roads and parking lot
- Mineralized bearing material storage stockpile
- Explosive magazines
- Accommodations camp
- Tailings storage facility

25.6 Environment

The company will need to carry the required studies to have their mining and processing permits according to National regulation.

25.7 Economic Analysis

The project is positive and development should continue.

25.8 Conclusions and risks

- + The mining titles are in good standing and are not grafted with any environmental liabilities that the authors are aware of;
- + The verification drilling program at Boumadine property was successful;
- + There is Gold, Silver, Zinc, Lead and Germanium. The actual situation and the commodity prices of Silver, Gold, Zinc Lead and Germanium are favorable for the economic development of the Boumadine Mine. The authors are aware that the precious metal prices are highly volatile and cannot be accurately predicted;
- + The Mineral resources are not mineral reserves as they do not have demonstrated economic viability;
- + The mineral resources estimates are undiluted and insitu. The mineralized zones are open in various directions with high potential to increase mineral resources near surface;
- + The tonnage and the grade of the reported inferred resources in this report are uncertain in nature. There has been insufficient exploration work to define these resources as measured or indicated and it is also uncertain whether further exploration would result in upgrading any of the inferred resource to measured or indicated category;

- + The metallurgical testing are positives and allows for recovery of 97.16% Gold and 96.17% Silver from the sulfides concentrates. More testing, both at bench and pilot plant level will definitely be necessary especially to refine the process and better circumscribe the milling cost;
- + The power supply with a power line for a mill on site has been secured;
- + Waters sources have been identified, further studies and negotiations are required;
- + The country is friendly mining and the Kingdom of Morocco is a politically stable country. Certain risks will always exist in mining development projects, but for this project the authors believe that they are of low impact;
- + No adverse protests or objections to the mine development have been observed at Boumadine site and the closest village. The population expressed their total confidence in the project expecting more jobs will be created as commented by people met during our 2018 site visit;
- + Additional studies and fieldwork will be conducted for several environmental components to collect more information in order to better understand the receiving environment. The Authors are not aware about significant factors and risks that may affect access or the ability to perform work on the property;
- + It is necessary to make a more extensive study on the location of the new mill (2000 tons per day). This location must take into consideration all processing operations and the tailings location;
- + The Preliminary Economic Assessment is positive and the requested level of capital is reasonable;
- + The technical parameters used in this study should be refined to increase robustness of the project.

The authors have taken all possible actions to insure that the mineral resource statements are accurate. The authors relies on historical and recent data and independent sampling result. GoldMinds Geoservices concludes the project should continue its development and move to the next step.

26 Recommendations

This section outlines the work required to advance the Boumadine project to the next stage of development. These recommendations concern drilling/exploration, mining development and processing.

26.1 Drilling and exploration

In order to have a better understanding of the geological setting and the characteristics of the mineralization, additional exploration works is suggested at Boumadine.

GoldMinds Geoservices recommends to Maya Gold and Silver an exploration drilling program. The first phase consists of diamond drilling from the surface in order to explore new zones that may increase the mineral resource estimates (Table 84).

Table 84: Drilling program zone IMARIREN, NORD and CENTRE.

| Hole Name | Easting | Northing | Elevation (m) | Azimuth (°) | Dip (°) | Length (m) | Hole Type | Zone |
|-------------|-------------|-------------|---------------|-------------|---------|------------|-----------|-------------|
| P_B_19_05MR | 315555,87 | 3477564,79 | 1220 | 93 | -45 | 95 | DDH | Imariren |
| P_B_19_06MR | 315555,87 | 3477564,79 | 1220 | 93 | -60 | 180 | DDH | Imariren |
| P_B_19_07MR | 315556,21 | 3477564,42 | 1219 | 133,78 | -45 | 145 | DDH | Imariren |
| P_B_19_08MR | 315556,21 | 3477564,42 | 1219 | 133,78 | -60 | 210 | DDH | Imariren |
| P_B_19_09MR | 315482,9498 | 3477439,431 | 1239 | 107 | -45 | 100 | DDH | Imariren |
| P_B_19_10MR | 315482,9498 | 3477439,431 | 1239 | 107 | -65 | 180 | DDH | Imariren |
| P_B_19_11MR | 316563,21 | 3477032,28 | 1185 | 112 | -45 | 280 | DDH | Zone nord |
| P_B_19_12MR | 316563,21 | 3477032,28 | 1185 | 112 | -62 | 410 | DDH | Zone nord |
| P_B_19_13MR | 316739,72 | 3476959,374 | 1178 | 112 | -45 | 220 | DDH | Zone nord |
| P_B_19_14MR | 316739,72 | 3476959,374 | 1178 | 112 | -62 | 320 | DDH | Zone nord |
| P_B_19_15MR | 316526,731 | 3477222,735 | 1167 | 113 | -45 | 140 | DDH | Zone nord |
| P_B_19_16MR | 316526,731 | 3477222,735 | 1167 | 113 | -62 | 190 | DDH | Zone nord |
| P_B-19-01CD | 317119,4 | 3476965,6 | 1215,722 | 220 | -58 | 291,9 | DDH | Zone centre |
| P_B-19-02CD | 317119,4 | 3476965,6 | 1215,722 | 213 | -65 | 437,2 | DDH | Zone centre |
| P_B-19-03CD | 317226,8 | 3476877,3 | 1209,797 | 239 | -45 | 316,9 | DDH | Zone centre |
| P_B-19-04CD | 317226,8 | 3476877,3 | 1209,797 | 235 | -55 | 300 | DDH | Zone centre |

To gain a better appreciation of the mineralization continuity, a second phase of drilling is needed.

After the cleaning of the galleries, dewatering these ones and the equipment of the raises, GMG recommends a percussion drilling program at zone CENTRE, SUD and TIZI in order to improve the confidence in modeling mineralization continuity. The drilling may potentially upgrade the classification from inferred mineralized block models to indicated or measured.

For the exploration, GMG proposes the following program at Boumadine property:



Table 85: Estimation of the exploration budget at the Boumadine property.

| Recommended works for Phase I | All included cost (USD) |
|--|--------------------------------|
| Assaying of existing pulps for Germanium | 30,000 |
| Surface diamond drilling (phase 01, 4000 meters) | 500,000 |
| Underground diamond drill (6000 meters) at 175 USD per meter | 1,050,000 |
| Percussion drilling (6000 meters) at 70 USD per meter | 420,000 |
| Geophysics | 500,000 |
| Total | 2,500,000 USD |

Core specific density measurement should be done on the whole core sample length, ideally the whole core, and match the from-to of the analysis for at least four (4) holes of the next diamond drilling program.

GMG recommends assaying of the existing pulps (priority for holes drilled at zone CENTRE) for Germanium.

GMG recommends to do geophysical testing at zone CENTRE, SUD and IMARIREN to identify the applicable method for Boumadine deposit.

26.2 Development and mining

GoldMinds Geoservices recommends to Maya Gold and Silver to acquire a cavity monitoring system (CMS) to get an accurate 3D mapping of underground voids, shafts, stopes, drifts and adits for different zones.

The CMS will help to locate the ancient stopes and accurately locate the underground drillholes. It will also help the mining operators in order to calculate the volumes extracted, blasting design of the pillars, slope analysis, mine planning and overall operations.

Table 86: Price for the cavity monitoring system (CMS).

| Cavity monitoring system | Cost training included (USD) |
|-------------------------------------|-------------------------------------|
| Cavity monitoring system (Geosight) | 75,000 |

Mine levels (zone TIZI (Z 1125m), zone CENTRE (Z 1095m; Z 1050m and Z 998m), zone SUD (1150m and 1100m)) need to be dewatered before starting developments in these parts of the mine. It is also recommended to analyse the water coming from these underground levels to make sure it can be safely used for the processing without being treated.

At least five (5) raises have to be equipped (one (1) in zone TIZI, two (2) at zone CENTRE and two (2) at zone SUD).

26.3 Processing and Metallurgy

Since the Boumadine deposit comprised five (5) mining zones (CENTRE, NORD, SUD, IMARIREN and TIZI) plus the old tailings, GoldMinds minimally recommends the following metallurgical testing program:

1) Fresh mine material

- Sampling of approximately 10 to 15 kg from half or, if this is not sufficient material, from the assay rejects of the drilling cores from each zone.
- Determine material density and ball mill Work Index on three (3) discrete samples from each zone.
- Run three (3) flotation tests on each zone to obtain merchantable Pb and Zn concentrates with at least 60% recovery followed by bulk sulfide flotation of the three Zn tailings of each zone with complete set of assays for Pb, Zn, Cu, Au, Ag and Ge on each of the heads, concentrates and tailings. Report reagent consumptions.
- Run pressure oxidation (POX) followed by carbon in leach (CIL) tests on all sulfide concentrates from flotation tests above. Assay head and tailings. Report reagent consumptions.
- Run atmospheric oxidation (Albion process) followed by CIL tests on all sulfide concentrates from flotation tests above. Assay head and tailings. Report reagent consumptions.

2) Old tailings

- Determine specific gravity of three (3) discrete representative samples from a mixture of both of the Boumadine old tailings piles.
- Run best of POX-CIL or ALBION-CIL from above tests on same three (3) discrete representative samples from both of the Boumadine old tailings piles. Assay heads and POX-CIL or ALBION-CIL tailings and report reagents consumption.

26.3.1 Metallurgical Testing Budget

GoldMinds is of the opinion that the overall budget to carry out the above metallurgical program will probably reach the amount of US\$200,000.

26.4 Other recommendations

+ On the metallurgical side, the company should carry metallurgical testing on each zone separately as well as testing blends of the various sectors identified in the mining sequence to validate that everything is working well in the processing facility.

- + Additional Bond index test for each zone

- + Material from existing core rejects of the mineralized zone is available for the additional met testing

- + Rejects / tails of met tests should be well characterized and used in environmental testing and ARD

+ Carry a baseline environmental study as it is a brown filed and it is important to identify and document the situation prior to mining.

+ Geotechnical study and core geomechanical tests should take place to allow optimal stope design for the mine as well as for the tailings location, water basin, buildings and power line structures pumping system infrastructures.

+ Hydrogeological study to secure water for processing and living must be done.

+ Infrastructure study on power line has to be done.

+ A social impact study and dialogue with the surrounding communities has to be done and started as soon as possible to make sure people are included throughout the project development process.

A total of 5 MUSD is scheduled in the CAPEX of the project for the whole recommendations.

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28 List of Appendices

Appendix A: Zgounder Mine, Economical Evaluation of underground ramp works, 2000 – 1975

Appendix B: CENTRE, SUD and TIZI zones, existing underground galleries layouts.

Appendix C: Future infrastructure constructions needed.

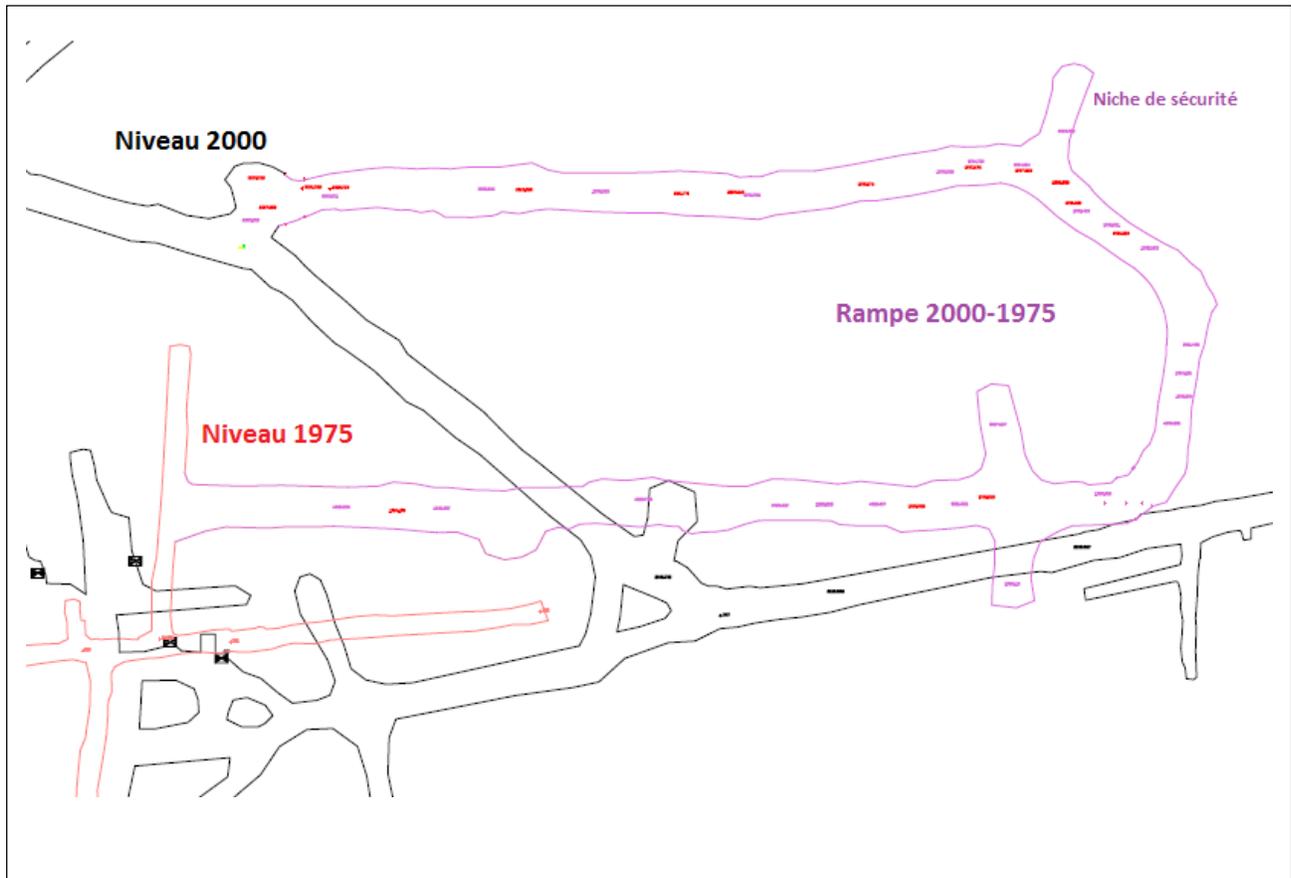
Appendix D: Ramps design.

APPENDIX A



Evaluation économique du creusement de la rampe 2000-1975

1. Plan de la rampe 2000-1975 après creusement



2. Dimensionnement des ouvrages

| Creusement de la rampe | | | Creusements divers |
|------------------------|--------------|-----------------|---------------------------------|
| <u>Section</u> | <u>Pente</u> | <u>Longueur</u> | <u>Niches de sécurité</u> |
| 4m x 4m | -12% | 208 m | 4 niches 2.5 m x 2.5 m x 4 m |



3. Evaluation prix de revient

En se basant sur des données réelles à savoir les sorties magasins et leurs imputations, des données obtenues de la Direction financière ainsi que le suivi assuré par S.Fond, l'évaluation du prix du prix de revient pour le creusement de la rampe 2000-1975 est synthétisée au niveau des tableaux suivants :

| Opération | Désignation | Cout opératoire (DHs) |
|----------------------------|----------------------------|------------------------------|
| Foration | Air comprimé | 67 790,4 |
| | Eau de foration | 1 913,8 |
| | PDR marteaux | 9 551 |
| | Lubrifiants | 3 110,8 |
| | Fleurets | 24 609,2 |
| Chargement et tir | Tovex | 111 428,0 |
| | Amorces électriques | 71 314,2 |
| | Ligne de tir | 1 012,5 |
| Déblayage par scoop | Gasoil | 43 665,6 |
| | PDR Scoop | 44 307,5 |
| | Huiles | 3 110 |
| | Maintenance | 15 300 |
| Exhaure | Pompe puit 1 | 8 966,2 |
| Soutènement | Boulons split set+grillage | 24 700 |
| | Cintres métalliques | 118 706,2 |
| Frais généraux | - | 7 356,9 |
| | | 556 842,3 |



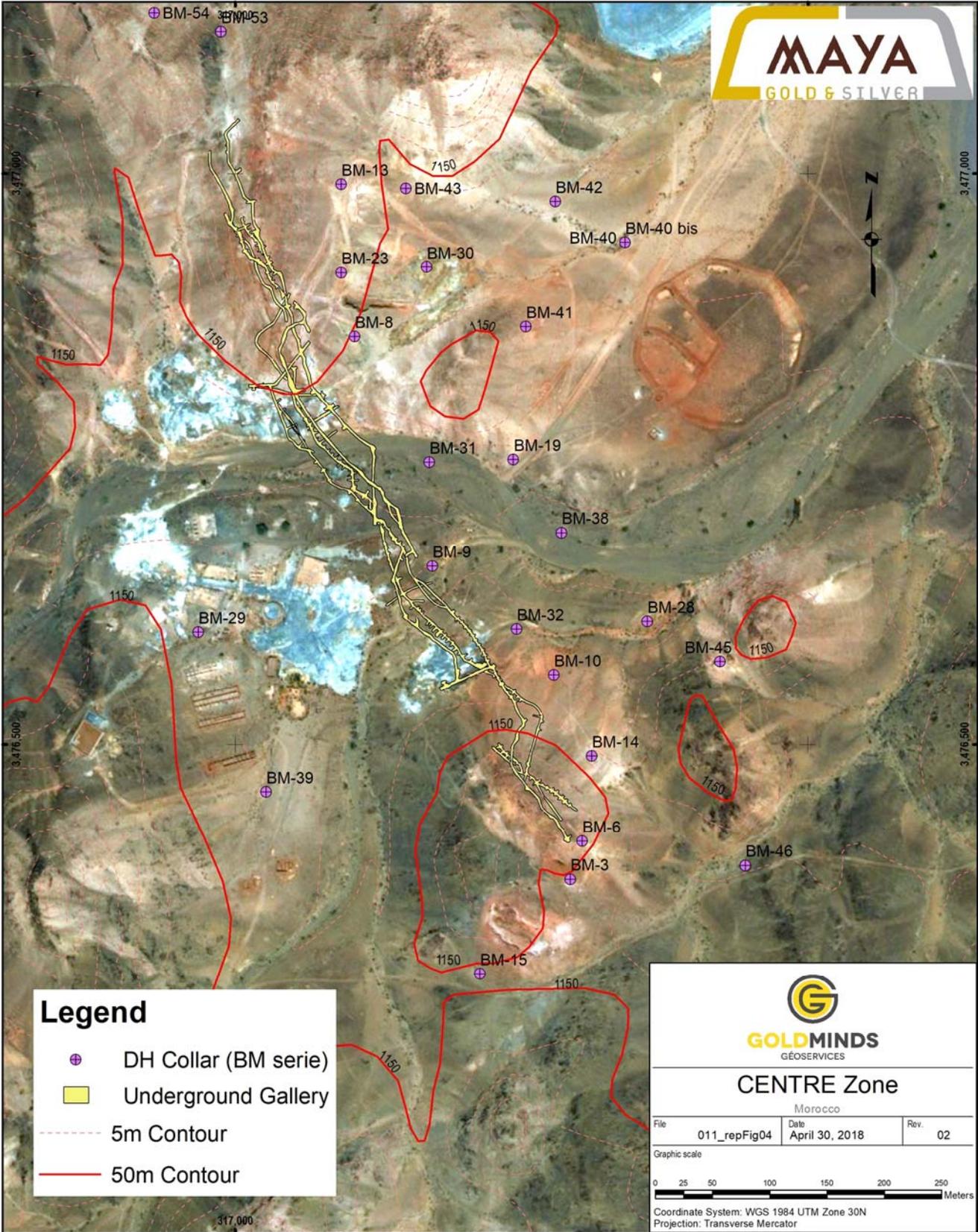
Zgounder Millenium Silver Mining

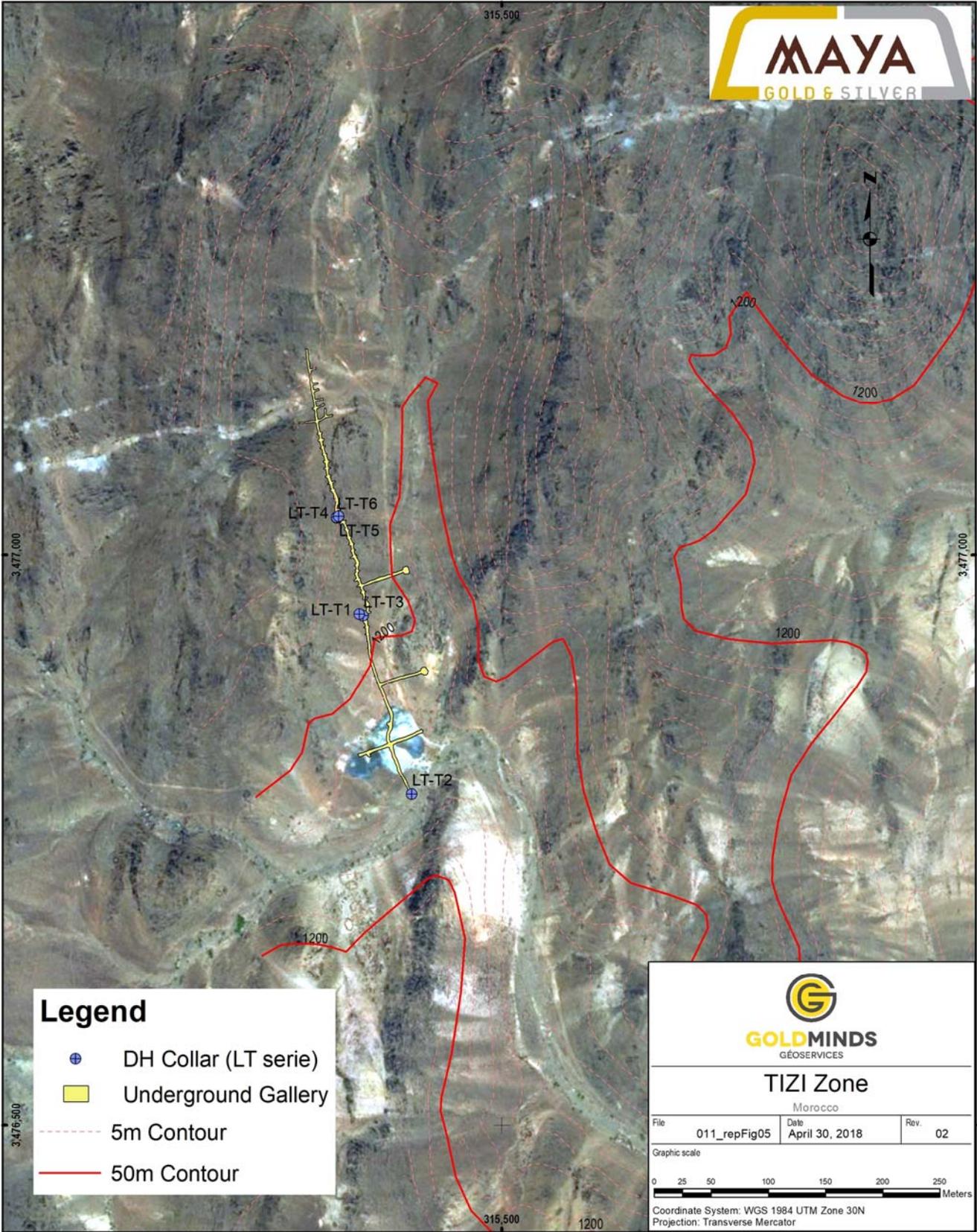
| | Opération minière | Effectif HP | Masse salariale/opération (DHs) |
|------------------------|--------------------------|--------------------|--|
| Masse salariale | Foration | 324 | 139371 |
| | Chargement et Tir | 126 | 34842 |
| | Déblayage | 210 | 69684 |
| | Soutènement | 20 | 9757,8 |
| | Exhaure | 105 | 22995 |
| | | | 276 650 |

A la base des données citées ci-dessus nous pouvons déduire le prix de revient pour le creusement de la rampe 2000-1975 :

| Charges du creusement (DHs) | Métrage creusé (m) | Prix de revient creusement (DHs/m) |
|------------------------------------|---------------------------|---|
| 833 492,1 | 208 | 4007 |

APPENDIX B





Legend

- DH Collar (LT serie)
- Underground Gallery
- 5m Contour
- 50m Contour

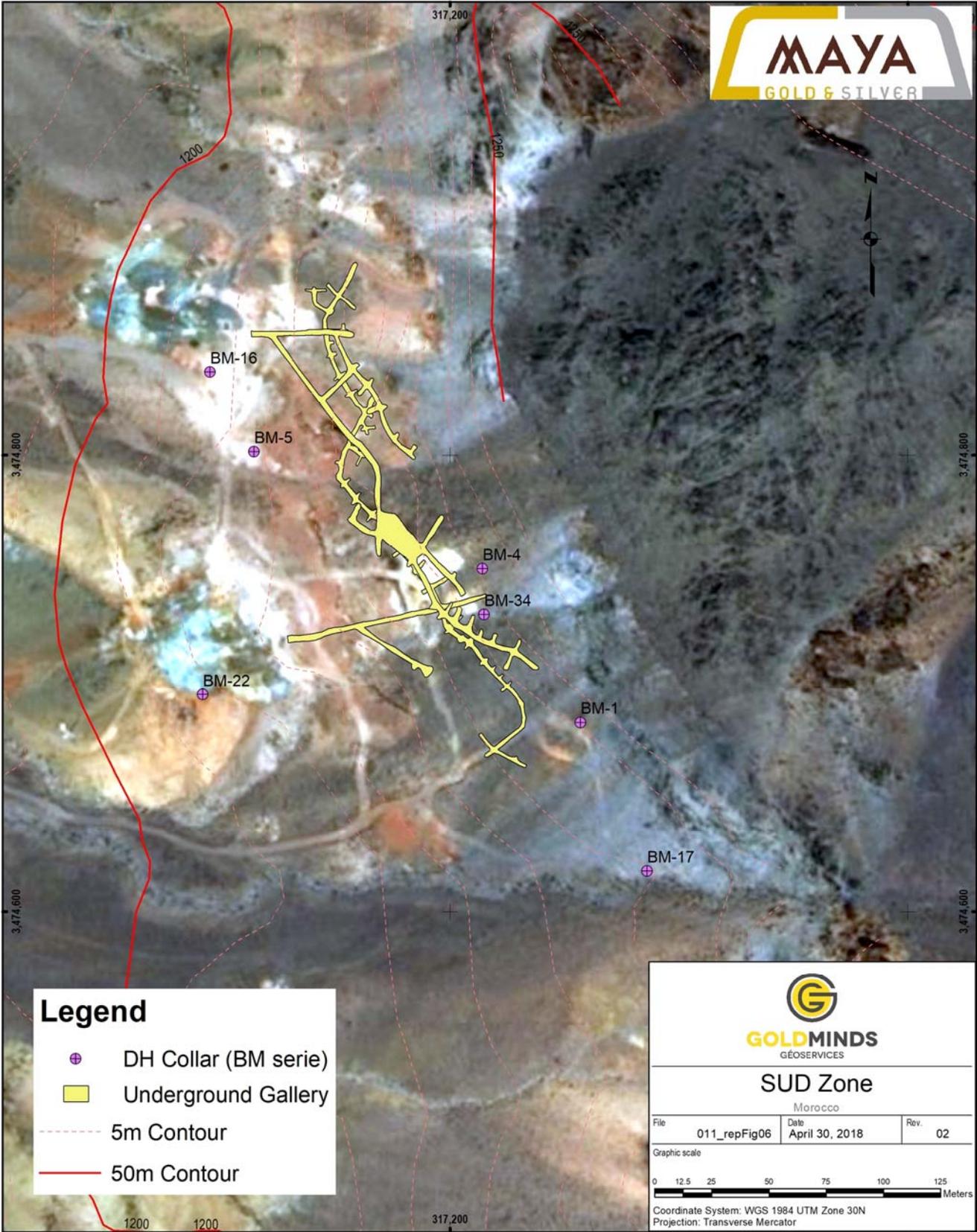
TIZI Zone
Morocco

| | | |
|--------------|----------------|------|
| File | Date | Rev. |
| 011_repFig05 | April 30, 2018 | 02 |

Graphic scale

0 25 50 100 150 200 250 Meters

Coordinate System: WGS 1984 UTM Zone 30N
Projection: Transverse Mercator



Legend

- ⊕ DH Collar (BM serie)
- Yellow box Underground Gallery
- - - 5m Contour
- 50m Contour


GOLDMINDS
GÉOSERVICES

SUD Zone
Morocco

| | | | | | |
|------|--------------|------|----------------|------|----|
| File | 011_repFig06 | Date | April 30, 2018 | Rev. | 02 |
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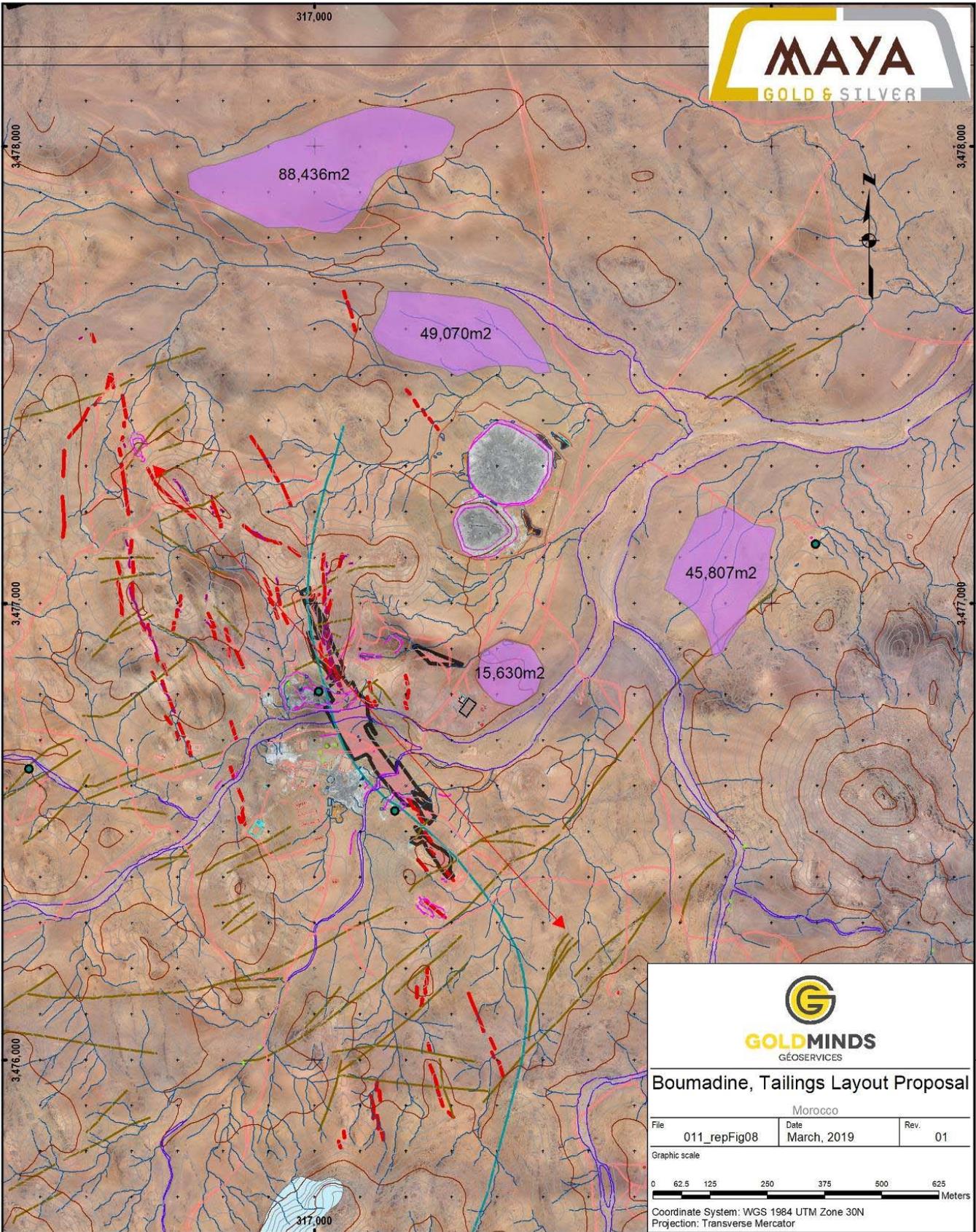
Graphic scale



0 12.5 25 50 75 100 125 Meters

Coordinate System: WGS 1984 UTM Zone 30N
Projection: Transverse Mercator

APPENDIX C



GOLDMINDS
GÉOSERVICES

Boumadine, Tailings Layout Proposal

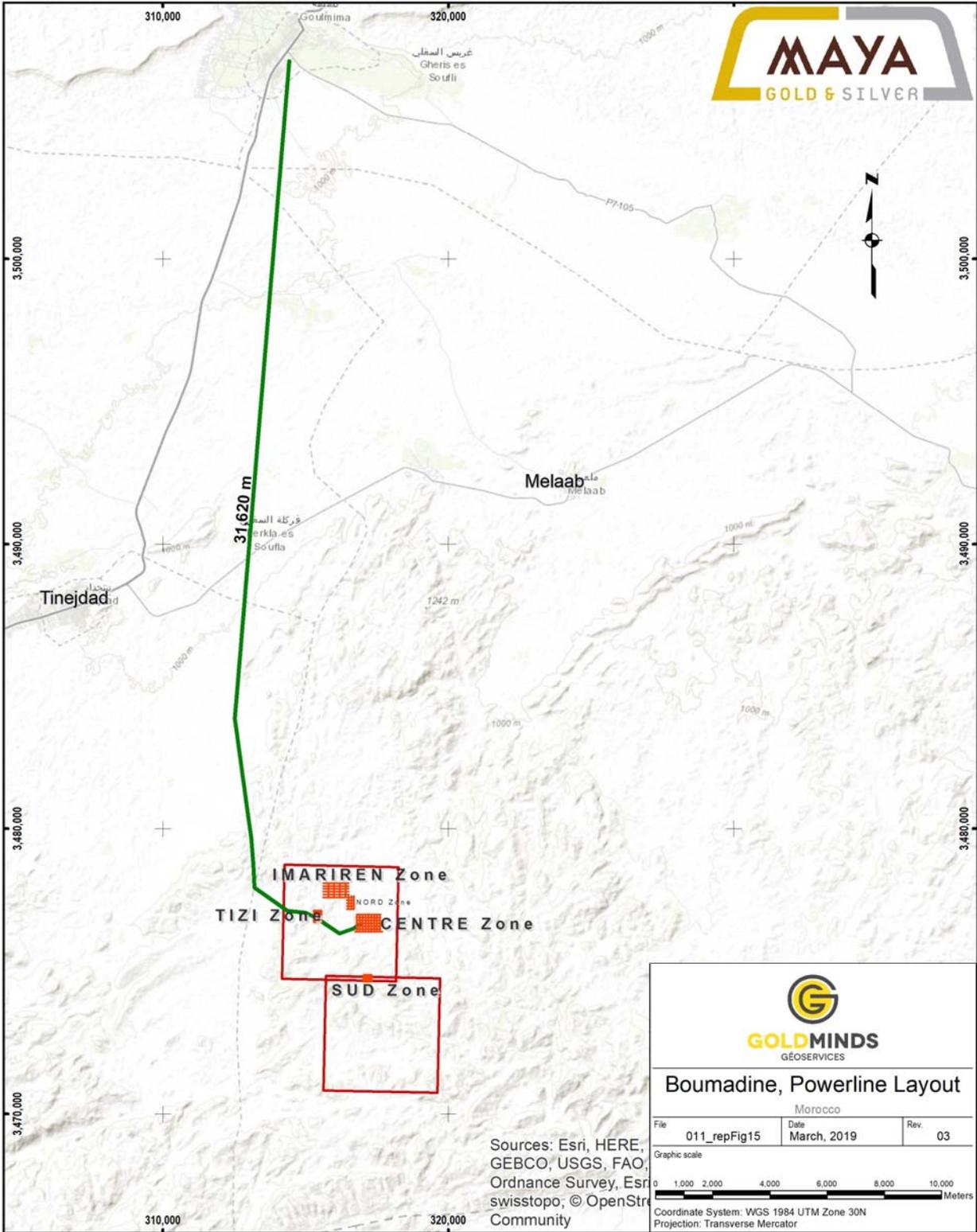
Morocco

| | | |
|--------------|-------------|------|
| File | Date | Rev. |
| 011_repFig08 | March, 2019 | 01 |

Graphic scale



Coordinate System: WGS 1984 UTM Zone 30N
Projection: Transverse Mercator





Boumadine, Powerline Layout
Morocco

| | | | | | |
|------|--------------|------|-------------|------|----|
| File | 011_repFig15 | Date | March, 2019 | Rev. | 03 |
|------|--------------|------|-------------|------|----|

Graphic scale



Coordinate System: WGS 1984 UTM Zone 30N
Projection: Transverse Mercator

Sources: Esri, HERE, GEBCO, USGS, FAO, Ordnance Survey, Esri swisstopo, © OpenStreetMap Community



GOLDMINDS
GÉOSERVICES

Boumadine, Possible Water Intake

Morocco

| | | |
|--------------|-------------|------|
| File | Date | Rev. |
| 011_repFig15 | March, 2019 | 02 |

Graphic scale



Coordinate System: WGS 1984 UTM Zone 30N
Projection: Transverse Mercator

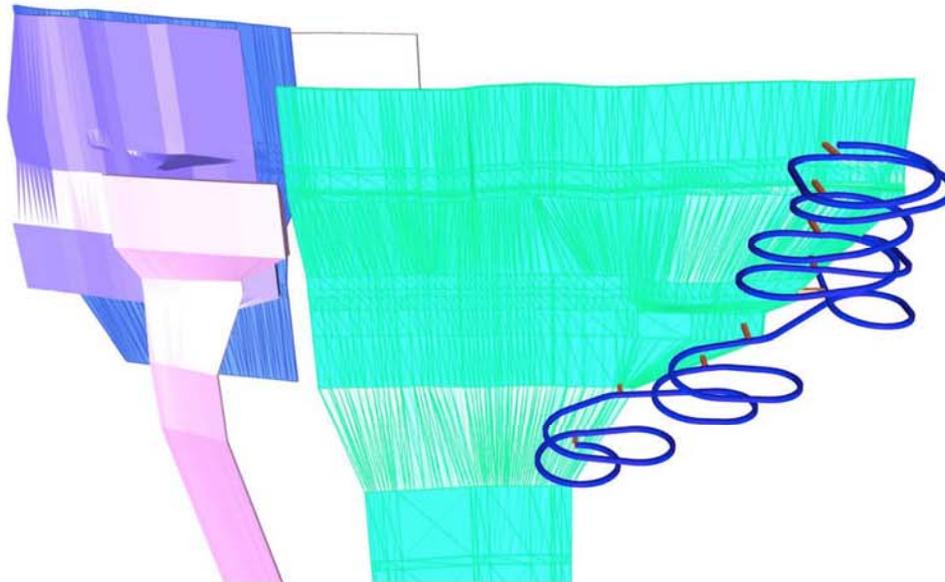
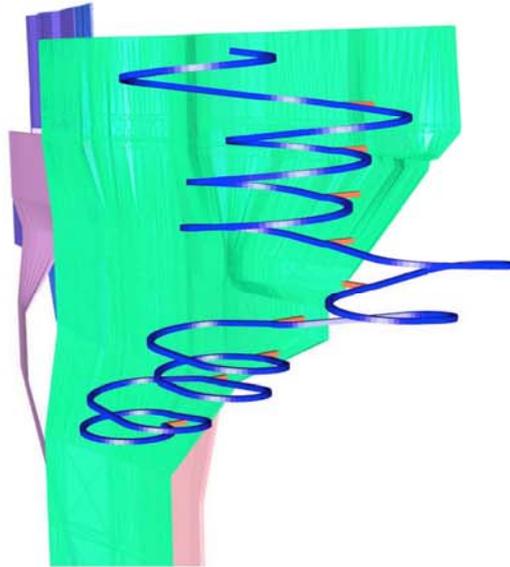
Source: Esri, DigitalGlobe, CNES/Airbus DS, USDA, User Communities

APPENDIX D

| Rampe | | |
|------------|-----------|-----------------------|
| Segment | length(m) | Description |
| 1 | 264.5 | surface 1150.8 - 1123 |
| 2 | 247 | 1123 - 1098 |
| 3 | 248 | 1098 - 1073 |
| 4 | 247 | 1073 - 1048 |
| 5 | 234 | 1048 - 1023 |
| 6 | 234 | 1023 - 998 |
| 7 | 240 | 998 - 973 |
| 8 | 240 | 973 - 948 |
| 9 | 239 | 948 - 923 |
| 10 | 164 | 923 - 915 |
| sous-total | | 2357.5 |

| Acces | | |
|------------|-----------|-------------|
| Segment | length(m) | Description |
| 1 | 23 | 1123 |
| 2 | 24 | 1098 |
| 3 | 25 | 1073 |
| 4 | 20 | 1048 |
| 5 | 17 | 1023 |
| 6 | 22 | 998 |
| 7 | 17 | 973 |
| 8 | 12 | 948 |
| 9 | 17 | 923 |
| sous-total | | 177 |

TOTAL 2534.5

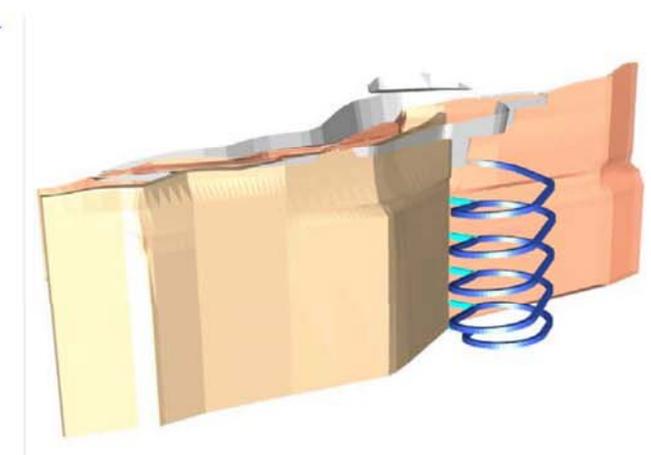
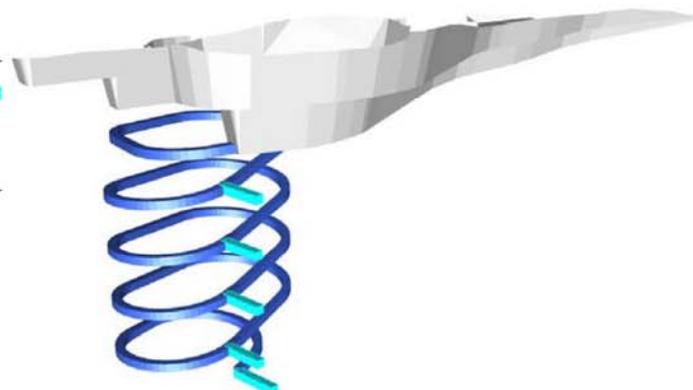


CENTRE zone, ramp design.

| Ramp | | |
|------------|------------|---------------------------|
| Segment | Length (m) | Description |
| 1 | 195 | Slot bottom (1170 - 1150) |
| 2 | 194 | 1150 - 1130 |
| 3 | 194 | 1130 - 1110 |
| 4 | 194 | 1110 - 1090 |
| 5 | 150 | 1090 - 1070 |
| Subs-total | | 923 |

| Access | | |
|------------|------------|-------------|
| Segment | Length (m) | Description |
| 1 | 16 | 1150 |
| 2 | 15 | 1130 |
| 3 | 15 | 1110 |
| 4 | 15 | 1090 |
| 5 | 18 | 1070 |
| Subs-total | | 79 |

TOTAL **1002**

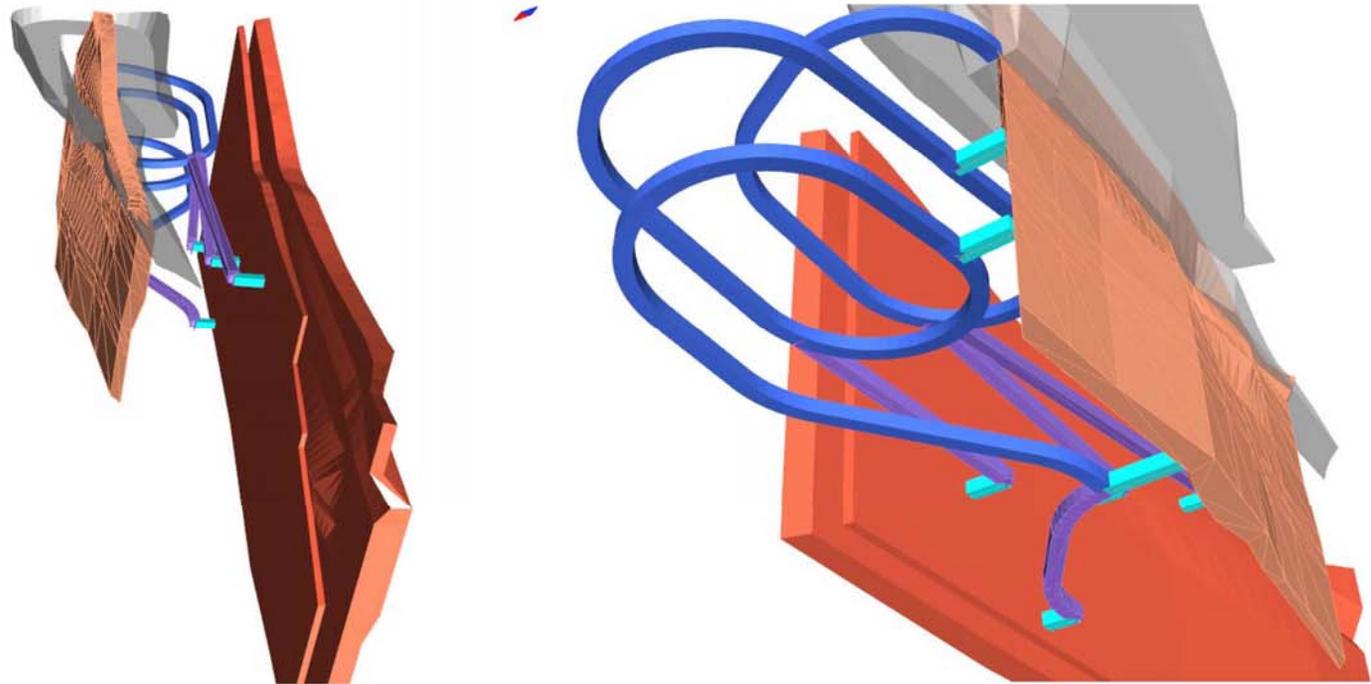


IMARIREN zone, Northern part, ramp design.

| Ramp | | |
|----------|------------|---------------------------|
| Segment | length (m) | Description |
| 1 | 193 | slot bottom (1150) - 1130 |
| 2 | 193 | 1130 - 1110 |
| 3 | 170 | 1110 - 1092 |
| 4 | 113 | west bodies 1137 - 1150 |
| 5 | 70 | west bodies 1130 - 1137 |
| 6 | 56 | west bodies 1110 - 1115 |
| 7 | 50 | west bodies 1090 - 1092 |
| subtotal | | 845 |

| Access | | |
|----------|------------|------------------|
| Segment | length (m) | Description |
| 1 | 11 | 1130 |
| 2 | 11 | 1110 |
| 3 | 15 | 1092 |
| 4 | 9 | west bodies 1150 |
| 5 | 9 | west bodies 1130 |
| 6 | 8 | west bodies 1110 |
| 7 | 7 | west bodies 1090 |
| subtotal | | 70 |

TOTAL **915**



IMARIREN zone, Southern part, ramp design.

| Cuz | Bench | Material | Ore | | | | | | | | | | | | | | Waste | | | | | | | | | | | | | | Grand Total | | | | | | | | | | | | | |
|-----|-------|----------|----------|----------|------|--------|------|------|-------|--------|----------|-----------|----------|------|------|------|-------|------|-------|----------|----------|----------|--------|-------|------|-------|--------|--------|----------|---|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | Tonnes | Volume | Au | Ag | Zn | Pb | Cu | LSDEC | Slipping | Tonnes | Volume | Au | Ag | Zn | Pb | Cu | LSDEC | Slipping | Tonnes | Volume | Au | Ag | Zn | Pb | Cu | LSDEC | Slipping | | | | | | | | | | | | | | | |
| 1 | 1149 | ore | 205.89 | 56.41 | 0.71 | 102.98 | 0.22 | 3.28 | 0.55 | 154.55 | 0 | 461.66 | 126.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 206.89 | 56.41 | 0.71 | 102.98 | 0.22 | 3.28 | 0.55 | 154.55 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1149 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1149 | Total | 205.89 | 56.41 | 0.71 | 102.98 | 0.22 | 3.28 | 0.55 | 154.55 | 0 | 461.66 | 126.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 206.89 | 56.41 | 0.71 | 102.98 | 0.22 | 3.28 | 0.55 | 154.55 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1151 | ore | 759.41 | 208.06 | 0.67 | 97.05 | 0.22 | 3.06 | 3.74 | 152.60 | 0 | 1,621.21 | 444.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 759.41 | 208.06 | 0.67 | 97.05 | 0.22 | 3.06 | 3.74 | 152.60 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1151 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1151 | Total | 759.41 | 208.06 | 0.67 | 97.05 | 0.22 | 3.06 | 3.74 | 152.60 | 0 | 1,621.21 | 444.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 759.41 | 208.06 | 0.67 | 97.05 | 0.22 | 3.06 | 3.74 | 152.60 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1153 | ore | 1,430.89 | 392.02 | 0.58 | 82.92 | 0.21 | 2.58 | 11.11 | 147.98 | 0 | 2,440.25 | 668.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 1,430.89 | 392.02 | 0.58 | 82.92 | 0.21 | 2.58 | 11.11 | 147.98 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1153 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1153 | Total | 1,430.89 | 392.02 | 0.58 | 82.92 | 0.21 | 2.58 | 11.11 | 147.98 | 0 | 2,440.25 | 668.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 1,430.89 | 392.02 | 0.58 | 82.92 | 0.21 | 2.58 | 11.11 | 147.98 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1155 | ore | 2,126.45 | 582.59 | 0.48 | 67.94 | 0.25 | 2.11 | 17.85 | 142.98 | 0 | 3,337.25 | 914.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 2,126.45 | 582.59 | 0.48 | 67.94 | 0.25 | 2.11 | 17.85 | 142.98 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1155 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1155 | Total | 2,126.45 | 582.59 | 0.48 | 67.94 | 0.25 | 2.11 | 17.85 | 142.98 | 0 | 3,337.25 | 914.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 2,126.45 | 582.59 | 0.48 | 67.94 | 0.25 | 2.11 | 17.85 | 142.98 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1157 | ore | 3,104.17 | 850.46 | 0.38 | 50.40 | 0.47 | 1.57 | 23.42 | 137.90 | 0 | 4,100.72 | 1,123.49 | 0.00 | 0.02 | 0.00 | 0.06 | 0.24 | 0 | 3,104.17 | 850.46 | 0.38 | 50.40 | 0.47 | 1.57 | 23.42 | 137.90 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1157 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1157 | Total | 3,104.17 | 850.46 | 0.38 | 50.40 | 0.47 | 1.57 | 23.42 | 137.90 | 0 | 4,100.72 | 1,123.49 | 0.00 | 0.02 | 0.00 | 0.06 | 0.24 | 0 | 3,104.17 | 850.46 | 0.38 | 50.40 | 0.47 | 1.57 | 23.42 | 137.90 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1159 | ore | 3,737.50 | 1,023.97 | 0.42 | 44.57 | 0.94 | 1.37 | 26.52 | 153.45 | 0 | 5,330.76 | 1,460.48 | 0.00 | 0.09 | 0.00 | 0.17 | 0.65 | 0 | 3,737.50 | 1,023.97 | 0.42 | 44.57 | 0.94 | 1.37 | 26.52 | 153.45 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1159 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1159 | Total | 3,737.50 | 1,023.97 | 0.42 | 44.57 | 0.94 | 1.37 | 26.52 | 153.45 | 0 | 5,330.76 | 1,460.48 | 0.00 | 0.09 | 0.00 | 0.17 | 0.65 | 0 | 3,737.50 | 1,023.97 | 0.42 | 44.57 | 0.94 | 1.37 | 26.52 | 153.45 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1161 | ore | 3,850.90 | 1,055.04 | 0.52 | 44.65 | 0.72 | 1.32 | 25.67 | 147.80 | 0 | 5,330.76 | 1,460.48 | 0.00 | 0.09 | 0.00 | 0.17 | 0.65 | 0 | 3,850.90 | 1,055.04 | 0.52 | 44.65 | 0.72 | 1.32 | 25.67 | 147.80 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1161 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1161 | Total | 3,850.90 | 1,055.04 | 0.52 | 44.65 | 0.72 | 1.32 | 25.67 | 147.80 | 0 | 5,330.76 | 1,460.48 | 0.00 | 0.09 | 0.00 | 0.17 | 0.65 | 0 | 3,850.90 | 1,055.04 | 0.52 | 44.65 | 0.72 | 1.32 | 25.67 | 147.80 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1163 | ore | 4,070.08 | 1,115.09 | 0.61 | 47.88 | 0.61 | 1.39 | 22.92 | 145.43 | 0 | 7,086.25 | 1,941.44 | 0.00 | 0.17 | 0.01 | 0.33 | 0.17 | 0.93 | 0 | 4,070.08 | 1,115.09 | 0.61 | 47.88 | 0.61 | 1.39 | 22.92 | 145.43 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1163 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1163 | Total | 4,070.08 | 1,115.09 | 0.61 | 47.88 | 0.61 | 1.39 | 22.92 | 145.43 | 0 | 7,086.25 | 1,941.44 | 0.00 | 0.17 | 0.01 | 0.33 | 0.17 | 0.93 | 0 | 4,070.08 | 1,115.09 | 0.61 | 47.88 | 0.61 | 1.39 | 22.92 | 145.43 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1165 | ore | 3,708.45 | 1,016.01 | 0.55 | 51.88 | 0.53 | 1.56 | 22.06 | 144.02 | 0 | 8,996.76 | 2,465.41 | 0.00 | 0.07 | 0.00 | 0.10 | 0.41 | 1.05 | 0 | 3,708.45 | 1,016.01 | 0.55 | 51.88 | 0.53 | 1.56 | 22.06 | 144.02 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1165 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1165 | Total | 3,708.45 | 1,016.01 | 0.55 | 51.88 | 0.53 | 1.56 | 22.06 | 144.02 | 0 | 8,996.76 | 2,465.41 | 0.00 | 0.07 | 0.00 | 0.10 | 0.41 | 1.05 | 0 | 3,708.45 | 1,016.01 | 0.55 | 51.88 | 0.53 | 1.56 | 22.06 | 144.02 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1167 | ore | 3,458.33 | 947.49 | 0.52 | 56.07 | 0.49 | 1.73 | 19.68 | 140.34 | 0 | 8,466.44 | 2,319.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 3,458.33 | 947.49 | 0.52 | 56.07 | 0.49 | 1.73 | 19.68 | 140.34 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1167 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1167 | Total | 3,458.33 | 947.49 | 0.52 | 56.07 | 0.49 | 1.73 | 19.68 | 140.34 | 0 | 8,466.44 | 2,319.57 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 3,458.33 | 947.49 | 0.52 | 56.07 | 0.49 | 1.73 | 19.68 | 140.34 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1169 | ore | 3,261.02 | 893.43 | 0.53 | 61.57 | 0.49 | 1.92 | 16.49 | 140.08 | 0 | 19,963.02 | 5,469.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 3,261.02 | 893.43 | 0.53 | 61.57 | 0.49 | 1.92 | 16.49 | 140.08 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1169 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1169 | Total | 3,261.02 | 893.43 | 0.53 | 61.57 | 0.49 | 1.92 | 16.49 | 140.08 | 0 | 19,963.02 | 5,469.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 3,261.02 | 893.43 | 0.53 | 61.57 | 0.49 | 1.92 | 16.49 | 140.08 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1171 | ore | 3,029.26 | 829.93 | 0.54 | 68.88 | 0.37 | 2.17 | 13.11 | 140.18 | 0 | 31,420.27 | 8,608.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 3,029.26 | 829.93 | 0.54 | 68.88 | 0.37 | 2.17 | 13.11 | 140.18 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1171 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1171 | Total | 3,029.26 | 829.93 | 0.54 | 68.88 | 0.37 | 2.17 | 13.11 | 140.18 | 0 | 31,420.27 | 8,608.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 3,029.26 | 829.93 | 0.54 | 68.88 | 0.37 | 2.17 | 13.11 | 140.18 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1173 | ore | 2,847.24 | 780.07 | 0.56 | 75.00 | 0.31 | 2.37 | 10.72 | 141.02 | 0 | 30,446.77 | 8,341.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 2,847.24 | 780.07 | 0.56 | 75.00 | 0.31 | 2.37 | 10.72 | 141.02 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1173 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1173 | Total | 2,847.24 | 780.07 | 0.56 | 75.00 | 0.31 | 2.37 | 10.72 | 141.02 | 0 | 30,446.77 | 8,341.58 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 2,847.24 | 780.07 | 0.56 | 75.00 | 0.31 | 2.37 | 10.72 | 141.02 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1175 | ore | 2,692.11 | 737.56 | 0.60 | 82.09 | 0.29 | 2.59 | 7.69 | 143.24 | 0 | 26,332.65 | 7,762.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 2,692.11 | 737.56 | 0.60 | 82.09 | 0.29 | 2.59 | 7.69 | 143.24 | 0 | 0 | 0 | | | | | | | | | | | | | |
| | 1175 | waste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | | | | | | | | | | |
| | 1175 | Total | 2,692.11 | 737.56 | 0.60 | 82.09 | 0.29 | 2.59 | 7. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

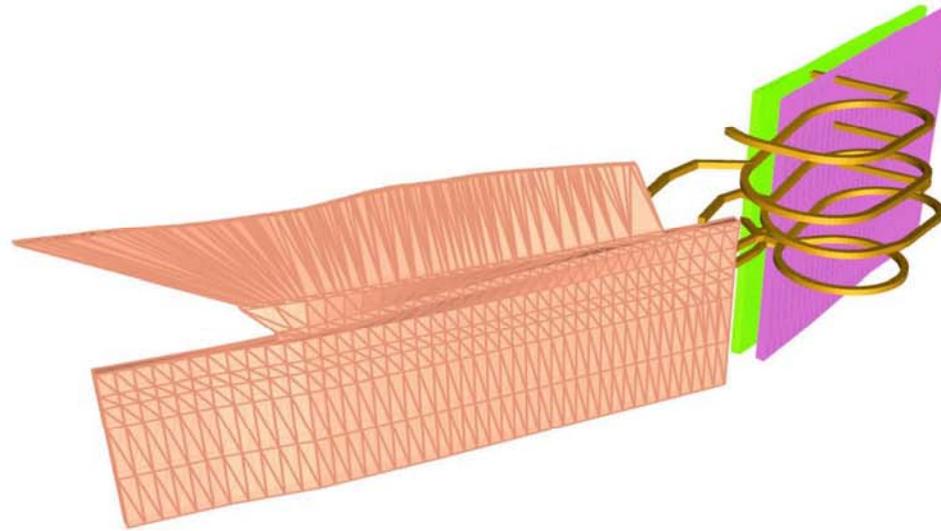
| Rampe | | |
|---------|-----------|------------------------------|
| Segment | Length(m) | Description |
| 1 | 233 | surface jusqu'au niveau 1135 |
| 2 | 238 | 1135 - 1110 |
| 3 | 238 | 1110 - 1085 |
| 4 | 159 | 1085 - 1080 |

sous-total 868

| Acces | | |
|---------|-----------|-------------|
| Segment | Length(m) | Description |
| 1 | 57 | 1145 |
| 2 | 55 | 1135 |
| 3 | 54 | 1120 |
| 4 | 46 | 1110 |
| 5 | 64 | 1095 |
| 6 | 31 | 1085 |
| 7 | 60 | 1080 |

sous-total 367

TOTAL 1235



NORD zone, ramp design.

Rampe

| Segment | Length(m) | Description |
|---------|-----------|------------------------------|
| 1 | 46 | surface jusqu'au niveau 1222 |
| 2 | | 220 1222 - 1197 |
| 3 | | 221 1197 - 1172 |
| 4 | | 220 1172 - 1147 |
| 5 | | 220 1147 - 1122 |
| 6 | | 220 1122 - 1097 |
| 7 | | 220 1097 - 1072 |
| 8 | | 220 1072 - 1047 |
| 9 | | 220 1047 - 1022 |
| 10 | | 220 1022 - 997 |

sous-total 2027

Acces

| Segment | Length(m) | Description |
|---------|-----------|-------------|
| 1 | 31 | 1222 |
| 2 | 35 | 1197 |
| 3 | 46 | 1172 |
| 4 | 45 | 1147 |
| 5 | 49 | 1122 |
| 6 | 50 | 1097 |
| 7 | 51 | 1072 |
| 8 | 52 | 1047 |
| 9 | 47 | 1022 |
| 10 | 46 | 997 |

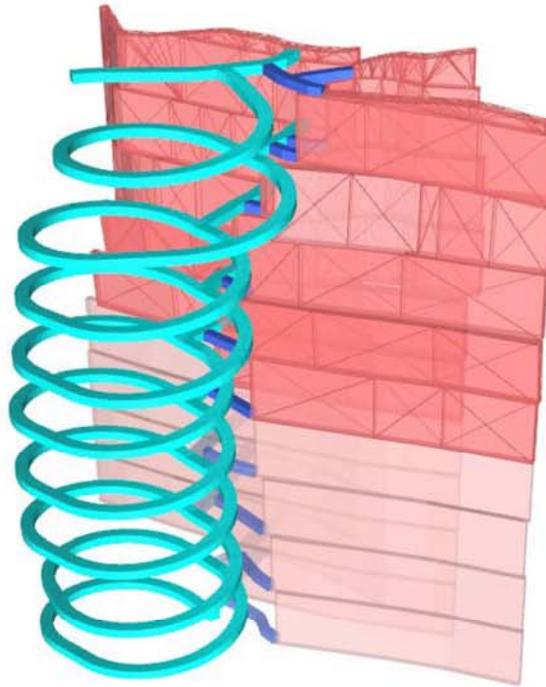
sous-total 452

Acces stopes NS

| Segment | Length(m) | Description |
|---------|-----------|-------------|
| 1 | 29 | 1222 |
| 2 | 21 | 1222 |
| 3 | 13 | 1197 |
| 4 | 16 | 1197 |
| 5 | 10 | 1172 |
| 6 | 15 | 1147 |
| 7 | 20 | 1122 |
| 8 | 24 | 1097 |
| 9 | 25 | 1072 |
| 10 | 29 | 1047 |
| 11 | 25 | 1022 |
| 12 | 36 | 997 |

sous-total 263

TOTAL 2742



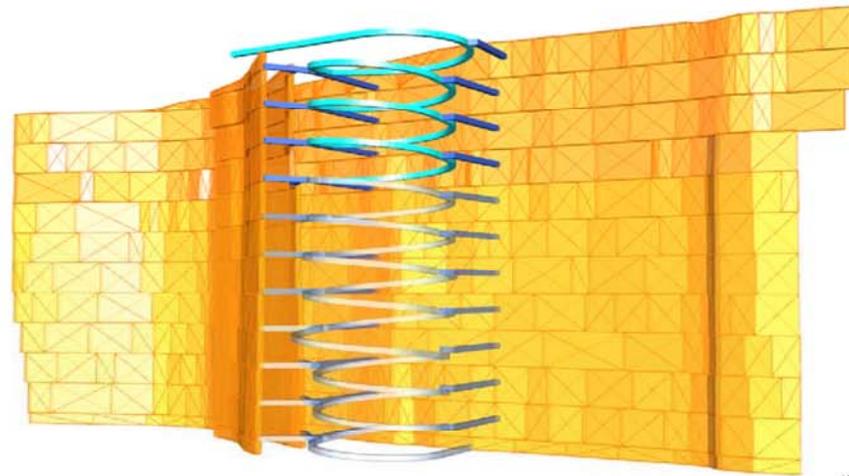
SUD zone, ramp design.

| Ramp | | |
|-----------|-----------|---------------------------|
| Segment | Length(m) | Description |
| 1 | 245.2 | from surface down to 1185 |
| 2 | 210.7 | 1185 - 1165 |
| 3 | 210.7 | 1165 - 1145 |
| 4 | 210.7 | 1145 - 1125 |
| 5 | 210.7 | 1125 - 1105 |
| 6 | 210.7 | 1105 - 1085 |
| 7 | 219.7 | 1085 - 1065 |
| 8 | 202.6 | 1065 - 1045 |
| 9 | 747 | 1045 - 978 |
| Sub-total | | 2468 |

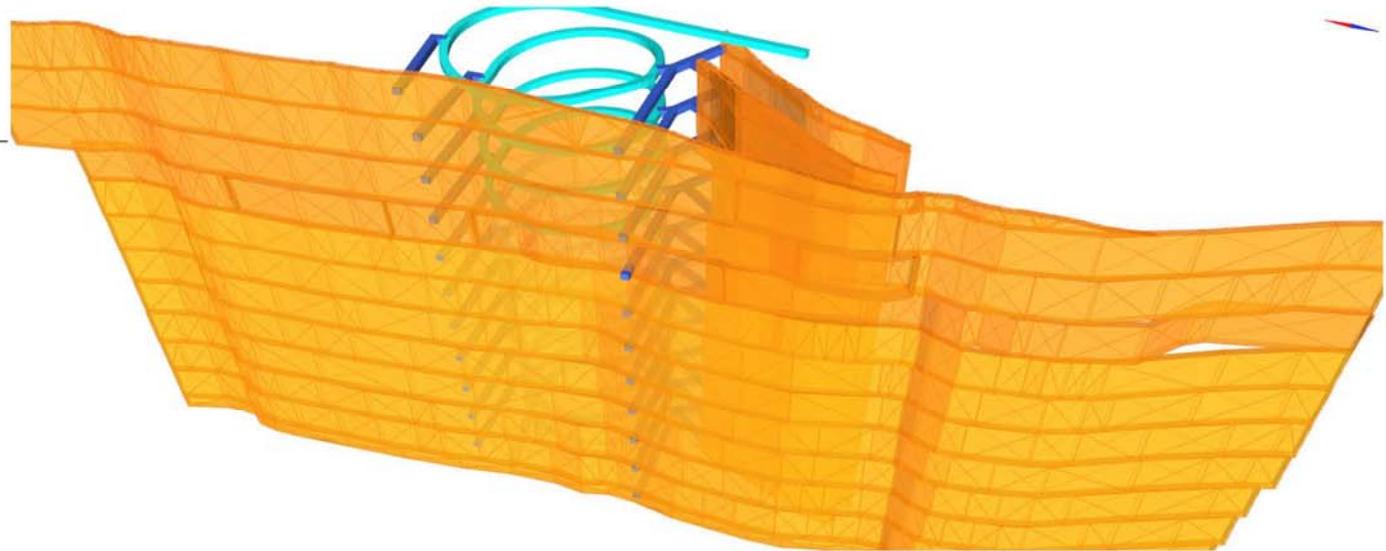
| Stopes access | | |
|---------------|-----------|-------------|
| Segment | Length(m) | Description |
| 1 | 92.6 | 1185 |
| 2 | 92.5 | 1165 |
| 3 | 92.6 | 1145 |
| 4 | 107.9 | 1125 |
| 5 | 111 | 1105 |
| 6 | 111 | 1085 |
| 7 | 111 | 1065 |
| 8 | 111 | 1045 |
| 9 | 111 | 1025 |
| 10 | 111 | 1005 |
| 11 | 111 | 985 |
| Sub-total | | 1162.6 |

| Sub level access | | |
|------------------|-----------|-------------|
| Segment | Length(m) | Description |
| 1 | 42.7 | 1195 |
| 2 | 52 | 1175 |
| 3 | 52 | 1155 |
| 4 | 52 | 1135 |
| 5 | 52 | 1115 |
| 6 | 52 | 1095 |
| 7 | 52 | 1075 |
| 8 | 52 | 1055 |
| 9 | 52 | 1035 |
| 10 | 52 | 1015 |
| 11 | 52 | 995 |
| Sub-total | | 562.7 |

TOTAL 4193.3



VUE EN DIRECTION SUD-OUEST



VUE EN DIRECTION NORD-EST

TIZI zone, ramp design.